LIGHTINGSOUND International



DLOUR TECHNOLOGY AT GOTHAM CITY: SEE NEWS IN L+SI.

PHOTO: RALPH NELSON

- Behind the scenes of Rod Stewart's 'A Spanner in the Works' tour
- Company profile: Rosco go for expansion
- One-stop entertainment at Italy's new Stopline Club
- Show report: Mark Cunningham at Audio Technology '95
- A decade down the line: Live Aid revisited
- Ian Herbert at Brazil's International Festival of Theatre



JULY 1995



THE DIFFERENCE LIES IN A BRIGHT NEW IDEA





WITH 48 NOISE GATES, 48 COMPRESSORS, 48 MODULATORS, 48 AUTOPANNERS, AND FDB™ EQUALISATION, SEQUEL II IS...

Acclaimed FdBTM Equaliser

As if having superb equalisation, comprehensive mute grouping and outstanding audio isn't enough, the Soundtracs Sequel II live sound console gives you that little bit extra.

If you can really call a fully programmable, on-board dynamics processor a 'little bit'.

After all, what other console can offer a package that includes gating, expansion, compression, limiting, modulation & triggered effects, - fully assignable and recallable on every channel.

All of the highest quality.

Gates with an attack time of just 5 microseconds. Compressors with variable control over threshold, attack, release, ratio, knee and stereo linking. Modulation that includes level, pan and channel

triggering.

It's just another example of Soundtracs' continued strive

toward giving live sound engineers the tools they need to complete their job.

Little wonder they call Soundtracs'

Sequel II, 'the

live one'.



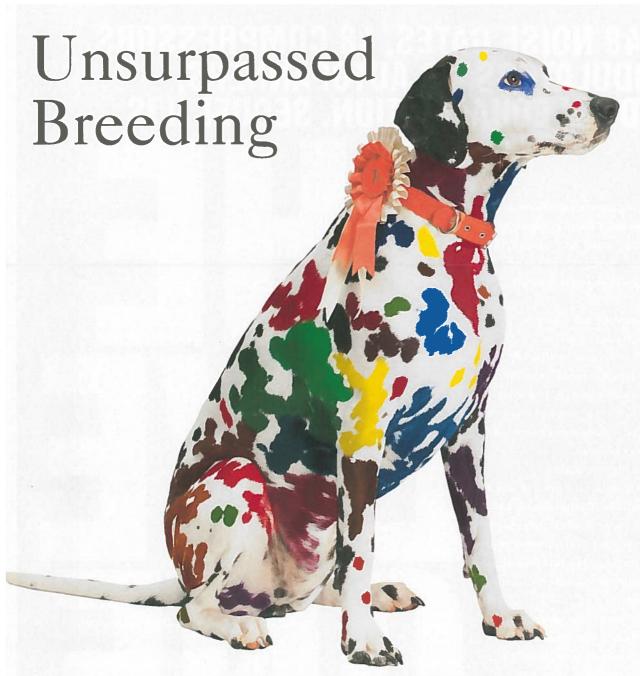
Assignable Dynamics Processor

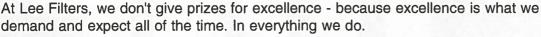
SOUNDTR∆CS

Distributed in the UK by: beyerdynamic Unit 14, Cliffe Industrial Estate, Lewes, Sussex BN8 6JL Tel: (01273) 479411. Fax: (01273) 471825

FREEPHONE 0800 374994 beyerdynamic

As used,
in auditoriums, concert halls
& theatres the world over





It's always been that way. Our systems – and attitudes – have developed to deliver the best possible products and service to our customers.

We offer the widest possible range of colours, with every product scrutinised electronically to maintain consistency and the highest quality standards through generation after generation of production.

That's why we're proud to say that our pedigree will always shine through.



Lee Filters

pedigree shines through

Lee Filters, Central Way, Walworth Industrial Estate, Andover, Hampshire, SP10 5AN UK.

Tel: 01264 366245 Fax: 01264 355058



CONSISTENCY



CONTINUAL R&D



IN-HOUSE MANUFACTURE



TOTAL COLOUR RANGE



TOP QUALITY MATERIALS



TOP PERFORMANCE



FILM INDUSTRY



ENTERTAINMENT



THEATRE INDUSTRY



TV INDUSTRY

LIGHTINGSOU

JULY 1995

6 News In L+SI

The latest news and views from across the Industry

25 Catalogue Collection

The latest product catalogues from many of the leading companies within the industry

31 On Tour

Steve Moles reviews the stage shows of Tanita Tikaram and James Last

34 Thoroughly Modern Rod



Rod Stewart's 'A Spanner in the Works' tour is a showcase for many new live technology developments. Mark Cunningham spent two days with the crew at Wembley Stadium . . .

40 A Decade of Change

Steve Moles catches up with the stage crew who worked on Live Aid and finds out whether the ten years since has treated them kindly

VOLUME 10, ISSUE 7

43 Rosco: Masters at **Marketing**

Following recent developments at Rosco, L+SI's editor visited the company's New York HQ and talked to the man at the helm, Stan Miller

48 Audio Technology '95

Mark Cunningham reports on the new-look APRS Show

55 One Stop Entertainment

Steve Moles visits Italy's Stopline Club

59 Asleep in the Stalls

Ian Herbert gets into South American festival mode

61 Second Take

John Watt discovers the dangers of making too many assumptions

62 Points of Law

Alex Carter-Silk on trademarks

63 PLASA Members

67 Directory of Suppliers and Services

72 International Directory

74 Viewpoint

Peter Sarner on Life Beyond Theme Parks

ABC Membership has been approved pending first audit for the period July 1995 - December 1995

The views expressed in Lighting and Sound International are not necessarily those of the editor or the Professional Lighting and Sound Association

LIGHTING SOUN

published monthly by the Professional Lighting and Sound Association ISSN 0268-7429 © Copyright Professional Lighting and Sound Association

Editor: John Offord Assistant Editor: Ruth Rossington

Associate Editor: Tony Gottelier Editorial: Lee Baldock Advertisement Manager: Barry Howse

Production/subscriptions: Sheila Bartholomew Advertising assistant: Jane Cockburn

Published from the PLASA Office: 7 Highlight House, St Leonards Road, Eastbourne, East Sussex BN21 3UH England

Telephone: (01323) 642639 Fax: (01323) 646905 Internet: http://www.plasa.org.uk/plasa E-mail: info@plasa.org.uk No part of this magazine may be reproduced without the permission of the Editor

The magazine is available on annual subscription

UK £45.00 Europe and rest of world £60.00 Airmail £85.00. Single copy price £3.50 plus postage

Editorial Advisors: Peter Brooks, Wyatt Enever, Mike Gerrish, Derek Gilbert, David Hopkins, Matthew Griffiths, John Lethbridge, Ian de le Vingne, Iain Price-Smith, Neil Rice, Jackie Staines, Mike Wood.

Lighting + Sound International is published Lighting + Sound International is published monthly for \$90.00 per year by The Professional Lighting and Sound Association, 7 Highlight House, St Leonards Road, Eastbourne, East Sussex BN213UH. Second class postage paid at Rahway, N.J. Postmaster: Send USA address corrections to Lighting & Sound International, c/o Mercury Airfeight International, in 2323 Randolph Airfreight International Inc. 2323 Randolph





Contact: Bruce Kirk

light solutions limited

QUALITY PRODUCTS

TECHNICAL SUPPORT

EXCELLENT BACKUP

M&M Light Solutions Limited

Studio 12 Cameron House

12 Castlehaven Road

London NWI 8QW

Phone: 0171 284 2504

Fax: 0171 284 2503

LIGHTING+SOUND INTERNATIONAL JULY 1995

LIGHTING SOUND News

PLASA Grows

The PLASA Light & Sound Show (10-13 Sept), the leading worldwide exhibition for the industry, has announced that it is expecting continued growth in attendance by both exhibitors and visitors with buying power at their fingertips.

The PLASA Show offers the entertainment industry the opportunity to see the latest in technology in an environment rich with experience and variety. Additionally, it provides the ideal forum to forge strategic relationships with companies and individuals providing products for the markets that matter in disco, club, theatre, leisure and live venues industries.

James Brooks-Ward, show director for PLASA 95, said: "The growth in attendance at PLASA over the last few years across the broad spectrum of companies that exhibit at the show has been phenomenal. It is the worldwide leader and anyone who wants to catch up with what's new in this industry needs to be there."

David Brooks, of Strand Lighting, said: "We have been attending the PLASA Show for a number of years now. Of the various exhibitions around the world that address this market, we have to focus on PLASA because, simply, it is the most important show. There is always a good quality and quantity of visitors, and as the show has grown, so have the benefits of attending."

Ken Sewell, commercial director at Pulsar Lighting, said: "For us, PLASA is the main opportunity to demonstrate our products and technology to world markets. It is the most important and professional exhibition of lighting and sound equipment in the world today."

Bryan Raven, of White Light, added: "As the crossover of attending disciplines at PLASA diversifies, there is an increasing opportunity for theatre-related companies to become integrated into the lighting and sound marketplace and to benefit from the differences and experiences offered by the other markets represented at the show. We have certainly formed partnerships to our advantage from this diversification."

Paul Adams, vice-chairman of PLASA, and managing director of PA Installations, said: "As a visitor to PLASA, it's important to be able to view all the latest technology from the major manufacturers and suppliers in the industry. I am convinced that PLASA embraces every area of the industry and accommodates the specialist knowledge required by clubs when installing the very latest lighting and sound technology."

For further details on the PLASA Show contact P&O Events, telephone 0171-370 8179.

PLASA People

Mike Wood's recent move to the US and High End Systems and his resultant resignation as chairman of PLASA left the Association with a gap to fill. It has been announced that vice-chairman Paul Adams and treasurer Matthew Griffiths will share the officer work-load through to the end of 1995 when officers will be elected for 1996.

Paul, who chaired the recent AGM of PLASA, is a director of Llanelli-based PA Installations which he founded in 1976. He has been on the PLASA committee for over six years and served as vicechairman for three. Matthew Griffiths of TSL (AV), a company in the White Light Group, has spent

AGM changeover: PLASA vice-chairman Paul Adams (second from right) with (left to right) George Thompson, Tony Akers and Tony Douglas-Beveridge.

over 15 years in the theatre business and has been on the executive committee for seven years and held the post of Association treasurer for the past four years.

Further changes have seen long-standing committee member Tony Akers resign due to completion of his service at Citronic. Tony was standards working group chairman for a number of years and has seen PLASA's work in this area grow considerably during that time. His leaving coincides with the departure of standards officer George Thompson, who is phasing out his second 'retirement' after a five-year run setting up one of the Association's most important roles. George will be succeeded by Tony Douglas-Beveridge who takes over on August 1st, and he will be based at PLASA's HQ in Eastbourne.

Paul Adams told L+SI: "Whilst it is a disappointment to see three such important personalities go, it is a pleasure to wish Mike Wood, Tony Akers and George Thompson well for the future. We also welcome Tony Douglas-Beveridge who will become the Association's first full-time standards officer and I am sure he will develop successfully the path set by George Thompson."

A Light on HIStory



Theatre Projects equipment provided the changing colour washes on the 33ft effigy of Michael Jackson moored on a barge on the Thames at London's Tower Bridge, as part of the ten-day promotion for his new album 'HIStory'. Eight of TP's newly acquired Irideon AR500 architectural luminaires were employed.

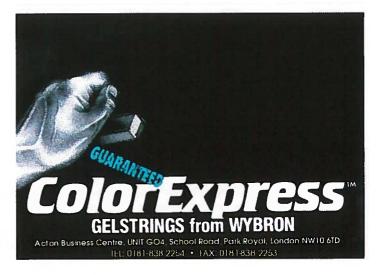
PLASA and Internet

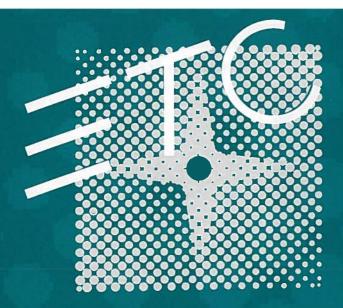
PLASA's HQ at Eastbourne now has a special office dedicated to work on the Internet and is fast accumulating industry information onto its world wide web site.

All PLASA members are listed with their contact and background information, as are exhibitors at the forthcoming PLASA Show. "In the next issue of PLASA's Membership News we will be offering all members the opportunity of expanding their web sites in a variety of ways," said chief executive John Offord. "In addition, exhibitors launching new products at the Light & Sound Show will have the opportunity of listing them on the Internet."

In a move that PLASA sees as the first of many, the Association of Lighting Designers will be providing PLASA with details and contact information to add to the web site in the near future. For more information call Lee Baldock on (01323) 410335 or http://www.plasa.org.uk/







Innovation

- Elegance
 - Reliability
 - **Dedication**



Impression 2

500 groups

300 channels 1024 dimmers 600 cues

- 2 x 24 submasters VGA monitor
- ETCNet & ETCLink

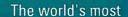
Expression 2x

600 channels 1536 dimmers 600 cues 500 groups 2 x 24 submasters Rate/level wheels X/Y moving light control **Dual VGA monitors**

ETCNet & ETCLink

Concept 2x

1200 channels 1536 dimmers 600 cues 500 groups 2 x 24 submasters Rate/level wheels X/Y moving light control **Dual VGA monitors** ETCNet & ETCLink



popular console family is now available from

ETC distributors - worldwide. Expression line consoles are powerful, friendly and fast. Five versions provide a wide range of system features to suit all kinds of live entertainment and television application.

To find out more about ETC products, contact ETC for the address of your nearest distributor.

Electronic Theatre Controls

Tel (+44) 181 213 5290 Europe Asia

expression 2x

North Fax (+1) 608 836-1736 **America**





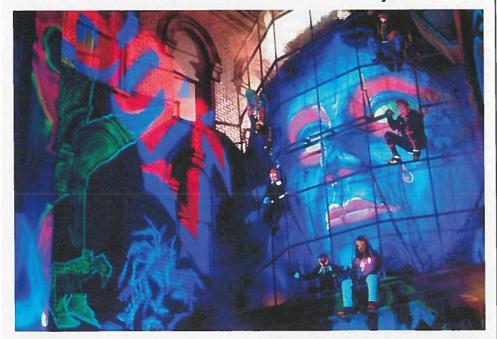
Insight 2 108 channels 1024 dimmers 108 channel/ submaster faders 600 cues 500 groups 2 x 108 submasters VGA monitor ETCNet & ETCLink

324 channels 1024 dimmers 108 channel/ submaster faders 600 cues 500 groups 2 x 108 submasters Rate/level wheels

control **Dual VGA monitors** ETCNet & ETCLink

X/Y moving light

The Colourful Streets of Gotham City



Martin Professional's Roboscan Pro 1220 has made a high-profile screen appearance in the new film, Batman Forever. In the new blockbuster starring Val Kilmer, several scenes feature the use of the Pro 1220. One such, the Riddler's party, filmed at the Pantages Theatre in LA, features the lights with spiralling, rotating gobos swirling over the crowd. Another scene, shot in the Chinatown district of LA, again uses the gobo facility of the Pro 1220 to generate Chinese letter characters which are projected onto the actors as well as the buildings. This effect was created by the movie's visual effects team by hanging the Pro 1220s from scissor lifts out of shot. All the Martin units used in the movie were supplied by Albert Chen of New Dimensions in San Francisco.

LA-based effects company, Wildfire Inc, have also added Batman Forever to their list of major film credits, lighting the largest film sets they have worked on to date. The company's long-throw UV (Blacklight) effects fixtures and fluorescent paints, plastics and make up were all used on the film.

Theatre Vision

Paul Elkington Productions in mid Wales have been acquired by Stage Electrics to form a new lighting and sound hire company - Theatre Vision - which will serve the Welsh market.

The new company will operate from a 4,600sq.ft unit in Cardiff which will serve south Wales, alongside their existing mid-Wales unit in Brecon and two further hire collection points, in Bangor and Newtown, to cover the north. The aim of the company is to provide a 'one-stop-theatre-shop', from hire and sales, to complete technical and production services for theatre, schools, conference and outdoor events. With each branch connected via a computer network, Theatre Vision aims to supply equipment to the whole of Wales and ensure availability of a full range of product at all times.

Theatre Vision opens its doors on the 21st August and can be contacted on (01222) 701212.

ShowTech Berlin Finds New Footing

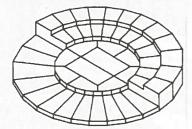
More exhibitors, a significant increase in the number of trade visitors, and many new business links were the main features of ShowTech Berlin '95 during its three day run on the Berlin Exhibition Grounds at the 'Funkturm', from May 30th-June 1st.

A total of 5,373 trade visitors attended the show. They came to view the latest technical developments and the entire range of services for halls and auditoriums that were presented by the 248 exhibiting companies, a significant increase on the previous year's numbers.

The main emphasis among the product presentations was on lighting and stage engineering, public address systems, equipment and installations for places of public assembly, special effects, organisational aspects of shows and events, computer software for events, trade fair construction and services for the events sector.

Although ShowTech is seen by the industry primarily as a place for establishing and strengthening contacts, a quarter of the companies represented reported immediate sales successes during the fair.

ALISTAGE



All the shapes, all the sizes! Available for both hire and sale. Limited only by your imagination.

Various heights catered for, specials manufactured on request, units tested to 9.88 kN/M₂. Accessories include guardrails, straight and spiral steps, ramps and fascia.

Unit 2 Hotspur Ind Estate - West Road, Tottenham - London N17 ORJ Tel: 0181-808 5005 Fax: 0181-801 9851

HIGH PERFORMANCE AT A LOW COST

THE MINI DRY ICE BOX
PORTABLE DRY ICE MAKER
PRODUCES DRY ICE IN LESS THAN A
MINUTE!



- RSC BARBICAN & STRATFORD
- LOUGHBOROUGH TOWN HALL XMAS PANTO
- ON TOUR WITH ME
 MY GIRL

(PRODUCT OF THE YEAR ABIT 1989)
NO MAINS OR BATTERIES REQUIRED
COMPACT AND LIGHTWEIGHT
SAFE AND CONVENIENT
SALE OR HIRE • AVAILABLE FROM



4 NORWICH ROAD, WHEATLEY PARK, DONCASTER DN2 4QD TEL: (0302) 364808



LIGHT UK



The new name in lighting hire.
We have available to hire the latest
equipment including:GOLDEN SCAN 3'S AND DESK
FOR LESS THAN

£1,000 per week.

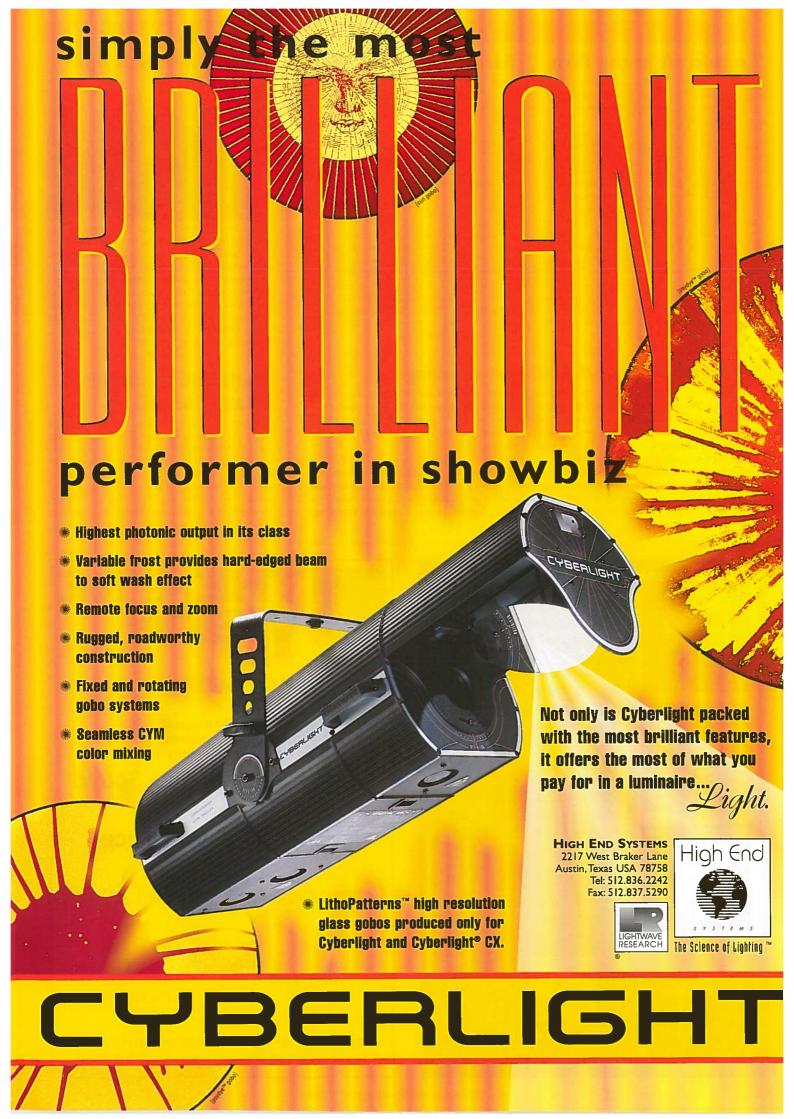
ROADIE FROM JEM - THE

MOST POWERFUL FOG MACHINE IN THE WORLD

HEAVY FOG AND COMING SOON, THE NEW H.O.T. TECHNOLOGY MACHINE.

ALL THE CHEAPEST POSSIBLE PRICES. CALL NOW FOR A QUOTE TEL: 01751 - 474493 or

0860 - 122388 Ask for James



Soundcraft at the Post

A highly innovative location broadcast project is underway in York, combining the forces of Soundcraft, several hundred racehorses and Event Broadcasting Ltd.

Throughout the summer season of meetings at York Races, the punters will be able to listen to a dedicated radio service - York Race Day Radio. Operating under a special event Restrictive Service Licence, York Races' private radio station will broadcast within a four to five mile radius of the track. The nub of the operation is a mobile studio, able to accommodate up to four people, specially built by CreaTV. Despite a mighty Soundcraft Series 10 audio console at its heart, the entire facility is packed into a small, long wheelbase transit van.

CreaTV were also behind the UK's first football club radio station at Blackburn Rovers, and now has an impressive client list of RSL stations at other clubs such as Manchester United, Norwich City, Newcastle United and Everton

Fame's Fortune

White Light is supplying the lighting for the new musical 'Fame', which opened at the Cambridge Theatre on June 27th after a sell-out run in Plymouth.

The £1m musical was inspired by the Oscar-winning film of the same name and one of the most popular television series of the eighties. Created by David de Silva, the man behind the film and TV series, and produced by Michael White of 'She Loves Me' and 'Crazy For You' fame, the new show is tipped to become the hit of the summer.

Interest in the musical began in November last year when an unprecedented number of young hopefuls turned up to open auditions held in Manchester, Glasgow and London. After a lengthy selection process, unknown actors were chosen for the main roles. The lighting is designed by Michael Halbert in his UK debut and comprises a large conventional rig with six FOS Fly moving lights and two Trichromas.

PAL win Pani Awards



Steve Terry of Production Arts Lighting Inc recently travelled to Vienna to collect an award from Pani's for being their best agent of 1994. Production Arts' technical expertise was also honoured by the award for the quality of PAL's technical work. Pictured above, left to right, are Sieglinde Staub, Herta Wasserburger and Hermann Sorger of Pani with Steve Terry and Anne Johnston of Production Arts and W.D. Hraschek, also of Pani.

High End Renames Wash Fixture

American lighting manufacturer and distributor High End Systems, Inc recently announced that they are changing the model name of their new automated wash luminaire from Technicolor to the Lightwave Research Studio Color. According to High End Systems CEO Lowell Fowler: "The name Technicolor was never really accepted throughout the distributor network, and the overwhelming suggestion was to change the product name."

Glasgow School of Audio Engineering

The eighteenth School of Audio Engineering has just opened in the centre of Glasgow and is one of the most impressive audio education facilities in Scotland. Headed by Ted Blakeway and Gordon McMillan, the school offers a full range of SAE courses from a 24 week 'Certificate' to the 18 month 'Diploma of Audio Engineering', which allows students over 500 hours of hands-on experience working with a variety of new high spec equipment.

The school's primary 24 track facility includes a 90sq.m live room, Mackie 32 channel mixing console, digital multitrack, Tannoy monitors and a full complement of Akai samplers with Lexicon, Digitech and Yamaha effects. A secondary eight track studio is equipped with a Tascam desk and Fostex multitrack recorder, while a fully specified MIDI programming suite and a number of Macintosh computer workstations offer experience using Steinberg programming and Digidesign digital editing software.



EMPLOYMENT OPPORTUNITY

Do you have a solid background in the Lighting, Sound, Audio Visual and Allied Equipment Hire Industries?

To enable us to commit our time more efficiently to the recently launched 5 Sound System, we require the right person to take over the UK Sales/Customer Liaison of the Flight Case Division of 5 Star.



If you feel that you fit our criteria, then please apply in writing, enclosing your C.V. to:





5 STAR 12 Sandall Road Wisbech CAMBS. PE13 2RS

Tel: (01945) 474080 Fax (01945) 64416



NEW CARDIFF BRANCH

Opening on the 21st August 1995
A new look in complete technical services to the entertainment industry of Wales

Lighting • Staging • Sound

Hire • Sales • Service

Corporate and Special Events

Cardiff

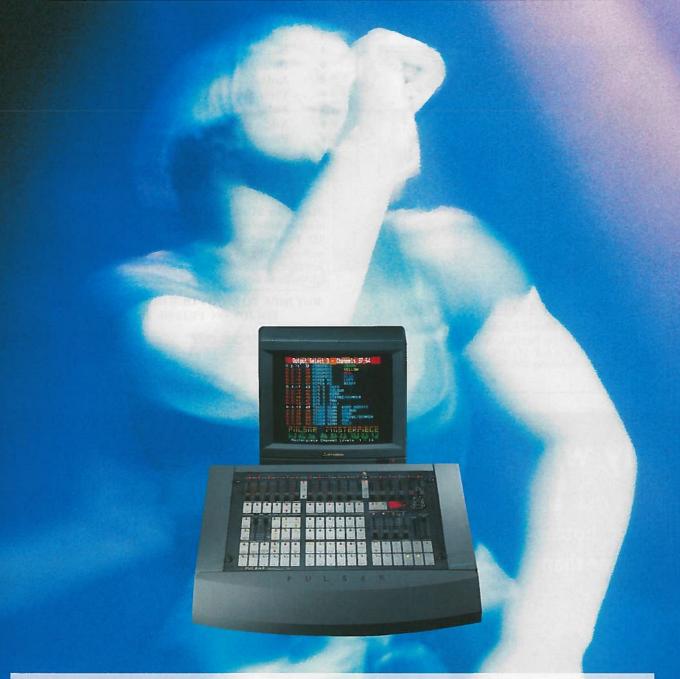
Unit 4 Westpoint Ind. Estate Penarth Road Cardiff CF1 7JO

> Tel (01222) 701212 Fax (01222) 701070

Hay - on - Wye
Unit 2 Javel Ind. Estate
Three Cocks
Hay-on-Wye
LD3 OSD

Tel (01497) 847090 Fax (01497) 847087

In control of the light



The world's most popular disco lighting controller - Pulsar Masterpiece

Masterpiece will control your whole disco environment. Every kind of effect including moving lights, strobes, fog machines – even the house lights can be programmed, sequenced or just plain turned on. Masterpiece is the light jockey's dream. The fast-acting keys allow features instantaneous direct access, while the powerful programming features allow you to design and store lighting of

stunning sequences for moving lights such as Golden Scans as well as generic lights such as Neon, Par Cans, Pinspots and Strobes. The latest software adds comprehensive extra

facilities for theatrical and live lighting. So if your club features live appearances, fashion shows etc, your Masterpiece will still be the ideal controller. Club and disco lighting controller? Look no further – you've found the best!

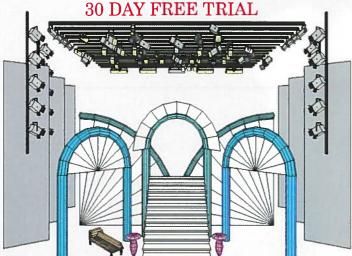
PULSAR LIGHT OF CAMBRIDGE LTD • Henley Road • Cambridge • CB1 3EA • England • Tel: 44 (0)1223 366798 • Fax: 44 (0)1223 460708

STARDRAW 31

At last, an affordable, fast, user friendly standalone 3D CAD package for Windows







Starlite Systems Technology Ltd

Design, Manufacture and Hire of Automated Lighting Systems. Calena House, Caxton Street North, London E16 1JL Tel: (44) 171 511 4400 Fax (44) 171 476 2922 ©1994 Starlite Systems Technology Ltd. All rights reserved

- See Your Design In 3D.
 - Built In Library Including Lights, Truss, Set.
- **Built In Editor Create Your Own Libraries.**
 - Animate Fly around your design.
- View Your Design From Any Position.
- Full 3D Rendering.
- Align Facility For Easy Positioning.
- Paste Repeat No More Repetative Copying.
- Recall And Modify Existing Designs.
 - True 32 Bit Program Ready For Windows 95.

Stardraw 2D & 3D Professional

Stardraw 2D. A powerful drawing package ombi

libraries, bill of materials, reports and OLF 2.0

3D Professional. The util at 3D drawing package with multiple light our est not the latest graphics technology featuring Textured light our est of the latest graphics technology featuring the latest graphics technology featuring Textured in Lyngwig Ports and Ly ttributes as used in Jurassic Park and Terminator 2.

BUY NOW TO ENJOY OUR DISCOUNT UPGRADE POLICY ON FUTURE PRODUCTS

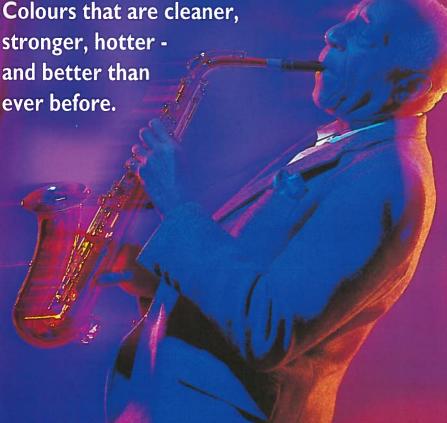












Supergel colour filters - and only Supergel colour filters - allow you to reach the new levels of design so many designers, technicians, producers and audiences are now demanding.

In the last couple of years alone, the range has been enhanced with designers everywhere describe as "cleaner, hotter, stronger"

With a vocabulary of well over 100 colours and diffusers the range gives incredible freedom of expression, and every tint, shade and nuance is the product of collaboration with designers from around the world. And because Supergel colour filters tend to last longer, they are more economical.

All of which means it is probably time for you to take another look at the better-than-ever Supergel range. And that means better than anybody

So call, write or fax us for a current swatchbook.



And better than ever before.

Roscolab Ltd, Blanchard Works, Kangley Bridge Road, London SE26 5AO Tel: 0181 -659 2300 Fax: 0181-659 3153

NEWS IN LIGHTING+SOUND INTERNATIONAL

Tunnel Vision

Starstruck Professional Sound & Light have completed the re-installation of sound and lighting equipment at one of Glasgow's premier venues, the award-winning Tunnel club.

Although all the sound and lighting equipment was in perfect working order, the re-installation was necessary as structural faults at The Tunnel were causing sound leakage. To rectify the problem, all the equipment had to be removed so that the ceiling could be lowered. The work took five weeks to complete, although the club was able to continue trading throughout.

Tunnel boss Ron McCulloch took the opportunity to upgrade his existing Electro-Voice system with the addition of a pair of Motivator 5 loudspeakers, and the first Scottish installation of four of the all-new Electro-Voice P3000 amplifiers, supplied by Shuttlesound.

Future Stock

Futurist are adding more equipment to their increasing hire stock. New products include the Clay Paky Golden Scan 3, Avolites Pearl desk and touring dimming systems, ADB Micropack digital dimmers, Jem Water Cracker, Litestructures Boxlite trussing and Verlinde motors, control and rigging equipment. The company have also invested in a new Electro-Voice sound system comprising EV Deltamax 1152 loudspeakers and P3000 amps.

The company has a full schedule including conferences, festivals and shows, and this summer will be the busiest on record in the company's 25 year history. As a result, Richard Curran, formerly of Preston's Charter Theatre, has joined Futurist to manage the rental operation.

Mix 'n' Match

Sofiscotech Sound and Light have opened a new 'Mix 'n' Match' operation in Leeds. The 20 year old Bradford-based company have sited their new retail base in the heart of Leeds city centre in the Corn Exchange.

The new shop will be known by the name of Sofiscotech Mix 'n' Match and will concentrate on the needs of the small-scale mixing market. The facility will offer hands-on demonstrations and will provide a focus for all dance music enthusiasts. As an authorised service station for both DMC and Mastermix, Sofiscotech are able to supply a comprehensive range of material on CD and vinyl. The shop can be found at Unit B7B, Corn Exchange, Call Lane, Leeds LS1 7BR, telephone 0113-246 8462.

Voyage of the Vikings

Sarner International Ltd has just completed a new £1.3m visitor attraction in Oslo. The company were contracted to provide everything from initial concept and design, to theatrical sets and scenic construction, technical systems, audio-visual engineering and creative programme production.

The VikingLand theme park is based around a multi-sensory extravaganza which starts when the visitor enters a vast man-made cavern. Once inside, they come upon a full-size Viking ship 'floating' on a pool of water. The experience is brought to life through a wide variety of sensory techniques and the massive 200 seat Viking ship itself is mounted on a custom-built hydraulic motion platform, believed to be the largest of its type in the world.

Behind the scenes, is an impressive battery of high-technology. As with most Sarner projects, the entire attraction is fully automated. Everything is centrally controlled by time-locked computers, all synchronised to split-second accuracy using specially produced software. The technical equipment includes a 16-channel sound replay system, nearly 10,000W of amplification, 22 slide and video projectors, laser disk players and more than 200 fully automated theatrical lights. The special effects devices include a motion platform, sub-bass sound radiators, hydraulics, motorised scenery, water sprays and smoke machines.

The Tale of TiLE

Tile '95, new Trends in Leisure and Entertainment, the location-based entertainment show and conference organised by Andrich International, took place as usual in the much maligned city of Maastricht in the Netherlands in mid June.

Papers were given by 42 speakers, including several from the United States theme park industry, but also many from elsewhere, on a wide range of subjects from 'Whose afraid of the big bad wolf, and other cultural hang-ups?' presented by Howard Kelly, president of the Sally Corporation to 'Unencumbered, full body subversive approaches to virtual reality' from Vincent J. Vincent, a director of the Mandala Group. While many papers were crystal-ball-gazing, others were retrospective. On the final day delegates were invited to visit the new Warner Bros 'Movie World' park currently under development in Bottrop, Germany.

The small exhibition, which runs in parallel with the conference, attracted a number of British exhibitors, the most familiar to readers of L+SI being Electrosonic, Maris and Sarner.

Tony Gottelier







BP4C - HMI

The PANI "Compact Line" is once again setting new standards in projection.

Powerful light efficiency, combined with compact dimensions, offer greater scope for designers and operators alike.

NEW: ZOOM-OBJECTIVE 25 - 60 cm

For information call: Tel.: 0043 - 1 - 521 08-0

Fax: 0043 - 1 - 526 42 87



Ludwig PANI - Company for Stage Lighting and Projection A-1070 Vienna, Kandlgasse 23

Shabbatai

For lighting designer David Taylor, 'Shabbatai', the only new musical to open in New York this spring, was especially challenging. The rock musical, dubbed by the New York press 'the Jewish Godspell' opened at the Susan Bloch Theatre in April but the pre-production period found Taylor on the West Coast of the USA tending to the renovation of the earthquakedamaged Geary Theatre for American Conservatory Theatre. Taylor finished the design for the show in San Francisco and subsequently both E-mailed and faxed the plot and paperwork from his laptop to New York to enable the rental shop to prepare the order for the fit up.

The show was designed in AutoCAD Lite with the paperwork in Rosco's Lightwright. The soft patch is exportable to the ETC console so Taylor was happily prepared when he stepped off the plane and went into rig supervision and focus.

LonWorks Work-Out

The process to establish whether any common ground exists across the various sectors of the entertainment technology industry in order to progress common communications standards has taken a step forward. As a follow-on to the recent CAN (Controller Area Network) seminar, a further seminar, focused on the possible applicability of the LonWorks approach to industry network control, was held in London on 28 June.

Organised by Dr Philip Nye of DHA Lighting and Allen Mornington-West of Quad Electroacoustics, and sponsored by PLASA, the importance of the topics to be discussed was sufficient to attract 20 stalwarts from both PLASA and AES into the centre of London on a day when the temperature soared into the upper eighties. Their reward was a professional and detailed presentation on LonWorks by Bob Warden of Echelon Europe Ltd, ably supported in discussion by his technical guru, Asela Rodrigo. LonWorks is a network system specifically designed for control applications and based on state-of-the art Neuron Chip technology. The system is currently used by over 2000 customers worldwide in a variety of applications ranging from audio visual control to railroad switching systems.

A subsequent short, but thought-provoking, presentation was given by Kim Popak of Klark Teknik, who reviewed progress on defining a suitable industry messaging language to be carried by the net. It was clear that substantial effort will be required to define and agree possible messaging protocols. The animated discussion that ensued on message structures highlighted that even apparently simple controls could reveal unexpected complexities, while considerable time was also spent discussing equipment identification issues and the impact of reconfiguring equipment on net operation. The seminar concluded with an informal demonstration of LonWorks.

It is planned to hold further seminars on communications standards topics with the objective of involving the widest possible cross-section of the industry in the debate on suitable standards for adoption. Details of these activities will be covered in PLASA's Membership News and Standards News. Echelon are also offering one day workshops for designers covering the use of LonWorks in specific applications. Further details may be obtained from Echelon on 0181-563 7077 or fax 0181-563 7055.

Tony Douglas-Beveridge PLASA Standards Officer

ONE HUNDRED YEARS AGO THIS MONTH

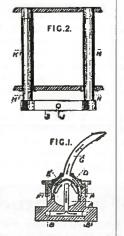
BRITISH THEATRICAL PATENTS 1801-1900

Intro' to Patent Abridgement 13076 of 1895 (C.W. Locke)

When a bank robber wants to break into a safe he sometimes resorts to an oxy-hydrogen blow-torch. It generates such high temperatures that cutting through tough metal is no problem. If you substitute a small cylinder of quick-lime for the door of the safe, the lime will rapidly become incandescent. If you now shut the whole affair in a box with a hole at one end and shove a lens in front, you will have a lime-light. As simple as that. And as dangerous. Violent explosions were not uncommon. But over the years, legions of lime-light operators introduced their own personal modifications to the lamp, secrets which they kept to themselves. But Mr Locke, who felt he would get a better flame if he mixed the gases before ignition, protected his secret by patenting it.

13.076. Locke, C. W. July 6.

Oxyhydrogen lamps.— Oxygen and hydrogen supplied through tubes B, B' respectively mix in a vertical tube D and pass to a deflecting cone E in the mixing obam ber A having fine perforations F, F' through which the mixed gases pass to the burner tube G. For the jet alides two tubes H, H', Fig. 2, are connected by a metal bridge I and telescope into two other tubes K, K' attached to the lantern. The bridge I carries the jet pin J.



Glantre Celebrate 21 Years in Industry



Glantre's managing director Derek Gilbert (left) with Richard Brett of Technical Planning and Bill Graham of the ICC, Birmingham.



Vic Dobbs of Glantre (centre) with Robert Theis of JR Clancy (left) and Henry Lewis of Glantre Engineering Pty (Australia).

Reading-based Glantre Engineering recently celebrated their 21st anniversary in style by inviting over 200 colleagues (past and present), clients and friends to join them at the oak-beamed Bix Manor in Henley for an evening of good food, good wine and reminiscence. People flew in from all over the world to attend the celebration, some even coming from as far as Australia. Following dinner, managing director Derek Gilbert, rose from his seat to recount a brief history of the company before inviting all present to join in him a toast to the company's future. (See latest contract wins for Glantre on page 19).

Maltese Lighting Control Seminar

ITC Light Sound Vision of Malta recently hosted a two-day lighting control seminar and hands-on programme attended by over 100 delegates from all walks of entertainment lighting and video from themed attractions, educational and training establishments, museums, radio and TV studios and theatres to installation companies, hotels, discos and video production houses. Richard Muscat, the island's Parliamentary Secretary for Youth and the Arts, officially opened the seminar at the 500 year old Mediterranean Conference Centre (a venue which had been refurbished by ITC less than a year before).



Mike Rothon (Celco), Mario Camilleri (ITC), Anna Pillow (PLASA), Catherine Guillaumier (ITC) and Ivan Mattioli (ITC).

The objective, as stated by ITC director and host - Mario Camilleri - was not only to market the range of products ITC handles (Lite Structures, Mobil Tech, ARRI, Selecon, Martin Professional, Celco, Electrosonic, Ludwig Pani, Teatro and Harlequin) via the exchange of information, but also to establish higher standards within Malta. To further this, ITC brought in Mike Rothon and Colin Whittaker of Celco to explain all about professional lighting control, how to programme moving lights, the importance of good dimming, DMX 512 applications and to give the assembled delegates the opportunity for some hands-on operation and programming.

Sourced from a truly comprehensive range of the most innovative stage and effects lighting manufacturers around, Cerebrum Lighting is the recognised choice for the discerning trade buyer.

OUR PRODUCTS

Cerebrum Lighting distribute products to trade clients from the following manufacturers world-wide on a freemarket basis:

ANDOLITE LTD. ANYTRONICS LTD.

AXON DIGITAL DESIGN LTD.

C.C.T. LIGHTING

CELCO DIVISION OF ELECTROSONIC.

CLAY PAKY srl.

DHA LIGHTING LTD.

GE LAMPS (THORN)

JEM GROUP OF COMPANIES

LEE FILTERS LTD.

LE-MAITRE LIGHTING & EFFECTS LTD.

LIGHT PROCESSOR LTD.

LITESTRUCTURES LTD.

M.A. LIGHTING TECHNOLOGY

GmbH

MARIS ENSING LTD.

MARTIN PROFESSIONAL LTD.

MODE ELECTRONICS LTD.

MULTIFORM ELECTRONICS LTD.

OPTIKINETICS LTD.

OSRAM LAMPS

LUDWIG PANI (AUSTRIA)

POWERDRIVE DRUM COMPANY LTD.

PULSAR LIGHT LTD.

RAINBOW COLOUR CHANGERS

STRAND LIGHTING LTD.

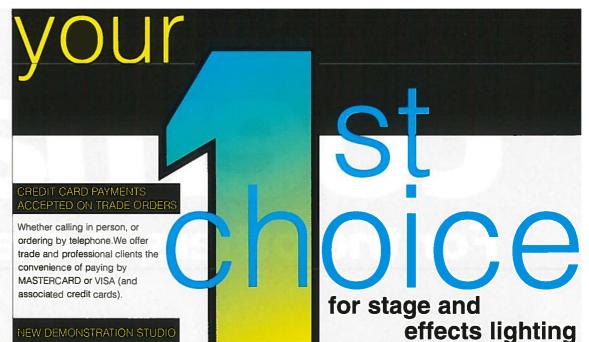
JAMES THOMAS ENGINEERING

TOTAL FABRICATIONS LTD.

TRILITE

WHITE LIGHT LTD.

ZERO 88 LIGHTING LTD.



NEW DEMONSTRATION STUDIO

You are welcome use our facilities to sell to your clients. Our recently upgraded showroom demonstrates the advantages of the latest entertainment and lighting products available.

We are happy to arrange demonstrations and training sessions by appointment.

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.

JUST ONE STOP FOR

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

Our New Malden sales counter is open every weekday from 8.30 a.m. until 6.00 p.m. for trade, professional and retail clients and there is plenty of free parking space right outside the door.

CEREBRUM





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.

WORLD-WIDE DEALER DISTRIBUTION

Cerebrum Lighting Ltd Units 4 & 5, Shannon Commercial Centre Beverley Way, New Malden, Surrey KT3 4PT England. Tel. 44 (0)181-949 3171 Fax. 44 (0)181-949 3649

coemar

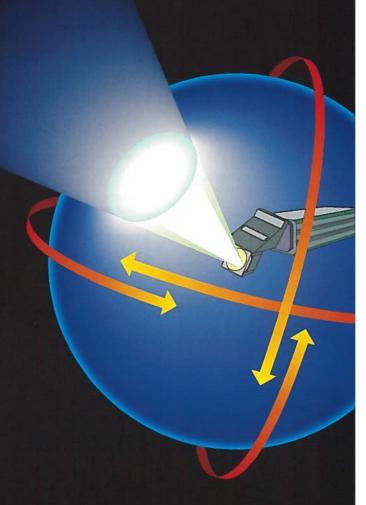
For the others, a dream.

For coemar it is already real, for the others it remains a distant dream. coemar nat tm 2500 and tm 1200,



at the forefront of effects available in comparison to any other product. coemar creativity sets trends in the evolution

of professional show lighting.
Today and tomorrow.
With luminaries and lighting effects
of unrivalled superiority.



new advanced technology

reality. coemar nat

tm 2500 tm 1200



total moviment 360° in both axis; full 360° light beam movement continuously rotable in both axis; multi rotation modes are available with speeds from 0.23 to 52 rom

coemarnat

00000 tm 1200

- 10 interchangeable gobos give a total of 36 image combinations; all gobos and effects are rotatable in both directions at variable speed; rolling gobo effects are available in either direction or in combination to give new contra rolling effect,
- full cyan, magenta, yellow colour mixing
- variable speed strobing shutter with black-out facility
- totally variable frost with built-in variable speed flash frost effect (coemar nat tm 2500)
- motorized high speed long range focus

 colour wheel with 9 colours give unique seamless multicoloured light beams; variable speed rotocolour effect

ew dv anced ech

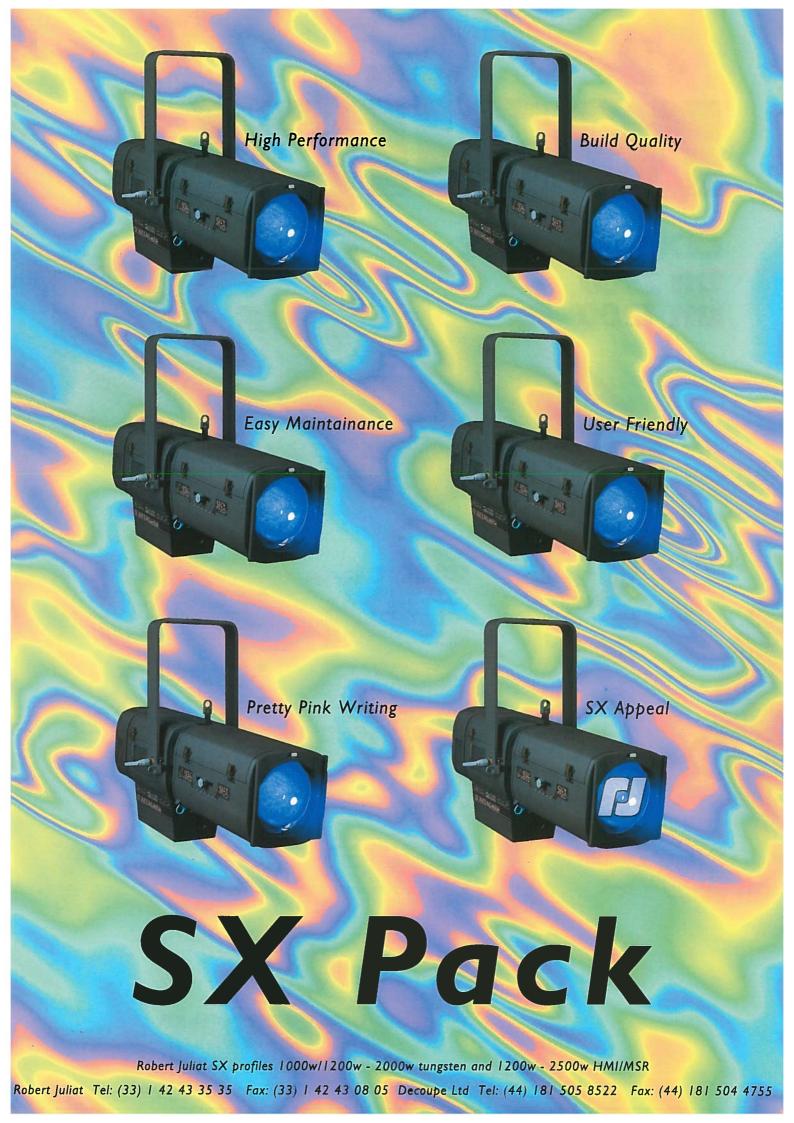
- additional effects wheel with 3 optically optimised image multiplying prisms (3, 4 and 6 facet) which can rotate at high speed to give tree-dimensional effects
- motorized iris with built-in variable speed pulse facilities
- totally smooth dimmer for complete intensity control (0 to 100%) with no optical degradation at any point
- 3 and 5 pin male and female cannon connectors for easy wiring

For more information please ask for the detailed catalogue

Available on the coemar nat tm 2500 and tm 1200, the total movement system. The ability to move the beam of light in any direction, a full 360 degrees in both x and y planes.



coemar spa via inghilterra = 46042 castelgoffredo (mn) italy tel. (0376) 779336 = fax (0376) 780657



NEWS IN LIGHTING+SOUND INTERNATIONAL

Avolites Time Out



The recent Fleadh festival in Finsbury Park featured an Avolites Sapphire desk controlling a broad range of equipment on the stage sponsored by Time Out magazine.

The line-up at the festival included Shane McGowan, Michelle Shocked and The Dubliners. The lighting production was handled by The Art of Darkness, and included 18 VL5s, six VL6s, 14 Trackspots, six Megastar strobes and 120K of conventional lights. Art of Darkness already own one Sapphire, which is installed at The Forum, and looked after by Ewan McRobb, who was also the operator for the Fleadh, together with various visiting LDs, most notably Phil Freeman, LD'ing for John Martyn.

Festival fever and Avolites continued at Glastonbury this year, with an Avolites Diamond II used on the main stage and a Sapphire on the NME stage. Lighting production for both these stages is supplied by Neg Earth.

Marquee Expand

Marquee Audio have opened a special projects office in Cheltenham to complement the work of its Sheffield office which has just celebrated its first year of business. The new operation will be headed by Kevin Hughes, formerly of Enlightened Audio, and will offer a full range of design and installation services to enhance the existing sales operation run from the head office at Shepperton Film Studios.

Glantre Proves its Seaworthiness

As hinted in news last month, Glantre have won the contract to handle the entertainment systems design for Disney Cruise Lines' two new 85,000 ton cruise ships which are being built in Trieste, Italy.

The two ships will be larger than any cruise ship currently in operation. Each will accommodate 2,400 passengers, and Glantre will be responsible for the technical design and planning of all theatrical and entertainment systems and facilities on-board. The brief covers theatre consultancy, planning and acoustic services, as well as detailed design of all shipwide and local entertainment systems.

The first ship is scheduled to sail in January 1998, with a second vessel to start operations in November that year.

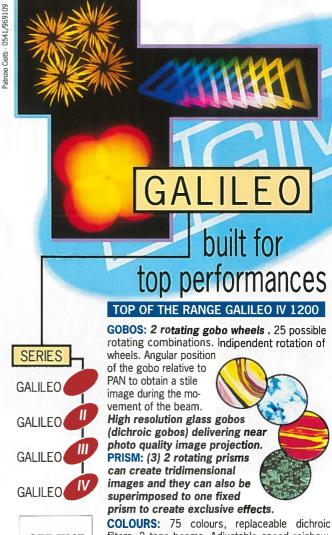
Jands Switch to Crest

In the final phase of a 10-year strategy, Jands Electronics has announced that it is to cease manufacture of power amplifiers and to take on the distribution of Crest amplifiers in Australia. The company will now concentrate its manufacturing resources on its lighting control range.

Similarly, in 1985, Jands stopped production of mixing consoles and began importing Soundcraft consoles from the UK. According to Jands' managing director Paul Mulholland, the strategy recognises the need to build high quality technology-based niche products to be a successful Australian-based manufacturer.

The decision coincides with the release of the Jands Hog moving light consoles, a joint project between Jands Electronics and Flying Pig Systems, which has been under development for two years.

In taking on the US-made Crest brand, Jands now has access to a greater product range from entry level MI amplifiers right up to the computer-controlled Crest NexSys system. The range will be available from Jands from September 1st, with the official launch scheduled for Sydney's AIMS show in late September.



SEE THE
GALILEO
ON JYG
STAND
B198
AT PLASA

`95

COLOURS: 75 colours, replaceable dichroic filters. 2 tone beams. Adjustable speed rainbow. Quadrichromatic and concentrical bichromatic dichroic filter. Highest speed colourch. Colourchanger with or w/o blackout and music sync. UV filter. COLOUR TEMP. CONVERSION FILTER: 2. SOFT BEAM: 2 frost filters.

OPTICAL SYSTEM: 35% more light power than typical 1200W based fixtures. Remote lamp enable and reset.

DIAPHRAGM: Noiseless operation and unbeatable operating speeds.

DIMMER: Precise regulation from 100% to 0%. **STROBE:** Quiet and high speed operation, 0.5 to 16 flashes per second.

ELECTRONIC FOCUSING: Remotly controllable and programmable.

INTELLIGENT DISPLAY: Microcomputer with display on rear panel.

MOVEMENT: The 16-bytes "Enhanced" control enables unbeatable linear and smooth movement. **EEC NORMS:** It complies with the most strictest EEC norms.



UK DISTRIBUTOR JYG LTD. TEL: 01708 741613 FAX: 01708 741579



ELECTRONIC LIGHT

PESARO · ITALY · Tel. 0721/208200 a.r. · Fax 0721/208231

Combicolor 300

Much more than colour.



POWERLY HTT 300 18mp (5800 K, 750 hours) - Colours homely effect with Frost litters, A choice of 5 hojestion distributes in the continuous such as the second of the second second of the dichroic fillers. Two independent, combinable colour wheels One fixed gobo . The charge are like a good with the large light like and the like a good one with the large light like and the light ligh 12 basic colours plus 37 colour combinations. U.Y. edeci angle and nation angle to producing also dillight. Westerna like City of C. 100%. State of Bell. The detailer was a factor of the city of the c (Wood's light). Raindow effect. Bicolour beans official Reals of DW 512, R5232, O. Westers Total Replie Has the state of the s

Combicolor 300

is the perfect complement to a moving mirror lighting system. Powerful but light and compact, this intelligent colour-changer is the ideal solution for mobile applications. Combicolor is also an extremely versatile projector, which may be used to produce a whole range of stunning effects, perfect for fixed installations and disco dance-floors.



Distributor United Kingdom:

Pulsar Light of Cambridge Ltd Henley Road - Cambridge CB1 3EA - U.K. Tel.+44 (0) 1223.366798 - Fax+44 (0) 1223.460708



CLAY PAKY SPA - Via Giovanni Pascoli, 1 24066 PEDRENGO (Bergamo) Italy Tel. + 39 (0) 35.654311 - Fax + 39 (0) 35.665976



NEWS IN LIGHTING+SOUND INTERNATIONAL

Cats - 14 Years On

A long time ago - before DMX, before scrollers, and before the IBM-PC or the Apple Macintosh, the musical Cats first appeared, to the surprise and delight of audiences who were enchanted by this adaptation of TS Eliot poetry into a song-and-dance show of the kind that everyone had assumed only Broadway could produce. Since then the show has been seen around the world, but through all of that the original production at London's New London theatre has run and run, becoming the longest running musical in British musical theatre history in 1989.

To celebrate its fourteenth birthday, Cameron Mackintosh and the Really Useful Group decided to bring the original creative team back in to take a fresh look at the show. As director Trevor Nunn and choreographer Gillian Lynne rehearsed a new cast, designer John Napier and lighting designer David Hersey re-convened in the New London with production manager David Gregory.

Napier's contribution was to incorporate a huge new ultra-violet painted ship in the backcloth for the Growltiger song, to force home the often-overlooked point that it is a dream sequence. In terms of lighting, Hersey managed to win some new side stage bridges, to improve the side followspot positions, and added a line of four pitching Digital Light Curtains upstage, to give backlight and sidelight coverage to the rubbish-dump area of the set. The plan was to control these from DHA's new DMX to LightTalk converter box, but limited plotting time meant that in the end a Macintosh was used, with the converter box switched to its DMX trigger mode to ensure that the Kliegl Performer lighting desk and the Mac stayed in sequence through what is an incredibly hectic show for the board operator.

A major re-fit of the lighting rig also took place under the direction of production electricians Fraser Hall and Howard Eaton, and chief electrician Chris Cunningham, who as well as replacing old lamps added Rainbow scrollers to give greater colour options, VSFX cloud effects in place of the older fixed-speed units, overhead fibre optics to match those used in the touring version and UV guns to reveal Napier's new artwork. These, too, were fitted with Rainbows containing neutral-density scrolls to allow the UV to fade in and out - until it was discovered that even the 'clear' filter filters UV! Quick work with a pair of scissors allowed the effect to work. The show re-opened on May 11th with a gala performance in aid of the Dancer's Trust, and once again met an enthusiastic reception. It's advertising tag is 'now and forever'. On current form, that might not be too inaccurate!

Robert Halliday

Modelbox Software Deals

Following the recent growth in visualisation, animation and other related projects, computer aided design specialist Modelbox has sold the rights of Laplight and Autolight to the original developers, CJG Consultants. And, in a separate development, the company has also signed an agreement with its parent company White Light, which will now market the Macintosh lighting design software, Mac Lux Pro.

Laplight is the stand-alone lighting software which was first launched in 1990, whilst Autolight is the lighting design software which works with AutoCad and was first released in 1989. CJG is intending to release an updated version of both programmes in the next few months.

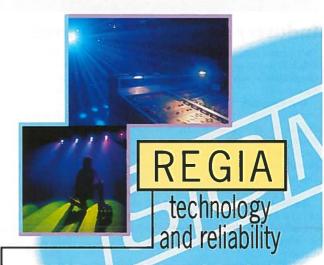
Modelbox's Christopher Toulmin told L+SI: "With all the new developments going on, especially in the visualisation markets, we were no longer able to give our full attention to the software. The appropriate solution was to hand Laplight and Autolight back to CJG, particularly as we had worked with them on the original software development. However, at the same time we were also keen to keep Mac Lux Pro within the White Light Group."

Wholehog II Flies the Nest

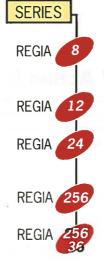
Following months of expectation, the Wholehog II lighting control system has finally been let out of its sty. The first production batch of consoles left their West London home in June following an exhaustive testing period and are bound for far reaching global destinations.

Orders are already confirmed for such diverse applications as a top New York nightclub featuring over 140 Martin moving lights, a major well know theme park in Orlando, Florida, a luxury hotel complex in Korea, several cruise ships and numerous theatrical rental and production companies around the major entertainment cities of the world.

AC Lighting, the Wholehog II distributor, are reportedly very busy catching up with a back log of demonstration requests from potential users. Special group demonstration sessions are already being planned for ALD members. Wholehog II University (Hog2 U), operator training for the new console will commence in July. If you are interested in attending please contact Mike Falconer at AC Lighting on telephone (01494) 446000.



SGM lighting control desks are designed and built to be highly user-friendly without sacrificing avant-garde performance or memory capacity. Without doubt an excellent choice - they're made by the leading firm in entertainment electronics.



0541/969109

Ciotti .

8-ch. 6 pages by 6 preset chases. Crossfade between programs and between chase scenes. Fader regulation of each channel level or MASTER. Pedal input for remote program changing.

12 (24) ch. Manual control by means of 2 x 12 (2 x 24) faders. Preset Master and Grand Master. Chase Master. Scene cross Ø to 32 minutes. Audio input. DMX-512 output, RS-232 interface. Scenes: 144; 12 scenes x 12 pages (576; 24 scenes x 24 pages). Chase: 12 (24).

240-ch. light desk. Ideal controller for allthose who, want to control whether intelligent luminous effects or all the lighting equipment. DMZ-512 output, RS-232 interface. Record capacity: 20 memory registers (each containing 4 memories). 24 pages x 2 files for a max of 960 scenes. Masters: Registers, Flash, Preset 1, Preset 2.



The perfect work-mates for SGM desks are SGM dimmer packs, such as:



810/D



610/D



10A/ch. dimmer. Channels: 8 (6). Loads: resistive or inductive. Load power s.:12-250 Vac, single or three-phase, 50/60 Hz. Pre-heating of lamps. Antiscratch filters. Input: 0-10V, DMX 512, RS 232, SGM 256.



ELECTRONIC LIGHT

PESARO · ITALY · Tel. 0721/208200 a.r. · Fax 0721/208231

Industry People on the Move

The board of Samuelson Group Plc has appointed Bob Ellis as group chief executive. Ellis replaces Derek Davies who is retiring after five years with the company.

Karl Chapman, familiar throughout the studio world for his key role in establishing Mitsubishi digital recording products, has joined the Soundcraft sales team. Following a spell at Neve Electronics, he joined the small team that was to put Mitsubishi's 32-track digital recorder firmly on the map. Chapman then moved to Amek where he was on the sales team for recording consoles.

Adrian Curtis has been promoted to director of sales for all Soundcraft products. Curtis, who has extensive international experience, was formerly in charge of sales for Soundcraft's broadcast

Carlsbro Electronics has appointed Dave Caulfield as sales and marketing director. After gaining his spurs at Casio, he spent 10 years at Akai, and will now be responsible for both UK and international sales, as well as overseeing future product development.

Vari-Lite Inc has promoted Lee Magadini to general manager of Vari-Lite New York. Magadini has been a part of Vari-Lite's New York office since November 1994, when she assumed the position of account manager.

Grif Palmer, former owner/CEO of Core Systems Inc of Houston, was recently appointed national sales manager by High End Systems, Inc. Palmer, who brings to High End nearly 20 years' experience in the professional sound and lighting industries, has been affiliated with the company as a dealer of Lightwave Research products throughout his tenure at Core.

Turbosound has expanded its R&D department with the recruitment of Dave Coles to the Sussex-based team. Coles has moved all of 10 miles down the road, from Blue Box PA, one of Turbosound's regular customers. He spent seven years there rising to head the technical department. His arrival strengthens the field experience of the company's R&D team.

Strand Lighting Limited have appointed Philip Lehmann as marketing manager for Strand Lighting Asia. Lehmann, who has been with the company for nine years, will be moving to Hong Kong to take up his new position. He joined Strand as a service engineer after completing a degree in electrical and electronic engineering at Manchester University. Following four years servicing and installing major systems, he joined the marketing department as product manager for stage and automated luminaires, filters and consumable products.

Rock on Tommy

Tommy is the latest major musical to open in Germany. The new production is running at the Theatre an der Goethestrasse in Offenbach, directed by Peter Rieger and with sound design by Steve Kennedy and Jon Weston. The Sound equipment was supplied by Amptown Sound & Communications (ASC), with the specification including a 94-input Cadac J-Type mixing console equipped with Cadac's motorised fader system, principally for handling the sound effects.

The equipment list also includes a sizeable complement of Sennheiser EM1046 radio mics, plus the new Micro MKE102 microphones. The loudspeaker system involves three main clusters of Meyer Sound UPA-1Cs and UPA-2Cs, with USWs for the bass. JBL Control 1s are used for the high-frequency fills under the balcony area. The surround sound system utilises 16 Meyer Sound UPM-1Cs in the main auditorium, backed up by UPA-1Cs and Control 1s around the stage area.

Light-UK Launch

Light-UK is a new company set up to cater for the small to mid-range hire markets for both rock and roll and theatrical applications. The company aims to provide high quality stock so that small and mid-range tours can hire equipment which they otherwise may not be able to afford.

By the end of July Light-UK hope to have purchased eight Golden Scan 3s, Jem Heavy Fogs, Roadies and ZR20s, together with a full range of pyrotechnics. The company will also offer full technical support during the hire period, extending to an operator going out on tour with the equipment if necessary.

Light-UK is based at Pickering and can be reached on (01751) 474493.

Samuelson now Visual Action International

The Samuelson Group board has announced that the company is to change its name to Visual Action International. This change reflects the nature of the worldwide businesses that make up the Group, and comes prior to the proposed flotation of the company from its parent company, Eagle Trust plc, which is likely to occur during the autumn of this year.

Among so many protocol converters the **QDMUX** stands out. Packed full of features and offered at a remarkably low price, it has become standard issue with so many system specifiers. The combination of signal connectors together with the display of each DMuX decoded channel has also made it a valuable piece of test equipment out on tour or in the workshop. NOLOGY TO LIGHT



The QDMuX provides an economically priced 24 channels of DMX to analogue decoding in a one unit rack-mount exterior. It is also a convenient interface between standards, the DMX line being connected through 5-pin XLR's to the front or 3-pin XLR's to the rear. Analogue outputs are in six channel groups

on the front face and four channel on the

The front panel alpha-numeric display shows the DMX start address, which may be set anywhere in the data chain, plus the current status of the programming options. In the event that a DMX line failure is detected you can opt for a total blackout, to hold the last input or to recall a previously stored scene. Using the display in conjunction with the 24 output monitor LED's you can quickly verify whether a signal is being received and at what address and level.



UB6 8PW. England Tel:(0181)575 8828 Fax:(0181)575 8678

and more



Features

- DMX and 0-10 volt inputs.
- T-BOPS twin bi-phased oscillating pumping system.
- 2.5kW vapourising chamber. (2kW in 100/110v version).
- 5mm high velocity cuprous helicoil for greater output (2-3 times output of ZR 20).
- On board/removable timer remote with output level.
- · Heavier gauge casework and non-reflective paint finish.
- Capable of producing fine haze effects as well as conventional smoke.
- 5 year guarantee.

lasting fluids specially developed for the ZR31. (free 1 litre sample of each fluid supplied with every machine)

Uses new formula stage haze and high density long

See the beam and smell.....nothing!

CONQUEST The Genesis of a new era in Professional **Amplification** CITRONIC Citronic Limited, Halifax Rd, Melksham, SN12 6UB, England. Tel: +44 (0)1225 705600 Fax: +44 (0)1225 709639

NEWS IN LIGHTING+SOUND INTERNATIONAL

HW Quality Award

Hot on the heels of their 30th Anniversary year, HW International has achieved another significant milestone with the award of an ISO 9002 Quality Assurance Certificate. Alan Aras (in picture, left), lead assessor from National Quality Assurance, is shown presenting the certificate to Chris Randall at HW's north London headquarters.



New Obsession, No Finesse

Some of the products which M&M Light Solutions are distributing for ETC will look very familiar, but the names may not be so well-known. The simple reason is that from now on, ETC products worldwide will be sold under their own ETC brand name.

M&M Light Solutions will be distributing Concept, Expression, Impression, Insight and Microvision FX consoles, which replace the names Imagine, Finesse, Focus and Mirage. The company is also now stocking a console which has not previously been widely available in the UK. Obsession was developed by ETC to provide the characteristic ETC power and reliability in a tracking style console. With the power to handle the biggest and most complex of productions, Obsession offers over 120 simultaneous timed fades using 118 additional virtual faders and provides a selection of extra features which simplify operation and reduce plotting time.

Cerebrum Open Day



The Cerebrum team (and family) outside their New Malden HQ.

Whilst rank outsider Lammtarra defied the pundits at the Derby, visitors from all over the country travelled to New Malden in Surrey to enjoy an opportunity for hands-on product demonstration at Cerebrum Lighting's Open Day. Though the company had on show an extensive range of equipment from the many companies they act as distributors for, the main focus of the day centred on the Pulsar/ Clay Paky range, in particular the new Golden Scan HPE, Celco's Aviator desk and Pani followspots, all of which were demonstrated in the company's first-floor showroom. John Lethbridge, Cerebrum's managing director, was delighted with the day: "I'm very pleased with the quality of visitor we attracted." Cerebrum will be holding further Open Days based around other manufacturer's products.

Bangkok Blues

Freddy LLoyd of Zero 88 reports on the Sound & Light Asia 95 show in Thailand

SALA is the first light and sound exhibition to be held in Thailand, and the theory was that geographically it should attract visitors from the surrounding countries such as Burma (now called Myanmar), Laos and Cambodia. Unfortunately, theory and practice did not correspond. Personally, I didn't see anyone from anywhere other than Thailand, although I was assured by the organisers that the visitor profile was broader. We constantly ask ourselves what comes first, the chicken or the egg? Does the visitor attract the exhibitor, or does the exhibitor attract the visitor? On balance I'd have thought that for a first-time show there was sufficient support from the exhibitors to have attracted local and national interest from the trade. For some reason though, they didn't come, and I'm sure the organisers will struggle to attract the bigger players next year. On a positive note, the Queen Sirikit Exhibition Centre is as good, if not better, than anything I've ever seen - a magnificent building overlooking a lake in the middle of Bangkok.

However, with the Pro Audio & Light Asia exhibition in Singapore going from strength to strength, and attracting a wide variety of foreign visitors, is there really enough interest to warrant yet another exhibition in South East Asia?

CATALOGUE COLLECTION

To obtain the latest catalogues and product literature from any of the companies advertising on these pages simply post or fax the slip, indicating your choice(s) by ticking the relevant numbers.



Contact: Derrick Saunders Tel: (01223) 66798 Fax: (01223) 460708



ENGLAND TEL: + 44 (0) 1825 732601 FAX: + 44 (0) 1825 732730

E.U. DISTRIBUTION **ENQUIRIES WELCOME!**



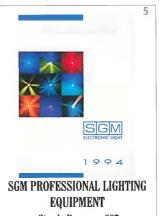
Pyropack Precision Pyrotechnic Products - the largest worldwide dealer network for sales and tour support services

> LUNA TECH Tel: (49) 4353 643 Fax: (49) 4353 1014



DHA have increased and improved their range of moving effects to encompass a greater spectrum of luminaires

For more details: Tel: 0171 582 3600 Fax: 0171 582 4779



Strada Romagna 307 Tel: 0721 208200 Fax: 0721 208231



Lighting, Sound and Rigging Glantre Engineering Tel: (01734) 64 00 00



RCF's new Professional Sound System Catalogue, featuring the complete range of RCF Loudspeaker Systems. Monitor Series - Espace - Process Control & Power Amps. RCF (UK) Ltd, 2 Blenheim Court, Hurricane Way, Wickford Business Park, Wickford, SS11 8YT. Tel: (01268) 570808 • Fax: (01268) 570809

XTBA for **DMX512**

XTBA supplies DMX512, encoders, decoders, soft patches, splitters, merge units, DMX testers, FX controllers. dimmers, control systems and all things DMX512 Tel: 0171-700 0996 Fax: 0171-609 8281



Studio, Theatre and Club Catalogue, lamps, lighting, special effects. Tel: 0181-965 6800 Fax: 0181-965 0950

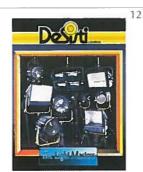


Rainbow Colour Changers Rainbows Evolve. Other scrollers just change. Worldwide distribution M&M 0171 284 2504



BRINGING THE BEST OF AMERICA TO EUROPE

Tel: 0181-838-2254 Fax: 0181-838-2253



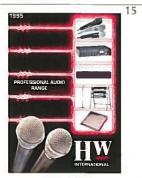
ALL YOUR NEEDS IN TV. FILMS & VIDEO LIGHTING. SUPPLIED BY DESISTI LIGHTING (UK) LTD Tel: (01842) 752909 Fax: (01842) 753746



The full range of JEM Smoke Machines and Pyrotechnics including the award winning Hydrosonic machines Tel: (01790) 754050 Fax: (01790) 754051



Rubber Box Co specialises in lighting distribution boxes. Made from rubber, they are double insulated and designed for outdoor usage to IP57 Tel/Fax 01282 830965



Covering all the existing product ranges from Shure, Pro Acoustics, 3G, Ultimate Support, QSC and HW, our latest catalogue also includes technical specifications.

Tel: 0181-808 2222

Fax: 0181-808 5599



LINK
All you need for audio + video professional installations.
Tel: +39 6 4072831
Fax: +39 6 4073138



OSRAM'S latest Photo-Optic Catalogue includes technical information on their full range of HMI[®], HTI[®], and HSR[®] lamps. Tel: 0181-904 4321 Fax: 0181-904 1178



For more details of the

Selecon Acclaim range of luminaires

Contact Mark Morley

AJS Theatre Lighting and Stage Supplies Ltd

Tel: (01425) 470888

Fax: (01425) 471398



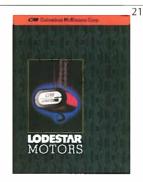
DIVERSITRONICS, INC.

Award winning DMX strobes with HYPERFLASH™ now available from A.C. Lighting Ltd Tel: (UK) 01494 464000 (Int.) 44 1494 446000



The 1994 "User's Guide to the Pani Projection System" is a comprehensive manual of large format projection techniques and equipment Production Arts Lighting, Inc. Tel: (212) 489-0312 Fax: (212) 245-3723

24



Lodestar Chain Motors PCM

(A division of Pfaff Silverblue Limited)
UK agents for Columbus McKinnon USA
Tel: 0151-609 0101
Fax: 0151-609 0200



Advanced Lighting Systems

Telephone 0131 556 1771

Fax: 0131 557 1973



PA INSTALLATIONS

Leading by example in the design, supply and installation of sound, lighting and audio-visual equipment to the leisure industry, from conception to realisation.

Tel: 01554 752490 • Fax: 01554 777848

Unusual Rigging Ltd is part of the Unusual Industries

Unusual Rigging Ltd is part of the Unusual Industries group comprising Unusual Manufacturing - Steel Fabrication Unusual Automation - Automated Winches & Chain-hoists Staged-Rite - Indoor and outdoor staging Unusual Services - Production services For more details phone 0181-206 2733

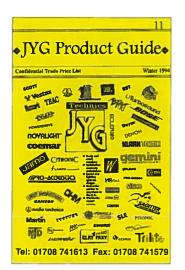
CATALOGUE

Barral agua;

Telephone Strand on 0181-560 3171



-buy direct from the manufacturer PLAYLIGHT, FREEPOST MR9555, Manchester M16 8HB Tel: (+44) 0161-226 5858 Fax: (+44) 0161-232 9510





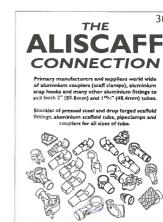
The Columbus McKinnon Lodestar motors brochure gives the entertainment industry a backstage look at the quality, durability and flexibility CM Lodestar chain motors offer. From lifting sets and backdrops to flying light grids and sound equipment, CM Lodestar chain motors adapt to countless staging environments.

Contact: CM Theatrical Products Division, USA Tel: 716 696 3212 Fax: 716695 0122

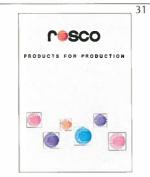


LASERS THAT CUT THROUGH THE PRICE BARRIER Distributed exclusively by

Nu-Light Systems Ltd
Tel: 01925 243075
Fax: 01925 243077



UNIT 2 HOTSPUR IND EST., WEST ROAD, TOTTENHAM, LONDON N17 OXJ TEL: 0181 808 5005 FAX: 0181 801 9851



For all Rosco product catalogues and more detailed data sheets:

Tel: 0181 659 2300 Fax: 0181 659 3153



The Scancommander from MA is one of a complete range of lighting control systems call M&M 0171 284 2504



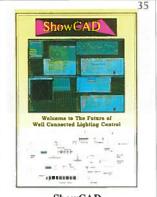
For all your audio and lighting cable, connector and custom wiring requirements contact Richard Vickers or Sean Downey

Tel: 0181-964 8000 Fax: 0181-964 1010

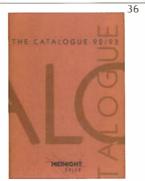


Bridon International offer the complete service from specialised training to the smallest shackle. Tel: 01302 382239

Fax: 01302 382303



ShowCAD **Axon Digital Design Ltd** Tel: +44 (0) 1929 423222 Fax: +44 (0) 1929 427232



The Midnight Design 150-page sales catalogue contains updated information on lighting products, special effects, and consumables.

Tel: 0171-498 7272 Fax: 0171-498 8845



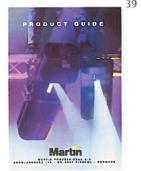
The 160-page Stage Electrics Hire Catalogue with detailed information on lighting, sound, A.V., rigging and mains distribution systems.

Tel: (0117) 982 7282 Fax: (0117) 982 2180



Penn Fabrication's new comprehensive trussing and lighting catalogue is now available.

Tel: +44 (0) 1424 718576 Fax: +44 (0) 1424 718572



Martin Professional A/S, Nordlandsvej 114, DK-8240 Risskov, Denmark Tel: +45 86 21 44 11

Fax: +45 86 21 50 01

TRIPLE E TRACKS AND AUTOMATION

Our comprehensive range for both sales and hire is featured in the new TRIPLE E catalogue now available.



B3 Tower Bridge **Business Complex** Clements Road London SE16 4EF. Tel: 0171-237 6354 Fax: 0171-237 7650

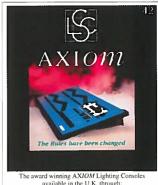
41

FRENCH DISTRIBUTION

OUR NEW 1995 CATALOGUE IS NOW AVAILABLE

TEL: (33) 1 46 11 41 00 FAX: (33) 1 46 66 04 73

PROFESSIONAL LIGHTING & SOUND MIXERS



The award winning AXIOM Lighting Consoles available in the U.K. through.

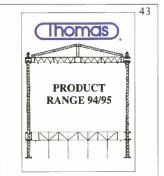
•XTBA Tel: 0171 700 0996 Fax: 0171 609 8281 •

•Lancelyn Tel: 01865 722488 Fax: 01865 728791 •

•Lancelyn Tel: 01865 722488 Fax: 01865 728791 •

tel: 461 3 9561 5255 Fax: 461 3 9561 5277

AXIOM - Winner of Australian Design Award 1994 •
 1994 Powerhouse Museum Selection Award •



Tel: 01386 553002 Fax: 01386 552321

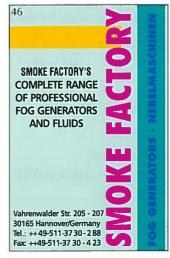


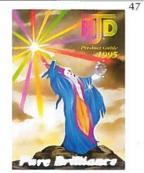
HIRE and SALES From AKG to ZERO 88 Tel: 0181-886 1300 Fax: 0181-882 2865



Full details on the new range of HMI and

tungsten profiles, HMI followspots, HMI digital dimming shutters and other theatre luminaires Contact: Tom Mannings of Decoupe Ltd Tel: 0181-505 8522 Fax: 0181-504 4755





The complete product information guide featuring specifications and full colour photographs of the entire range of sound and lighting control equipment

Tel: (0115) 9394122 Fax: (0115) 9490453



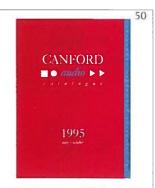
WYBRON LTD

Technology Serving the Arts

Tel: 0181-838 2254 Fax: 0181-838 2253



For a complete set of Le Maitre product leaflets covering smoke machines and pyro 6 Forval Close, Wandle Way, Mitcham CR4 4NE Tel: 0181-646 2222 Fox: 0181-646 1955



Essential for every audio professional

Tel: 0191-417 0057





TRANTEC SYSTEMS

Telephone: 0181-640 0822 Fax: 0181-640 4896



White Light's latest price list contains the vast range of lighting equipment currently available from both London and Halifax. It also contains projection charts, reference guides and other useful information.



A comprehensive range of lighting control available to suit most applications. World-wide dealer network, Showroom and Training Centre. Multi-language brochures available.

Tel: +44 (0) 1727-833271 (sales and spares) Tel: +44 (0) 1633-868099 (service only) Fax: +44 (0) 1727-843676



THE ACCENT RANGE Low voltage lighting for professionals Call M&M 0171 284 2504



The Science of Lighting™

For more details of our full product range, contact:
High End Systems
Tel: 512 836 2242
Fax: 512 837 5290
UK Enquiries:

Lightfactor Sales
Tel: 0181 575 5566
Fax: 0181 575 8678



Light Engineering have a unique range of lighting, sound & special effects products, also a vast array of component parts, lamps & accessories.

Tel: (44) 0181 520 2336

Fax: (44) 0181 509 1332



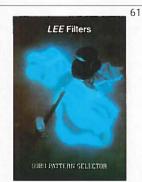
For a free Lee Filters information package, please telephone (01264) 366245 or fax (01264) 355058

Please arrange for the follo	owing catalogues to	be sent to me: (P	lease tick those require	d)	July 199
1 2 3 4 5	6 7 8	9 10 11	12 13 14 15	16 17 18	19 20
21 22 23 24 25	26 27 28 2	29 30 31	32 33 34 35	36 37 38	39 40
41 42 43 44 45	46 47 48 4	50 51	52 53 54 55	56 57 58	59 60
61 62					
Name					
Company					
Job Description/Title					
Address					
		Telepho	ne		

SOUND DEPT-CATALOGUE

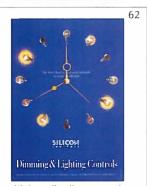
Importers and Distributors of Pro
Audio & Commercial Sound Equipment
including Ashly, Astatic, Biamp, Carver,
Community & Sound Advance Systems
Tel: (01865) 516800
Fax: (01865) 514461





The Lee Filters Gobo Pattern Selector features more than 200 gobo styles - many of them new - in industry standard sizes.

Tel: (01264) 366245 Fax: (01264) 355058



High quality dimmers and lighting controls since 1979. New range for architectural applications.

Fax: (Belgium) 32,93,86,83,71.

Hull University Mega Gig



The 'Mega Gig' at the University of Hull is now a regular event spawned by a much older, annual beer festival that demanded some live entertainment. Why it should come to the attention of this august publication can be attributed to one man, Ben Teale, and the Herculean effort he and his team made to stage this event as profitably as possible, so that the needy of the Hull might benefit from every penny spent by the student body.

Ben's initial request for equipment, published in L+SI, attracted more attention than he possibly imagined. In short order Ben was contacted by Peter Stutley at Vari-Lite who promised half a dozen VL5s, Mick Hannaford at Lightfactor who pledged 14 Trackspots, and Steve Warren of Avolites, who offered a 48-channel dimmer rack and a Sapphire desk for control. Not to be out-done by London suppliers, John Melon's Prism Lighting of Chester proffered all necessary truss and rigging, and between the University's own stock and donations from Sabre of Hull, some odd Pars were amassed. Lighting was further augmented by Lighting Technology who provided all gel, whilst the Broadbent Theatre in Lincoln gave six profile spots, and DHA made 22 custom gobos free of charge. To top it all off, and in answer to a student lighting operator's dream, Mick Hannaford had over-booked the Trackspots: "I can only let you have 13 - would you like a couple of Cyberlights to make up the difference?"

All sound equipment came from a slightly more orthodox route: TSA is a semi-professional PA company run under the aegis of the University of Bradford. Peter Foulkes of TSA supplied 12kW of Martin Audio equipment, powered by C Audio amps, as well as a Series IV Soundcraft out front with a TAC Scorpion for monitors. TSA also supplied a willing crew for this two-day, 21-band event. Particular praise should go to John 'Moose' Postlethwaite, the doughty front of house knob-twiddler.

The University's technical committee used the Pop Code as their safety yard-stick and proudly proclaimed compliance with every part relevant to their event (and with a licence for 2,500 people they were rigorously inspected). With most of the bands drawn from the local pub and club circuit, they also wisely decided to PAT test every band's back-line equipment prior to their performance. Sarah Hayward was responsible for booking the bands - over 400 locals submitted tapes whittled down to a short list of 20. Only headliners 'Collapsed Lung' demanded a fee for their appearance. I mention this as the entire event was staged at a total cost of £1,500 which included 'Lung's' fee, truck rental to collect the equipment from the various donors, hire of scaffolding stage (Teale managed to beg a crane to lift in the Unitbeams), and utilities like power and phones.

It was an excellent show managed to professional standards, and the equipment donors will be pleased with the condition of their gear on its return.

Steve Moles

VE Day Correction

West-Sussex based BHA Design Associates have asked us to point out that it was in fact they who designed the exhibition pavilions as part of the VE Day celebrations covered in last month's issue and not Structural Design Associates as stated.

Planetarium Takes Off

Among the dignitaries who attended the launch of Mme Tussaud's new World Planetarium were Steven Hawking, both in person and in effigy, and other spacemen such as Patrick Moore and Ian McCaskill. The famous auditorium, which chalked up 18m visitors before closing for the refurb, was extensively remodelled by architects Fletcher-Priest, in order to create tiered seating and a fitting stage for the £1m Evans and Sutherland Digistar II cosmic projector, which weighs in at 328kg and is the first of its kind in Europe. Housed in the same complex as the famous waxworks, and above the 'Spirit of London' dark-ride, the remodelling required some ingenious structural 'shoe-horning' to make it feasible, though the end result has created space under the new seating tiers for three interactive pre-show areas, a new street entrance and a new suspended projection dome by Astrotec from Ohio.

All the new technical devices for the show were specified and designed-in by Phil Pike's AV department at Tussauds Group Studios, which includes the 50-strong Kodak Ektapro 7000 All Sky, Panorama and general effect slide projectors, and two Barcovision 701S projectors on moving platforms and the central Barcodata 1101. All the slide and video projection was provided by Electrosonic of Hawley Mill, who also contributed the overall show control system based on their EASY software platform. Another intriguing piece of equipment is the 'Virtual' video recorder from Stirling Audio which provides all the video imagery and can store up to 50 minutes of video at its highest definition.

In the sound department, Phil Pike was keen to use a 3-D surround sound system and he found what he wanted in the United States with the LCS Storm sound control system which was supplied and programmed by Big Bang Boom in W1. Three levels of speaker arrays were installed and supplied by Shuttlesound, a mixture of Electro-Voice and Bose.

Lighting is controlled by the Strand LBX lighting desk and EC90 dimmers. In-house lighting designer Steve Wentworth commissioned the lightstore to light the holding areas, and Lighting Tech supplied special effects in the auditorium. Other industry names involved in the project were Delstar Engineering for stage lift design, Flint Scenery for stage installation and Terry Murphy Scenery for sets.

Tony Gottelier

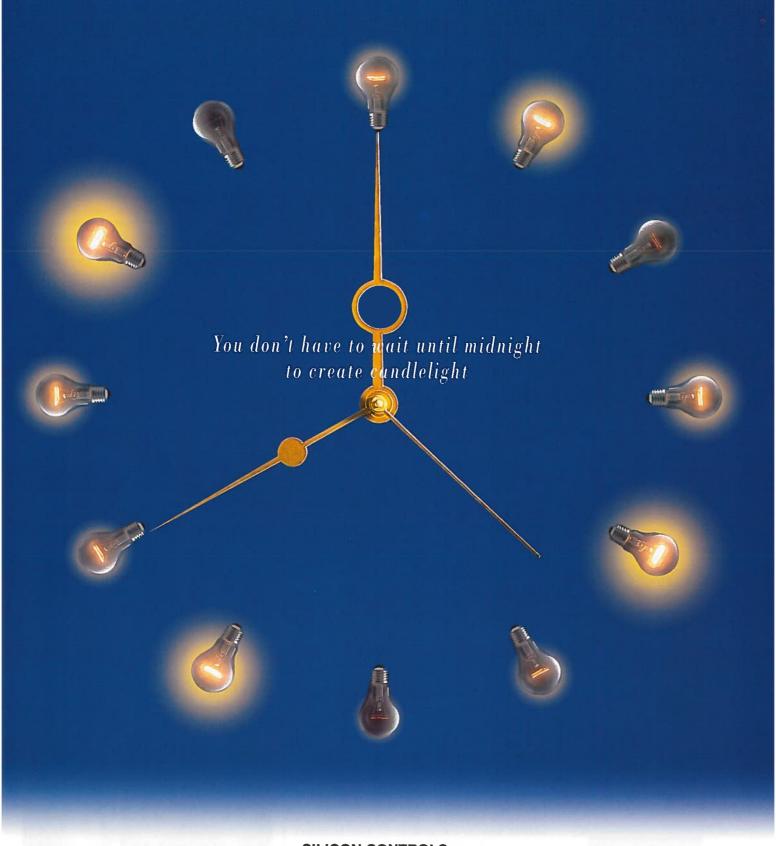
All Right Jac



Leading Dutch distributor Jac van Ham, L.B.G b.v held a two day product presentation at Lubbeek, near Brussels in late May. The full range of products on show included equipment from Clay Paky, Pulsar, Le Maitre, Optikinetics, Prolyte, Lampo, Outline and Celco.

The company also officially opened their new facility in Tilburg, Holland in mid June, followed by three open days which were attended by a number of international guests. The new site, which has a staff of 30, includes an extensive showroom facility. The building also serves for production of the company's own Ohio Sound product range.

Ben Weijters, Jac van Ham's managing director, is shown above (right) with Hennea van Ham, wife of Jac van Ham, who cut the speaker cables to officially open the new Tilburg facility.



SILICON CONTROLS dimmers and control systems since 1979

- 15 years of combined experience as both a distributor and manufacturing company helps us understand more about what a distributor really needs. Silicon Controls dimmers and lighting control systems have been conceived and made for true value-added reselling. We offer:
- true zero defect effective commercial support technical manuals and sales literature in 4 languages fast deliveries
 technical back-up sales leads on international projects undiscounted profit margins

Ask now for our new catalogue: FAX (Belgium) for more information: 32.93.86.83.71



ON TOUR

by STEVE MOLES

AND PRODUCTION NEWS

James Last

Birmingham NEC

LD: Carl Burnett SD: Paul Addison

You may not see James Last as heavy metal, but then how else do you categorise an act that kicks off 10 back-to-backs with a show at the NEC International Arena, Birmingham, has a 400+lamp rig overhead, and a star who insists that he 'just does it for fun'? And this from a man who is old enough to be Charlie Watts'dad!

What James Last lacks in chart success and physical vigour, he more than compensates for in lasting popularity (no pun intended), with a lively and varied programme. There is probably not a single reader of this magazine who hasn't listened to this man's work at sometime in their life. You can hear his recordings almost every night at cinemas all over England; what you might be surprised to learn is that songs by modern writers almost 50 years his junior, such as George Michael, are integral parts of a James Last show. Can there be anything more remarkable than witnessing 8,500 grandparents tapping their toes, clapping along, and mouthing the words to 'I will be your Father Figure'?

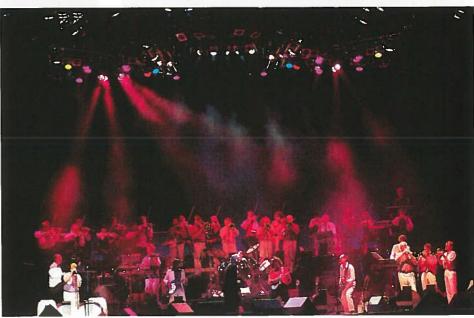
LIGHTING

Neg Earth are providing the lighting system, although it was Mr. Last's desire for "a big rock and roll light show" that determined the size of the rig - the design and how it is used is entirely in the hands of Carl Burnett. The only confine placed upon him was for some bold truss moves to enhance and bring a bit of drama to the last quarter of this almost three hour show. The rig is a basic $40\text{ft} \times 30\text{ft}$ box truss with two 'X's and an 'O' hung within - these latter truss shapes perform the required moves.

The box is fully laden with Pars, essential in this instance as there are 34 band members on stage, including Mr Last, plus six vocalists to cover. Carl managed to cajole 25 ColorFaders (not originally quoted for) out of Neg Earth: fortunate for him he has such a well-established relationship with this company, as the Faders really gave him the extra dimension of wash he needed to lay across the orchestra. With three tiers of musicians on what is a packed

stage, the players can barely move, so the element of animation imposed by the washes is a much needed fillip.

The back of the stage is defined by a cyclorama which is predominantly lit in dark colours at subdued levels (courtesy of four-lamp Moles with Rainbow scrollers). The only other lamps in the system are 11 ellipsoidals to pick out some of the principals and singers, and two followspots front of house. The lighting behind the band did appear a problem in terms of presentation, as the tiered seating of the string section rose perhaps half way up the cyc screen. With such strong levels of light in the fore-stage area forced by the need to cover the whole band evenly, more pronounced lighting on the cyc might have overwhelmed the eye. A difficult balance to strike, and although Carl did vary levels on the cyc, there seemed no comfortable pitch.



James Last on stage at the NEC, with the movable trusses visible at the top of the picture.

As was said before, the band is largely static, and Mr. Last as band leader spends much of the evening with his back to the audience, so Carl is very much charged with the responsibility of injecting some life into the stage. The only exception to the rule of least movement was the trumpet section, who frequently indulged in buffoonery when not called upon to play. Personally, I preferred the lighting.

Control was from an Avolites Diamond I, a desk Carl hasn't used since being introduced to the Diamond II just over a year ago. Going back to what is barely old technology was harder than Carl imagined: "I don't know why, it just looked so old fashioned. Things like only being able to run three chases seemed really weird."

Despite these supposed drawbacks Carl had no

"... this is not rock and roll - it's more like some bizarre fusion of Gary Glitter and the purple rinse, twin-set and pearls brigade, but don't knock it - good sound and light is not just for the baby-boomers and new youth"

trouble in acquitting himself admirably. As if this needed qualification Carl's mum appeared (Brum being his home turf) and pronounced his efforts "A lot better than the lights he used to have in his bedroom." Absolutely.

SOUND

For too long now Paul 'Paddi' Addison has stood by the side of FOH engineers and performed the 'oily rag' role. This able technician has, at last, been given the opportunity to twiddle his own knobs, and not just for the support band. In contrast to the heavy metal lighting rig, Paddi has a modest Turbosound PA system from Britannia Row - just four Flash' and four Floodlight cabinets flown per side with a couple of further Floods tucked around the sides to cover the bleachers, and some bass and near-fills on the floor. The audience may be prepared to demonstrate the exuberance normally seen of fans 60 years their junior, but their ears are apparently sensitive to volume (and I thought deafness came with age). However, the NEC is a big room, even when curtained down for the slightly under capacity audience, and Paddi had to drive the system quite hard to fill it, which allowed the PA to flex its muscles - a seemingly necessary requirement with such precisely-designed equipment. That said, the level was never more than comfortable.

Paddi runs the show from the inevitable Yamaha PM4000 (no surprise to find a full 50 inputs from the stage), the most notable sound modifier he uses being three Lexicon PCM70 reverb units which he uses on vocals, brass and strings. For the strings Paddi is using Soundlab

Electronics' D8044 Symphonic mic system. These tiny mics replace the nut at the foot of the violin - being set inside the instrument removes the problems associated with a regular mic and the need for high gain. However, the true sound of the instrument barely has a chance to develop within the confines of the violin body, hence Paddi's use of the Lexicon to fatten it up. Tour production manager Julian Tether, for many years a notorious sound man himself, singled Paddi out for particular praise. Despite Julian's

less-than-favourable personal press, he does know his kHz from his Ohms, in his own words: "I've toured with James Last on and off for eight years now and know much of his material thoroughly. Since Paddi took on front of house, I'm hearing things in the mix I never knew were there." And I don't think he meant the flautist when he nutted his mic during a cadenza.

Despite the rig, the PA and the lively audience, this is not rock and roll - it's more like some bizarre fusion of Gary Glitter and the purple rinse, pearls and twin-set brigade, but don't knock it - good sound and lights is not just for the baby-boomers and new youth. Seeing an older generation enjoy a big concert is like being 13 years old again and suddenly realising that your mum and dad actually have sex. It's a bit freaky at first but eventually you realise everyone can have fun and it's as good for them as it is for you.





Tanita Tikaram

York Barbican

LD: Chris Lambourne SD: Des Jabir

Songs like 'Twist in my Sobriety' and 'Traditions of Love and Hate' typify the lyrical content of Tanita Tikaram's songs: deep, introspective and gloomy. 'Love and Hate' does have a certain humour to it - behind the words lies a jaunty melody that sweeps along like a jig in an Irish bar on a Saturday night, so perhaps it's not all so serious after all? This number, however, is the exception rather than the rule, most of the one-and-a-half-hour set is filled with songs that make Leonard Cohen sound positively light and jolly by comparison. Even a silly title like 'Elephant', a song spawned out of childhood and her mother's taunts, cannot lift the gloom. Introspection fine, but where's the self deprecation that makes it bearable? Perhaps this is why the York Barbican was barely half full.

Playing to half houses is testing for the performer, and uncomfortable for the audience too. For the production crew it would be easy to just go through the motions and get it over and done with. Des Jabir on sound, and lighting designer Chris Lambourne were immune to this temptation; both worked exceedingly hard to bring the full weight of their experience to the presentation, and without that air of desperation that is blind to the truth.

SOUND

Tanita has a deep, mellow voice: her delivery is breathy and she squeezes out the lyrics from the pit of her stomach. Like Marlene Dietrich singing 'Falling in Love Again', Tanita's voice has an alluring timbre. For Des Jabir, bringing her voice to the fore is central to the mix. The PA is supplied by Villa Audio (from Great Waltham, Essex), the six single 15" RCF bass bins per side are made by Tony Rossel, who Des cites as, "probably the best cabinet maker in the country". The bass stacks are

surmounted by four Deltamax DML1152s, with another pair of these cabinets positioned on the floor aimed to cover the front few rows, and two more flown each side from the ends of the front lighting truss.

Des runs the flown PA from a sub group on the desk solely as a voice fill. He confirms: "She has a low register voice which needs to be pushed out." Des is using a Soundcraft 8000 (Gavin Wright also has an 8000 for monitors): "Despite its limitations, a bloody marvellous desk. Can't go wrong - you can use them blindfold," said Des, before ruefully admitting that he wished he had some VCAs. Villa are also supplying a BSS OmniDrive (FDS388 for the cognoscenti), which Des is particularly keen on, as it can be set up specifically to whatever cabinets you are using, as well as being able to set cross-over points and filter slopes. Thus: "When I start the day I have the graphics completely flat and know it will sound reasonably good. Any adjustments I then make to the EQ are specifically to compensate for the room or her voice."

Tanita has a five-piece band who, with the exception of the drummer, all double up on one another's instruments. Mandolin and accordion vie with telecasters, songs switch from full band to Tanita's sole acoustic guitar - either way, Des stuck to his allotted task and kept her voice in our laps. It's a fragile environment because the sound level is generally low and the presentational style exposed and unforgiving. Sound-wise, the only faux pas I heard all night was Tanita's embarrassing admission that she'd forgotten the keyboard player's name when introducing the band.

LIGHTING

"Basically, it's a six colour wash. No followspots. Simple," said LD Chris Lambourne. Maybe so, but the apparently simple front and rear truss rig (from SuperMick) had a couple of tricks up its sleeve that made for a very engaging show. Into what is a tight lighting budget Chris had squeezed eight Martin 218s and four ColorPro MSDs to augment the 84 Pars and five ellipsoidals. Now these are not high spec' lamps, so it would not be fair to make

comparisons with Golden Scans or Cyberlights, but in the right hands they are not just disco toys, as Chris pointed out: "They are easily as bright as an ellipsoidal, with a rig trimmed at 20ft like this they're fine. What's more, when we were out in Europe playing clubs J might have had to leave most of the truss and Pars in the truck, but at just two amps per lamp I knew I could always put the scans in somewhere, even if it was on a ring main."

The show is basically dark, as the songs demand. The wash colours are a mix of rich hues, reds and blues, with lighter blue/greens and lavender for contrast. Chris has arranged parts of the wash in blocks, 6kW from the back of stage left, whilst others are split symmetrically across the middle. All are controlled from an ageing 60 channel, three pre-set, pin matrix Avo board that, needless to say, performed faultlessly.

The 218s are used very much as moving, colour changing Sils, shifting from one musician to another, following the melody from guitar to keys. Crossfading from three of these lamps in the rig to perhaps two on the floor and one on the front truss, Chris timed his fades well from a simple manual controller. As well as basic colour mixing, these lamps also have a four colour split beam, all of which can be overlayed with any of the 10 available gobos. Chris used this to great effect on some of the moodiest songs, using no Par washes at all, letting gobos play across the stage and back-drop, and just lighting the band with the ColorPros positioned on the floor. A largely one-dimensional repertoire was made to look varied and fresh for each song.

It was 45 minutes into the set before the tempo raised and we were able tap our toes and whoop a little, but it was short lived. Maybe it was me: had I gone out to dinner expecting a varied and interesting menu only to be served a reasonable entrée but nothing of substance to follow? Still the ambience, décor, service and attention to detail were faultless.

YOU CAN FAX YOUR TOURING NEWS THROUGH ON (01323) 646905



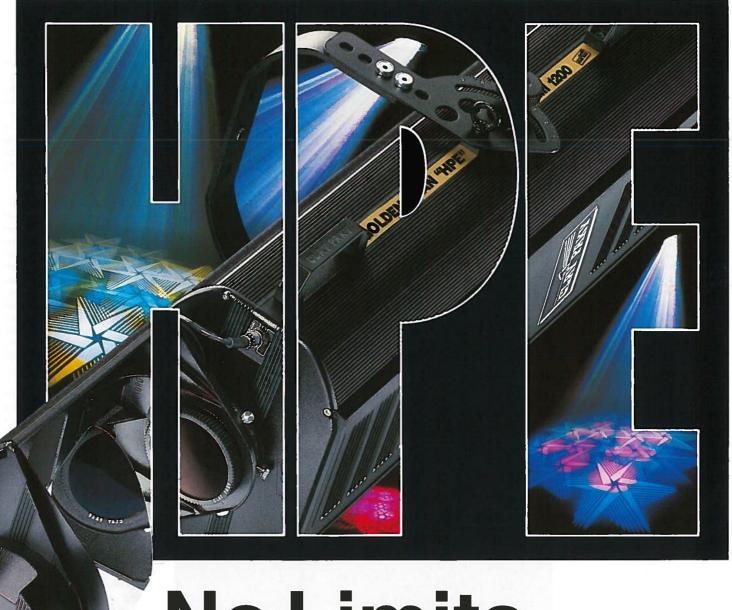


Panasonic

The way ahead.

UNIT 4G, EUROWAY TRADING ESTATE, BRADFORD BD4 6SG Tel: 01274 651600 Fax: 01274 651190

GOLDEN SCAN



No Limits.

• A complete range of gobos: 4 fixed gobos, 4 rotating gobos (2 in glass), adjustable-speed bidirectional rotation, indexable positioning, pattern superimposition, fully interchangeable gobos. • The most sophisticated range of prisms: 4 rotating prisms (x2, x4, 3D, "trail effect"), adjustable-speed bidirectional rotation, fixed prism (x5) which may be combined with any other prism. • Endless colour possibilities: three independent combinable wheels, 113 single-coloured projections, infinite multi-colour combinations, beams with two concentric or adjacent colours, 4-colour beams, Wood's light, rainbow effect. • An optical system which meets all needs: HMI 1200 lamp, basic 23° wide angle aperture (may be reduced to 15° by means of a remote-controlled lens), optional kit for modifying projection angles (to 12,5°-8,5°), electronic focusing. • Control of all light parameters: high-speed linear iris, gradual

Distributor United Kingdom:

diffusion, mechanical linear dimmer (0-100%), 1-7 fps strobe effect.

Pulsar Light of Cambridge Ltd Henley Road - Cambridge CB1 3EA - U.K. Tel.+44 (0) 1223.366798 - Fax+44 (0) 1223.460708





THOROUGHLY MODERN ROD

Rod Stewart's A Spanner In The Works tour is a showcase for many new live technology developments. Mark Cunningham spent two days with the crew at Wembley Stadium . . .

Not even torrential rain could dampen the high spirits of the 85,000 strong crowd gathered at Wembley Stadium in June to see Rod Stewart's dazzling display of pop artistry. An impressive in-the-round stage design situated in the centre of the venue's hallowed turf provided an innovative platform upon which 'The Mod', his 14-piece band and 22-piece orchestra presented songs from the latest album 'A Spanner In The Works', while a generous and faithfully executed back catalogue of over 25 years had the fans joining in on every line.

Showing no sign that he turned 50 in January, Stewart's voice is back in fine form after some years of difficulty and he left the audience breathless at the sight of his athleticism as he jumped, ran, kicked footballs by the dozen into the crowd and generally twisted the night away. By complete contrast, the weather was hot and sunny during the previous day's load-in and set-up when I met various members of the production crew, all of whom waxed lyrical about the many technical developments being introduced on this tour.

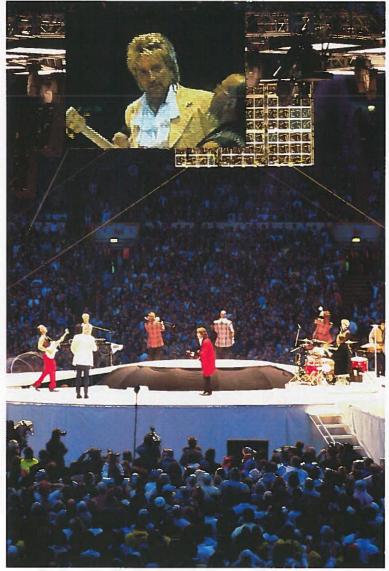
SOUND

One such development is the much talked about 48-channel Midas XL4 audio mixing console, of which three have been put to good use for the first time on this Stewart tour which began in Aberdeen. With the exception of pre/post switching on aux sends, virtually every

switch on the XL4 is automated, courtesy of Out Board Electronics who were commissioned by Midas to design a bespoke, upgraded version of its SS2 snap shot automation software package for the new console.

On the eve of the Wembley show, Out Board's Robin Whittaker told me: "There is a phenomenal amount of automation on the console which I think really sets it aside from just about any other analogue non-assignable board. There are around 60 switching functions per channel automated as well as faders. There are some really nice touches, such as when you power the console down, irrespective of what happens to it before it's powered up again, everything will reset automatically. In terms of specifying the automation, I canvassed the opinions of Lars Brogaard (production manager/FOH engineer) to a reasonable extent. He had the experience of working with the automated XL3 package which was really just moving faders, and collaborated with Midas on the overall console specification.

"We try to adopt a Volvo approach to product development. Rather than redesigning



Larger-than-life Rod Stewart gives a towering performance at Wembley.

something from scratch to give birth to a new product, we issue enhanced and improved versions of our old products. What Lars is working with has a much larger memory capacity and a larger addressing capacity in terms of how many switches and faders it conforms to. It has an upgraded user interface and now also has alpha-numeric display which was absent from the previous SS2 system. We've also taken on board MIDI event management into the new processor rather than have it on an external software product basis. The SS2 solution was to use proShow, a remote programming and MIDI events management system, but that's now incorporated into the new processor.

"Within each scene or cue in the automation, you can programme a series of MIDI events that are executed when you hit the 'go' key. It still has event listing on the computer screen and we have a version of proShow on the XL4 which is an overall scene, cue and prompt listing package, as well as displaying VCA status in terms of being able to name VCA groups. Although there is virtually total automation, the

engineer can intervene at any point. It's still essentially a snap shot based system, so the automation is not ruling the show; it's still the sound engineer who is deciding on the moves. The automation serves as a scratch pad memory facility for him. It's only when the switch and fader movements are being recalled that the automation is active."

Lars Brogaard began his audio career in 1977 and toured extensively with ABBA, Lionel Richie, Traffic and Cher, among many others, before joining Rod Stewart's clan in 1984 as both FOH engineer and production manager. Why both jobs? "When I started, production managers didn't pay too much attention to the sound because most came from a lighting background. So to get things done the way I wanted them, I had to be in that job too."

Brogaard's involvement in the automation design for the XL4 has resulted in a console that is almost personalised to his own discerning requirements. How does he view the latest Midas creation? "One of the big changes is that there are subgroups on this board which weren't on the XL3. The EO is fully four-way parametric and there is both high pass and low pass on the mic and line inputs. These are just a few of the extra useful features. The metering is much better and the great sound coming out of the board means that I don't need to do much EQ'ing, although if you pick the right microphone you shouldn't

need to do much anyway."

For the first few dates on the tour, Brogaard worked with an incomplete automation package on his console which, Whittaker assures, will be finished by early July. "But," said Brogaard, "all the VCA sub-groups and mutes are automated. We will very soon have all the input channels on moving faders, which, to me, is a great way of using a board and accessing only the channels that you need."

The in-the-round production meant that Brogaard and his crew had to approach elements of PA rigging and EQ differently. "We have two sets of PA system mirrored, so that we have two lefts and two rights. There is a lot more EQ'ing and phasing that needs to be sorted out, but having done it a few times, I can say that it gets easier. You certainly don't need such a long throw."

A moving plexiglas dome in the centre of the stage provides an isolated 'home' for the 22-piece orchestra. "It works very well because you get a tremendous amount of level in there. There's no spill from the band, although there wouldn't be much anyway as everyone is on

in-ear monitors, but the drum kit is still banging away in their direction. On the last tour, we had them sitting behind the band with a plexiglas baffle in front of them, but we can get a much better sound now."

With the exception of some Shures and Neumanns on the drum kit, the microphones are exclusively AKG. "We have AKG C401 pick-ups on all the string instruments, C409s on the woodwinds, C451s overhead on the flute and there are some C414s picking up the ambience inside the shell. On drums we have a D112 on the kick, a Shure SM57 on the top and bottom of the snare, a C451 and a Neumann on the hi-hat, small AKG C408 bugs on the three toms (also on the horns), a C451 on the percussion and a couple of Neumanns overhead. The guitar cabs underneath the stage are mic'd with Shure SM57s. The vocals are all AKG TriPower C5900 and the keyboard position mic is the only one which isn't wireless - everything else is a radio mic and we have 12 channels' worth of them!

"I was always trying to keep as many mics as possible on wires because I generally think it sounds better than wireless. But the technology is

improving all the time - when we tried out the AKG equipment, it was so good that I couldn't distinguish between their radio mics and hard-wired products."

Adjacent to Brogaard's XL4 is a Midas XL200, functioning exclusively as the orchestra mixing console. The instruments are broken down into sub-groups, assigned effects for warmth, then sent in stereo to the XL4. I had to wait until show time before I caught a glimpse of the orchestra. Brogaard explained why: "It's rather expensive to have an orchestra on site for two days. They will come in at 8am and rehearse, then I will soundcheck them at 11am. It's not something that makes me nervous because once you've successfully mixed an orchestra live, it's more or less the same thing over again. We have just been using local orchestras for the first few dates, but after Wembley we will be travelling with our own orchestra for the rest of the European tour which will make things a lot easier."

The PA is an Electrotec Lab Q system consisting of a bass bin with an 18" driver and a horn-loaded cabinet which has two 12" drivers, a 2451 horn and 2075s. These are powered by Crown 5000 amplifiers on the lows and mids, and Crown Reference amps on the highs, contributing to a combined amplification power of around 250,000W.

There is a line speaker cabinet arrangement on top and the remaining cabinets are staggered in checkerboard fashion at the bottom. Some of the cabinets are turned upside down to provide a more forceful sound. The sub-bass cabinets all have Aura 18" speakers in them, each speaker being 1kW. Positioned around the bottom of the stage, I feared for the health of the audience members seated in the front rows, but Brogaard put my mind at rest.

"Having the sub-bass cabinets so close to the front of the audience hasn't been a problem and certainly no one has complained. The way we run the sub-basses isn't the same as one might in a heavy metal or rock band where it can be offensive. We use them as part of the music, the entire mix picture. I had planned to position the subs in the middle of each of the four sides, but in that position they were shaking the orchestra to pieces and I couldn't leave it like that. I had



The in-the-round stage featured a massive Electrotec Lab Q system.



Rod the Mod in typical pose.

to move them out, even though I was a bit nervous about phasing. I don't know if it's the best situation, but it does work."

The entire FOH EQ'ing is performed with BSS Varicurve units, while general out-board effects at Brogaard's console are largely care of vintage AMSs.

MONITORS

Rod Stewart and his band enjoy the luxury of two monitor engineers. Mike McNeil's primary responsibility is to look after Stewart's personal mix, while David Bryson on the opposite side of the stage takes care of the band, each being equipped with 48-channel automated Midas XL4 consoles - one of two major world firsts for this monitor crew!

McNeil enthused: "I have been running with automation from the very first day and it's working great. It has MIDI in/out, so I've MIDI'd it to all the effects and everything changes with the press of the next button because there are assignable MIDI channels on the board. The first time we used this system on the road was

in Aberdeen and it's the first time anywhere in the world that an automated monitor mix has been attempted! I've got it all going out pretty well and there are no problems whatsoever."

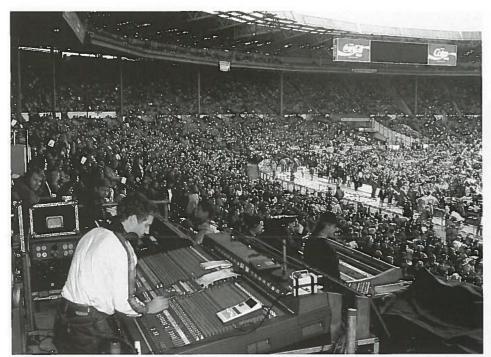
To add further fuel to the technological feats displayed on the tour, McNeil is happy to point out that there are no conventional monitor wedges to be seen on the stage, as the performers are all using Garwood Radio Station in-ear monitoring (IEM) systems. In the spirit of this boundary-defying tour, there are no less than 13 channels of IEM - currently a world record.

"We're running 14 Radio Stations simultaneously to provide 14 stereo mixes, and that is more than anybody in the world right now. As far as I'm concerned, it's the future standard of live monitoring," said McNeil. "We have one Radio Station module and a Dominator per man. The Dominator is a peak ceiling limiter which is a protection unit aside from the internal protection within the Radio Station itself. It provides dynamic limiting which holds down the over modulation of the unit. If you over modulate you risk crashing one frequency into another.

"I don't hard compress anything in the in-ear mix like some other engineers tend to. We're much more comfortable with open dynamics, but I do have the ceiling set so that if anything really major happens, it'll hold it down and not damage the listener's ears."

Stewart, McNeil affirmed, prefers to hear a full show mix, the quality of which is virtually hi-fi. "I have a full complement of effects here and I create a lot of ambience with a variety of effects. If you send a very dry mix into the performer's in-ear mix, it's really just too confining and too closed in, and not a nice experience. But we open it out with reverb systems that are dedicated to individual voices and instruments. That creates different types of ambiences which makes the overall sound appear much more natural."

The only wedges in sight on the lower stage level are situated below both McNeil and Bryson's consoles. "I use my wedge occasionally to check my cues, so that I don't have to wear my ear pieces all day. We also hooked up a live hands-free selectable



The sound mix position at the back of the stadium.

audiocom that we invented ourselves to enable a three-way conversation between myself and the other console engineers; we can designate it to any of the performers on stage, or all of them at the same time. The conductor is on an isolated in-ear mix and the orchestra players are listening only to themselves. The plexiglas shell that they're in is acoustically resonant inside because of its symmetry, and it gets really loud in there so they can hear themselves just fine and be isolated from all the extraneous noise."

McNeil eagerly took on the responsibility of introducing Stewart and his band members to the idea of IEM. Most were enthusiastic, although it is to his credit that he persevered with the doubting Thomases to ensure that everyone is 'on ears'. "I took each member one at a time and we demo'ed the ear pieces with a full stereo mix. The keyboard players were the last two holdouts and were on straight wedges last year, but on this tour they've gone over to the ear mix. Everybody is really happy with it. Because of the stereo imaging and the detail that you can put into a mix, it is a comfortable listening experience."

Colleague Bryson commented: "Drummers can also be difficult to win over because of the lack of power they experience without drum fill monitors. Dave Palmer has two of what I call butt-woofers or shakers. They are Aura solenoid drivers, mounted on the bottom of his drum stool. Each one is basically a coil and I reinforce

the stereo signal through an amplifier to give the sound a lot more beef. It goes through a parametric EQ and I give it 40 cycles as the signal goes to the stool. They constantly blast his spine with the physical sensation normally experienced with loud side fills. He has a hard-wired, stereo ear mix, although he wears closed-can headphones instead of ear pieces, so he hears a really fat sound."

A combination of radio mics, guitar transmitters and Radio Stations contribute to the use of a staggering 32 separate radio frequencies. Said Bryson: "We organised it very thoroughly with Hand Held Audio, ran some programmes and worked out all the frequencies for all the venues well in advance of the tour. As a result of the isolation on stage, there is a much better FOH sound."

The BSS Varicurve system with remote control is used extensively. McNeil noted: "I have Varicurve inserted on Rod's main mix output, the three backing singers and orchestra conductor. There's a stereo insert on each one of the mix outputs and I use the remote control for all of this. It also has MIDI in and through, so that if I do want to brighten up for one of the softer ballads, and put some extended highs on it as I change the reverb programmes, all the EQ programmes change as well, via the XL4 which, I've got to say, is the most happening mixer I've had my hands on in 18 years.

"David and I both use a Midas XL88 to

sub-mix the orchestra. The sub-mixes come to me in four groups from Lars at FOH and I send them in stereo to Rod. That cuts down the channel usage somewhat. It's very versatile, we can change our set-up around and in any emergency situation I could theoretically pick up one of David's players and he could pick up one of mine. They are two matched monitor systems, and although mine is dedicated to Rod and David's to the band, we have enough on-board flexibility, in the event of the worst possible scenario, to trouble shoot and save the show."

FIBRE-OPTICS

This tour also witnesses the first use in the live entertainment sphere of fibre-optic cabling, used exclusively here for audio. Originally manufactured for missiles in the Gulf War, the cable impressed Electrotec with its strength and durability, which far surpasses that of traditional copper. Electrotec was confident that the cable, having withstood tanks rolling over it in the desert, could take the pressures involved in a Rod Stewart tour and hired engineer Greg Horn to look after all aspects of the cabling.

Horn said: "I've been involved with Electrotec for over six years and they wanted a crew member dedicated to this. Lars wanted to bring it out on this rig provided there was someone around who knew how to terminate fibre and troubleshoot it. To date we haven't had anything to troubleshoot. We're running about 76 channels' worth of band and orchestra mic and line level to the FOH and about 26 channels of returns which include talkback.

"We have cables the size of a microphone line holding 128 channels of audio, and they'll run for three miles without any loss. In a regular situation, we would string the 'snake' up from the ceiling, put two ropes over the top and pull it up, then just drop it at the end of the show. The reason that Lars wanted to bring it was that we're doing a bunch of festivals where we're taking all our FOH gear and monitor rigs, and we'll want to pull out our snake before the show's over. We can do that in 10 minutes! There's about a mile of this stuff and it weighs only 180lbs, as opposed to 300ft weighing 250lbs. On top of that, there's no mechanical protection so we haven't spent time running ground loops."

LIGHTING & STAGING

The lighting rig was designed by Lars Brogaard, LSD's Kevin Forbes and Jeff Grainger, and the brief requested that the lighting design team keep it simple, but bright. Responsible for making it all happen every night on tour are LD Martin McLoughlin and Icon operator, Mark



The 48-channel Midas XL4, three of which are in use on the tour.



Rikki Farr (left) and Lars Brogaard (centre) with Bryan Grant of Brit Row.



Mike McNeil, Stewart's monitor engineer.

Payne. Stewart's Wembley set kicked off at 8.15pm when there was still plenty of daylight and ended with the moving finale of 'Sailing', accompanied by Jeff Gilreath's spectacular pyro display and the obligatory waving of lighters in the evening sky. For the first 10 or so numbers, the lights remained an effective white, but, as McLoughlin explained: "We have a meeting before the show to decide at which point we go to colour. That is dictated to some degree by how dark the sky has become, but even in daylight, the white Icons give the stage a real edge. So adding colour for the first time is an impressive effect in itself.

"We were left alone to get the show together. I believe in giving a client exactly what they want and if it's a big, simple show they're after, then that's what they get. In the past we've had more theatrical looks, but Rod likes to be the centre of attention with the lights around him, rather than the lights to be all around and him just be in there somewhere. There are, of course, some moody ballads like 'Have I Told You Lately That I Love You' and 'Tom Traubert's Blues' in the Unplugged part of the set, where we keep the stage all blue with a white spot on Rod - but for the most part it has to be bright."

The plexiglas stage is a completely new design by Ian Knight and Rikki Farr, built especially for this tour. The central part of the stage is an under-lit moving plexiglas dome in which the orchestra sits. Payne said: "The core in the middle ejects Rod Stewart out for a rather slick entry. It makes for a slick departure as well! Rikki also had some involvement with the lighting and having been with Rod for many years, he is able to interpret Rod's wishes very closely. Everything's been designed from scratch including the roof which was designed by Mikel Brogaard Staging and the stage will, no doubt, go on to be used by several other artistes as it has been very successful.

"We've only done three shows and we've locked into what is a very successful, bold and effective look. In a stadium situation, if you're going to go red, everything's going to have to go red, and if someone's got a hope in hell's chance of creating any kind of atmosphere on stage, it's got to be bright. We have 21 LSD Megamags over the stage in two circles which are literally focused on the stage. Generally, we use one colour per song and sometimes split the Megamags half and half. There are also 20



LD Martin McLoughlin with Icon operator Mark Payne.



Aura solenoid drivers under the drum stool.

Molemags and 96 C-Mags, and there are eight 3kW Gladiator spots around the stage and four 1200W HMI spots on stage. Martin covers filter spots, we cover solos with the spots, but most of the time everything is focused on Rod. The band plays quite a low profile; it's an excellent band, but they are very much in the background."

McLoughlin added: "The total power of the lighting rig is around 650kW since we added all the runways to the stage. We have three 72-way dimmers, two 32-way C-Mag controllers and I operate a Celco Gold 90-way console. It's a fabulous desk, although on this show, not a great deal is demanded of it. It's just pushing chases and big washes. Mark operates the Icon console which controls 24 Icon active heads and, again, he's not doing anything complicated."

Payne, who previously worked with Stewart as a Vari*Lite operator, insisted that while the lighting for Stewart is important, it remains a secondary aspect of the production. "I think we've done a good job of making the lighting very effective, while not overshadowing what's going on. It's quite refreshing to see a show that is very straightforward and uncomplicated."

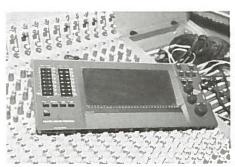
FOUR JUMBOS IN THE RIGGING

One of the most visible equipment suppliers to the Stewart tour is Hampshire-based Screenco, which celebrates its 10th anniversary this summer as the leading rental company of giant video screens to major outdoor rock concerts and festivals, as well as to top sporting events. Its most recent successes have been largely a result of its massive investment in Jumbotron video screens, each complete system costing in excess of £2 million. That, however, represents only one-third of Screenco's overall commitment to system inventory. But, as managing director David Crump told me after the show, for concerts such as Rod Stewart's Wembley appearance, which boasted four screens suspended around the stage rigging, this technology is absolutely vital to audience appreciation.

The JTS80V in use on the Rod Stewart show



David Bryson, band monitor engineer.



The BSS Varicurve remote unit.

was Screenco's first Jumbotron system and is a joint venture with Arsenal Football Club (an unintentional coincidence for the soccer mad singer). Crump said: "This particular system is owned by Arsenal FC but we operate it for them, hiring it out between matches and out of season. It works very well for both parties because they use it for their matches and we generate income for them at other times. The system is actually being used for two weeks at Lord's Cricket Ground during a break in Rod's tour. The key to making it that versatile was in coming up with the right design and packaging of the equipment so that assembly and dismantling was quick and simple, and it could be used in all situations."

Physically, the JTS80V is identical to the screen used on the Genesis tour in 1992 and its main advantages lay in its high resolution and modular construction. The screen is supplied by Sony in units of 352mm x 352mm blocks. Each unit contains 256 pixels and Screenco mounted the standard Sony 'building block' units four wide by three high to form a 1.408m by 1.025m, 220 kilo module - essentially an aluminium frame holding 12 units.

In the configuration used for Rod Stewart's show, Screenco constructed the screens three modules wide by three modules high (3 x 3) to give a total screen measurement of approximately 4.5m by 3m. "To do what we did with Rod Stewart would have been unheard of two years ago, because video screens were huge 20 ton lumps of equipment that had to be lifted in by a crane. The configuration we've used on this tour is probably the smallest we would ever expect to go with a Jumbotron system," commented Crump. "The smaller you make the screen or the fewer modules you use, the fewer pixels there are and effectively the lower the resolution. If we had made the screen any smaller for Rod, I am sure that the picture quality would have been unacceptable, but most people's opinion was that the resolution at the concert was very good.

"I think we struck a good medium on the size because a bigger screen wouldn't have worked. Firstly, there was the cost factor; secondly, a bigger screen would have added too much weight to the rigging. Each of those four screens had 192 pixels horizontally and 144 vertically, giving a total of 27,648 pixels which is an awful lot lower than a conventional TV picture. When we designed the modules we specified TV



LSD's Icon desk controlling 24 Icons.

aspect ratio, four units wide by three high, so that if we wanted a TV-shaped screen we would simply configure the modules in a 3×3 , 4×4 , 5×5 arrangement, and so on. But there is no reason why you cannot make screens with a different aspect ratio, in a narrow or extended wide shape, although they are conventional aspect ratio for Rod Stewart."

Each module is fed with horizontal and vertical data cables, with one cable for each column of units, and they are addressed on a matrix basis to enable calculation of which item of visual information each unit should be showing. The modules are each fitted with one 16 amp power connector and the main image controlling is performed by a separate rack at floor level. It receives a normal composite video feed, A-D converts it and sends it out to the screens as a multiplex datastream.

Crump said: "As we are running four screens for Rod Stewart, we purchased from Sony a £20,000 splitter system which was originally designed for basketball arenas. We are the only rental company in the world to own one. It takes the output of one image controller and splits it equally four ways, so that the image on each screen is identical. We couldn't really put different pictures on each screen. This kind of technology is ridiculously expensive in comparison to the cost of other equipment which goes out on the road."

Standing close to the mixing platform, I found myself paying more attention to the on-screen video images than the real-life action on the stage. That in itself speaks volumes for the quality of the Jumbotrons. Crump agreed: "Everybody I've spoken to said that it was difficult to keep their eyes off the screen. But at the end of the day, the artiste and staging is absolutely essential to the show, otherwise

there would be no audience. People go to a stadium show for the atmosphere and excitement of the spectacle. But video screens are becoming an integral part of the set-up; it's visual amplification and I no longer believe it's fair for an artiste to perform to a crowd of 85,000 people without screens.

"The concept of doing the show in-the-round was that it brought Rod much closer to his audience. Because of the way the cameras were positioned, it meant that at all times Rod was facing a camera and could be seen clearly on a screen, no matter where he was on the stage or where you were positioned in the audience."

Creative Technology, which is owned by Screenco's holding company Avesco plc, provided all the video production equipment for the Stewart tour on sub-hire to John Basile of Videopac Systems, who was one of several crew members beavering away in the claustrophobic under-stage confines. In charge of the raw video material being sent to Basile was video director Mick Anger, who is clearly in awe of the technology at his fingertips. He said: "Having these Jumbotrons is not something I could complain about! I've worked with Screenco quite a bit over the last 10 years and we did Genesis's 'Invisible Touch' tour together in 1987. Starvision was the state-of-the-art medium then, but Jumbotrons are in another field entirely."

Although the images shown on screen are predominantly close-ups of the live performance, some numbers include videotape inserts. Examples include a Top Of The Pops' clip from 1971 with Stewart and The Faces performing 'Stay With Me', portions from the cartoon promo for 'The Motown Song' and 'home movie' shots of Stewart's wife, Rachel Hunter, and children shown during 'Have I

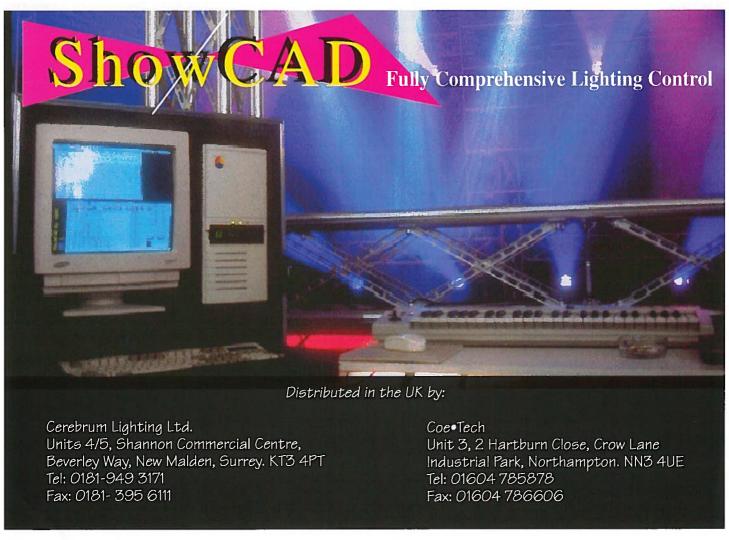
Told You Lately That I Love You?'

Anger said: "We shoot the show as close as we can to make the best use of the screens. If you were to put a wide shot up there it would make everything look a lot smaller."

The essential tools for this job are Sony 70IS cameras, two Elmo 'lipstick' remote cameras and a Grass Valley 110 switcher in the processing equipment. "We're using two 30:1, one 35:1 and two 14:1 lenses on the cameras near the stage," said Anger. "Five of the cameras are manned and two of them fixed one on the drums, the other on Chuck Kentis, the keyboard player. The main duty of three of the cameras is to follow Rod and, obviously, since we are in-the-round, I need several to capture his movements at any given moment.

"I'm really happy with the outdoor set, it's beautiful. When you consider that's all the steel required for the whole PA and everything, it's a marvellous feat. It takes 10 guys six hours to put it all away. For a show like this you would normally be talking about three days to get rid of all the scaffolding."

Anger has worked in video since 1978 and one recurrent problem he has faced is lighting directors' lack of sensitivity to the role of video. He said: "The best you can do with lighting people is to just go with them. Your best break is to have a good engineer and a band member who says that he can't be seen by the audience. Most LDs won't even enter into a conversation with me. I don't want them to change their show, but they have to realise that the human eve is different to the television camera. You just have to do the best you can and Rod's show, for me, is the best of both worlds. It's Europe in the summer, so we have daylight and I don't have to worry about the lighting guys, plus I have the luxury of Jumbotrons."





"For the first time wireless doesn't sound wireless!"

Combine the superior sonic performance of the C 5900 Tri-Power condenser vocal microphone with the only receiver system using AKG's revolutionary UHF antennaverter technology and what do you get?

- 12 microphone channels on any one TV channel.
- No noise because no RF booster needed.
- Absolute, night-after-night reliability.

Compare AKG hardwire and wireless microphones. You won't hear a difference. WMS 900. Also available with C 535 or C 1000.



Lars Brogaard, live sound engineer for Rod Stewart.





A Harman International Company

AKG Akustiche u. Kinogerate Gesellschaft m.b.H. Brunhildengasse 1,P.O.B. 584, A-1150 Vienna/AUSTRIA Tel: (1) 98 124.0* Fax: (1) 98 124-245 Telex: 131839 akg ac a

Harman International Industries Limited Unit 2, Borehamwood Industrial Park, Rowley Lane, Borehamwood, Herts. WD6 5PZ/ENGLAND Tel: (0181) 207 5050 Fax: (0181) 207 4572

A DECADE OF CHANGE

Steve Moles catches up with the stage crew who worked on Live Aid and finds out whether the ten years since has treated them kindly

That the Live Aid show at Wembley was a landmark event for the British music business hardly needs saying. The global stature of the broadcast, coupled with a similar concert in the US and many smaller national events around the world, brought pop and rock to the attention of a truly enormous audience, unparalleled in history, and let's not be churlish here, for a very worthy cause. If you need reminding of what it was like, the BBC will be broadcasting several 'specials' on July 15th (just past the tenth anniversary, the closest Saturday to the day in question), including six-and-a-half hours of recorded television footage on BBC2.

For those of us who were there the many sound, lighting, stage and electrical crew who worked on the show - the day's events flashed by in an instant. For most, it was months

before we were able to sit down and watch the video playback and really take on board what it was that we had been a part of. Despite the prestige and scale of the show, and contrary to what you might imagine, most of the crew were not chosen for particular prowess. It was a busy touring summer all around and the main lighting and sound providers (Samuelson/Vari-Lite Europe and Malcolm Hill Associates) had to draw on who was available. That's not to say competency wasn't a foremost consideration, but rather that necessity determined choice. For many of us, it was just a case of being available in the right place at the right time.

The show had a profound influence, and not just on the plight of several million Ethiopians. Most notably, it re-launched the career of Queen, who had for a couple of years been languishing in the shade. Their performance at Live Aid brought them to a wider audience and also underscored Freddie Mercury's astonishing ability to capture the undivided attention of not only the 60 odd thousand in Wembley Stadium, but also all those who watched on TV. But what of the crew? Did they all go on to greater things? Was such a high profile event a springboard to their careers? Dealing with all those it was possible to contact, and in no particular order, below is a thumb-nail sketch of where they are now.



The Live Aid show at Wembley - a landmark event.

Lighting

Mike Humenuik has been through some tumultuous times. He rose to crew chief his own tours immediately following Live Aid and topped off this phase in his career in early '92 with an extensive Joe Cocker tour. He then came off the road and took over as warehouse manager for Samuelson Lighting Division at Fairway Drive, a role he developed and defined until his departure in the Spring of '94. Following this, he has returned to the road, perhaps the place he most enjoys to be, and is currently crew chief for the seemingly never-ending round of tours undertaken by Take That. Curiously, that band seems to have become a haven for several of the Live Aid crew.

At 50 years of age, Brian Condrey, if not one of the oldest men of rock and roll, is certainly one of the oldest active crewmen on the road! One of life's gentlemen, Brian has never felt the urge to stray away from touring, despite his age, and has contrived to arrange other interests in his life. He is, like many roadies, an accomplished musician and when time permits still writes and records his own material. Will he ever retire? "No, I still enjoy it too much." Brian has been working almost solidly with Take That for the past two years, imposing his calming influence on LD Simon Tutchener.

Kate Crampton was, to my knowledge, the

only female crew member on the day. It reminds us all that it was only 10 years ago when, with the exception of those wonderful women in the catering department, women were a rarity on tour, certainly amidst the technical crew. Kate remained a lampie until 1990, by which time she'd made a speciality of running the main stage lighting system for the Roskilde festival in Denmark each year. By this time she was married, inevitably to a sound engineer, and the two of them, both recognising the immense strain touring places upon a marriage, left the road and took 'proper jobs'. Kate has since run a Ritz video shop and a seaside boarding house, written a children's book and is currently vying to become a local magistrate (citizens of Scarborough, you have been

warned). Does she miss the road? "Only the money. Well, the money and the people. Hmmm. The money, the people and the travel."

Steve Nolan is a well known name in this journal. Steve has, on his own devices and through a long-standing relationship with Patrick Woodroffe, built a varied career. He now divides his time between crew chiefing, lighting design, operating and organising some of Patrick's more esoteric shows. In recent years, he has carved out a well deserved reputation for lighting classical music.

Phil Freeman was lighting designer for Live Aid: it fell upon him to provide a generic system that would satisfy the cameras, as well as the egos of the stars. Central to his task was having to fend off the numerous 'suggestions' submitted by Peter Clark (SuperMick) and Paul Turner (then head of Samuelson Lighting) about how he should do this! Phil is of similar vintage to Brian Condrey - 48 this year, and he too is still on the road, designing most recently for one of the Glastonbury Festival stages. Like many others featured here he is "... content to earn a crust, and have a good time doing it."

As for myself, Steve Moles, well as you can see I now scribble for a living and I must say it's very nice. Do I miss the road? No, I've no desire to get hot and sweaty in the back of a freezing cold truck at 3.00am outside Madison Square Gardens in the depths of winter, thank you.



CALL
US
TODAY
FOR OUR
NEW
ILLUSTRATED
BROCHURE

Since I 884 we have been manufacturing and supplying iris diaphragms.
Today, with a reputation second to none, we supply many of the leading companies in the Television and Theatre industry, from our wide range suitable for all applications

Wilkes Iris Diaphraym Co Ltd

Widco Works, London Road, Bexhill-on-Sea, Sussex, England Telephone: (01424) 217630 Fax: (01424) 215406



Sound

Malcolm Hill wound up his PA rental company, Malcolm Hill Associates (The Live Aid PA supplier), in late '92, and is now concentrating purely on his sound equipment manufacturing company, Hill Audio. Designing sound equipment is what he likes to do best.

Despite being company boss, Malcolm played a hands-on role on the day, and amongst many other items had his manufacturing company build a custom stage box for the show. He also provided two monitor and two FOH consoles for the event, something we now accept as commonplace but in 1985 was considered something of an extravagance.

Martin Conolly did all the logistical planning for the concert, arranging rehearsals and scheduling in crewmen and equipment, but wasn't actually there on the day, as his wife was in hospital about to have baby. Martin left MHA days prior to its wind-up in 1992, jumping straight on to the then-current Status Quo tour. He soon became their monitor man and through regular contact with Capital Sound (Quo's PA supplier), was asked in '94 to join the company as rental manager by its owner, Keith Davis.

Mike Scarff had the unenviable task (with Andrew Jones q.v.) of 'baby-sitting' the FOH consoles on the day, hand-holding many a band's engineer through an intense 20 minutes of patching and EQ hell prior to the band's arrival on stage, ready or not! Already a well-established sound engineer, Mike was also Malcolm's partner in the PA rental business at the time. Mike now owns Malcolm Hill Associates outright in the U.S. (trading as MHA Audio), which is based one hour West of Washington DC. He still mixes when the need arises but devotes much of his time to the

running of the company.

Andrew Jones also now has his own company, Media Mobiles, with partner Andy Peacock. The company provides mobile location vehicles for the photographic industry, a Mercedes 709 van fitted with TV/video, fridge, toilet etc, etc. Andrew is still an active sound engineer, having worked almost non-stop with Paul Weller for the last three years, he has also diversified into studio engineering, having recently worked on both Paul Weller and Carmel's latest live albums.

Andrew was, in fact, only supposed to be doing sound for Midge Ure on the day (being Ultravox's FOH engineer at the time) but, "It was obvious that Mike Scarff would need support, and as I had worked with Malcolm Hill equipment many times, I volunteered and ended up out there for the whole day."

Phil Tame is still active as a sound man, dividing his time between John Henry's and Big City Sound. He has been working as a FOH engineer for the past seven years mixing for the likes of Tanita Tikaram, Bonnie Tyler, Fish and more recently Warren G, but for Live Aid, he was responsible for monitors. Phil would like to tour more (he mainly does one-offs these days), but as a father (boy and girl aged four and two respectively) is still quite content to have so much time to spend with his kids. Phil also rather bravely volunteered that he thought it might have been him who was responsible for the faux pas of the event - the failure of Paul McCartney's microphone - but when pushed he said he couldn't really be certain.

The sound crew ran to a cast of thousands, and most of them still appear to be on the road: 'Privet' Hedge is on tour with Eric Clapton; Tom Boyle is looking after the stage set for Wet Wet; Steve Dove was last sighted heading off to

Showco in Dallas, but according to them has never arrived; Paul Timmins is working for Capital Sound on Take That; Kevin Hopgood is baby-sitting monitors on Simple Minds; and John Callis progressed onto monitors and is currently working for Mike and the Mechanics.

For all the other working crew on the day, scaffer/riggers like Tom and Ashley, the lampies who worked unseen and non-stop for five days to illuminate the stadium roof, and the many others not mentioned here, apologies. Space only permits a focus upon those who worked the stage.

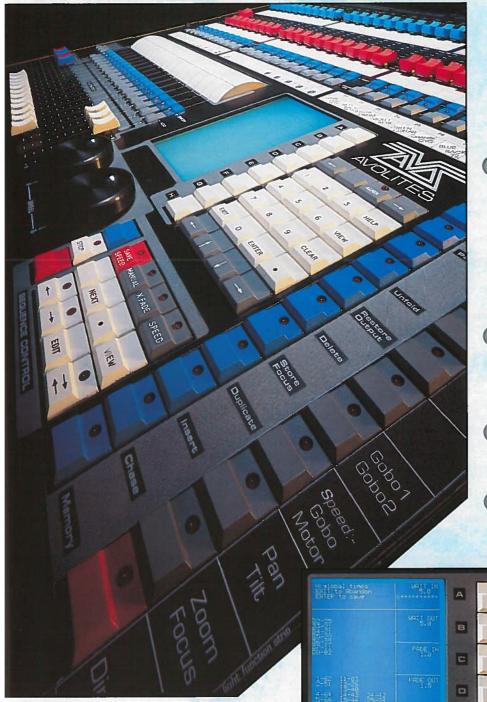
So perhaps not so earth-breaking after all for those who 'only serve'. A couple of career changes here and there, but even then not born out of the event, but more from economic or social influences. No meteoric runs up the ladder of success, no rapid promotions, but then maybe this confirms how fortuitous was the choice forced upon those who had to decide. Most of the crew contacted here, both sound and lights, are of the opinion that the London show was superior in presentation and professionalism than that staged in Philadelphia, and I've heard many an American admit as much also. I mention this as Phil Freeman is exceedingly modest about his lighting contribution: "There's always somebody better, I'm not great." And yet acclamation of the visual aspect of the show is practically universal. Similarly, if one screw-up with Paul McCartney's vocal mic is the only thing the sound crew have to fret over, then considering the circumstances their achievement was extraordinary.

For the many who still practise the same role they had on that wonderful day, surely their continued presence on the job, in spite of their age, underlines their lasting prowess.



UK AJS Ph: 01425-470 425, Fax: 01425-471 398 **SWEDEN** Avab Ph: 08-702 2445, Fax: 08-641 0015 **DENMARK** Kunekco Ph: 035-822 728 Fax: 035-824 141 **FINLAND** Foki Ph: 00-561 2066 Fax: 00-561 2441 **NORWAY** CP Norway Ph: 055-297 170 Fax: 055-296 950 **SWITZERLAND** Licon Ph: 061-311 3010 Fax: 061-312 5471 **SPAIN** Stonex Ph: 91-471 5597, Fax: 91-471 9703 **ITALY** Decima Ph: 049-870 1655 Fax: 049870 1656 **Selecon New Zeatand Ltd.** 26 Putiki Street, Grey Lynn, Auckland, Ph: 64-9-360 1718, Fax: 64-9-360 1719.

SELECON



THE PEARL PURE POWER

- SIMULTANEOUS CONTROL OF 30
 INTELLIGENT INSTRUMENTS
 (SUPER SCANS, INTELLABEAMS,
 VAR/*LITE 5's & 6's ETC.), 60
 COLOUR CHANGERS AND FULLY
 LOADED DIMMER RACKS
- THREE DIMENSIONAL INTELLIGENT
 TRACKING SYSTEM FOR CONTROL
 OF MOVING LIGHTS
- 15 SUB-MASTERS FOR CONTROL-LING MEMORIES OR CHASES
- 450 MEMORIES (OR CHASES)
 - DEDICATED FOCUS

 (PALETTE) BUTTONS FOR

 POSITION, COLOUR, GOBO

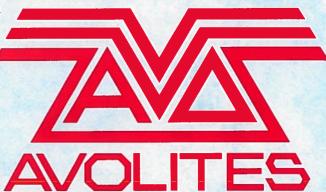
 ETC.
 - O ANY CHANNEL MAY BE
 OUTPUT AS 16 BIT HIGH
 RESOLUTION DMX
 - EASY PROGRAMMING, LABELLING AND ORDERING OF CUES

- SEPARATE ADD AND SWOP

 BUTTONS FOR MASTERS AND

 CHANNELS
- BUILT IN GRAPHIC SCREEN AND OPTIONAL COLOUR VGA
- STORE OR EDIT A MEMORY WITH TWO KEY PRESSES
- THREE CHANNEL SOUND TO LIGHT INPUT
- TWIN DMX OUTPUTS, DMX INPUT, MIDI PORTS,

 3.5 INCH PC COMPATIBLE DISK SYSTEM



1995 LIVE! AWARD WINNER FOR NEW LIGHTING CONSOLE

MASTERS AT MARKETING

Following the recent double announcement of the amalgamation of Entertainment Technology within Rosco Laboratories and their direct involvement in manufacturer of dichroics, L+SI's editor visited the company's Port Chester New York HQ and talked to the man at the helm, Stan Miller

Having created a legend, and you're still only 63, what do you do next? Allowing himself a few moments of quite justifiable self- questionning about what he'd achieved for the industry, what he'd brought to the party - apart, that is, from straightforward commercial success, Rosco Laboratories' CEO Stan Miller smilingly detailed for me the company's plans for the future. And, rather than entrench what is possibly the industry's biggest and most successful international marketing and distribution operation and live satisfyingly from it ever after, Miller and his men are going for growth big-time, and in a fashion that will see their operations spread to a very much wider plane.

"Our latest developments are the coincidence of a number of things coming together," explained Miller. "In fact, I think most development happens this way." And in his view there were two key factors at play. "I have been in this chair for 38 years and ask myself what have I brought to the industry (Stan Miller, along with Len Kraft, bought Rosco from its founder in 1958. Kraft passed away in 1979 and Miller became the sole stockholder). I have spent my life working with products for theatre, television, film production and been fortunate enough

to have had a vehicle for making a difference. The second factor is that unlike some people I am not contemplating moving. I enjoy what I do, and I want to continue doing it. I have been blessed with the health that permits me to come to work."

Behind the scenes, Stan Miller and his management colleagues have been giving a great deal of consideration as to where the company should go.

"To some extent we are troubled that the cause of our concern is the success we have achieved," continued Miller. "We have a level of sales, turnover and earnings that we are proud of and which I see as a significant accomplishment. However, no-one feels we should keep it at that - business people don't think that way. We are interested, and committed to the growth of the company. Over the years we have made a point of bringing in younger people, so we have a mix of ages. Michael Hall of London, Peter Edwards in Canada and myself are 'old men', but we have many 30-year-olds who have good positions in the company and they are here for the next 30 years!

"Even if I were of a mind to say 'I'll sit on this and get some income out of it', I could not run the operation and keep these people if we didn't strive for growth. The company has to find ways to grow and we are burdened and blessed with success. Many of our products have a very large market share and you can no longer operate a major business in the performing arts and say that



Stan Miller, in his office at the company's Port Chester HO.

you only sell in the US or UK, for instance. We are in a growth market and have the need and the opportunity to grow."

The question that has troubled Rosco over the past few years is to determine where new growth is to come from, but common sense will dictate that it will rely on the company's greatest strength, its established distribution

"Our greatest chance of achieving growth," says Miller, "is to find the products that fit our distribution. And it is important to note that there are relationships that I have in our dealer network that go back more than 50 years. The company dates back to 1910 and there are

Supergel: the image most associated with Rosco.

dealers that started with us in the twenties and thirties."

The first move in the Miller masterplan was to structure a deal, launched at the USITT convention in Las Vegas in March, whereby the interests of Entertainment Technology of Portland (Oregon), the highly innovative lighting control development and manufacturing outfit run by Gordon Pearlman and Steve Carlson, were merged within the Rosco group.

"They had been limited by availability of resources, distribution and access to the market," explained Stan Miller. "I felt that by putting their skill, innovation and technological base together with our ability to create demand and make the product available, was very logical. It is also an example of the changes taking place in this industry and that technology is a critical element of a theatrical production today, despite my natural fears that people involved with production often fall in love with technology for its own sake and lose sight of the fact that they are trying to put something on the stage. However, high tech or low tech we have to provide the designer and the technicians with the necessary tools, and I see the ET merger as the first step in broadening our capability to service

the market."

The new style agreed for future presentation shows the Rosco and Entertainment Technology logos equally balanced. "It clarifies our approach and reflects our thinking. ET remains as a company and the same people remain with it. It made no sense to start dismantling an established reputation. The management have done a fine job of developing products - the key now is what do we bring?

The answer, quite simply, is international expansion for Entertainment Technology products. But, would this new departure into lighting control upset any of Rosco's traditional

distribution arrangements along the way? Stan Miller was sensitive about the situation. but didn't feel he had a major problem on his hands, and a great deal of pre-announcement discussion and consultation has already taken place.

His attitude is pragmatic, determined and decidely non-combative. "I have tried to make it clear to companies that feel there may be an element of competition, that we see our niche as slightly different. We think that we will compete in certain areas of the lighting control market, but with products that are not the same. Most dealers have a number of dimmer or lighting control relationships and it depends on what is specified on a job by the customer, rather than what they want them to have, and it's not unusual for a stage lighting dealer to deal with four or five suppliers.

"If we do our job correctly there will be a lot of specification of ET equipment around the world, and we will endeavour to create demand by getting the product specified and the distributors interested in it. If there is a case where our existing exclusive agent already handles (say) Strand, then I don't expect them to change the situation. What I would like to be able to do is to convince them that there are parts of the market that ET products fit into. There may well be other circumstances where things don't work out, and in that case we'll find some other way to create demand."

Another major announcement from Rosco HQ is in the field of dichroics, a natural development of their filter business and to that extent a more easily understandable part of the expansion plans. Colour is still the game, and Spectrum Imaging Laboratories - a joint venture operation based in Austin. Texas - is the name.

"It would be ludicrous for a company like Rosco to say 'we will supply you with colour film for your lights, provided it's the plastic colour that we make'. If a customer wants colour in a certain form, it is obviously in our interests to supply it, otherwise we are forcing them to go elsewhere. I see dichroic filters as an addition to the range of tools a lighting designer has at his disposal."

Rosco had already made the general descision to add dichroics to their range and began buying from a major manufacturer, but the range and consistency of colour available, long delivery times and the problem of small batch ordering posed problems. "We had to find a way to do it ourselves," explained Miller. "We didn't have the technology so we went into a joint venture operation with people who did. We had the resources and the access to the market. They know how to make the product. And it's another example of where the technology moves on and goes beyond the traditional parameters."

Gene Brummett of Spectrum was in Port Chester during my visit, and he explained the state of play. "We have just completed the last installation of equipment in Spectrum's laboratory and are currently about 85 per cent of the way towards establishing our stock of 22 colours. This work should be completed by the end of June.

"I feel that in the past the lighting industry has not been given enough attention from the manufacturers of dichroics and we are looking to establish standards for the industry in terms of colour and colour matching. We need to show the rest of the world it can be done and I believe we are the people who can do it. Rosco, after all, is the colour company!"

And Miller capped that: "If any other form of colour comes along then we will be in it! We are a marketing company that manufactures, as opposed to vice versa. It's our job to provide the products that people need, and in the case of glass I wasn't embarrassed that in the first instance we didn't actually manufacture it. We bought it and resold it and we provided a service."

Getting back to basics, Rosco's closeness to the market it serves is the stuff of text books, and their 20-plus product range covers a huge array of consumables for use in theatre, motion picture, television, theme park and general entertainment industries. Its strength, apart, of course from coming up with consistently reliable products, lies in its access to the professional, amateur and academic markets



Stan Schwartz, marketing icon.

through its sales force, direct marketing programme and dealer network (over 300 outlets in the US alone).

The company employs around 150 people world-wide and has 12 facilities spread across seven countries with its associated plastics company based in a 80,000sq.ft complex at Lakewood, New Jersey. Committed to improving its penetration into markets outside the US, it has set itself the goal of raising the current level of overseas earnings from 35 per cent of total sales to 50 per cent by the end of

1996. The ever-changing and sophisticated demands from the broad entertainment industry will continually pull new developments out of Rosco, just as they have in the past. And to monitor what's going on at the front end, Miller has his people "out with the designers all the time".

In January 1994 Rosco's US-based senior management gathered for an off-site meeting and a further session was held in May with their international managers joining in. The theme of these meetings was 'Reinventing Rosco' and the focus a tripartite plan for growth. Summed up, the opportunities for growth included the introduction of additional products and product line extensions, development of the international market (with the possibility of additional subsidiary companies) and the acquisition of companies offering related products for the established market place.

Proof that they mean business is self-evident from this article.

Development into the high-tech field of dichroics should be straightforward. It fits their product portfolio hand in glove. In my view, the real test will come in their effort to break seriously into the lighting control field. Wisely, they've kept the integrity of Entertainment Technology intact. It's now down to the famed marketing expertise of executive vice-president Stan Schwartz . . .





COLORS AS FOLLOWS

132 Magnett History, Steel Blue 143 Litter Blue 143 Litter Blue 142 Emerald Green

Packed in bottles Half pints, pints, quarts and gallons

Rosco Glocolor



ROSEOD docodors for a sparcel color the t-penduc a finish equal to the spraced colors is lamp factories. SEO Checolors describe a mart finish. They the lamp charact meiodic, they are drug. This is an important leature as if the lamp of things on both from true to window charge on both from true to window charging all.

RoscoOpaline



Findings a first signorial political unitary Have partition via bibey. All glare climinated, any idaments or hidden. Especially distribute for sign finings because of an wonderful weather resisting equalities, and illume color times. Dries to 3 manufes.

cked in oversized pint quart, half gullan and gallan friction top cans

Rosco Frost Etch



SPELIDY Just dip, russ and dry

Prost 1 telt also cleans the faded cube from a tury sprayed lamps, so that they can be recolored ith. Glocolor,

Bowl freeting may be there free hand with a high degree of uniformity.

SAFL: Will not in me bands or clothing. Has pleasant infor, fike molasses.

Half gallon size has a wide month and allowance r displacement to an onodate a 300 Watt Mazda Parked in sandy quari, but gallon and guiton ellen top into

WHEN A SUPERFICIAL OR NON-ETUHING FROSTING IS DESIRED USE No. 300 FROSTINE



Wittesia Enamel Scrifts, It by Israela, It I Morrela Bun Mythesia, Grass Canarygia Irass

Gelatine Sheets For Spotlights

OF FIXE TEXTURE

Size 19-21

Large enough to make your spotlight sheets

COLORS

114	Landy	14	Michigan Ble
1.2	*4FAN	11	Dark Blue
+5	Light Amber	34	Green Blu-
114	Amel - p	11	This Bist
4	Part 4	10	Rive Phil
41	Maganta	14	19115
. 01	Table 1	73	H~I



Rosco Solvent LAMP CLEANER

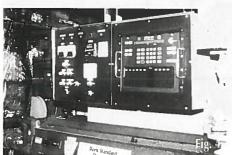
Rosco Thinner



131 THIRD PLACE, BROOKLYN, N.

An old advertising poster, showing some of the early Rosco product range, which included 'gelatine sheets for spotlights' and a range of colour products, available by the pint, quart or gallon!

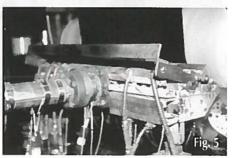


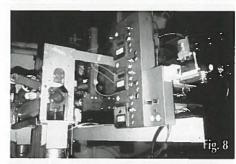


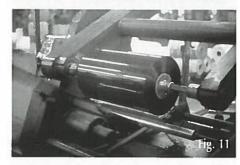




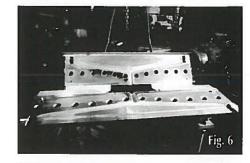
















Supergel: The Manufacturing Process

The Supergel manufacturing process is unique among colour filters in that it begins with powdered resin (Fig 1). Generally, filters are made by coating or dyeing clear plastic film, but in the production of Supergel, the coloured plastic itself is manufactured.

The predetermined formulation of dyes is blended with the custom compounded resin in the hopper of the concentrate extruder. The mixture is melted and forced through a 'spaghetti' die (Fig 2), creating strands of coloured plastic. These are cooled and chopped, producing concentrated pellets of a specific Supergel colour (Fig 3). These are then dried for four hours in desiccation tanks.

The production of plastic is done on the main extrusion line. The pellet is fed from holding silos into the hopper. Powered by a 50 hp motor, the screw drives the mix through the heated barrel at a rate of 350 pounds (5,000 sheets) per hour. Temperature is controlled in four separate zones along the barrel. As the screw rotates, the shear or friction develops heat and the zones are then cooled to maintain temperatures within a limited range (Fig 4).

The flow from the main extruder moves into the coextrusion block where it combines with a flow of clear resin from a second, off-axis extruder. A flow plate diverts the flow by predetermined percentages into clear layers on the top and the bottom of the film sealing in the colour core.

The clear-colour-clear flow moves into the die (Fig 5) and spreads out across the 'coat hanger' channel (Fig 6). There are five heating zones across the die to

control the temperature of the resin.

The plastic exits the die at a thickness of about four thousandths of an inch. The opening of the flexible die lip is controlled by bolts placed one inch apart. The die is positioned within one quarter of an inch of the chromed roller (Fig 7) and the plastic flows onto the roller, cooling to a stable film virtually instantly. For clear colours, both the upper and lower rollers are chrome rollers to polish the film. For diffusion, various matte rollers are used to emboss the top surface.

The film moves between idler rollers which maintain the path (Fig 8). Colour consistency is continuously monitored by an on-line colorimeter. Since the film is coloured through and through, thickness is critical. Thicker film will be darker, thinner will be lighter. To monitor gauge, the film passes through a device which pulses beta rays through the plastic to a sensor unit (Fig 9). The data is processed and displayed on a screen as a cross-section view of the film (Fig 10). If there are areas which deviate from the programmed thickness standard, the appropriate die bolts are adjusted to alter the opening of the die lip.

After passing through a set of driven rollers, the finished Supergel is wound onto a take up roll (Fig 11). When the roll gets to one metre in diameter, a new core is swung into place and the take up continues. After a final colour check, the film is inspected and converted into 50 pound masters. As a final step, the masters are sheeted, numbered and tissue-interleaved (Fig 12) or converted into 50 feet rolls.

Other Products

Rosco provides a wide range of consumables to the entertainment industry including:

Cinegel: The Cinegel series includes lighting correction filters and diffusers used to correct natural daylight and light sources when shooting with film or video systems.

Roscolux/Supergel: Roscolux (sold under the Supergel name in Europe) is the leading colour lighting filter line in the world.

Fog System: Rosco's fog and smoke system includes both machines and fluid. The range of machines includes eight Models differentiated by the amount of aerosol generated from a slight haze to clouds of smoke.

Scenery Paints: Rosco supplies a complete line of paints to the entertainment industry.

Connectors: Pin Connectors, male and female plugs for connecting high-wattage electrical cables, were introduced a few years ago and have captured 25% of the US market.

Roscomurals: Large-sized backdrops created from a simple photograph.

Rosco have promised that further new products will be introduced at the PLASA Show in in London (September 10th-13th, Earls Court 2).

IPS Dimming System

from Entertainment Technology

The IPS family of dimming products is one of the most innovative since the introduction of SCR-based dimmers in the late fifties. Introduced barely three years ago, IPS dimmers range from the 6x1.2kW DS1206 bar, an aluminium connector-strip style unit housing six 1200W dimmers, through the 3x2.4kW DS2403 (illustrated right) another connector-strip style housing containing three 2400W dimmers, to the Nomad, 3x600kW dimmers, packaged in a convection-cooled, lightweight configuration.

Instead of using heavy magnetic chokes and SCRs, the dimmers are solid-state using IGBTs (Insulated Gate Bi-polar Transistors) and sophisticated software that produces virtually silent operation. All IPS dimmers feature a focus button that toggles the fixture on for focusing, then off again, enabling one person to hang, focus and trouble-shoot an entire IPS installation.

All are controlled by industry standard DMX512 wiring and operate on any line voltage, from 90V AC to 140V AC, 50/60Hz. The dimmers are immune to short-circuit and each unit has built-in diagnostic software and an LED display to report error conditions, dimmer address and operation status. IPS dimmers also have Talkback, a unique feature that reports dimmer status including temperature, load size, line current and other information.

Colour Beyond the Theatre



This construction, assembled and photographed by Barbara Kasten at the World Financial Center in New York City, is an excellent example of the artist's goal of "de-structuralising and reorganising the forms of contemporary architecture. Utilising a truckload of location lighting equipment, two generators, a variety of flags, mirrors and a range of Roscolux colour filters, the artist was able to control light, add colour and rearrange images. The shot was set and photographed exactly as it appears, on site; nothing was added or altered in the laboratory or through multiple exposures. It was used some years later by Rosco as a marketing poster.



THE PEOPLE AT ROSCO

Stan Miller, chief executive officer, is the only person ever to be named both a Fellow of the United States Institute for Theater Technology and a member of the American Society of Cinematographers. He also serves on the Society of Television Lighting Directors in Canada and the United Kingdom. He was voted the Board of Directors Award by the American Society of Lighting Directors and delivered the keynote address at the 25th anniversary convention of USITT. He received the USITT Award for 'outstanding service to American Theatre' in 1985.

Mark Engel, vice president of finance and operations, earned an A.B. in Economics at Dartmouth and a Masters at Kellog School of Management at Northwestern. He worked at Bain Consulting before joining Chemical Bank's \$2billion subsidiary, Chemical Venture Partners, as a principal. In 1992, he joined Rosco as the director of corporate development and was promoted to vice president of finance and operations in 1993.

Stan Schwartz, executive vice president, graduated New York University in 1956 with a B.S. in Marketing. After several years with Doyle, Dane and Bernbach, he started a marketing consultancy in 1966. In 1968, he bagen his association with Rosco as marketing consultant and, in 1982, joined the company as executive vice president and director of marketing. Over the course of these 27 years, Schwartz has developed what is recognised, within the industry as 'Rosco style marketing'. He is recognised by associates, Rosco dealers and competitors as an 'authority' on marketing products for the performing arts.

Michael Hall, vice president of European operations and managing director of Roscolab Ltd in London, has worked in the lighting industry since 1955 in manufacture, technical marketing and lighting design. He was involved in the development of light sources for the stage and studio lamp division of GEC when Rosco convinced him to head up its UK operation in 1975. Hall is recognised as an industry leader and has been named a Fellow of the Illuminating Engineering Society. He is active in The British Kinematographic Sound and Television Society, The Association of British Theatre Technicians and The Society of Television Lighting Directors.

Roger Claman, vice president of sales, holds a BA degree in Communications from Emerson College. In his 12 years at Rosco, he has worked in every sales capacity within the company leading to his current position. In this, he works with Rosco's sales people and the dealers and agents in the US and abroad. He created 'Rosco University' and has established sales programmes and successful dealer incentive plans unique to Rosco.

Pedro Massano de Amorim, vice president for international development, is Portuguese, but grew up in Angola. He returned to Lisbon to study Electrotechnical Engineering at the Technological Institute and then moved to Paris. In 1965-66, he studied physics at Belgrade University in Yugoslavia and then spent four years in the Faculty of Philosophy earning an advanced degree. While at school, he became interested in film production and studied cinematography at the Institute of Dramatic Arts. Although he was qualified to join the philosophy faculty on graduating, Pedro chose to become a cameraman and eventually shot the major feature films produced in Yugolsavia. In 1974 he returned to Portugal and served on the faculty of the Escola Superior de Cinema in Lisbon. He was involved with Rosco's film products as dealer and in 1982 agreed to join the company and undertake the development of a Rosco subsidiary in Spain. After setting up Rosco companies in Portugal and Brazil, he was named vice president for international development in 1994.

Peter Edwards is president of Rosco Laboratories Ltd in Toronto, and was trained as a lighting director at the BBC. In the 1950s he relocated to Canada and was hired by CFTO, a major CTV production centre. When Rosco decided to open a company in Canada in 1983, Peter became its CEO.

Joao Macarone is president of Rosco Brazil. Prior to taking up his role with the company he was a well-known theatrical lighting designer, having studied in New York. Since joining Rosco Brazil in 1989, he has been responsible for the company's rapid growth.

Biba Campos, manager of Rosco Portugal, was a teacher of mathematics at Lisbon University but left in 1985 to establish Rosco Portugal.

lan Baseby, president of Rosco Australia, began selling Rosco products in Australia in 1980. In 1991, when Rosco Australia was formed, Ian became its president. He serves as secretary of the Australian Cinematographers Society, on the executive committee of the Australian Production Designers Association and the executive board of the National Entertainment Technology Association.



EUROPEAN & WORLDWIDE PATENTS & PATENTS PENDING.
ALL TRADEMARKS PROTECTED

JEM SMOKE MACHINE CO. LTD.

VALE ROAD INDUSTRIAL ESTATE, BOSTON ROAD, SPILSBY, LINCOLNSHIRE. PE23 5HE. ENGLAND.

TEL: (01790) 754050 FAX: (01790) 754051

AUDIO TECHNOLOGY 95

Mark Cunningham reports on the new-look APRS Show

More than 5,600 visitors came to see 154 exhibitors at the newly retitled APRS show, Audio Technology '95, held for the first time at the National Hall, Olympia. The visitor attendance total represented a slight increase over last year, suggesting that the APRS's decision to rename the show was not such a bad idea after all.

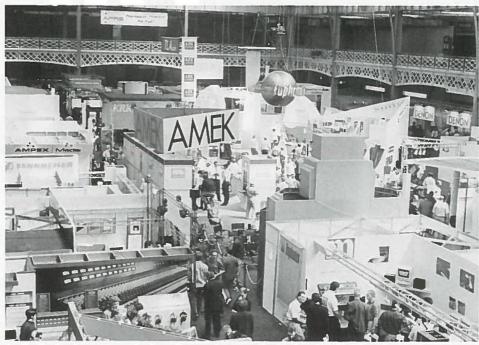
But 27 years on from the original APRS Show, what was it that inspired this dramatic change of title in the first place? APRS chief executive, Philip Vaughan explained: "People were confused about the exact definition of the APRS. Because the Show was such a popular event, the recognition of the APRS as an important trade organisation became lost and we had to raise our profile."

The show is no longer exclusive to the recording industry as it was when I first attended in 1980. Although representation in the studio sector is predominant, exhibitors in the fields of live sound and broadcast are always present, and with products such as mixing consoles, there is much crossover. Vaughan commented: "There may be manufacturers who need to keep tabs on all sorts of pro-audio technical development and the evolution of new technologies, who might currently be in live sound but are thinking about entering another field. So that was another valid reason for changing the name."

Having been at Olympia 2 for eight years, the APRS Board decided to coincide the show's rebirth with a new venue and situate everything on one floor instead of three. "As the show has evolved it has become increasingly sophisticated," said Vaughan. "It seemed that the advantages of being on one large floor from the exhibitor point of view, with easy access, quick load out and the availability of stands that were relatively equal in position to competitors, are more appealing. Being on three floors was tricky for exhibitors and not conducive to giving the show an even buzz, like I had seen at the AES in Amsterdam.

MIXING CONSOLES

A development that has been two years in the making, the new Yamaha 02R digital mixing console - reputedly the world's most advanced - received its world launch at AIR Studios on the eve of Audio Technology '95 and was officially hailed as the show's 'Best New Product'. The first console to incorporate



Audio Technology '95 settles in to its new home at the National Hall, Olympia.

Yamaha's latest 32-bit audio DSP chip, providing exceptional processing precision and internal dynamic range, the 02R heralds the advent of genuinely affordable (under £6,000), fully digital recording systems.

According to Yamaha pro-audio manager, Terry Holton, however, it also promises a major leap forward for the live sound engineer. He told me: "We designed the 02R to be specifically intended for recording applications, but it certainly has a lot of capabilities to be used in live sound and I'm very anxious to see how engineers take to it for concert and theatre applications. It has a lot of incredible features for that market. There is instant reset of the whole console, so you can call up a memory setting, and over 3,000 parameters can change instantly between songs and bands. To change scenes that quickly in a theatre is incredibly useful. For the first time in this mixer, we allow the user to specify which faders are not to be recalled. The user might want to keep some or all of the faders isolated, and just recall everything else on the console, keeping the other faders under dynamic control. Automation seems to me the only way to go for live sound, rather than frantically running all over the console trying to change EQs or aux sends by hand in between songs. It should allow engineers to spend more time listening to the music as they're mixing." The 02R, which goes into production this September, can also be cascaded with multiple 02R consoles with full 24-bit precision to give unlimited facilities for large productions.

Doug Ford of AMS Neve introduced the new Logic 2 all-digital console - a desk which is generating enormous interest in the US and Europe among fans of snapshot automation. He told me: "As audio is processed remotely in a rack and the control surface has all controls addressable, we can also run snapshot automation for which there is spiralling high demand for theatrical use." The engineer is able to take a smaller version of the remote control panel into the auditorium and arrange pre-sets, then run the show from the back of the room. Ford commented: "This is absolutely vital in places like opera houses where seat prices are very high, and we are seeing a lot of success in European theatres with these consoles, particularly in Leipzig and Cologne."



Yamaha's Terry Holton with the company's 02R digital mixing console.



Doug Ford of AMS-Neve with the Logic 2 desk.



DDA's QII dedicated FOH console.

Celebrating its fifteenth year in the live sound console manufacturing business, **DDA**'s new QII console represents the summit of the company's achievements to date. Designed for theatre applications, the main feature of this console, Wilson Carson informed me, is its full left/centre/right panning capability. Carson demonstrated a VCA version of the desk which had eight VCA sub-groups and mono output modules. He said: "We can produce VCA or non-VCA versions of the console, with mono or stereo output modules. It also comes in four different frame sizes with either 48, 40, 32 and 24 inputs."

AMEK's Langley Recall console has been available since 1994 but its Showtime automation software is being constantly updated. The console itself is available in 40 and 56 input frame sizes, along with a matrix with 10 sources and eight destinations, eight VCA groups, eight audio groups, 12 aux sends, eight mute groups, eight mono returns and two stereo returns, as well as many monitoring and metering facilities. A regular VCA console, one might think, but the addition of a 456-based computer, such as the IBM ThinkPad demonstrated, takes live engineering on to another level. The company's Geoff Muir commented: "The computer acts as a remote control for the virtual dynamics, so on every channel you can access one of nine gates and compressors. You can store the whole desk in about 10 seconds. After you've done a soundcheck, you just store all your settings, give it a title and you can recall it later that evening. It's a great tool when you are running a show with two or three bands on the bill. Another new addition to the software is visual effects which gives you the control of all your effects rack from the computer. You can store the parameters of a particular effect on a certain song, and if the tour finishes and you work with the band six months later, you might have the same units in your rack but they might have been re-programmed. With this, you don't need to re-programme them for your requirements, the software will tell each effects unit what it should be doing for each song."



The new Langley Recall desk from Amek.



Soundcraft's Mike Mann with the compact K3 Theatre console for touring and theatrical applications.

Mike Mann of Soundcraft was in enthusiastic mood when he described to me his company's K3 Theatre console, which received its worldwide launch at Audio Technology '95. "We've never seen so much interest in a new console as we did when the standard K3 model was launched at NSCA in Indianapolis a few months ago." A professional eight-bus live console offering integrated mute scene setting and MIDI control over external equipment, the K3 Theatre is the more advanced of the two desks, featuring individual routing to the eight busses rather than the paired routing on the K3 Standard. Mann commented: "We are packing the electronics of our bigger desks, like the Vienna II, into a smaller frame. It has the high grade mic pre-amps that would be seen on big consoles, it has balanced inputs and outputs. inserts on separate jacks, four swept band semi-parametric EQ, as opposed to the usual two swept and two fixed bands, eight aux's rather than six, and metering on all the input channels." But, Mann claimed, the major advances include MIDI scene control with up to 128 MIDI scenes opening only the combination of channels appropriate to each audio cue. "So we have included a MIDI continuous controller called the Datafader. Having executed a particular cue like a vocal reverb, we can modify a parameter of that effect, such as decay time, to compensate for the vagaries of touring from venue to venue." The first sales of the K3 Theatre went to the Young Vic for its production of The Tempest. and theatre hire company, MM Productions.

Launched at Frankfurt, but appearing for the



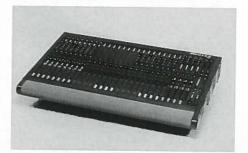
Studiomaster's Jim Khan with the Horizon.

first time in the UK at this show, was the Studiomaster Powerhouse Horizon console an eight channel unit based around the successful Vision range and aimed at club installations, single or duo acts who require a compact mixer with high power. It offers 600W per channel into 4 ohms, has six mono channels with inputs for both mic and line level signals, three band EQ with mid sweep, four aux sends, PFL and sub-group routing. Two channels are equipped with mono mic or stereo line inputs and Studiomaster's AMCS (Amplifier Management Control System) provides the kind of protection needed with so much power driving this compact mixer. Jim Khan said: "There is an option for a crossover module. If you exhaust the power on the console, the internal amplifier will drive the top end, but with a crossover module in and a slave amp you can drive the bass bins." Studiomaster also launched its new Diamond DJ mixing desks at Audio Technology '95.

The new Topaz Mini and Macro mixing consoles from Soundtracs were of particular interest to visitors hoping to equip small installations or bands on a budget. The larger Maxi, meanwhile, is a 4-bus FOH console for general live use. But Soundtracs' MD, Todd Wells was making the most noise over the Megas II Mix, a modular console for broadcast, sound reinforcement or video post-production applications. As a live FOH desk, it would contain a mic/line module, stereo input unit, groups with one or more effects return/group modules and a live master section. The Megas Il Mix is available as either a rack-mount unit or conventional console, building to a maximum of 32 inputs with a meterbridge.

MICROPHONES & SYSTEMS

Paul Whiting showed me Sennheiser's new EM2004 switchable diversity receivers, which impressed sound company, Wigwam Acoustics so much, they placed a £150,000 order on the show's opening day! Currently pursuing the relatively uncluttered UHF bandwidth, Wigwam's Mike Spratt said: "Sennheiser's switchable frequency features



Soundtracs' Megas II Mix console.

A real Pro

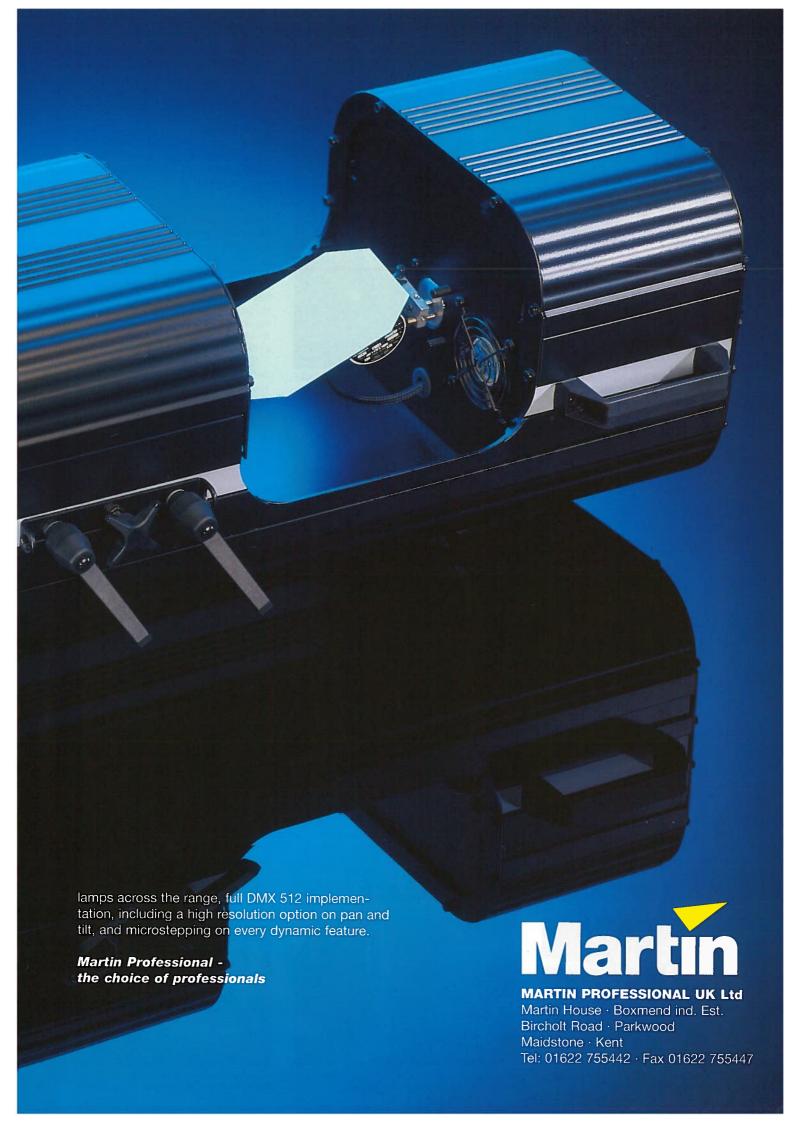
OZZI OBO 1830

At Martin Professional we are known for our range of Pro. entertainment lighting products. But out of all of this super-intelligence, the most brilliant of them all, is the Roboscan Pro 1220 CMYR.

Before CMYR, there was already the Roboscan Pro 1220, the brightest thing on the planet to date, with its excellent modular construction which enables anything from tweaking facilities to a full upgrade, thus radically extending the useful lifetime of the product.

CMYR adds an extraordinary, full-color, color-mixing system to all the other winning attributes which were previously synonymous with the quality and performance of the original Pro 1220. Plus rotating gobos, of which there are no less than four on-board every model in the new series, as well as 9 motorised fixed-aspect gobos. Standard or custom designs, or even etched dichroic self-coloured gobos are available.

In addition, the new, quieter Roboscan Pro 1220 series offers you the choice of HMI, or MSR 1200W





Nigel Mann (left) and Rob Piddington (right) of Sennheiser UK take an order from Wigwam's Mike Spratt (centre, left) and Stuart McPartland, for more than £150,000 worth of radio microphone equipment.

mean that we can provide greater support on the tours using this technology because we can be more flexible within the UHF bandwidth." A VHF version of the EM2004 is also available. The EK4015 UHF pocket true diversity system was released as a concept almost two years ago but has now gone into full production, and Whiting demonstrated one of the first units to come into the UK. He commented: "We supplied a couple of early units to the BBC for use on Grand Prix and Sunday cricket broadcasts. It is all linked with this switchable system; everything is now frequency agile with 16 channels or more." Released last year, Sennheiser's SKM5000 is a switchable hand-held transmitter with interchangeable capsules and formed part of a £46,000 order at the show by London's Cine Audio who will be using the product for the forthcoming European athletics tournament in Sweden. Rob Piddington said: "It's a modular system and we now have in production all the capsules omni-directional, dynamic, super-cardioid, condenser, etc - which allow the characteristics of the microphone to be changed. It's going very well and rapidly setting a standard.

Shown for the first time last year at IBC and currently in use for a number of high-profile musicals, such as Les Miserables and Miss Saigon, is the Micron MDS2 modular multi-channel diversity receiving system from Audio Engineering. Clive Lorton said: "We have made a budget system without the monitoring facility, available as either a single unit or mounted into 1U racks with an antenna distribution amplifier in the middle and up to four units running together. We supply everything and the system is easy to install."



Richard Ganley demonstrates Trantec's new frequency management software.



Audio Ltd's RMS 2000 portable diversity kit.

The U600 true diversity receiver is the latest in **Beyerdynamic**'s growing range of advanced UHF wireless systems. This has synthesised tuning and is capable of operating 64 channels in one TV channel, grouped in 16 frequencies. Todd Wells told me: "It makes frequency planning much more straightforward because you can tune to a desired frequency instead of having to put up with an allocated frequency. The transmitter generates a pilot tone for locking into a frequency."

Audio Ltd's newest product on display was its portable diversity kit, consisting of Dx2000 diversity receivers and the Dk2000 rack system, that can be used virtually anywhere such as in the studio, on location and in a concert application. "It's a very flexible system in that you can remove each module and interchange them," added Kishore Patel. "You don't have to spend a lot of money on separate systems for studio and live use. There is also our Hx2000 hand-held transmitter which uses the very high quality Schoeps capsule on the front end and has a new proximity capsule for vocal use."

Within earshot of our own L+SI base was the Trantec/BBM Electronics stand, voted the



Autograph Sales' John Adeleke gave the low-down on Lab Gruppen amplifiers.

show's best. It was here that visitors could marvel at the state-of-the-art computer control system designed to work alongside Trantec's recently launched \$5000 UHF microphone system. The software is Windows-based and can control a bank of up to 16 receivers in a block. Essentially designed for theatre use, it is, said Richard Ganley, highly recommended for general live performance uses. "You can write a programme for a play that will allow you to assign different receivers to different people with different frequencies. As you go through the play you can simply address the 'next scene please' icon and it will reconfigure the receiver block for you. The software is capable of changing the operating frequency of the receiver. You have the ability to focus in on the status of a particular user frequency. During set-up you will want to put the antennae in the best possible position and this package allows the actor to do a walk test around the stage or set and decide on the best placing. It also has troubleshooting characteristics which are valuable when signal drop-out is experienced."

SCM810 Shure's new automatic microphone mixer is ideal for conferencing applications. Designed for simple operation and inclusion in a rack, there is no need for specialised microphones as the unit functions with all professional hard-wired and radio mics. Features include adjustable EQ per channel, 48V phantom power selectable for each input and active balanced mic and line level output. Another new product to be unveiled was the Shure WH10, a lightweight, headset microphone for those who wish to escape from the confines of the mic stand.

The AKG CK77 miniature dual diaphragm microphone for live performance is the smallest of its kind in the world and created a real buzz at the show. It is ideally suited to speech and vocal artistes who require maximum mobility from a mic that is difficult to detect from the front row. Only 14mm in length and weighing just 0.4 grams, it marries extreme miniaturisation with high performance. Also on show was the WMS 900 UHF wireless system, currently on the road with Wet Wet Wet and Rod Stewart, in conjunction with AKG C5900 condenser mics.

AMPLIFIERS

A major feature of the Autograph Sales stand was the range of Swedish Lab Gruppen amplifiers and crossovers, including the lightweight Lab 1200C Quatro four-channel amplifier which offers 4 x 300+ watts into 4 or 8 ohms. John Adeleke said: "There's a minimum load selection switch at the rear of the amp which allows you to use four channels to drive either 8 or 4 ohms. This has come about because people want a four-channel amplifier to drive wedge monitors. When you combine this with the Lab 1600 which is also a new amplifier, you are able to achieve something in the region of 2400W in a package weighing 50% less than one would normally expect."



Clive Lorton of Micron with the MDR rack-mount diversity receiving system.



In the pink - Malcolm Hill with the Chameleon 2000D power amp, designed for robustness.

The R&D on the 1200C was conducted in association with Concert Sound who road tested the amps with Tom Jones, Eric Clapton and Meat Loaf.

Three versions of the new QSC Powerlight amps, the Powerlight 1.0, 1.4 and 1.8, were launched at the HW International stand with the promise of delivery by the time you read this report. Each weighing only 18lbs, they are full frequency with a powerful bass response which has been a problem in previous amplifiers, said a spokesperson. Typical power output at 2 ohms, for example, is 500, 700 and 900W per channel respectively. HW has tested the amps with various companies and the reaction has been very positive, already resulting in a healthy order book.

Jim Khan demonstrated two new Studiomaster stereo power amplifiers, the 700D and 1200D. Power output is 350W per channel (700D) and 600W per channel (1200D) into 4 ohms, and both are 19", 2U rack mounting. Both models feature the AMCS protection system and have limiters at the input and output stages. There is also thermal and load sensing fan cooling - the load and impedance sensing circuitry anticipates heat build up within the amplifier and applies cooling in advance.

New at Audio Technology from Malcolm Hill Associates was the Chameleon 2000D power amplifier, a mere 26lbs in weight and capable of 750W of power per channel into 4 ohms or over 1kW per channel into 2 ohms. Malcolm Hill expanded: "The idea of the 2000D is to take the proven technology of the studio range and put it in a robust package to provide the same sound quality for the live field. We have upgraded all the components and introduced a special cooling system, and made a very tough amplifier without compromising the sound quality. It has been suggested that using pink noise to test amplifiers shows how they will perform in very heavy duty applications. I'm pleased to say that the 2000D will run at 1kW per channel with continuous pink noise all day."

OUTBOARD, LOUDSPEAKERS, MORE

Available within the next two months is the DPR-901 Mark 2 dynamic equaliser from **BSS Audio**. It includes a split function which allows the unit to be used as a single four-band device or as two separate two-band devices, with one half covering the low frequency programme and the other half on high frequency. The FCS-916 is a six-band parametric equaliser with a built-in discreet mic pre-amp, sweepable high and low pass filters and four fully-parametric EQ bands. Also on display was the Varicurve equaliser/analyser system and Omnidrive loudspeaker management system, the latter used on virtually every stage at the recent Glastonbury festival.

Ben Lund of TC Electronic described the TC6032 graphic equaliser remote and TC1128 programmable 28-band graphic equaliser/



Ben Lund of TC Electronic with the company's graphic eq and spectrum analyser package.

spectrum analyser package as "a very good system for quick reference checks when an engineer arrives at a new venue." The TC6032 has 29 optically encoded high-speed motorised faders, providing a familiar graphic interface. This can instantly control the 1128 which is an intelligent microprocessor, capable of automatic room linearisation, among a number of advanced features.

PMC has added the XB1 transmission line sub-bass monitor to its smaller TB1S loudspeaker to provide a high power monitoring system. Peter Thomas said: "Being transmission line speakers you get another octave of bass from the same size cabinet. Even the small monitors on their own have quite an extended bottom end, much lower than conventional boxes. The system is ideal for club installations - a growing market for us."

Ruggedly constructed from UV resistant, high density, pressure moulded polyurethane, the new cable crossovers from Kelsey Acoustics can be used for jigsawing together to produce protective walkways for cable enclosures. Solving a host of problems is the new Kelsey cable drum (in three standard sizes) which allows connector face plates to be put into the side, alleviating the need for a separate stagebox and drum. There is an internal cable storage area within the drum and connection to a multicore stagebox on arrival at a performance venue could not be quicker or easier. "We also exclusively distribute the Pyle National E-Line range of multipin connectors which are high density with low crosstalk," explained MD Richard Vickers. "They are now being used by SSE, Light & Sound Design, Capital Sound Hire, CAV and Theatre Projects."

The Signex Smartpatch from **Isotrack** allows audio signals to be routed automatically in real time under MIDI control, giving full control



Adrian Loader (left) and Peter Thomas of PMC with their new studio monitors, ideal for clubs.

over 16 inputs and outputs. Fully MIDI controllable from a computer, as well as from the front panel, the Smartpatch is available in two or three pole, balanced or unbalanced versions. It has silent FET switching so it can be used live without signal degradation. Despite the absence of complex menus, there are no fewer than 128 internal patch memories, all of which can be selected and edited either from the front panel or via MIDI.

Drawmer has gone high-tech with its new 1962 digital mic/line pre-amp which provides two channels of valve sound for mics and instruments, and features variable tube drive, variable high/low pass filters, dynamic enhancement and fine tune EQ, among the many purist requirements adhered to.

A perfect piece of kit for pub, club and hotel background music is the Denon DN200F 200 CD automatic changer available this month. As a result of a partnership with DWA Pro-Audio, the system can be supplied with a computer package and Retriever software which allows the programming of a selection of tracks from the 200 discs, or continuous automatic programme selection. DWA's David Wood told me: "The prime application is in broadcasting, but it will be immensely popular with pubs and clubs, and areas where they need to make up some kind of structured background music programme. We're looking into systems for the venue pub industry where the type of clientele changes drastically over the course of a whole day, and the music has to reflect that."



Drawmer's new baby - the 1962 tube pre-amp.



VISION 10

A new Generation in Lighting Control



IMAGINE ... A lighting control system with totally integrated control of intensity,

motion, colour and any other parameter!

DREAM OF ... Customising front panel controls and personalising software!

IMAGINE ... A system which responds at the same speed with 100 or 1000

channels!

DREAM OF ... A hard disk system so powerful that capacity and speed become

problems of the past!

IMAGINE ... Direct control and access of any element at any time!

DREAM OF ... Inbuilt compatibility and response to MIDI, SMPTE, DMX, RS 232

and RS 485!

IMAGINE ... 499 macros you can programme with your functions!

DREAM OF ... On-board displays with 250 LED characters for instant and

permanent information!

Imagine no longer ... Your dream has come true! It's VISION 10

ADB - Your Partner for Light

 Belgium
 Tel: 32 - 2 - 722.17.11
 Fax: 32 - 2 - 722.17.64

 France
 Tel: 1 - 41.17.48.50
 Fax: 1 - 42.53.54.76

 Germany
 Tel: 06108 - 66204
 Fax: 06108 - 66205

 Great Britain
 Tel: 0932 - 75.28.65
 Fax: 0932 - 75.28.83



ONE-STOP ENTERTAINMENT

Steve Moles visits Italy's Stopline Club

On a steep hill in Lombardy, between the foothills of the Alps to the north and the flat plains of the Po valley to the south, lies the ancient city of Bergamo. Once an important Venetian trading centre, the Cathedral still sports lengths of rough hammered iron bar stapled to its walls that were used as measuring standards by the cloth traders of the middle ages. Here too was born the 23rd Pope and the town still boasts a strong Catholic tradition. Since WWII, and for reasons now forgotten (well, actually it was something to do with GIs and prophylactics, but we don't talk about that), the potentates of the church have decreed that no dancing nor wanton music can take place within the city boundaries, most especially the devil's music and discotheques. Ironically, on the town's industrial outskirts, in the hamlet of Curno, one of the largest and most sophisticated discotheque and dance halls in Italy has just opened.

Much to the chagrin of the city fathers, Italian Opera tenor Adriano Valotti has steered the investment of a staggering 37 billion Lira (that's nine zeros, or US \$24m) into a grandiose experiment in family entertainment - the Stopline Club. As if this were not irony enough, here in the heart of the industrial north where many of Italy's profusion of automated lamp manufacturers ply their trade, the club (if we can call such a venture a mere 'club') has been the subject of an invasion from Danes of the frozen north.

The lighting system within is the biggest single installation of Martin Professional equipment that the company has ever had specified. Before listing the equipment, it is necessary to describe the layout and function of the Stopline Club - firstly to get some perspective on the scale of the place, and secondly, to understand exactly what is being attempted here. From the outside the club resembles nothing more than a cubist colander, and a rusty one at that. A 45,000sq.ft industrial box has been clad in iron plate and perforated by hundreds of 20mm holes and the iron work is deliberately rusted for that unpainted, no-maintenance look. If it wasn't for the lengthy queues lining the bridge across the main entrance moat, you could drive past this unprepossessing building without so much as a glance. This is, however, no lightly-clad converted warehouse, but a purpose-built concrete fortress with public areas on three levels.

Starting at the top, the original intention was to place an open-air cinema on the roof, but this idea has been shelved for the time being, partly through hesitation over its earning potential, but more importantly to provide some parking space for the cars of the potential 9,000 people the club is licensed for. As an afterthought, the car park inadvertently provides one of the most thrilling aspects of arriving and departing the club, having vertiginous up and down ramps to launch you 50ft in the air up a 45 degree gradient. Goodness only knows what they'll do when an icy blast rolls in from the Alps one winter's eve when the car park is already full.

As you exit your car you catch your first glimpse of the delights that await within through a slit window which runs the full width of the building. Like the bridge of a warship, the third floor games room broaches the roof by



A live performance on the stage.



Ornamental hardware: the Martin Scans appear as part of the decor in Stopline's unusual interior.

some three feet, permitting a view of the eight-lane ten-pin bowling alley and armada of video and pinball machines inside. This being Italy, there are also a healthy number of table football machines dotted about, all being battered away at with passion and verve, and all remaining resolutely non-digital.

Entering at ground floor level, across the aforementioned moat, you come straight into the main function area and are instantly surprised by the space and particularly the high ceilings. Architect Marco Casamonti has contrived to keep almost the entire floor area of the building open plan. With the concrete and stone-clad walls painted in white, the contrast with a regular club where blackness and neon prevail, could not be more marked. The lobby has a rather disturbing illuminated glass floor with thousands of smashed wine bottles beneath, but otherwise the decor does not predominate. Furnishings are modest and understated in the seating areas - there is no profusion of stainless steel, and where barriers are required, these are made from 20mm plate glass which contributes to the general air of openness and light. Thus the room is shaped by colour and the way it is lit.

Central to the room is a quarter-size ice rink,

beyond which is a sprung wooden dance-floor of similar dimension. which, in turn, gives way to a raised stage area some 50ft wide and 30ft deep. This instantly gives some clue to the rationale behind the club: this is not just a disco but an entertainment centre. Although open to public use (skate hire in the lobby) and generally filled with happy, colliding skaters, the rink has 10 minute performances by professional ice dancers (culled from the likes of Holiday on Ice) every 45 minutes or so from 7:30pm until just after midnight. Similarly, the dance- floor goes through periods of intense and deliberately choreographed light shows up to the witching hour, at which point it conforms to type and becomes a full on

disco show until 4.00am.

The stage, naturally enough, plays host to a live band, who on the Saturday night I attended performed two turns at 11.00pm and 11.50pm. Artistic director Massimo Russo has contrived, with the assistance of lighting designer and system programmer Dave Stewart, a theme for each night of the week based around a combination of colour and musical style. Tuesday is the only dark night. Wednesday is for rock music with green the chosen colour; Thursdays see Italian folk music in orange (Dave describes 'Italian folk', from this region at least, as a curious blend of Tyrolean oompah music with whining vocals); Fridays is Latino and World Music with a yellow and orange theme; Saturday is commercial/mainstream pop and dance in red, as is Sunday with a splash of rock 'n' roll (and green of course, for consistency) added, whilst Monday is considered to be the best night by Dave and the rest of the club's technical crew, when Blues and Jazz is lit, naturally enough, in dark blues.

One curiosity which Dave drew my attention to is the Italian male's dislike of anything purple. Renowned for placing a hand in front of their genitalia when made to feel insecure, usually by the unexpected, like the entrance of

a beautiful girl into their circle of vision or a chaffinch landing on the handlebars of their Lambretta, they will do similarly when purple light is cast upon them. Hence the lack of purple in any of the colour themes. Nevertheless, Dave felt obliged to use the occasional splash of Congo Blue from time to time ("it's blue Massimo, not purple", he stressed). Nothing can wipe from my memory the sight of several hundred young male dancers, like some demented troop of Michael Jacksons, reaching for their crotch every time the offending colour appeared.

A large black steel double gantry, suspended from the roof, runs the length of the building above the ice, dance and stage area. Open to the public, it forms a

gallery viewing area capable of holding several hundred spectators. At the stage end, and cordoned off by the lightest of security chains, is the control zone, where a profusion of computer and video monitors stare unblinkingly down on the crowds below. The chain is a notable point for this is without doubt the most well-behaved of crowds I've ever seen: they queued quietly and patiently to get in, never once did a stranger step over the chain to drunkenly make a request to the DJ, and they all drank copiously from real glasses till 4.00am and never once did I see a glass smash - let alone the slightest hint of a fight.

To stage right and left are two voyeur's bars, cylindrical in shape and accessed by a curving ramp wrapped snail shell-like around the core. At some 15 feet high, a great view of the thronging masses can be had but the stage is obscured so they don't get mobbed when bands are playing. Behind each bar, and tucked into the corners of the building, are large, well-lit salt water fish tanks stocked with a collection of small sharks two to four feet long and a couple of evil-looking moray eels. Running the length of the room down each side, and some five feet above dance-floor level are more bars, informal circular seating areas, a fast food restaurant, a specialist ice cream bar, a créperie, a cocktail bar, and an à la carte restaurant. Interestingly, and perhaps shrewdly, all the refreshment areas are leased out, leaving the club to support actually a quite small roster of staff, mainly technical and security.

Although some loss of earnings is inevitable, the burden of stock and employment is relinquished, giving a generally faster cash return on what is, after all, a major investment. Like a modern shopping mall, the leaseholding vendors share in the financial risk of the building's overall development.

As well as housing many toilet areas, the basement is also home to several other recreational zones. A pool room is located beneath each side of the dance-floor with a dozen full-size tables in both. A piano bar, with seating for some 150, serves as a general cabaret room.

On the night I attended, rock karaoke was in train: a long-haired guitarist was, with the aid of the tiniest of Casio keyboards, able to recreate accurate renditions of Led Zeppelin songs at full throttle, whilst his male cohort, curiously attred as Whistler's Mother, chivvied members of the audience to scream "Squizz mih limins til di joos runs dahn mi leeg" into the microphone. To the front of the building, directly beneath the lobby is a completely separate techno, jungle, rave disco. Low-ceilinged and the only black room in the building, the walls are lined with thick glass-fronted booths where revellers can chill



Control zone: a profusion of computer and video monitors.

out or pretend to be Hannibal Lecter as one sad individual did.

Another subterranean surprise is the billiard room, which, with 20 billiard tables and a couple of air football tables, eats up a huge chunk of the basement area. And finally, in a room redolent of the public toilets in ancient Rome - concentric rings of simple seating - two feet high walls of thick concrete form the video theatre facing onto a large projection screen.

So how's it all lit and where does the music come from? House lighting is mainly up lighting - MR16s mounted beneath thick glass and set into the floor and stairs. With the exception of the four distinct games rooms (which are all lit conventionally with soft white fluorescents) everywhere else has Martin instruments of one type or another splashing colour across the walls and down onto the floor. Running from five (yes, five) Martin 3032 controllers, Dave Stewart is responsible for a total of 527 Martin instruments: 44 Roboscan Pro1220Rs, four Centre-pieces, 15 Robozaps, 160 Robocolor Ils, 72 Pro 518s, and 232 Pro 400s. Plus there are a dozen Magnum Pro 2000 smoke machines dotted around.

The lamps are leased from Mario Raidice of Videosel in Milan, Martin's Italian agent. The installation was by Sangalli, the local Martin dealer, who also run the maintenance contract. Although Dave has only been there since March (Spotline opened on 15th June), lighting installation began in December, with Steve Rawlings from Martin Denmark coming in to oversee system set-up and to start the show programming process. Although there is obviously a high concentration of lighting gear above the central dance areas and stage, there are Robocolors and 'Scans dispersed throughout the building. Two of the 3032 controllers are dedicated to architectural lighting - even the eating areas are drawn into the lighting ethos.

There are also three Coherent lasers - 4W Purelights from Laser Innovations, programmed and run by Aldo Visentin, a freelance designer from Venice. The lasers are all positioned above the stage and, like the lights, perform choreographed displays during the evening, as well as augmenting the disco show later. There is also a scanning head above the dance-floor, ironically mounted in a Clay Paky Par 36 automated yoke, the only bit of non-Martin lighting equipment in the whole place.

Sound equipment, apart from the obvious CD and record decks, is all supplied by Italian company Outline who are based just 30 miles away in Brescia. Their badge is on the amps, speakers and house control console, but there is, however, a Soundcraft Spirit 32 into 4 for visiting band engineers to use for live work. The now ubiquitous form of trapezoidal cabinets,

with low/mid and mid/high loadings, are all flown, never floor-mounted. Around the dance and ice areas, single cabinets hang every three metres facing inwards, whilst to the front of stage each side, hang a cluster of four. The cabinet positioning, and maybe to some extent the shape of the room, makes for an ideal acoustic environment. Volume in the dance and skating areas is intense, whilst out at the bars and eateries, conversation can be held without screaming in one another's ears. For stage work though, the sound engineers of visiting bands have complained of a lack of coherence due to speaker positions. However, the Soundcraft desk up in the gantry is not ideally positioned to hear the PA working and as bands tend to arrive after doors

open and are obliged to sound check in the early evening with punters already in, conditions are not ideal.

Video is run from four Irradio VHS players and a couple of Pioneer V202 laser disc machines. Monitors are everywhere, in the walls of the bars, down in the basement areas, above the seating and restaurant areas. There is, however, no videowall and no effects. Images are either straight tape or live images from a static camera mounted front of stage.

This is an ambitious project and not without its problems: plans to run cabaret turns each night have been shelved, live artistes in the audience (mimes, trick cyclists, jugglers, fringe acts and the like) have gone the same way, as has the cinema mentioned at the beginning. However, the shopping mall metaphor alluded to earlier holds good - this is one-stop shopping for a wide variety of entertainment. The Saturday night I attended was noticeable for a capacity crowd made up of not just young people, but their parents too, lots of 30 and 40 somethings, and certainly a fair few sub-teens.

Despite the light, open environment and great size, the club retained an intimate atmosphere and with so many oases to repair to, privacy was never a problem. Everyone appeared to enjoy themselves, except the sharks who just looked bored or wrote the occasional name down in that little book kept tucked under their dorsal fin. Perhaps like Center Parcs, this may be the big night out for 'the nuclear family'.



Primary manufacturers/suppliers worldwide of aluminium couplers (scaff clamps), aluminium snap hooks and many other aluminium fittings to fit either 2" (50.8mm) or 1.29/32" (48.4mm) tubes

Ask for collage of full range -

Ask for collage of full range -Custom design work undertaken



ALISCAFF LTD
Unit 2 Hotspur Ind Estate
West Road, Tottenham
London N17 ORJ
Tel: 0181-808 5005
Fax: 0181-801 9851

The Premier Inverted Hoist/Motor

NOW STOCKED IN THE UK



- ♦ Black powder coat finish ♦
- ♦ Up to 40 metres lift high duty factors ♦
 - ♦ Protector ® overload protection ♦
 - ♦ II0 volt controls ♦
- ♦ Upper/lower adjustable limit switches ♦
- ♦ Motor suitable for use in UK, Europe or USA ♦
 - ♦ Capacities % to 3 tonnes ♦
 - ♦ Fast speed units available ♦
 - ♦ Single phase versions available ♦
 - ♦ For Inverted Use ♦

Contact for motors/spare parts/service:-

A Division of Pfaff Silverblue Mechanical Handling Ltd, Prenton Way, North Cheshire Trading Estate, Prenton, Wirral L43 3DU

Tel: 0151-609 0101 Fax: 0151-609 0200



THE GRADAV EMPORIUM

SMOKE FACTORY PRODUCTS

RAINBOW SCROLLERS

CHEVIN AMPLIFIERS

DENON PRO AUDIO

ROSCO PRODUCTS

DOUGHTY ENGINEERING HARDWARE

PLEASE CONTACT US FOR YOUR FREE CATALOGUE

SERVICE & REPAIR

Nice people to talk to

613-615 GREEN LANES, PALMERS GREEN LONDON N13 4EP

Phone: 0181-886 1300 Fax: 0181-882 6517

DUE TO CURRENT PROJECTS BEING UNDERTAKEN, THE FOLLOWING VACANCIES WILL SHORTLY BE AVAILABLE:

• Major Project Administrator • Lighting Expert • Sound Expert • A/V Expert

All applicants must be of the highest calibre: have had on-hands experience with organising certain areas concerning live touring concert systems.

All applicants who wish to be considered for any of the above mentioned positions must only apply by letter. No candidate will be even considered if they contact JYG by any method other than by letter. All letters will be replied to in the strictest of confidence.

Details required:

Full personal and address details
 Past 15 years job titles and history of accomplishments
 State why you believe you should be chosen for the position
 State your current salary and the salary you would expect to receive if accepted



Consultants
Designers
Suppliers
Installers



JYG Ltd.

General Enquiries 01708 741613 24Hr Fax 01708 741579 Units D10 & D11, The Seedbed Centre, Davidson Way, Romford, Essex RM7 0AZ.

Simply the Best!

is getting

Better!

We are on the move!

We will soon be moving to our new headquarters in Leighton Buzzard, Bedfordshire

Our massive new warehousing and office complex will enable us to offer you even better service and stock availability. Standby for our new details in the next issue!



Your Positive Option!

We are distributors of all leading brands of Professional Sound, Lighting and Special Effects Equipment. If you are a retailer or installer or overseas and would like to become one of our *satisfied customers* please contact us for our latest product information

Leisuretec Distribution Ltd

Unit 15, Portland Industrial Units, Kingsway, Luton, England. LU4 8HA Tel: 01582 23300 (5 Lines) Fax: 01582 400237

Just some of our lines are.....

Abstract - Altai - Adda - Alesis - ANYtronics - Bose - Canon - Citronic - Carlsbro - Cloud - Clay Paky - Electro Voice - Denon - Doughty - Fabtronic - Formula Sound - Filter - Flight Cases - H.W. - 3G - Jamo - JBL - JEM Smoke - JEM Pyro - KAM - Le Maitre - Leisuretec Products - Light Processor - Lamps - Made to Fade - Martin - Mode - Mirrorballs - NJD - Optikinetics - Ortofon - Pioneer - Powerdrive - Pulsar - Penn - QSC-Ryger - Shure - Stanton - Soundlab - Stands - Trilite - TEAC - TOA - Trussing - Trantec - Zero 88

Plus a full compliment of ancillary products

Stop Press - We are now exclusive distributors of the Minim MkIV Noise Controller, please contact us for full details and prices

ASLEEP IN THE STALLS

If there are any lighting designers out there looking for new career opportunities, may I suggest Brazil? The country seems to be suffering from a chronic shortage of good lighting design. The only other problem is that it also has a chronic shortage of good lighting equipment, so you'll need a lot of ingenuity too - and a way round the country's import controls as well.

Let me not pretend to a complete knowledge of the situation. I've just spent 10 days at the International Theatre Festival in Londrina and a couple snooping around Sao Paulo. That leaves rather a lot of territory unexplored in a country roughly the size of the United States, but theatrically at least, Sao Paulo is where it's at.

Londrina is hardly a theatrical powerhouse. It's a town of 300,000 souls in the south of the country, with a University and a handful of not very prepossessing theatre spaces. Once a year it comes alive for the festival, which is truly international. In previous years gurus of world theatre like Eugenio Barba and Kazuo Ohno have visited, and this year's festival included groups from several European countries (France, Spain, Russia) as well as North and South America. The British contribution was Bath's Natural Theatre, who provoked both curiosity and amusement in the streets of Londrina.

For the technically minded, the main feature of the festival was the woeful absence of skills and equipment in many of the shows, even from

reputable visiting companies. Lanterns were slung anywhere, lighting plots were crude and sound systems reached the level of the average village fête. To come across a show with sensible lighting and sound became quite a relief.

That it could be done was demonstrated by the town's own resident company, Proteu, who used the entire space of their studio (including the roof-trees and the foyer) to present a dynamic, violent play about the self-destructive German Rainer Werner Fassbinder. Areas were clearly defined, lit to effective levels, and a

well-controlled sound score built atmosphere. There was also a fascinating demonstration of physical-technical interaction from the Quebecoise dancer Isabelle Choinière, who worked with a team of three - sound mixer, lighting console and video control - to create the effect of dancing with herself, literally in and out of her sometimes phosphorescent skin. The set was no more than a couple of gauzes, but on these played video patterns - oscillograms, body outlines, colour washes - which formed an integral part of the choreography. What may have seemed hi-tech in Brazil was lo-tech to the Canadian operators, who had cannibalised all sorts of old equipment to produce the set-up. And what most of the audience didn't realise was that the techies were playing along with the dancer, MIDI-sampling sounds in real time and playing the manual finger-slide lighting controls like a musical instrument - much more fun than pushing the cue 1 button and sitting back.

The highlight of the festival was also the most technically subtle, an installation by the Image Workshop of Bogota in Colombia called

aspect of street theatre way back in the hippie sixties in New York, when he worked at Ellen Stewart's Cafe La Mama. So intrigued was he, that he went off to Michigan to do a master's degree in anthropology. In 1975 he set up his workshop in Colombia's national university, where, as well as using theatre people, he draws on the skills of a team of scientists from many faculties - neurologists, physiologists, chemists, optical specialists. From an initial research into the properties of darkness - how do you define it, shape it - he has progressed to investigation of all the senses - how do we use them, and what's going on in the brain when we do.

If all this sounds very dry, it's only background to an incredible

Ariadne's Thread. Some of you may have been lucky enough to catch it

when the Colombians paid a short visit to Wales earlier this year. For reasons more personal than technical, I would urge you to experience it

The man behind this amazing maze - for this is the nature of the

experience - is Enrique Vargas, who was investigating labyrinths as an

when it returns, as it surely will.

sensory, even spiritual, experience. After being made to leave all your belongings at the door, you enter a large room in which the only light is from spots over three throne-like chairs, where the visitor waits to be summoned inside the labyrinth. Visits are made in groups of three every 15 minutes, though the trio is quickly separated and you make your journey alone. A small, quiet voice in the darkness introduces you to the new world you have entered, using C P Cavafy's poem *Ithaca* to encourage you to be more like the ever-curious traveller Odysseus than the hero Theseus, whom Ariadne guided through Minos's frightening tunnels. Here there will be no terrors, only risks to be taken, experiences

awaiting your response.

Then you are given a mirror to hold to your face, so that you can see only what is above you, and propelled gently into a narrow tunnel of black drapes. A path of light-patterns in the mirror completes your disorientation as you stumble forward. Emerging into the light of a small space you meet a beautiful girl in a white bridal gown who begins your initiation, showing you bright jewels, pressing scented photographs, petals and leaves to your nose. From then on, guided at times by friendly, unseen hands, you roam the

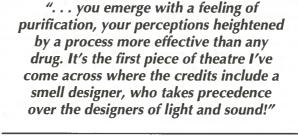
black tunnels. There are different paths to choose, so that no one sees the same sequence, but every now and again you come to a new pool of light, a play-space, which will sometimes have an actor there, sometimes be empty for your own exploration.

There are occasional soft sounds - wind in the trees, running water. Everything is a provocation to the senses. You may find a room full of clothes or masks to try on, or crawl on your stomach through a narrow white womb-like tunnel to meet a strange gypsy-child who wants to play nursery games, or slide down a chute to encounter a silent young man who raises coffee-beans to your lips and pours them through your hair. In this gentle, friendly atmosphere the senses come alive, the outer world slips away, and you emerge (after anything up to two hours of self-discovery) with a feeling of purification, your perceptions heightened by a process more effective than any drug. It's the first piece of theatre I've come across where the technical credits include a smell designer, who takes precedence over the designers of light and sound!

The experience makes a good preparation for Sao Paulo, a sprawling city of 19 million inhabitants in a state of almost permanent gridlock. Lord knows how anyone ever finds a theatre in time, let alone a parking place.

Although it has no equivalent of our National Theatre (the imposing Teatro Municipal is a receiving house for opera, concerts and dance companies as well as theatre), there are several dozen theatres both commercial and independent, and long runs are common. The leading Brazilian director, Antunes Filho (known in Britain for the sexy folklore of *Macunaima*) has just opened his latest piece, a version of *Gilgamesh*.

The centre of actor training in Brazil is the Escola de Arte Dramatica (School of Dramatic Art), which is a self-sufficient part of the department of arts and communications in the University of Sao Paulo, the country's biggest and most prestigious college. Every year six or seven hundred candidates go through a rigorous selection process for the 20 places available for the school's four-year course. Selection for the parallel courses in scene design, playwriting and (heaven help us) criticism at the twin Centro de Artes Cenicas (Centre of Scenic Arts) is at a much less competitive level. The Escola's director, Silvana





A scene from Antonio Araujo's The Book of Job, performed in a disused surgical ward in Sao Paulo.



'Total Street Theatre' at Londrina's International Theatre Festival.

Garcia, showed me over the new buildings which have just been opened for them on the University's huge campus. They didn't have the best of luck with their architect, who produced a dance practice room with an unsprung floor, rehearsal rooms and classrooms with an impressive echo, and dressing rooms which very nearly had the mirrors on a different wall from the lights. But the two schools have gained an attractive home on the campus, and two imposing, if somewhat inflexible, theatre spaces, a 200-seater with the beginnings of a thrust stage and a 300-seater end-stage auditorium. On my visit the students were rehearsing for their inaugural production. I do hope that wasn't the finished lighting plot that I saw, but from experience elsewhere I fear that maybe it was.

All the more exciting, then, to come across a production in Sao Paulo which at last made use of all the skills of acting, singing and movement in harmony with a simple, but incredibly effective, technical set-up. The young director Antonio Araujo spent two years preparing his dramatised version of *The Book of Job*, including six months searching for the right venue. He found it in a disused surgical ward block in one of the city's hospitals, and the equipment and atmosphere of the hospital provide the imagery for a stunning promenade production. The audience starts its journey in semi-darkness in the entrance hall. Four 'nurses' in white

operating gowns and caps are singing a capella, observed by what will become the narrators, also medically gowned. Splayed against the picture-windows of the wards beyond, are the still bodies of other actors, naked as if for an anatomy lesson.

Thus begins an exploration in which we are led progressively up through three floors of the hospital to watch the enactment of the bible story of a man whose faith in God was tested by the most terrible suffering. Hospital beds and trolleys, complete with drips, are wheeled on carrying the protagonists as the action moves through wards and corridors, and up the acoustically glorious main staircase. The final scene has the audience seated like medical students around the walls of a small operating theatre, where Job (a young actor still in the middle of his course at the Escola de Artes Dramaticos, who has been naked and dripping with stage blood for most of the piece's 75 minutes) rises up from the operating table to go and meet his maker in a blaze of smoke-hazed light.

In keeping with local conditions, the technical set-up for the *Book of Job* seems very simple. There are hardly any stage lanterns, no big bins: instead unobtrusive pin-lights and small speakers provide the most accurately focused lighting and sound effects when required. As well as the *a capella* singing and the instant percussion available from metal hospital trolleys, there is an impressive instrumental scoring at appropriate moments. Big close-up lighting effects are offered by operating theatre spotlights, wheeled into position behind the actors.

Behind this apparent simplicity lies a considerable technical achievement. The audience is completely unaware of any cabling or switching on its journey through the wards and corridors, yet sound and light have to be controlled from rooms on the three separate floors. A very complex lighting plot offers backlit rooms, stygian halls, three floors of alternately lit staircase and much more, blending effortlessly into the very mobile action. Araujo and his designers have produced a powerfully imaginative work of art, an essay in human suffering that moves and inspires. The settings and props, all found on the spot, seem to have been made for the play, rather than vice-versa.

So it's all the more impressive to report that two months ago the production moved to the festival in the nearby city of Curitiba, where five days' preparatory work by Araujo and his LD, Guilherme Bonfanti, and a day's intensive re-blocking by the actors and musicians made it possible to stage the piece, with equal success, in the local AIDS centre.

Ian Herbert

Ian Herbert is the editor and publisher of the Critical journal, Theatre Record.

HOW LOW CAN YOU GO?

The Effects Company proudly present the Cirrus lowsmoke – a compact unit, compatible with all Supersmoke machines which is easily operated using CO₂ cylinders. You no longer require bulky refrigeration or freezing plants to produce smoke which stays low almost indefinitely and is virtually indistinguishable from dry ice.

- ★ Compact size 355 x 190 x 281 mm.
- ★ Compatible with ALL Supersmoke machines.
- ★ No refrigeration unit required.
- ★ No 'pre-freezing' necessary.
- ★ Electronically linked to run simultaneously with smoke machine.



- ★ 'Timer' operation also possible.
- ★ Produces absolutely dry low smoke.
- ★ Minus 25/30°C internal operating temperature.
- ★ Uses readily available liquid CO₂.
- ★ Ducting adaptor also available.

This truly innovative product runs for 9½ minutes from a single 6.35 kg CO₂ cylinder and a full 48 minutes from a 34 kg cylinder. The best news of all is the price – only £1,100 complete – from The Effects Company distributors.



Unit 43, Barns Court, Turners Hill Road, Crawley Down, West Sussex RH10 4HQ. Tel: +44 (0) 1342 718399. Fax: +44 (0) 1342 717525.

SECOND TAKE

John Watt's View from beside the Camera

Although I should know better by now, I do continue to make assumptions. Luckily, I am not alone: most of the people that offer me jobs assume I can do the work, whilst I assume there's going to be a big enough gap for me to either find out how, or cook up some scenario that will make it appear that I can. To quote from an old play (most of my conversation is made up from cobbled-together half-remembered lines from old plays), "every day I go to work and I say to myself, today is the day they find me out." But, up till now, dear reader . . .

One of the first assumptions I make in the production process is that the producer and director have some mental

picture about how the piece will look, or at least how they would like it to look. Wrong! The chances are they haven't an idea in their heads and are waiting for the first production meeting with lighting and design to swipe a few ideas that they can turn into their own a few minutes later. Like the judge said, "anything you may say will be taken down, twisted round and used in evidence against you."

Mind you, a bit of tactical assuming may reap rewards. For instance, you can say 'I assume you don't like green', upon which the director, for fear of being thought to have a fixed mind over colours (heaven forbid) brought about by the use of a blue cyc on his last 18 productions, will let you have whatever colour you want. Or, you can say, I assume the star wants total freedom of movement over the entire set and since you have

seven cameras, one on a techno crane and two hand-held, I had better light it like all-in wrestling (an unfortunate, if close-to-the-mark, comparison), i.e. a lamp at each corner. He doesn't buy this 'every frame must be a Rembrandt' idea, and therefore all of our star's close-ups will now be on camera three. He had better not assume I believe it, in fact he probably assumes I won't.

Never assume that what's on the truck is what you ordered. I have noticed a

tendency for rental vehicles to be beautifully racked out with a place for everything and everything in its place - well, nearly. But the designers of the racking forget you need cable and that's the last thing to go on because it's heavy. This forms a barrier which makes it difficult for the crew to get things out and for the lighting director to look in to see what's missing.

The process of checking is complicated by the existence of 'Junior' and lightweight lamps. It's all too easy to mistake an 575 HMI for a 1200. Don't assume either that with modern technology, the HMIs are hot-restrike and never assume the choke is a neat little lightweight box

with a dimmer (yes, I know, I should have been specific at the time of ordering, but I assumed the gaffer would get it right). I also assumed the reflector boards would have a shiny sheet of Mr Rosco's best and not look as though they have been abseiled over - I've got trousers with more shine than the average reflector board.

Never assume there will be another rehearsal. The fact that artistes

aren't dressed or made up, the sets not finished and the director is working on the floor, doesn't mean there's going to be a more definitive 'practice' later. Chances are that this is all you are going to see before recording, so it's best to assume that this is the only look you are going to get, and go out there and hang and focus that extra lamp no matter what havoc you cause in the process.

Never assume you will actually see the take. You will either be on your way to the floor in a vain attempt to fix something or you will be on your way back having failed to fix something. You can ask racks (the vision engineer to you modernists) how it went, but don't assume he was watching, the scope maybe,

but not the pictures. It's probably more artistically satisfying, though, in general, they do use too much green.

Never assume you are going to get paid: the chances are, you accepted the job over the phone and, as we all know, verbal agreements aren't worth the paper they aren't written on. So always tell the suppliers of the kit that the order, and therefore the invoice, is with Skinflint Productions and not you. You then only lose time, petrol and hotel, plus some tough spun and gaffer from the boot of your car.

Lastly, don't assume you will get your reward in heaven; it's been merged with LWT and that pot of gold has been distributed amongst a handful of top executives in divine retribution against ACTT. Dedicated crews who get a buzz from the business, and would probably do it

anyway, are currently paid daily rates that wouldn't pay the call-out fee for Dynarod - not, incidentally, the only company franchise that's cleaning up.

At least one lighting director I know will say there is too much bile on view in this piece, so I am pleased to both declare an interest and promote the antidote to any faint signs of depression amongst lighting designers. 21 years ago (come November) the Society of Television Lighting Directors was formed to

"provide a forum that stimulates a free exchange of ideas in all aspects of the television profession." The aims are more extensive even than that, but you get the general idea.

In a much changed world, the Society does still provide that forum and some very wide ranging discussion amongst its membership both here and abroad via its magazine and its meetings. I am currently chairman of the STLD and so I am biased. Running the committee is like having several tigers by the tail - it focuses the mind wonderfully. I assume if you have read this far you are already a member?



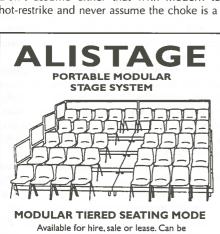
"One of the first assumptions I make in

the production process is that the

producer and director have some

mental picture of how the

piece will look . . . "

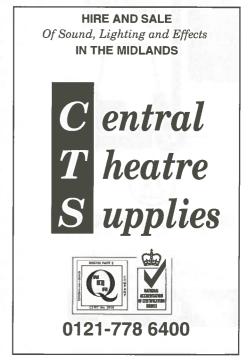


Available for hire, sale or lease. Can be supplied minus seating so that client may use own seats. Each tier has 200mm rise for perfect audience viewing. Guardrails at 500mm and 1000mm height. Modular construction ensures that the unit can be customised to client's requirements. Seat unit cost is considerably less than most other systems.

Canopies available for outside events.

ALISTAGE
Unit 2 Hotspur Ind Estate
West Road, Tottenham
London NI7 ORJ.
Tel: 0181-808 5005 Fax: 0181-801 9851





DISTRIBUTOR audio-technica Technica House, Royal London Industrial Estate, Old Lane Leeds LS11 8AG Tel: 0113 277 1441 Fax: 0113 270 4836

POINTS OF LAW: TRADE MARKS

The fourth in a series of articles in which Alex Carter-Silk explains the basic law surrounding Trade Marks and their use

"Imitation, it is said, is the sincerest

form of flattery. In many cases the

owner of this bundle of rights can ignore

those who trespass in his field of

exclusivity, but he does so at his peril."

Having used my three previous articles to explain all the pitfalls and shortcomings in the system of trade mark registration and protection of intangible rights, one might be forgiven for thinking that there is little to be gained from such rights at all. I suggest that this is not the case.

The intangible rights attaching to any business, far from being the 'also-rans' of the business, are actually the life blood of it. The knowledge how to perform a task, is know-how and may be protected as a trade secret. The connection with the customer base is the goodwill of the business and departing employees can be prevented from taking this with them. The process or mechanism by which the product is created or operates is often capable of protection as a patent.

The way the product is created or operates is often

capable of protection as a patent. The way the product looks, its 'eye-appeal' may be protected in three dimensions by 'unregistered design right' (or registered design right) and the drawings, whether

technical or aesthetic are protected by copyright. The name of the business is protected both at common law without registration (passing-off) and with registration as a trade mark or service mark. Individual brands or products all attract this basket of protection.

With such a complex web of intangibles, what is to be gained? With products that are virtually indistinguishable from one another as perfect substitutes, the name attached to the product and the images which that name creates are all important. Soap powders and jeans are perhaps simple examples. But this does not mean that brand names for less easily substitutable goods have no value.

In accounting terms, intangible rights rarely appear on a balance sheet, and whilst the accountancy profession continues to argue and debate the issue, the only real value is either in connection with the continuing business, or the present value of an income stream which could be created by licensing others to use them. Where brand leaders are concerned, it is certainly highly arguable that the brand name has an intrinsic value as it could be sold, with or without the underlying business. No one could doubt that the right to manufacture and sell denim jeans as 'Levis' has a value which could be unlocked by a purchaser whether or not he could actually produce the product or whether he would need to sub-contract the process.

By far the longest stride towards exploiting a business's intangible rights is to identify what they are. The trademark of the company may denote or become associated with quality or technical expertise. The phenomena of 'badged goods' does no more or less than recognise that associating a particular product with one's own name or mark enhances the value of the mark.

In the past few years the growth in sales of imported beers has been exponential and yet, if one looks carefully at most of these, one will discover that they are in fact no more than locally produced and 'manufactured under the license' of the originator. Since one cannot undertake a comparison with the parent product on a daily basis, it is difficult to say whether the domestic product is actually comparable or not. In fact it probably does not matter, because when goods are manufactured and sold internationally, it is common practice to deliberately differentiate the product to suit local tastes.

To test the hypothesis, ask yourself, as far a third party is concerned, 'Is my name or product design, worth copying'? If the answer is yes, then firstly it is probably worth protecting, and secondly, it is probably capable of being licensed to a third party.

The truly successful licensors are often invisible to the public eye. Many well known fashion houses will either franchise their high street operations or license a manufacturer to sell their own designs under the

fashion house's name. Pierre Cardin could not possibly design all that is sold under his name, yet the brand remains associated with the couture house.

These rights are however worth

nothing if they are not protected, and there is a cost to such protection. If one tolerates unauthorised close imitations and look-alike product, then one cannot expect a licensee to pay good money for the right to exploit an 'authorised' association.

In order to become worth something independently from the core business of manufacturing, substantial investment will, in most cases, have been undertaken. Whilst the company may advertise to sell a particular product, every time an advertisement is placed a proportion of the money expended goes invisibly towards establishing the visibility of the entire business in the market place.

The greater the exposure the easier it becomes to sell the product. All the years of creation and investment must be worth something surely? One can value it either by what the effect on the business would be if it were lost, or what could be received by licensing the use of it.

Imitation, it is said, is the sincerest form of flattery. In many cases the owner of this bundle of rights can ignore those who trespass in his field of exclusivity, but he does so at his peril. The effect of look-alikes, counterfeits, similar designs, confusingly similar names and the like, undermines the investment of the owning company.

Ask yourself the simple question 'why do they copy?' I suggest the answer is because it enables the competitive advantage to be gained, without undertaking the investment either in time or money. The employee who leaves, taking with him the customer list and all of the pricing information, does so because he believes that he can make more money for himself that way. The counterfeiter undertakes no market research, has no advertising expenses and need not worry about returned goods. The look-alike product says, "I am the same or nearly as good as the real thing," (pun intended).

Every business has these rights. Once identified they can be exploited. The first step is understanding that they are not someone else's problem, they are your assets.



PROFESSIONAL LIGHTING AND SOUND ASSOCIATION

UK Members

ABSTRACT DESIGN TO LIGHT

Westfield, Leicester Road, Blaby, Leicester LE8 4GQ. Tel: 0116-278 8078 Fax: 0116-277 1286 Contact: Steve Water

A.C. LIGHTING LTD

Unit 3, Spearmast Ind Park, Lane End Road, Sands, High Wycombe, Buckinghamshire HP12 4JG. Tel: (01494) 446000 Fax: (01494) 461024 Contact: David Leggett

ADAM HALL LTD

3 The Cordwainers, Temple Farm Industrial Estate, Sutton Road, Southend on-Sea, Essex SS2 SRU Tel: (01702) 613922 Fax: (01702) 617168 Contact: R Mundy

ADASTRA ELECTRONICS LTD Hille Business Centre, 134 St Albans Road, Watford WD2 4AL. Tel: (01923) 248888/248889 Fax: (01923) 254607 Contact John Doran

ADB UK THEATRE AND STUDIO

LIGHTING DIVISION
Siemens, Siemens House, Windmill Road,
Sunbury-on-Thames, Middlesex TW16 7HS
Tel: (01932) 752885 Fax: (01932) 752883 Contact: Russell Dunsire

ADDA SUPER CASES LTD

P.O. Box 366, Cambridge CB4 5AX. Tel: (01223) 233101 Fax: (01223) 233080 Contact: Monica Saunders

AEI REDIFFUSION MUSIC

Cray Avenue, Orpington, Kent, BR5 3QP. Tel: (01689) 832121 Fax: (01689) 826683 Contact: David Nibbs

AJS THEATRE LIGHTING & STAGE SUPPLIES LTD

Crow Arch Lane, Ringwood, Hants BH24 1ND. Tel: (01425) 470888 (Sales) (01425) 470088 (Hire) Fax: (01425) 471398 Contact: Simon Sketchley

ALBION ELECTRIC STORES LTD

Albion House, Airebank Works, South Accommodation Road, Leeds LS10 1PR. Tel: (0113) 245 0196 Fax: (0113) 234 1408

ALLEN & HEATH

Remick Industrial Estate, Penryn, Cornwall TR10 9LU. Tel:(01326) 372070 Fax: (01326) 377097 Contact: Glenn Rogers

ALPHA AUDIO

5 Brooklands Close, Sunbury-on-Thames, Middlesex TW16 7DX. Tel: (01932) 765550 Fax: (01932) 788512 Contact: Jenny Moir

ALTAI GROUP LTD

Sillavan Way, Salford, Manchester M3 6AE. Tel: 0161-954 4000 Fax: 0161-954 4080 Contact: Warren Morrow

AMEK SYSTEMS & CONTROLS LTD

New Islington Mill, Regent Trading Estate, Oldfield Road, Salford M5 4SX. Tel: 0161-834 6747 Fax: 0161-834 0593 Contact: Gary Clark

AMPETRONIC LTD

Whitehouse Wharf, Millgate, Newark NG24 4TY. Tel: (01636) 610062 Fax: (01636) 610063 Contact: Leon Pieters

A & M SOUND & VISION

Unit 11B, Business Centre, Frederick Street, Aberdeen AB2 1HY. Tel: (01224) 649922 Contact: Alistair Savage

ANYTRONICS LTD

Units 5&6, Hillside Industrial Estate, London Road, Horndean, Hants POB 0BL. Tel: (01705) 599410 Fax: (01705) 598723 Contact: Bob Hall

APOGEE SOUND (UK) LTD

Mezzanine Floor, 5 Brooklands Close, Sunbury-on-Thames, Middlesex TW16 7DX. Tel: (01932) 765550 Fax: (01932) 788512 Contact: Jenny Moir

APOLLO SOUND LTD

Hawtin Park, Pontllanfraith, Blackwood NP2 2EU. Tel: (01443) 862206 Fax: (01443) 862236 Contact: Shirley Evans

APPLE SOUND

Unit 3, Cambrian Business Park, Queens Lane, Mold CH7 1NJ. Tel: (01352) 700433 Fax: (01352) 758336 Contact: Philip Brown

ARB AUDIO & VISUAL HIRE LTD

The Studio, Overthorpe Road, Banbury OX16 8SX. Tel: (01925) 262869 Fax: (01295) 271386

ARRI (GB) LTD

1-3 Airlinks, Spitfire Way, Heston, Middlesex TW5 9NR. Tel: 0181-848 8881 Fax: 0181-561 1312 Contact: Dee Reed

ARTISTIC LICENCE (UK) LTD

A2 Livingstone Court, Peel Road, Harrow, Middlesex HA3 7QT. Tel: 0181-863 4515 Fax 0181-863 4515 Contact: Wayne Howell

AUDIO COMMUNICATION SYSTEMS

5 Ledmore Terrace, Dundee DD2 4UF Tel/Fax: (01382) 226320

AUDIO DESIGN SERVICES LTD

St Davids House, Adcroft Street, Higher Hillgate, Stockport SKI 3HW, Tel: 0161-476 1010 Fax: 0161-476 0440 Contact: David Hopkins

Contact: Howard Anderson

AUDIO PROJECTS INC Unit 10, Acton Vale Industrial Park Cowley Road, London W3 7QE Tel: 0181-740 0057 Fax: 0181-743 1925 Contact: George Thorn

AUDIO TECHNICA LTD

Technica House, Royal London Ind Estate, Old Lane, Leeds L511 8AG. Tel: 0113-277 1441 Fax: 0113-270 4836 Contact: Shig Harada

AUDITEL SYSTEMS LTD

Unit 7, Chiltern Court, Asheridge Road, Chesham, HP5 2PY. Tel: (01494) 778043 Fax: (01494) 775036 Contact: David Langtry

AUDITRONIC SERVICES

55 Northey Avenue, Cheam, Surrey SM2 7HU Tel: 0181-770 2173 Fax: 0181-770 2173 Contact: Melvyn Pearson

AUDIX COMMUNICATIONS LTD

Station Road, Wenden, Saffron Walden CB1 4LG Tel: (01799) 40888 Fax: (01799) 41618 Contact: Alan Bond

AUTOGRAPH SALES LTD

102 Grafton Road, London NW5 4BA. Tel: 0171-485 3749 Fax: 0171-485 0681 Contact: Aviva Ozin

AVALON EMERGENCY SYSTEMS LTD

Unit 17, St Johns Road Industrial Estate, Tylers Green High Wycombe HP10 8HR. Tel: (01494) 815004 Fax: (01494) 8158 57 Contact:: R E Butler

184 Park Avenue, London NW10 7XL. Tel: 0181-965 8522 Fax: 0181-965 0290 Contact: Steve Warren

AWE EUROPE LTD

123-7 Parchmore Road, Thornton Heath, Surrey CR7 8LZ. Tel: 0181-653 3657/2261 Fax: 0181-653 6656 Contact: Barry Tickle

AXON DIGITAL DESIGN LTD

16 Holmes Road, Swanage, Dorset BH19 2JU. Tel: (01929) 423222 Fax: (01929) 427232 Contact: Rowland Hughes

BALDWIN BOXALL

COMMUNICATIONS LTD
Wealden Industrial Estate, Farmingham Road,
Crowborough, East Sussex, TN6 2JR.
Tel: (01892) 664422 Fax: (01892) 663146

Contact: Terry Baldwin

BATMINK LTD Glastonbury Warehouse, Silver Street, Glastonbury, Somerset BA6 8BT. Tel: (01458) 833186 Fax; (01458) 835320 Contact: David Churches

BC TECHNOLOGY LTD BC Tec House, Wallis Close, Park Farm Industrial Estate, Wellingborough NN8 6AG. Tel: (01933) 405050 Fax: (01933) 405454 Contact: Annette Somerfield

BETTERSOUND SYSTEMS

9 Jackson Road, Bledington, Chipping Norton, Oxon, OX7 6XN. Tel: (01608) 658669 Fax: (01608) 587035 Contact: Rodney Beacham

BEYERDYNAMIC (GB) LTD

Unit 14, Cliffe Industrial Estate, Lewes BN8 6JL Tel. (01273) 479411 Fax: (01273) 471825 Contact John Midgley

BEYMA UK LTD

Unit 10, Cowley Road, London W3 7QE-Tel: 0181-749 7887 Fax: 0181-749 9875 Contact: John Ridley

BLACK LIGHT

18 West Harbour Road, Granton, Edinburgh, EH5 1PN Tel: 0131-551 2377 Fax: 0131-552 0370

Contact: David Gray

BLAYDON COMMUNICATIONS LTD Factory Road, Blaydon, Tyne & Wear NE21 5RY. Tel: 0191-414 4241 Fax: 0191-414 7978 Contact: D W Chapman

BLICK TELEFUSION

COMMUNICATIONS SYSTEMS LTD Blick House, Bramble Road, Swindon SN2 6ER Tel: (01793) 692401 Fax: (01793) 615848 Contact: Martin Tweedie

BOSE (UK) LTD

Unit G2, Trinity Trading Estate, Sittingbourne, Kent ME10 2PD. Tel: (01795) 475341 Fax: (01795) 427227 Contact: John Sabell

BRAHLER ICS (UK) LTD

Unit 2, The Business Centre, Church End, Cambridge, CB1 3LB. Tel: (01223) 411601 Fax: (01223) 411602

BRIDGE MICROPHONES

172 Wadsley Lane, Hillsborough, Sheffield S6 4EE. Tel/Fax: 0114-285 5335 Contact D W Anderson

BRILLIANT STAGES

20-22 Fairway Drive, Greenford, Middlesex UB6 8PW Tel: 0181-575 8888 Fax: 0181-575 0105 Contact: Charlie Kail

BRITISH HARLEOUIN PLC

Kent House, High Street, Farningham, Kent DA4 ODT. Tel: (01322) 865288 Fax: (01322) 864803 Contact: Monica Arnott

Linkside House, Summit Road, Potters Bar EN6 3JB. Tel: (01707) 660667 Fax: (01707) 660755 Contact: David Haydon

BYGONE TIMES LTD

The Green, Eccleston, Chorley, Lancs, PR7 5PD. Tel: (01257) 453780 Fax: (01257) 450197 Contact: Steve Higham

CANADIAN INSTRUMENTS

& ELECTRONICS
Widdowson Close, Blenheim Industrial Estate, Bulwell, Nottingham NG6 8WB. Tel: 0115-977 0075 Fax: 0115-977 0081 Contact: Jon Doar

CANFORD AUDIO

Crowther Road, Washington, Tyne and Wear NE38 OBW. Tel: 0191-417 0057 Fax: 0191-416 0392 Contact: Jain Elliott

CANON AUDIO

Unit 6, Genesis Business Park, Albert Drive, Woking, Surrey GU21 5RW Tel: (01483) 740005 Fax: (01483) 740054 Contact: Glen Harris

CARTER-VOCE LTD
111-113 Chiltern Drive, Berrylands, Surbiton, KT5 BLS.
Tel: 0181-390 8671 Fax: 0181-390 2383

CAUDIO LTD

Barnwell Road Business Park, Cambridge CB5 8UY. Tel: (01233) 211333 Fax: (01233) 410446 Contact: Phil Hildrow

CCT LIGHTING LTD

4 Tudor Court, Brighton Road, Sutton, Surrey SM2 5AE. Tel: 0181-770 3636 Fax: 0181-643 9848 Contact: David Manners

CEEP LTD

Unit 7, Haslemere Industrial Estate, Haslemere, Surrey GU27 1DW. Tel: (01428) 661515 Fax: (01428) 644147 Contact: G Poulain

Hawley Mill, Hawley Road, Dartford, Kent DA2 7SY. Tel: (01322) 222211 Fax: (01322) 282282 Contact: Colin Whittaker

CELESTION INTERNATIONAL LTD

Foxhall Road, Ipswich, Suffolk IP3 8JP. Tel: (01473) 322222 Fax: (01473) 729662 Contact: Phil Pell

CENTRAL THEATRE SUPPLIES

1186 Stratford Road, Hall Gree Birmingham B28 8AB. Tel: 0121-778 6400 Fax: 0121-702 2046 Contact: D G Harwood

CEREBRUM LIGHTING LTD
Units 4 and 5, Shannon Commercial Centre,
Beverley Way, New Malden, Surrey KT3 4PT.
Tel: 0181-949 3171 Fax: 0181-949 3649 Contact: David Wilkins

CHAMELEON (ELECTRIC)

Unit 6, Market St. Ind. Est., Coalville, Leics LE67 4DX. Tel: (01530) 831337 Fax: (01530) 838319 Contact: Stewart Duckworth

CHEVIN RESEARCH

Otley Mills, IlKey Road, Otley, West Yorkshire LS21 3JP. Tel: (01943) 466060 Fax: (01943) 466020 Contact: Kate White

CHRIS IAMES & CO LTD

43 Colville Road, Acton, London W3 8BL Tel: 0181-896 1772 Fax: 0181-896 1773 Contact: Grant Blockley

CITRONIC LTD

Halifax Road, Bowerhill Estate, Melksham, Wiltshire SN12 6UB. Tel: (01225) 705600 Fax: (01225) 709639 Contact: Mike Gerrish

CLARKE & SMITH

Contact: Roy Millington

MANUFACTURING CO LTD Melbourne House, Melbourne Road Wallington SM6 8SD. Tel 0181-669 4411 Fax: 0181-669 4090

CLOUD ELECTRONICS LTD 140 Staniforth Road, Sheffield S9 3HF. Tel: 0114-244 7051 Fax: 0114-242 5462

COLIN MACPHERSON SOUND SYSTEMS 12 Moyness Park Crescent, Blairgowrie PH10 6LY Tel: (01250) 873714 Contact Colin Macpherson

COMMUNICATION SERVICES LTD

Unit 4, 3 Church Road, West Huntspill, Highbridge, Somerset TA9 3RL, Tel: (01278) 792320 Fax: (01278) 780712 Contact: Keith Bedford

COMTEC-SERVICES

20 Poplar Road, Kensworth, Dunstable, Beds LU6 3RS. Tel: (01582) 872111 Fax: (01582) 872111 Control Day 11/2 Contact: Dave Hofer

CONCERT PRODUCTION LIGHTING 20-22 Fairway Drive, Greenford, Middx UB6 BPW Tel: 0181-575 5555 Fax: 0181-575 0105 Contact: Dave Keighley

C P CASES

Unit 11, Worton Hall Industrial Estate, Worton Road, Isleworth, Middx TW7 6ER Tel: 0181-568 1881 Fax: 0181-568 1141 Contact: Peter Ross

CREATIVE TECHNIKAL SERVICES LTD

Unit 8, Anglia Way, Southwell Road West, Mansfield, Nottinghamshire NG18 4LP. Tel: (01623) 656390 Fax: (01623) 420893 Contact: Ivor Green

CREST AUDIO EUROPE

5a Wilbury Grove, Hove, East Sussex BN3 3JQ Tel. (01273) 325840 Fax: (01273) 775462 Contact: Lee Wiltshire

CYBERDESCENCE DESIGN LTD

63 Lancaster Road, New Barne Hertfordshire EN4 8A5. Tel: 0181-447 1010 Fax: 0181-447 0419 Contact: Del Trew

DARTFORD PUBLIC ADDRESS

Unit 45, Victoria Industrial Estate, Victoria Road, Dartford, Kent DA1 5AI Tel (01322) 226320 Fax: (01322) 292886 Contact: John Middlemiss

DE SISTI LIGHTING (UK) LTD

15 Old Market Street, Thetford, Norfolk IP24 2EQ Tel: (01842) 752909 Fax: (01842) 753746 Contact: William Smillie

DECO LEISURE

10 Carver Street, Birmingham B1 3AS. Tel: 0121-693 9292 Fax: 0121-693 9293 Contact: Sammy De Havilland

DELTA SOUND PA LTD

Levens Road, Newby Industrial Estate, Hazel Grove, Stockport SK7 5DN Tel: 0161-456 7171 Fax: 0161-487 1616 Contact: Mark Withington

DENON PRO AUDIO,

HAYDEN LABORATORIES LTD
Chiltern Hill, Chalfont St Peter, Bucks SL9 9UG
Tel: (01753) 888447 Fax: (01753) 880109 Contact: Simon Curtis

3 Jonathan Street, London SE) 1 5NH Tel: 0171-582 3600 Fax: 0171-582 4779 Contact: Wyatt Enever

DHA LIGHTING LTD

DIAL SOUND AND LIGHTING Unit 4G, Wharfedale Road, Euroway Trading Estate, Bradford, West Yorks BD4 65G. Tel: (01274) 651600 Fax: (01274) 651190

DISCO CLUB & LEISURE INTERNATIONAL 50 Doughty Street, London WC1 2NG. Tel: 0171-405 2055 Fax: 0171-405 6527 Contact: Jerry Gilbert

DISCO MIRROR

Suite 2, Waterloo Place, Watson Square, Stockport, Cheshire SK1 3AZ. Tel: 0161-429 7803 Fax: 0161-480 8896 Contact: Colin Gawne

DONMAR LTD DORMAK LID
Donmar House, 54 Cavell Street,
Whitechapel, London E1 2HP.
Sales and Hire - Tel: 0171-790 1166
Service and Installation - Tel: 0171-790 6624 Fax: 0171-790 6634 Contact Miranda Hunt

DOUGHTY ENGINEERING LTD

Crow Arch Lane, Ringwood, Hampshire Bl Tel: (01425) 478961 Fax: (01425) 474481 Contact: George Chiverton re BH24 1NZ DNH WORLD-WIDE LTD

28 Clarke Road, Mount Farm, Bletchley, Milton Keynes MK1 1LG, Tel: (01908) 275000 Fax: (01908) 275100

DREAMHIRE 18 Chaplin Road, London NW2 5PN Tel 0181-451 5544 Fax: 0181-451 6464

Contact: Tracey Middleton DRINKLE AND MANN

SOUND ENGINEERING
Unit 2, Peel Green Trading Estate, Green Street,
Eccles, Manchester, M30 7HF. Tel: 0161-789 4140 Fax: 0161-707 7599 Contact: Doug Mann

ELECTRONIC LIGHTING AND MUSIC

Unit 8, Scorrier Workshops, Redruth, Cornwall TR16 5AU. Tel. (01209) 820599 Fax: (01209) 820599 Contact: Eric Matthews

ELECTRONIC PROJECTS

Horizon Piddington Lane, Piddington, Bucks HP14 3BD Tel. (01494) 883292 Fax: (01494) 883292 Contact: Dennis Terrett

ELECTRONIC SERVICES

35 Vicarage Road, Wednesfield, Wolverhampton, West Midlands WV11 1SE. Tel: (01902) 726846 Fax: (01902) 727483 Contact: Terry Billau

ELECTRONIC THEATRE CONTROLS LTD

C/o Arri (GB) Ltd, 1-3 Airlinks, Spitfire Way Heston, Middlesex TW5 9NR. Tel: 0181-561 3402 Fax: 0181-813 5559

ELECTROSONIC LTD

Hawley Mill, Hawley Road, Dartford, Kent DA2 75Y. Tel: (01322) 222211 Fax: (01322) 282282

ELITE-SOUND COMMUNICATIONS

Unit 6, West Leeds Industrial Park, Stanningley Road, Leeds LS13 4EL. Tel: 0113-239 3993 Fax: 0113-239 4114 Contact: Paul Enderby

ELLIOTT SOUND & COMMUNICATIONS

Elliott Buildings, 19-23 Cardiff Road Taffs Well CF4 7RB. Tel: (01222) 810636 Fax: (01222) 810455 Contact: G Elliott

EMINENCE SPEAKER EUROPE LTD

38 Barnsley Road, Wakefield, West Yorkshire WF2 6BA Tel: (01924) 279297 Fax: (01924) 263998 Contact Arthur Barnes

EMO SYSTEMS LTD

Durham Road, Ushaw Moor, Durham City DH7 7LF. Tel: 0191-373 0787 Fax: 0191-373 3507 Contact: Mike Reay

ENVETRON STANDBY POWER LTD

St James's Road, Brentwood, Essex CM14 4LL Tel: (01277) 214455 Fax: (01277) 227341 Contact: Cyril Bennett

ENVO-TECH (UK) LTD

2 Saffron Business Centre, Elizabeth Close, Saffron Walden, Essex CB10 2NL. Tel. (01799) 513134 Fax: (01799) 524614 Contact: Brian Puckey

E.S.P. (UK) LTD

The Arches, Unit 5, Furmston Court, Letchworth, Herts SG6 1EX. Tel: [01462) 482411 Fax: (01462) 673856 Contact: Ann Brodhurst

EXCITING LIGHTING & DECOR

Units 7, 46, 47 The Business Centre, Enterprise House, Balloo Industrial Estate, Balloo Avenue, Bangor, Co. Down BT19 7QT Tel. (01247) 462338 Fax: (01247) 271755 Contact: Harry Filmer

FABTRONIC LIGHTING

54/56 Tenter Road, Moulton Park Ind Estate, Northampton NN3 1AX Tel: (01604) 790765 Fax: (01604) 492856 Contact: Mel Henderson

FAIRBANK HARDING LTD

38 Chapletown, Pudsey LS28 8BL. Tel: 0113-257 0020 Fax: 0113-257 0732 Contact: Andrew Fairbank

5 STAR CASES

12 Sandall Road, Wisbech, Cambs PE13 2RT Tel: (01945) 474080 Fax: (01945) 64416 Contact: James Willis

FLYING PIG SYSTEMS LTD

53 Northfield Road, London, W13 95Y Tel: 0181-579 5665 Fax: 0181-579 8469 Contact: Nick Archdale

FORMULA SOUND LTD

Ashton Road, Bredbury, Stockport, Cheshi Tel: 0161-494-5650 Fax: 0161-494-5651 Contact: Sandra Cockell lockport. Cheshire SK6 2SR

FRANCIS SEARCHLIGHTS (1990) LTD

Union Road, Bolton, Lancs BL2 2HS Tel: (01204) 27196 Fax: (01204) 361567 Contact: John Orentas

FUTURIST LIGHT & SOUND LTD

Hoyle Head Mill, New Street, Earlsheaton, Dewsbury, West Yorkshire WF12 8JJ. Tel: (01924) 468183 Fax: (01924) 458667 Contact: Brian Simmons

GARNDENE COMMUNICATION

SYSTEMS LTD Hi-Pylon Works, Slades Road, Golcar, Huddersfield, HD7 4JS. Tel: (01484) 658415 Fax: (01484) 656810 Contact: B Marshall

G E LIGHTING LTD

Miles Road, Mitcham, Surrey CR4 3YX. Tel: 0181-640 1221 Fax: 0181-640 9760 Contact: Marney Lowe

G F BEVAN

Burley Moor Works, Ball Hill, Newbury, RG15 OPB. Tel: (01653) 253248 Fax: (01653) 253248 Contact: G F Bevan

GERRIETS GREAT BRITAIN LTD

J412 Tower Bridge Business Square, Drummond Road, London SE16 4EF. Tel: 0171-232 2262 Fax: 0171-237 4916 Contact: Stewart Crosbie

GLANTRE ENGINEERING LTD

20 Richfield Avenue, Reading, Berks RG1 8EQ. Tel: (01734) 640000 Fax: (01734) 640064

GORDON MORRIS LTD

Denehurst, Baltonsborough, Glastonbury BA6 8QY. Tel: (01458) 50396 Fax: (01458) 50652 Contact: Gordon Morris

GMS (RECORDINGS) LTD

Kinneil House, Kirk Entry, Polmont, FK2 OQS. Tel: (01324) 711011 Fax: (01324) 711533 Contact: Tom Clarke

HARDWARE FOR XENON LTD

140 Clayton Road, Hayes, Middlesex UB3 1BB. Tel: 0181-848 1387 Fax: 0181-848 1135 Contact: Alain Bardouil

HARKNESS SCREENS & HALL STAGE LTD

The Gate Studios, Station Road, Borehamwood, Herts WD6 1DQ. Tel: 0181-953 3611/9371 Fax: 0181-207 3657 Contact: Eddle Daniels

HARMAN AUDIO UK LTD

Unit 2, Borehamwood Industrial Park, Rowley Lane, Borehamwood, Herts WD6 5PE. Tel: 0181-207 5050 Fax 0181-207 4572 Contact: Bruno Wayte

HAWTHORN THEATRICAL

40 Pate Road, Leicester Road Industrial Esta Melton Mowbray, Leicestershire LE13 ORG Tel: (01664) 410122 Fax: (01664) 63542 Contact: Martin Hawthorn

HOWARD EATON LIGHTING LTD

Winterlands, Resting Oak Hill, Cooksbrid Lewes, East Sussex BN8 4PR Tell (01273) 400670 Fax: (01273) 401052 Contact: Howard Eaton

HW AUDIO LTD

174-176 St Georges Road, Bolton BL1 2NZ. Tel: (01204) 385199 Fax: (01204) 364057 Contact: C D Harfield

HW INTERNATIONAL

HATEKINA HONAL 167-171 Willoughby Lane, Brantwood Industrial Area, London N17 05B. Tel: 0181-808 2222 Fax: 0181-808 5599 Contact: Alf Allenstein

Hz INTERNATIONAL LTD

Combe House, Stoke-St Michael, Bath, Somerset BA3 SHN Tell (01749) 840102 Fax=(01749) 840887 Contact Fernley Roch

6 Delany Drive, Frecleton, Preston PR4 1SJ Tel-(01772) 633697 Fax: (01772) 634875 Contact: John Foley

IAMES THOMAS ENGINEERING LTD

Station Approach, Pinvin, Nr Pershore, Worcester WR10 2DB. Tel: (01386) 553002 Fax: (01386) 552321 Contact: Mervyn Thomas

JARVIS SOUND SERVICES

55 High Street, Christchurch, Dorset BH23 1AT, Tel. (01202) 485877 Fax. (01202) 421257 Contact Keith Jarvis

J.E.M. SMOKE MACHINE CO LTD

Lincolnshire PE23 5HE Tel: (01790) 754050 Fax (01790) 754051 Contact Ion Petts

J M McDONALD & ASSOCIATES

Tel/Fax (01463) 231314 Contact: John McDonald

JOHN HORNBY SKEWES & COLTD

Garforth, Leeds L525 2HR
Tel: (0113) 286 5381 Fax: (0113) 286 8515
Contact John Hornby Skewes

JYG LTD Unit D10 & D11 The Seedbed Centre, Davidson Way, Romford, Essex RM7 OA2 Tel: (01708) 762696 Fax: (01708) 741579 Contact: Garry Clark

KAM ELECTRONICS (LAMBA PLC)

Albion Mills, Albion Road, St Albans, Heris Tel: (01727) (940527: Fax: (01727) 837811 Contact: Damon Crisp Horts ALL SEB

KELSEY ACOUSTICS LTD

Street London W10 4LL 27 Beethoven Street, London W10 4LL Tel: 0181-964 8000 Fax: 0181-964 1010 Contact: Richard Vickers

KEN DIBBLE ACOUSTICS

Old Rectory House, 79 Clifton Road, Rugby, Wanvickshire CV21 3QG. Tel: (01788) 541133 Fax: (01788) 541314 Contact: Ken Dibble

KLARK TEKNIK PLC

Klark Industrial Park, Walter Nash Road, Kidderminster, Worcs DY11 7HJ Tel: (01562) 741515 Fax: (01562) 745371

Contact: David Webster LASER CREATIONS LTD

55 Merthyr Terrace, Barnes, London SW1 Tel: 0181-741 5747 Fax: 0181-748 9879 Contact: Marlyn Weeks

LASERPOINT COMMUNICATIONS LTD

14/45 Cliffon Road, Cambridge CBT 4FD Tel: (01223) 212331 Fax: (01223) 214085 Contact: Ron Turpie

LE MAITRE (SALES) LTD

6 Forval Close, Wandle Way Mitcham, Surrey CR4 4NE. Tel: 0181-646 2222 Fax: 0181-646 1955 Contact: Dave Winfield

LE MARK TVS

Unit 24, Stevenson Road, St Ives, Huntingdon, Cambs PE17 4WJ. Tel: (01480) 494540 Fax: (01480) 494206 Contact: Stuart Gibbons

LEAMINGTON SIGHT & SOUND

gton Spa CV34 6TI Tel: (01926) 833617 Fax: (01926) 883120

LEE FILTERS LTD

Central Way, Walworth Industrial Estate, Andover, Hants SP10 5AN Tel=(01264) 366245 Fax: (01264) 355058 Contact Ralph Young

LEISURE SERVICES (UK) LTD

The Sound Light Workshop, Gaywood Farm, Hole Lane, Edenbridge, Kent TN8 6SL Tel (01732) 866551 Fax (01732) 866552 Contact: Ian De Le Vingne

LEISURETEC

Unit 15, Portland Road Industrial Units. Kingsway, Luton, Beds LU4 BHA. Tel=(01582) 23300 Fax: i01582) 400237 Contact: Mike Henden

LIGHT & SOUND DESIGN LTD

Tel=0121-766 6400 Fax: 0121-766 6150 Contact: Terry Lee

LIGHT ENGINEERING LTD

64 Eden Road, Walthamstow, London E17 5 Tel: 0181-520 2336/7 Fax: 0181-509 1332 act Cliff Wildi

LIGHT PROCESSOR LTD

11 Fairway Drive, Fairway Industrial Estate, Greenford, Middlesex UB6 8PW. Tel: 0181-575 8828 Fax: 0181-575 8678 Contact: Mick Hannaford

LIGHT SUPPORT LTD

121 Loverock Road, Reading, Berkshire RG3 1DZ. Tel: (01734) 393955 Fax: (01734) 505964

LIGHT WORKS LTD

2a Greenwood Road, London E8 1AB Tel: 0171-249 3627 Fax: 0171-254 0306 Contact: Charlie Paton

LIGHTFACTOR SALES LTD

11 Fairway Drive, Fairway Industrial Estate, Greenford, Middlesex UB6 8PW. Tel: 0181-575:5566 Fax: 0181-575 8678 Contact Mick Hannaford

LIGHTING TECHNOLOGY GROUP LTD

2 Tudor Estate, Abbey Road Park Royal, London NW10 7UY Tel: 0181-965 6800 Fax: 0181-965 0950 Contact: Ron Knell

LMC AUDIO SYSTEMS LTD

Unit 10, Acton Vale Industrial Park, Cowley Road, London W3 7QE Tel: 0181-743-4680 Fax: 0181-749-9875 Contact Paul Hinkl

LITE SMIFFS LTD

266 Church Road, Northolt, Middlesex UB5 5AW Tel: 0181-845 9337 Fax: 0181-842 0294

LITE STRUCTURES (GB) LTD

West Yorkshire WF4 3BQ. Tel: (01924) 240800 Fax: (01924) 254083 Contact: Adrian Brooks

LITTON VEAM UK

72 Whitecrays Road, Glenrothes, Fife, Scotland KY6 2RX. Tel. (01592) 774018 Fax: (01592) 774143 Contact, John Cameron

LOUIS GRACE FLECTRICAL LTD

25 Langside Place, Glasgow G41 3DL Tel: 0141-632 4633 Fax: 0141 649 4772 Contact: Martin Grace

LYNX LIGHTING LTD

5 Oxford Road, Pen Mill Trading Estate, Yeovil, Somerset BA21 5HR. Tel: (01935) 29290 Fax: (01935) 79439 Contact: Nick Searle

Studio 12, Cameron House, 12 Castlehaven Road, London NW1 8QW Tel: 0171-284 2504 Fax: 0171-284 2503 Contact: Michael Goldberg

MAM COMMUNICATION SYSTEMS LTD

2 Pincents Kiln, Calcot, Reading, Berkshire Tel: (01734) 305599 Fax: (01734) 303369 Contact: Peter Woodard

MARQUEE AUDIO LTD

Shepperton Studio Centre, Studios Road, Shepperton, Middx TW17 0QD, Tel: (01932) 566777 Fax: (01932) 565861 Contact: Spencer Brooks

MARTIN AUDIO

Cressex Industrial Estate, 19 Lincoln Road, High Wycombe, Bucks HP12 3RD Tel: (01494) 535312 Fax: (01494) 438669 Contact: Sara Kendrick

METRO AUDIO

rell Road Business Park, Onit 12, Barnwell Road Business Park, Cambridge CB5 8UY. Tel: (01223) 413814 Fax: (01223) 415918 Contact: Phil Hildren

MICO LIGHTING LTD

Troydale Lane, Pudsey, Leeds LS28 9LD, Tel: (01532) 567113 Fax: (01532) 572358 Contact: Michael Kitching

MIDLAND THEATRE SERVICES

Tel: 0121-525 4545 Fax: 0121-525 2413 Contact: Mike Savage Contact: Mike Savage Leicester: Tel: 0116-275 5310 Fax: 0116-275 5311

m B66 1AX

MIDNIGHT SALES LTD

Unit 1, Chelsea Bridge Business Centre, 326 Queenstown Road, London SW8 4NE Tel: 0171-498 7272 Fax: 0171-498 8845 Contact: David Rose

MILLBANK ELECTRONICS

Forest Row Business Park, Station Road, Forest Row, East Sussex EH18 5DW-Tel: (01342) 826869 Fax: (01342) 826795 Contact: Sarah Harwood

MODE ELECTRONICS LTD

Chelsing Lodge, Tomvell. Ware, Hertfordshire SG12 0LB Tel: (01920) 462121 Fax: (01920) 466881 Contact: Andrew Morris

MODELBOX

57 Filmer Road, London SW6 7JF Tel: 0171-371 0110 Fax: 0171-371 0806 Contact: Christopher Toulmi

MTL INTERNATIONAL LTD

Steelmark House, Crusader Ind Estate, Hermitage Road, London N4 1LS Tel: 0181-800 8090 Fax: 0181-809 6465 Contact: Laurie Steel

MULTIFORM LIGHTING Bell Lane, Uckfield, East Sussex TN22 1QL, Tel;(01825) 763348 Fax::101825) 763310 Contact: Jain Price-Smith

MUSHROOM LIGHTING SERVICES LTD 76 Tenter Road, Moulton Park Ind. Estate, Northampton NN3 TAX. Tel (01604) 790900 Fax: (01604) 491118 Contact: Paul Butler

MUSTANG COMMUNICATIONS LTD

Eastfield Industrial Estate, Cayton Low Road Scarborough YO11 3 LT. Tel. (01723) 582555 Fax: (01723) 581673 Contact: Alec Worrell

NEXT TWO LTD

Bellbrook Industrial Estate Uckfield, East Sussex TN22 1QL Tel (01825) 761638 Fax: (01825) 763900

NIGHT FLIGHT (ENTERTAINMENTS) LTD

7 Floming Court, Clydebank Business Park Clydebank, Glasgow, G81 2DR Tel: 0141-941 1001 Fax: 0141-952 6464 Contact: Bill Smith N.J.D. ELECTRONICS LTD

10 Ascot Industrial Estate, Lenton Street, Sandiacre, Nottingham NG10 5DJ Tel: (01602) 394122 Fax: (01602) 490453 Contact: Keith Greenwood NORTHERN LIGHT 39/41 Assembly Street, Leith, Edinburgh EH6 7RG. Tel: 0131-553 2383 Fax: 0131-553 3296 Contact: John Allen

NORTHERN LIGHTS 89 Scotforth Road, Lancaster LA1 4SD. Tel: (01524) 845584 Fax: (01524) 845583 Contact: Ray Wilkinson

NSR COMMUNICATIONS LTD Tel 0181-951 0222 Fax 0181-951 0226

ontact Nigel Robinsi **NU-LIGHT SYSTEMS LTD**

Unit 1, Athertons Quay, Warrington, Cheshire, WA5 1AH. Tel. (01925) 243075 Fax: (01925) 243077 Contact: Debbie Clayton

OCLI OPTICAL COATINGS LTD

Ridge Way, Hillend Industrial Park Dalgety Bay, Nr Dunfirmline, Fife KY11 5FR Tel (01383) 823631 Fax: (01383) 824287 Contact: Steve Rothero OHM INDUSTRIES LTD

Wellington Close, Parkgate Ind. Estate Knutsford, Cheshire WA16 8DX Tel. (01565) 654641 Fax: (01565) 755641 Contact: Darryl Thorpe

OPTEX 22:26 Victoria Road, New Barnet, Herts EN4 9PF. Tel: 0181-441 2199 Fax: 0181-449 3646 Contact: Ian Lake

OPTIKINETICS LTD

38 Cromwell Road, Luton LU3 1DN, Tel :(01582) 411413 Fax: (01582) 400613 Contact: Neil Rice

OSRAM LTD

P.O. Box 17, East Lane, Wembley Middlesex HA9 7PG Tel 0181-904 4321 Fax 0181-901 1122 Contact Andre Mussert

OWL VIDEO SYSTEMS LTD ndustrial Park 8-9 Horsted Square, Bellbrook Industrial Pa Uckfield, East Sussex TN22 1QW Tel: (01825) 766123 Fax: (01825) 760246

Contact: David Juby P.A. INSTALLATIONS LTD 26-28 Inkerman Street, Llanelli, Dyfed SA15-1SA. Tel: |01554|752490 Fax: |01554|777848

PAR OPTI PROJECTS LTD

Contact: Paul Adams

67 Stirling Road, London W3 8DJ Tel: 0181-896 2588 Fax: 0181-896 2599 Contact Paul Raymond

PCM

Prenton Way, North Cheshire Trading Estate. Prenton, Wirral L43 3DU. Tel: 0151-609 0101 Fax: 0151-609 0200 Contact: John Jones

PEAVEY ELECTRONICS (UK) LTD

Hatton House, Hunters Road, Corby, Northants NN17 1JE. Tel=(01536) 205520 Fax: (01536) 269029 Contact: Ken Achard

PECO ELECTRONIC DISTRIBUTORS

248-252 Grand Drive, Raynes Park, London SW20 9NE Tel: 0181-543 1030 Fax: 0181-543 0067 Contact Paul Leib

PEGASUS SOUND & LIGHT

23-25 Canongale, The Royal Mile, Edinburgh EH8 8BX. Tel: 0131- 556 1300 Fax: 0131- 557 6466 Contact: David Hunter

PENN FABRICATION LTD

3 Armstrong Road, Armstrong Industrial Estate, District 2, Washington, Tyne and Wear NE37 LLH. Tel: 0191- 416 1717 Fax: 0191- 419 3715 Contact: Frank McCourt

PENN FABRICATION (HASTINGS) LTD

Unit D1, Theaklen Drive, Ponswood Ind. Es St Leonards-on-Sea, East Sussex TN28 9BX. Tel: (01424) 718576 Fax: (01424) 718572 Contact: Riad Mehio

PERFECT ACOUSTICS LTD

Hughes Buildings, Boat House Lane, Stockton-on-Tees, Cleveland TS18 3AW. Tel: (01642) 603395 Fax: (01642) 618176 Contact: Bob Mulvey

PHILIPS COMMUNICATION & SECURITY

Cromwell Road, Cambridge CB1 3HE. Tel: (01223) 245191 Fax: (01223) 413551 Contact: Brian Bennett

PLANNED EQUIPMENT LTD

Belvue House, Belvue Road, Northolt UBS 5HP. Tel: 0181-841 6251 Fax: 0181-841 1948 Contact: P Williams

PLAYLIGHT HIRE LTD

67 Ayres Road, Old Trafford, Manchester M16 7 QN Tel: 0161-226 5858 Fax: 0161-232 9510 London: 0181-965 8188 Birmingham: 0121-328 1591 Contact Barry Hampson (Manchester

POWERDRIVE DRUM CO. LTD

Unit M1, Cherrycourt Way, Stanbridge Road, Leighton Buzzard, Redfordshire LU7 8UH Tel: (01525) 370292 Fax: (01525) 852126 Contact: Keith Dowzell

PRIMARC (MARKETING) LTD

121 Loverock Road, Reading, Berks RG3 1DZ Tel: (01734) 596777 Fax: (01734) 505964 Contact: Donald Major

PROTEK SOUND SYSTEMS

83 Farclough Road, Dungannon, County Tyrone, N. Ireland BT71 4DU Tel: (01868) 747327 Fax: (01868) 747478 Contact: Stephen Kennedy

PUBLIC ADDRESS SOUND SYSTEMS

Springburn', Miltonduff, Elgin, Moray, IV3 Tel. (01343) 541939 Fax: (01343) 541939 Contact: Alexander Mellis

PULSAR LIGHT OF CAMBRIDGE LTD

Henley Road, Cambridge CB1 3EA Tel: (01223) 66798 Fax (01223) 460708 Contact: Derrick Saunders

P W ENTERPRISES LTD

Unit 11, Chelsea Fields Industrial Estate, 278 Western Road, Merton, London SW19 2QA. Tel: 0181-646 6131 Fax: 0181-646 5983 Contact: George Wetherill

RAINBOW INTERNATIONAL

448 Uxbridge Road, Shepherds Bus London W12 ONS. Tel: 0181-743 9999

RAMSA PROFESSIONAL AUDIO SYSTEMS

Willoughby Road, Bracknell, Berks RG12 4FP Tel: (01344) 853176 Fax: (01344) 853705 Contact: Ian Sharpe

RANDOM SOUND DESIGN Unit 6/8, Clader Vale Road, Wakefield, W Yorks WF1, Tel: (01924) 290829 Fax: (01924) 379125 Contact: R Dunbar

RAPER & WAYMAN LTD

Unit 3, Crusader Industrial Estate, 167 Hermitage Road, London N4 1LZ Tel: 0181-800 8288 Fax: 0181-809 1515 Contact: Rodney Wayman

REDIFON SPT Woodrolfe Road, Tollesbury, Maldon CM9 8XD. Tel: (01621) 869558 Fax: (01621) 868898 Contact: T Thomas

REES SOUND SYSTEMS

Hillside, Brewery Road, Carmathen SA31 1TF. Tel/Fax: (01267) 236811 Contact: Ken Rees

REFLEX SOUND & LIGHT SYSTEMS

47 Wellgate, Rotherham, South Yorkshire 5 Tel: (01709) 377767 Fax: (01709) 366504 Contact: John Pve

REFLEXION LIGHTING GROUP

Lanwades Business Park, Kentford, Newmarket, Suffolk, CB8 7PN Tel: (01638) 750088 Fax: (01638) 750030 Contact: Richard Dixon

RCF ELECTRONICS (UK) LTD

2 Blenheim Court, Hurricane Way, Wickford Business Pk, Wickford, Essex SS11 8YT. Tel: (01268) 570808 Fax: (01268) 570809 Contact: Philip Price

R.D. FENNER & CO

31 Brackenbrae Avenue, Bishopbriggs, Glasgow G64 2BW. Tel: 0141-762 0506 Fax: 0141-772 3481 Contact: R D Fenne

R.G. IONES SOUND ENGINEERING

Beulah Road, Wimbledon, London SW19 3SB Tel: 0181-540 9881 Fax: 0181-542 4368 Contact: Mark Ada

RICHARD PATTIMORE

5 L'Enclos des Monts, Mont Morin, St Sampson's, Guernsey, Channel Islands GY2 4JA. Tel: (01481) 49883 Contacts: Richard Pattimore

RICHMOND ELECTROTECH

Unit 1, Willow Court, Bracewell Avenue, Poulton Le Fylde, Lancs, FY6 8JF Tel: (01253) 893688 Fax: (01253) 899226 Contact: E Mather

ROGER DEY

Unit A, Pye Alley Farm, Clapham Hill, Whitstable CT5 3DN. Tel: (01227) 277611 Fax: (01227) 771044 Contact: Jason Dey

ROPE ASSEMBLIES LTD

Hallcroft Industrial Estate, Retford, Nottinghamshire DN22 7PX. Tel: (01777) 700714 Fax (01777) 860719 Contact: D T Hitchin

ROSCOLAB LTD

Blanchard Works, Kangley Bridge Road, Sydenham, London SE26 5AQ Tel: 0181-659 2300 Fax: 0181-659 3153 Contact: Peter Richards

RYGER ELECTRONICS

Gladstone Street, Langley Mill, Nottingham NG16 4EN. Tel: (01773) 530053 Fax: (01773) 530855 Contact: Tyrone LeMercie

SAMUELSON COMMUNICATIONS

13 Field Way, Greenford, Middx UB6 8PV Tel: 0181-566 6444 Fax: 0181-566 6365 Contact Roger Dix

SCRATCH MUSIC & INSTALL

Sunset House, 159 Balby Road, Balby Doncaster DN4 ORG Tel: (01302) 850030 Contact Alan Drabble

SCV ELECTRONICS LTD

6 24 Southgate Road, London N1 3]] Tel: 0171- 923 1892 Fax: 0171-241 3644 Contact Julian Blyth

SENNHEISER UK LTD

12 Davies Way, Knaves Beech Business Centre Loudwater, High Wycombe HP10 9QY Tel: (01628) 850811 Fax: (01628) 850958 Contact: Paul Whitins

SENSIBLE MUSIC LTD

Unit 10, Acorn Production Centre, 105 Blundell Street, London N7 9BN-Tel: 0171-7006655 Fax: 0171-609 9478 Contact: Jeffrey Allen

SET REACTION 9 Victoria Road, Avonmouth, Bristol BS11 9DB Tel: 0117-982 6260 Fax: 0117-982 7778 Contact: Nick Handcock

SHERBORNE SOUND

48 Gordon Road, West Bridgford, Nottingham NG2 5LS. Tel: 0115-981 5555 Fax: 0115-982 7007 Contact: K Beevers

SHUTTLESOUND LTD

4 The Willows, Willow Lane, Mitcham, Surrey CR4 4NX Tel: 0181-640 9600 Fax: 0181-640 0106 Contact: William Woods

SLICK SYSTEMS INTERNATIONAL LTD

Portland Street North, Leek, Staffs ST13 6L/ Tel: (01538) 372109 Fax: (01538) 381315 Contact: Mike Wood

SMITHFI LD ELECTRONICS

3 Ermine Road, Hoole, Chester CH2 3PN. Tel: (01244) 349062/349158 Fax: (01244) 347331

1440 Leeds Road, Bradford, West Yorkshire BD3 7AA. Tel: (01274) 661406 Fax: (01274) 666463 Contact: Keith Walker

SOUND ADVICE

6 St Christophers Ave, Fareham, Hampshire PO16 7BY, Tel/Fax: (01329) 221791

SOUND DEPARTMENT

33 Beaumont Street, Oxford OX1 2NP Tel: (01865) 516800 Fax (01865) 514461 Contact: Steve Smith

SOUND ELECTRONICS (NEWCASTLE) LTD

201-205 Jesmond Road, Newcastle Upon Tyne NE2 1LA Tel: 0191-281 4248 Fax: 0191-281 1194

SOUNDCOMM DISTRIBUTION LTD

24 Stanley Place, Ongar CM5 95U. Tel: (01277) 362450/362579 | Fax: (01277) 365187

SOUNDCRAFT ELECTRONICS LTD

Cranborne House, Cranborne Industrial Estate, Potters Bar, Herts EN6 3JN. Tel: (01707) 665000 Fax: (01707) 600482 Contact: Jon Ridel

SOUNDIVISION

Adelaide House, 383-385 Liverpool Road, Islington, London N1 1NP. London NT 1NP.
Tel: 0171-609 3939 Fax: 0171-609 1310
Contact: David Graham

SOUND SPECIALISTS LTD

Stonefield, Oldhill Wood, Studham, Beds. LU6 2NF: Tel: (01582) 872352 Fax: (01582) 872623 Contact: D Newell

SOUNDTRACS PLC

Unit 21-D Blenheim Road, Longmead Industrial Estate, Epsom, Surrey KT19 9XN.
Tel: 0181-388 5000 Fax: 0181-388 5050 Contact: John Carroll

SOUNDTRACK (AUDIO VISUAL) LTD

23 Farriers Way, Temple Farm Industrial Esta Southend on Sea, Essex SS2 SRY. Tel: (01702) 619583 Fax: (01702) 619584 Contact: Colin Cooper

SPECIALIST LAMP DISTRIBUTORS LTD

10 Sovereign Enterprise Park, King W Salford, Manchester M5 2UP. Saltord, Manchester M5 2UP. Tel: 0161-873 7822 Fax: 0161-873 8089 Contact: John Edwards 83 Lomond Grove, Cambenvell, London SE5 7QZ. Tel: 0171-708 0751 Fax: 0171-708 2251 Contact: Jane Grater

STAGE ELECTRICS

Victoria Road, Avonmouth, Bristol BS11 9DB Tel: 0117-982 7282 Fax: 0117-982 2180 Contact: James Bishop Exeter: Tel: (01392) 55868 Fax: (01392) 410592 Plymouth: (01752) 296444 Fax: (01752) 228283

STAGE TECHNOLOGIES

udios Ltd. 22 Highbury Grove Tel: 0171-354 8800 Fax: 0171-359 1730 Contact: John Hastie

STAGE TWO LTD

Unit J, Penfold Trading Estate, Imperial Way, Watford, Herts WD2 4YY. Tel: (01923) 230789 Fax: (01923) 255048 Contact: Terry Dourls

STAR HIRE

Blackburn Hall, Milton Road, Thurleigh, Bedfordshire MK44 2DG. Tel: (01234) 772233 Fax: (01234) 772272

STARSTRUCK PRO SOUND & LIGHT LTD

Block 2, Unit 2, Tollcross Industrial Estate Causewayside Crescent, Tollcross Glasgow G32 8LY. Tel 0141-778 4848 Fax: 0141-763 0015

STRAND LIGHTING LTD

Grant Way, Isleworth, Middlesex TW7 5C Tel: 0181-560 3171 Fax: 0181-568 2103 Contact: David Brooks esex TW7 5QD

STUDIOMASTER DIAMOND LTD

Studiomaster House, Chaul End Lane, Luton, Beds, LU4 8EZ. Tel (01582) 570370 Fax: (01582) 494343 Contact Stake Farley

SUPERMICK LIGHTS

119-121 Freston Road, Holland Parki London W11 4BD. Tel: 0171-221 2322 Fax: 0171-727 8693 Contact, Peter Clarke

SYLVANIA

Otley Road, Charlestown, Shipley, West Yorkshire BD17 7SN. Tel: (01274) 595921 Fax: (01274) 580632 Contact: Ken Rickman

Rosehall Industrial Estate, Coatbridge Strathclyde, Scotland ML5 4TF. Tel: (01236) 420199 Fax: |01236| 428230 Contact: Derek West

TECHNICAL INSIGHT LTD

Unit 8, 75 Filmer Road, London SW6 7)F-Tel: 0171-371 0875 Fax: 0171-371 0806 Contact: David Self

TERRALEC LTD

3 Featherby Way, Purdy's Industrial Estate, Sutton Road, Rochford, Essex SS4 1LD Tel: (01702) 547571 Fax: (01702) 548543 Contact: Richard Lord

T G BAKER CO LTD

Clydebank Business Park, Glasgow Tel: 0141-941 3399 Fax: 0141-952 6003 Contact: T G Baker

THE AUDIO AND

COMMUNICATIONS COMPANY LTD
Aizlewood's Mill, Nursery Street, Sheffield S3 8GG
Tel: (01142) 823120 Fax: (01142) 823179 Contact Andy Baker

THE AV COMPANY

Z80 Forest Road, Walthamstow, London E17 5JN. Tel:0181-520 4321 Fax:0181-520 9848 Contact:R M Dobney

THE MUSIC COMPANY LTD

Unit 3E, Hillam Road Industrial Estate, Canal Road, Bradford, West Yorkshire BD2 1QN-Tel: (01274) 370966 Fax: (01274) 308706 Contact: Miles Marsden

THE SPOT CO LTD

53 Northfield Road, West Ealing, London W13 9SY. Tel: 0181-566 5012 Fax: 0181-566 5013

THE SOUND WORKSHOP

19 21 Queens Road, Halifax HX1 3NS. Tel: (01422) 345021 Fax: (01422) 345031 Contact Richard Lockver

THEATRE DIRECT

Unit 2, Kilmaine Close, Cambridge CB4 2PH. Tel: (01223) 410249 Fax: (01223) 411300 Contact: Adam Blaxill

THEATRE PROJECTS

20-22 Fairway Drive, Greenford, Middlesex UB6 8PW-Tcl-0181-575 5555 Fax: 0181-575 0105 Contact: Alan Thomson

TOA CORPORATION PLC

Tallon Road, Hutton Ind, Estate, Hutton, Brentwood, Essex CM13 1TG Tel: (01277) 233882 Fax: (01277) 233566 Contact: Harry Greenaway

TP SOUND SERVICES LTD

13 Field Way, Greenford, Middlesex UB6 8UN. Tel: 0181-813 1112 Fax: 0181-566 6365 Contact Rachel Henshay

TRANTEC SYSTEMS LTD Unit 30, Wates Way, Willow Lane Industrial Estate, Mitcham, Surrey CR4 4HR. Tel: 0181-640 0822 Fax: 0181-640 4896 Contact Chris Gilbert

TRIFIBRE CONTAINERS INTERNATIONAL LTD
Unit C, Britannia Way, off Melton Road,
Thurmaston, Lejcester LE4 8JA. Tel: (01533) 698989 Fax: (01533) 698959

TRIPLE E LIMITED B3 Tower Bridge Business Square, Clements Road, London SE16 4EF Tel: 0171-237 6354 Fax: 0171-237 7650 Contact: David Edelstein

TSC MUSIC SYSTEMS LTD

288 Northgate Place, Crawley, RH10 2BB. Tel: (01293) 523441 Fax: (01293) 553461 Contact James Abdool

TSL (AV) LTD

Studio 9, 75 Filmer Road, London SW6 7JF Tel. 0171-371 5020 Fax: 0171-371 0503 Contact: Matthew Griffiths

TURBOSOUND LTD

Star Road, Partridge Green, West Sussex RH13 8RY, Tel: (01403) 711447 Fax: (01403) 710155

ULTIMATE DJ ACCESSORIES 26 Warley Road, Oldbury, West Midlands B68 9JS. Tel: 0121-434 4000 Fax: 0121-429 1865

Contact Andrew Tain UNITED KINGDOM DISTRIBUTORS

Rigby Close, Heathcote Industrial Estate, Learnington Spa, CV34 6TH. Tel: (01926) 314878 Fax: (01926) 883120 Contact Ian Potter

UNUSUAL RIGGING LTD 4 Dalston Gardens, Stanmore, Middlesex HA7 1DA, Tel: 0181-206 2733 Fax: 0181-206 1432

Contact: Adam Wildi

VA TURNER & SON Fernhill, High Street, Barcombe, Nr Lewes BN8 5BB. Tel: (01273) 400339 Contact: Vic Turner

VARI-LITE EUROPE LTD

20-22 Fairway Drive, Greenford, Middlesex UB6 8PW, Tel: 0181-575 6666 Fax: 0181-575 0424 Contact: David March VAUGHAN SOUND SYSTEMS LTD SA1 2JG.

Contact David Vaughan

VESTAX (EUROPE) LTD

18 St Christophers Road, Haslemere,
Surrey GU27 1DQ

Tel: (01428) 653117 Fax: (01428) 661021 Contact Rob Peck

222/223 Neath Road, Landore, Swansea SA Tel: (01792) 654133 Fax: (01792) 654145

VOLT LOUDSPEAKERS LTD

Enterprise House, Blyth Road, F Middlesex UB 3 1DD. Tel: 0181-573 4260 Fax: 0181-813 7551 Contact David Lyth

WASHBURN UK LTD 15 Amor Way, Letchworth, Herts SG6 1UG. Tel: (01462) 482466 Fax: (01462) 482997 Contact: Steve Wright

WEAC LTD

Europoint, 5-11 Lavington Street, London SE1 ONZ. Tel: 0171-945 6002 Fax: 0171-945 6003 Contact: John Pullen

Clock Tower Works, Warsash SO3 6FH. Tel: (01489) 583288 Fax: (01489) 885039

WEMBLEY LOUDSPEAKER CO LTD

Unit 4, Askew Crescent Workshops, Askew Crescent, London W12 9DP Tel: 0181-743 4567 Fax: 0181-749 7957 Contact Paul MacCallum

WESTMINSTER SOUND SYSTEMS

Westminster House, Herschel Centre Church Street, Slough SL1 1PJ Tel: (01753) 553325 Fax: (01753) 553867

WHARFEDALE INTERNATIONAL LTD

Sandleas Way, Crossgates, Leeds. West Yorkshire LS15 BAL Tel: 0113-260 1222 Fax: 0113-260 0267 Contact Gary Orrell

WHITE LIGHT (ELECTRICS) LTD

57 Filmer Road, London SW6 7JF. Tel: 0171-731 3291 Fax: 0171-371 0806

WHITE LIGHT (NORTH)

Corporation Street, Sowerby Bridge, Nr Halifax, West Yorks HX6 2QQ Tel: (01422) 839651 Fax: (01422) 839773 Contact: John Anderton

WHITELY ELECTRONICS LTD

Victoria Street, Mansfield NG18 5RW. Tel: (01623) 421300 Fax: (01623) 420484 Contact: S Radford

WHITWAMS LTD

70 High Street, Winchester SO23 9DE. Tel: (01962) 870408 Fax: (01962) 842064 Contact: Dave Harding

WIGHTSOUND

ell Road, Newport NP9 4BP. Tel: (01633) 262023 Contact: M G Wight

WIGWAM ACOUSTICS LTD

St Annes House, Ryecroft Avenue, Heywood, Lancashire OL10 1QB. Tel: (01706) 624547 Fax: (01706) 365565 Contact: M ke Spratt

WILLOW VALE ELECTRONICS LTD

11 Arkwright Road, Reading, Berks RG2 OLU. Tel: (01734) 860158 Fax: (01734) 867188

W S STEELE

Unit 5/05 Oakbank Industrial Estate, Garscube Road, Glasgow G20 7LU. Tel: 0141-353 3393 Fax: 0141-353 3396

WYNNE WILLSON GOTTELIER LTD

The Old Mission House, Ide Hill, Sevenoaks, Kent TN14 6BZ Tel: (01732) 750204 Fax: (01732) 750617

104 Blundell Street, London N7 9BL Tel: 0171-700 0996 Fax: 0171-609 8281 Contact: Chris Cook

ZERO 88 LIGHTING LTD Hart Road, St. Albans, Herts AL1 1NA. Tel: (01727) 833271 Fax: (01727) 843676 Contact: Freddy Lloyd

International Members

ADB

Leuvensesteenweg 585, B-1930, Belgium. Tel: (32) 2 7221711 Fax: (32) 2 7221764 Contact: Mike Musso

ANDERSEN & CO Struenseegade 13-15, DK-2200 Kobenhavn N, Denmark, Tel: (45) 35 37 19 40 Fax: (45) 35 37 18 38 Contact: Jan Hjorth-Jenser

AUDIO VISUAL LAND PTE LTD

94 Kallang Avenue, #01-00 Atlas Ice Warehouse, Singapore 1233. Tel: (65) 2942522 Fax: (65) 2942500 Contact: Winston Goh

BYTECRAFT PTY LTD

23-27 Fonceca Street, Mordialloc 3195, Victoria, Australia. Tel: (61) 3 95 87 2555 Fax: (61) 3 95 80 7690 Contact John Drummond Montgomery

CLAY PAKY SPA

Via Pascoli 1, 24066 Pedrengo (BG) Italy. Tel: (39) 35 663965 Fax: (39) 35 665976 Contact: Enrico Caironi

CLAY PAKY & PULSAR VERTRIEBS GmbH

An der Talle 26, D-4790 Paderborn, Germany. Tel: (49) 5251 409051 Fax: (49) 5251 409931 Contact | Gunther Olbricht

Via Albinatico 80-82, Ponte Buggianese (Pistola), Italy Tel: (39) 572 636536 Fax: (39) 572 636535 Contact: Laura Piattelli

COEMAR SPA
Via Inghilterra Zona Industrial Estate, 46042
Castel Gofffedo (MN) Italy.
Tel: (39) 376 779336 Fax: (39) 376 780657
Contact: (vano Burato

COEMAR BELEUCHTUNGSALAGEN VERTRIEB DEUTSCHLAND GmbH

Schiller Str. 47-48, D89077, ULM/Donau, Germany Tel: (49) 731 96664-0 Fax: (49) 731 96664-4 Contact Harry Ratzer

COEMAR DESISTI AUSTRALIA PTY LTD

36a Clememst Avenue, Bundoora, Victoria 3083, Australia Tel: (61) 3 467 8666 Fax: (61) 3 467 8667 Contact: Peter Kemp

COŁORTRAN INC 1015 Chestnut Street, Burbank, CA 91506, USA. Tell: (1) 818 843 1200 Fax: (1) 818 972 5599 Contact: John Fuller

COMMUNITY SOUND SYSTEMS

438 Clontarf Road, Dublin 3, Ireland. Tel: (353) 1 833 8653 Fax: (353) 1 833 1493

COMPULITE R&D

3 Haroshet Street, New Industrial Zone, Ramat, Hasharon 47279, Israel. Tel: (972) 3 540 1268 Fax: (972) 3 540 1276 Contact: Fred Senator

CREST AUDIO INC

100 Eisenhower Drive, Paramus, New Jersey 07652, USA. Tel: (1) 201 909 8700 Fax: (1) 201 909 8666 Contact: Donna Lee Cordes

d&b AUDIOTECHNIK AG

Locks Mill, Brewery Lane, Nailsworth, Stroud, Gloucestershire GL6 0JQ, England. Tel: (0453) 815884 Fax: (0453) 834193 Contact: Simon Johnston

D.A.S. AUDIO S.A. C/ Islas Baleares, 24, Poligono Industrial Fuente del Jarrro, 46988 PATERNA (Valencia) Spain.
Tel: (34) 6 134 02 06 Fax: (34) 6 134 06 07
Contact: Jack Palacio,)r

ELECTROSONIC S.A.

P.O. Box 73515, Fairland, Johannesburg, RSA 2030, South Africa. Tel: (27) 11 476 5888 Fax: (27) 11 476 6705 Contact P.J.L. Coetz

E\T\C AUDIOVISUEL

27 rue Maurice Gunsbourg, 94851 lvry-Sur-Seine, Cedex, France. Tel. (33) 1 45 15 28 28 Fax: (33) 1 45 15 28 29

ELECTRONIC THEATRE CONTROLS INC.

3030 Laura Lane, Middleton, Wisconsin 53562, USA. Tel: (608) 831 4116 Fax: (608) 836 1736 Contact: Bill Gallinghouse

EVDV TRADE BVBA

Hoogstraat 56B, B-2870 Puurs, Belgium. Teli (32) 3 889 1909 Fax: (32) 3 889 5272. Contact: Georges Baekelmans

Tractieweg 190, 3534 AP Utrecht, The Netherlands Tel. (31) 30 444 842 Fax: (31) 30 447 606 Contact: Gerard Jongerius

GøGLER LYS SALG A/S

Gronnegade 61, DK - 8000, Aarhus C, Denmark. Tel: (45) 86 12 1966 Fax: (45) 86 19 0835 Contact: Poul Tonder

GRIVEN SRI

Via Bulgaria, 16, 46042 Castel Goffredo, (MN), Italy Tel: (39) 376 779 483 Fax: (39) 376 779 682

H. ITO & COMPANY LTD

Rms 301 & 302, No. 13-8 Koamicho, Nihonbash, Chuo-ku, Tokyo, 103 Japan Tel: (81) 3 3667 3268 Fax: (81) 3 3667 3267 Contact: Harumichi Ito

HIGH END SYSTEMS2217 W. Braker Lane, Austin, Texas TX 78758 USA.
Tel: (1) 512 836 2242 Fax: (1) 512 837 5290 Contact: Rob Schacher

Standaardruiter 27a, 3905 PT Veenendaal, The Netherlands Tel (31) 83 855 5495 Fax: (31) 83 855 5661 Contact: Jan de Jonge

Bosch 61, CH-6331 Hunenberg, Switzerland. Tel: (42) 366 779 Fax: (42) 362 808 Contact: Rolf Sarner

IAC VAN HAM LICHT, GELUID & BEELD B.V.

Kraaivenstraat 13, 5048 AB Tilberg, The Netl Tel: (31) 13 638 585 Fax: (31) 13 638 435 Contact: Ben Weilters

IANDS ELECTRONICS PTY LTD

P O Box 171, St Peters, N.S.W. 2044, Australia Tel: (61) 2 516 3622 Fax: (61) 2 517 1045 Contact: Paul Mulholland

JOEUN TECHNICS AND ARTS INC

#468-24 Segyo Dong Mapo Gu, Seoul, Korea Tel (82) 02 325 2501 Fax: (82) 02 325 2511

KUNELCO A/S

Bragesgade 10, 2200 Copenhagen N, Denmark-Tel: (45) 35 82 27 28 Fax: (45) 35 82 41 41 Contact: Kurt Neldahl

LASER THEATRE LIGHTING LTD

6/F Rear Portion, Microtron Bull 38 Hung To Road, Kwun Tong, Kowloon, Hong Kong. Tel: (852) 7979803 Fax: (852) 7970708 Contact: Lawrence Chan

LED SKL SS 100 - IL Baricentro - L.2 M 5, 70010 Casamassima (Bari), Italy. Tel: (39) 80 6977377 Fax: (39) 80 6977399 Contact: Onofrio De Nitto

Kandigasse 23, A-1070 Vienna, Austria Tel: (43) 1 521 080 Fax: (43) 1 526 4287 Contact: Hermann Sorge

LSC ELECTRONICS PTY LTD

7 University Place, Clayton, Victoria 3168, Australia. Tel: (61) 3 9561 5255 Fax: (61) 3 9561 5277 Contact: Gary Pritchard

LUNA TECH PYROTECHNIK GMBH

Schulberg 1, 24358 Ascheffel, Germany Tel: (49) 4353 643 Fax: (49) 4353 1014 Contact: Amanda McLean Wate

LYCIAN STAGE LIGHTING

P O Box D, Kings Highway, Sugar Loaf N.Y. 10981 USA Tel (1) 914 469 2285 Fax: (1) 914 469 5535 Contact: Lou Farina

M A LIGHTING TECHNOLOGY GMBH

Höhenweg 6, D-97249 Eisingen, German Tel: (49) 9306 2459 Fax: (49) 9306 2473 Contact: Thomas Stanger

MACOSTAR HONG KONG LTD

2/F Union Industrial Buildings, 48 Wong Chuk Hang Road, Hong Kong-Tel: (852) 2814 1881 Fax: (852) 2814 9106 Contact: David Law

MARTIN PROFESSIONAL A/S

Vejlbergvej 16, 8240 Risskov. Denmark Tel: (45) 86 21 44 11 Fax: 45 86 21 50 01 Contact: Peter Johansen

M H TECHNIK

Lilla Bjallerup 14, \$245 92, Staffanstorp, Sweden. Tel: (46) 46 46210 Fax: (46) 46 46211 Contact: Magnus Holm

NEUTRON SOUND SPECIALISTS LTD

Unit 8, Pine View, Firhouse Road, Templeogue, Dublin 16, Ireland Tel: (353) 1 945660 Fax: (353) 1 945766 Contact: Alan Mullegan

NOVATEC GROUP INC

20-6415 Northwest Drive, Mississauga, Ontario, Canada L4V 1XI. Tel: (1) 905 672 8811 Fax: (1) 905 672 8770 Contact: Brock McGini

NUMARK INDUSTRIES

111 Dupont Drive, Providence, Rhode Island 02907, USA. Tel. (1) 401 946 4700 Fax: (1) 401 946 5350 Contact: Jack O'Connell

PEATS WHOLESALE LTD

2 Chapel Lane, Parnell Street, Dublin 1, Ireland. Tel: (353) 1 8722577 Fax: (353) 1 8722642 Contact: Geoffrey F Peat

POWER LIGHT PRODUCTIONS LTD Fabrikmattenweg 8, CH-4144 Arlesheim, Swit Tel. (41) 61 701 8228 Fax. (41) 61 701 8338 Contact: Nicholas de Courten

PRODUCTION ARTS LIGHTING INC 636 11th Avenue, New York NY10036, USA. Tel: (1) 212 489 0312 Fax: (1) 212 245 3723

PRODUCTION PROJECTS (PTY) LTD 38 Schoeman Street, Pretoria, P O Box 40115, Arcadia 0007, Republic of South Africa Tel: (27) 12 211180 Fax: (27) 12 215 426 Contact: Nic Michaletos

PROF SOUND SYSTEMS B.V.Kruisstraat 116, 5502 JH Veldhoven, The Netherlands Tel: (31) 40 538235 Fax: (31) 40 549446 Contact: Cor van Avezaath

R. L. SHOWEQUIPMENT Neherkade 93 D, 2521 WV Den Haag, The Netherlands. Tel: (31) 70 399 9095 Fax; (31) 70 399 9098 Contact: Renè v.d. Luit ROBERT IULIAT S.A.

62/64 Rue Danielle Casanova, F-93207 Saint- Denis Cedex, France. Tel: (33) 1 42 43 35 35 Fax: (33) 1 42 43 08 05 Contact: Chantel Claret

ROMATOR RAINBOW PRODUCTION AB

Stallarholmsvagen 52, 124 59 Bandhage Stockholm, Sweden. Tel: (46) 8 869950 Fax: (46) 8 867280 Contact: Mikael Carlsson

RULE 1 ASIA

MVF, 2 Shelley Street, Central, Hong Kong. Tel: (852) 2525 2112 Fax: (852) 2525 8631 Contact: Jeeta de Pasquale

SEE FACTOR INDUSTRY INC

32-11 30th Street, LLC., New York 11101, USA. Tel: (1) 718 784 4200 Fax: (1) 718 784 0617 Contact: Annemarie Jocka

26 Puliki St., Grey Lynn, Auckland 2, New Zealand. Tel: (64) 9 3601718 Fax: (64) 9 3601719 Contact: Jeremy Collins

SGM ELETTRONICA SRL

Strada Romagna 307, 61010 Colombarone Di Pesaro, Italy. Tel: (39) 721 208200 Fax: (39) 721 208 231 Contact Franco Zachini

SHOWTEC GmbH

Mathias-Bruggen-Str. 21, 50827 Cologne 30, Germany. Tel: (49) 221 582081 Fax: (49) 221 581979 Contact: Thomas Ickenroth

SKS COMMUNICATIONS LTD

2 Robin Hood Estate, Clondakin, Dublin Tel: (353) 1 521655 Fax: (353) 1 505519 Contact: Harold Smith ıblin 22, Ireland.

SOUND PARTNER

P O Box 50, Bergschenhoek, 2660 AB, The Netherlands Tel (31) 18 921 6992 Fax: (31) 18 921 8204 Contact: Hans ter Kulle

STAGE CRAFT INTERNATIONAL INC

RM 3565 Secretariat Bldg, Picc CCP Complex, Roxas Blvd, Pasay City, MM, Philippines Tel: (63) 2 816 1903 Fax: (63) 2 817 1867 and Salvacion

STEINIGKE SHOWTECHNIC GMBH

Andreas Bauer Str 5, D-97293 Waldbuettelbrunn, Germany Tel: (49) 931 406660 Fax: (49) 931 4066772 Contact: Jochen Scholtes

STIERS GmbH (STIERS EFFECTS)

Munich 8 Liebigstr, D8000 Munich 22, Germany Tel: (49) 89 221 696 Fax: (49) 89 23 17 0425 Contact: Denis Stiers

STRONG INTERNATIONAL INC 4350 McKinley Street, Omaha NE 68112, USA Tel:(1) 402 453 4444 Fax:(1) 402 453 7238

SYNCROLITE SYSTEMS, INC. 2517 Manana Drive, Dallas, Texas 75220-1236, USA-Tel:(1) 214 350 7696 Fax:(1) 214 350 8051

TEATRO SRLVia Ubertin | 3, 46042 Castelgoffredo, Mantova, Italy-Tel | (39) 376 780702 Fax | (39) 376 780888

TFP MARKKINOINTI OY

Hatanapaanvaltatie 4a, 33100 Tampere, Finland Tel:(358)31 214 3933 Fax: (358) 31 213 3077 Contact: Fikket Saadetdin THE OBJE COMPANY

19771 Magellan Drive, Torrance, CA 90502, USA. Tel: (1) 310 767 4000 Fax: (1) 310 767 4020 Contact: Patricia Thurston

TMB ASSOCIATES 2102 W. Kenmere Avenue, Burbank, CA 91504, USA. Tel:(1) 818 842 9652 Fax:(1) 818 842 1064

Contact: Colin Waters

TOMCAT USA INC P O Box 550, Midland, Texas 79702, USA, Tel:(1) 915 694 7070 Fax:(1) 915 689 3805

Contact: Mitch Clark

UNITON AG UNITON AG
Pumpwerkstrasse 18, Regensdorf,
CH-8105, Switzerland
Tel: (41) 1 840 4833 Fax: (41) 1 841 0937
Contact Elke Dähler

UNIVERSE STAGE LIGHTING INC

308 West 47th Street, New York NY10036-3115, USA. Tel: (1) 212 246 0598 Fax: (1) 212 315 0300

VANCO LIGHTING SERVICES

9561 Satellite Blvd, Ste 300, Orlando FL 32837, USA Tel₌(1) 407 855 8060 Fax₌(1) 407 855 8059 Contact: Dale Ward

210 Regal Row, Dallas, Texas, TX 75247 USA. Tel. (1) 214 630 1963 Fax: (1) 214 630 5867 Contact: Tom Littrell

VARI-LITE INC

VIKING DISCOTHEOUES 28 Mostaía Sadek Chafie, St Helipolis, Cairo, Egypt. Tel: (20) 2 664544 Tel/Fax: (20) 2 240727 Contact: Mamdouh Malak Kamel Kolta

WELLSON ENTERPRISE CO LTD

6th Fl., No 13, Chung Po North Road, Taipei, Taiwan Tel (886) 2 762 6898 Fax: (886) 2 769 5271 Contact: George Lin

WIZARD FLECTRIC

P O. Box 33271, Montclair 4061, South Africa, Tel: (27) 31 323777 Fax: (27) 31 323931 Contact: Bing Bisetty WYBRON INC

4830 List Drive, Colorado Springs, CO 80919, USA. Tel: (1) 719 548 9774 Fax: (1) 719 548 0432 Contact: Keny Whitright

66

DIRECTORY

Lighting + Sound **Equipment Sale/Hire Installation and Design**



specialists in audio visual presentation

Studio 9, 75 Filmer Road, London SW6 7JF Telephone: 0171-371 5020 Fax: 0171-371 0503



Designers and manufacturers of flight cases

BDS Northern - Tel: 0161 873 8181 BDS Southern - Tel: 0171 624 2134

LIGHTING SALES SPECIAL F/X

STAGE CONTROL LTD.

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

TEL: 0181-952 8982 FAX: 0181-951 4178

LIGHTING HIRE & SALES Philip L. Edwards (Theatre Lighting)

5 Highwood Close, Glossop, Derbyshire SK13 9PH. Tel/Fax: 01457 862811.



ELECTRICAL CONTRACTING LICENSING CERTIFICATION NATIONWIDE SUPPLY & SERVICING: ARRI, GREEN GINGER, PULSAR STRAND LIGHTING & ZERO 88 Technical Support Mon-Sat until 23.00 hrs.

DONMAR LTD. 54 CAVELL STREET LONDON E1 2HP INSTALLATION & SERVICE 0171-790 6624 SALES 0171-790 1166 FAX 0171-790 6634

REFE APPROVEO CONTRACTOR





SOUND & LIGHTING

Stereo Sound & Effects Lighting Specialists

CLAY PAKY

zaro 88

PO(S)(C)(O)

Panasonic

PULSAR

UBL DENON

PENVEY

ELECTRONICS SHURE

CO TEATRO Le Maitre

JEM **DIAL SOUND AND LIGHTING** Unit 4G Wharfedale Road, Euroway Ind. Estate, Bradford BD4 6SG. Tel: (01274) 651600 Fax: (01274) 651190

BOSE

OPTIKINETICS

TECHNICS

CITRONIC

Tel: 01524 845584 Fax: 01524 845583 **89 SCOTFORTH ROAD LANCASTER LA1 4SD**

CXM MODULAR MIXER — CX233 MIXER/ZONER CXF FIXED FORMAT MIXER



CX122 MIXER/ZONER — CX335 COMPRESSOR/LIMITER CV AMPLIFIER RANGE — PROFILE DISCOTHEQUE CONSOLES

WORLDWIDE DISTRIBUTION TRADE & EXPORT TERMS AVAILABLE

The SEARCHLIGHT Co.

SINGLE OR MULTIBEAM SEARCHLIGHTS AVAILABLE

HIRE OR BUY AND LIGHT UP THE SKY Tel: 01954 718118 Fax: 01954 719066



Hire Point Software

The computer system for L, S & A/V Hire efficiency!

Tried & Proven since 1986 ☑ Comprehensive, Powerful &

fully integrated M Hire/Rental contracts, quotes, inventory, stat's reservations, VAT/GST/PST S TAX,
Options — Multi-user, Bar code, accounting Back up service Bank managers loan not required

Phone/fax now:-

Rick - Hawthorn Theatrical 01664 410 122 Mike - Lighthouse Technical 0181 802 2088 US & Canada

Keith - Score Systems (519) 748 2770 Australia

Tim - Hire Point Software Fax (+61 2) 824 0554



Manufacturers of a complete range of quality effects lighting for the telsure industry

PROFESSIONAL LIGHTING FOR PROFESSIONAL PEOPLE

For a full brochure and price list call the Sales Hotline

01604 790765

54-56 Tenter Road, Mouiton Park Ind Estate, Northampton NN3 1AX Fry 01604 402856

FOR SPEEDY INFORMATION TO LIGHTING + SOUND Telefax: (01323) 646905



manufacturers of high quality:-

- * Strobes
- * Lighting Control Equipment
- * Amplification

trade & export enquiries most welcome

Anytronics Limited

Units 5 & 6 Hillside Industrial Estate London Road, Horndean Hants PO8 OBL, England

Tel: (01705) 599410 Fax: (01705) 598723





the UK

The worldwide sales and marketing team of LASER SCIENCE also

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

0181 560 3171

UK distributors for FLY and LA NOVALIGHT effects lighting.

> Nu-Light Systems Ltd. Unit 1, Athertons Quay, Off Liverpool Road, Warrington Cheshire WA5 1AH.

Tel: (01925) 243075/6 Fax: (01925) 243077



For Stage and TV Lighting and Stage Equipment, phone

0181 871 5132



MOBILE No:

0589 044597



"SILENT MOBILE GENERATORS 5Kva - 1500 Kva 50/60 Hz CABLES TRANSFORMERS ETC.

Complete Distribution Systems Specialist Location Engineers Depots throughout UK & USA 24 Hour Service Worldwide

Tel: - 01304 - 813555 Fax:- 01304 - 813502 Telex:- 965324. Power G



THE COMPLETE **PRO-AUDIO SERVICE**

EV Deltamax concert system, Bi-Amped monitors, Soundtracs boards. Large dry hire stock

Installations
Theatre, Clubs, Churches, Hotels

CHELMSFORD (01245) 361694





C TEATRO Party House, Mowbray Drive, Blackpool, Lancs.
Tel: (01253) 302602 Fax: (01253) 301000

MODE ELECTRONICS





Professional Loudspeaker Repair Specialists for all Makes of Power Units

also Manufacturers of 'Deuce Mini & Maxi Cube 'B I ine'

(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 Cresent Workshops Askew Crescent, London W12 9DP

> Tel: 0181-743 4567 Fax: 0181-749 7957



EQUIPMENT RENTAL & SERVICES

6 Vine Street, St. Helier rsey. Channel Isainds Tel. 01534 78351 (0860 740584)

different by pesign...

lite alternative Ltd ph 01706 627066 fx 01706 627068

> fibrE optics, comprehensive lighting services

VARI**LITE

authorised series 3001M dealer



TUBECLAMPS LIMITED PO Box 41, Petford Street Cradley Heath, Warley West Midlands B64 6EJ

TUBECLAMPS YOUR VERSATILE CONNECTION

Together with galvanised or light weight alloy tube, they form all types of structures. Smooth and free from sharp edges, easy to erect and dismantle they are ideal for stage and grid lighting work. Competitive prices include for a galvanised finish.

TEL: (01384) 565241 FAX: (01384) 410490

CHARLES FISHER

S-T-A-G-1-N-G L-1-M-1-T-E-D

EXHIBITION and CONFERENCE DESIGN and CONSTRUCTION



Specialists in Something Different



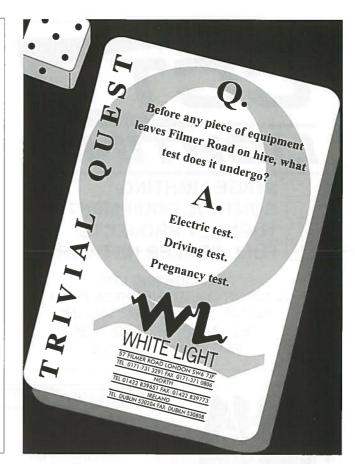
Straw House Farm, Kirkby Road, Ripon, North Yorkshire HG4 3JU Tel: 01765 701604 Fax: 01765 701389



EARLS COURT 2, LONDON 10-13 SEPTEMBER 1995

EXHIBITOR BOOKING INFORMATION NOW AVAILABLE

Ring P&O Events for details on 0171-370 8215



SALES — INSTALLATION— **OF PROFESSIONAL LIGHTING** AND EFFECTS EQUIPMENT

190 PAGE CATALOGUE LISTING 1,000's OF **TECHNICAL PRODUCTS INCLUDING:-**



Unit 1, Chelsea Bridge Business Centre, 326 Queenstown Road, London SW8 4NE Fax: 0171-498 8845



Suppliers of Lamps to the Leisure Industry

65 Ainslie Wood Gardens, Chingford, London E4 9BL Tel: 0181-532 9989





PROFESSIONAL LIGHTING AND SOUND ASSOCIATION

JOIN US!

For full details and a Membership Application Form please write to: Nicola Evenden **PLASA** 7 Highlight House St. Leonards Road Eastbourne

BN213UH





sole uk-distributors for Prog



Trade Suppliers of Professional Sound, Lighting and Special Effects Equipment Telephone: (01926) 314878 Fax No: (01926) 883120 MOBILE No: (0860) 544934

- Wholesale trade supply to retailers, installers
- contractors etc. Extensive stock on all major manufacturers and some
- minor ones too.

 Some own brand products, concerntrating on quality
- and availability.
- Manufacturers trade prices used, sometimes bettered considering delivery service.

 Vehicles travelling the country carrying orders and stock.
- Regular personal contact.
- 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 to pleased to hear from you.

Rigby Close, Heathcote Industrial Estate Leamington Spa CV34 6TJ England



☐ STAGE LIGHTING
 ☐ CONTROL EQUIPMENT
 ☐ TURNKEY PROJECTS
 ☐ FULL DEALER NETWORK

CCT LIGHTING LTD

4 TUDOR COURT, BRIGHTON ROAD, SUTTON, SURREY, SM2 5AE, U.K. TEL: 44 (0)181 770 3636 FAX: 44(0)181 643 9848



- The complete gobo service
- ♦ Projection slides all formats
- Animation effects
- ♦ Fibre optic equipment
- ♦ Digital Light Curtains
- 3 Jonathan Street London SETT 5NH UK Tel. +44 (0)171 582 3600 Fax. +44 (0)171 582 4779

FOR COMPETITIVELY PRICED

CONTACT FIRST LIGHT

TEL: (0850) 349913 or (01795) 886209

TO ADVERTISE
IN THIS
SECTION CALL
01323 642639
(FAX: 01323 646905)

THEATRE *** CRAFT°

DRAMA EQUIPMENT
Eltec Lighting Controls

Internally Wired Bars Rostra & Scenery Kits Braces, Weights etc

TRADE ENQUIRIES
TEL: 0151-334 0831 • FAX: 0151-334 4047



UNIVERSAL FIBRE OPTICS

MANUFACTURERS OF FIBRE OPTIC EQUIPMENT

FOR LIGHTING AND DISPLAY

• HARNESSES • LIGHT GUIDES•

• SIGNS • FIBRE OPTIC DISPLAYS•
LIGHT SOURCES AVAILABLE
FROM 50w TO 150w

BUYING DIRECT MEANS: LOW PRICES • FAST DELIVERY PROMPT AFTER SALES SERVICE

> GALLOWESKNOWES, LENNEL ROAD, COLDSTREAM, BERWICKSHIRE, TD12 4EP

> > TEL: 01890 883416 FAX: 01890 883062

Lighting · Sound · FX · Video

Hire & Sales

Whatever you are
running We can help
you make it a Success.

HOWARD EATON LIGHTING LIMITED

DESIGN AND MANUFACTURE
OF SPECIALIST LIGHTING EQUIPMENT AND EFFECTS

LIGHTING DESIGN CONSULTANCY

DIGITAL DIMMING SYSTEMS

Telephone: (01273) 400670 Fax: (01273) 401052

Trafalgar Lighting Ltd

Tel 0181 887 0082

Sales & Hire Of: Lighting, Control, Trussing, Mains Intellabeams, Sound Equipment

Used Equipment Bought & Sold



FOR SPEEDY
INFORMATION TO
LIGHTING + SOUND
Telefax: (01323) 646905 or
Telephone: (01323) 642639



DORIS



CYRIL



& ROGER

Are Waiting To Hear From You At LIGHT ENGINEERING 64 Eden Road London E17 9JY Tel: 0181-520 2336 Fax: 0181-509 1332

Quentor Cases

Quality custom-built transportation cases made FAST! Phone (01603) 721604

We specialise in making transit cases fast. For a simple briefcase or for complex rackmounts call Quentor - you'll be glad you did!

Quentor (EC) Limited
Units 4 & 5 Fitzmaurice Court,
Rackheath Industrial Estate, Norwich
NR13 6PY.

Tel: (01603) 721604 Fax: (01603) 721992



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 (01865) 722522 SALES: Oxford (01865) 722468 Hire and Sales Northwest: 0151-334 8991

MICO LIGHTING

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

Excellent Trade terms available.

Mico Lighting Ltd. Troydale Lane, Pudsey, Leeds, West Yorkshire. Telephone: (0113) 2567113 Fax: (0113) 2572358

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 0131-553 2383 (Fax 0131-553 3296)

Glasgow 0141-440 1771

(Fax 0141-445 4406)





PULSAR DEVELOPMENTS LTD MARLOW, ENGLAND TEL: (01628) 473555 FAX: (01628) 474325

LET'S GET TECHNICAL

IF YOU'RE LOOKING FOR INFORMATION ON ANY SUBJECT, YOU MAY NOT HAVE LOOKED IN THE RIGHT PLACE. PLASA'S **TECHNICAL BOOK SERVICE** OFFERS A WIDE RANGE OF BOOKS COVERING ALL ASPECTS OF THE INDUSTRY

TELEPHONE (01323) 642639





THE EFFECTS CO.

contact us for full details of this great range of special effects smoke machines and pyrotechnic equipment and accs.

Now Available

■ Lighting, sound, U communications. rigging, audio visual, conference and

projection. ■ For theatres, halls, studios, leisure and presentation.

- In-house electrical contracting service.
- Schemes prepared.
- UK and worldwide.





GLANTRE ENGINEERING LTD.

20 Richfield Avenue, Reading, Berks. RG1 8EQ United Kingdom

Tel: 01734 64 00 00 Fax: 01734 64 00 64 Telex: 846522

TRANSFORMERS

- **★ LAMINATED TRANSFORMERS**
- ★ LOW PROFILE ENCAPSULATED
- **★** TOROIDAL TRANSFORMERS
- ★ From 2VA to 1500VA
- **★ 100V LINE TRANSFORMERS**
- **★** CUSTOM ENCLOSURES
- * Design, Development. Production
- ★ Large & Small production runs, at very competitive prices
- ★ Short delivery
- **★ BABT LISTED**
- ★ BS5750 APPROVED

DAREN ELECTRONICS LTD

23-29 OWEN ROAD, DISS **NORFOLK IP22 3HQ** TEL 01379 644233 FAX 01379 650118



P.J.LIGHTING (Products)



Manufacturer of stage & disco lighting equipment.

Parcans, Pinspots, stands, Par-Bars, Equipment Satnds etc.

Tel: 0121 515 2125

Unit 14, 35/37, Nursery Road, Hockley, Birmingham, B19 2XN.





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**

And much much more

call us

0171 232 2262

FOR SPEEDY INFORMATION **TO LIGHTING + SOUND** Telefax (01323) 646905



41 High Street, Brentford, Mddx, TW8 0BB. Tel: 0181 847 3331, Fax: 0181 568 1059

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

AUSTRALIA



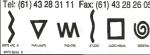
L.S.C. **ELECTRONICS P/L**

7 University Place, Clayton, Victoria 3168, AUSTRALIA Tel: (61) 3 9561 5255 Fax: (61) 3 9561 5277

SYLVANIA

SYLVANIA LIGHTING INTERNATIONAL Tel: (32) 16 80 03 69 Fax: (32) 16 80 03 67 SYLVANIA LIGHTING INTERNATIONAL PTY Ltd

Tel: (61) 43 28 31 11 Fax: (61) 43 28 26 05



AUSTRIA

SYLVANIA

Special Products Group

SYLVANIA LIGHTING INTERNATIONAL Tel: (32) 16 80 03 65 Fax: (32) 16 80 03 67

LTV Tel: (43) 1 60902 Fax: (43) 1 6090220 MTEC Vertrlebsges.m.b.H.
Tel: (43) 7242 60 860 Fax: (43) 7242 60 740



LUDWIG PANI

A1070 Vienna, Kandlegasse 23 Tel: (1) 521 08-0 Fax: 526 4287 Range of follow-spots and projectors Exclusive Agent for Strand

VARI*LITE **VARI-LITE AUSTRIA**

Tel: (43) 1 609 02 Fax:(43) 1 609 0220

BELGIUM

SYLVANIA

Special Products Group

SYLVANIA LIGHTING INTERNATIONAL Tel: (32) 16 80 03 65 Fax: (32) 16 80 03 67 LUXILLAG

Tel: (32) 2 242 59 28 Fax: (32) 2 242 11 54 PPV-LIGHTING





lite structures

Astralite Bilite Quatralite Minilite POLYPHONIC Tel: 071 32 44 30



VARI*LITE **VARI-LITE BENELUX** Tel: (32) 16 60 76 48 Fax: (32) 16 60 88 61

CANADA

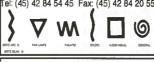


DENMARK

SYLVANIA

Special Products Group SYLVANIA LIGHTING INTERNATIONAL Tel: (32) 16 80 03 69 Fax: (32) 16 80 03 67 BICO A/S

Tel: (45) 42 84 54 45 Fax: (45) 42 84 20 55



ON THE SPOT





GØGLER LYS SALG 4/s

DENMARK

Grønnegade 61 • DK-8000 Århus C TIF +45 86 12 19 66 • Fax +45 86 19 08 35 Toldbodgade 55 • DK-1253 København K TIF +45 33 32 96 96 • Fax +45 33 32 96 99

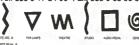
FINLAND

TFP MARKKINOINTI OY

Import and Export of Lighting and Scenic Equipment, Exclusive distribution in Finland for Jands, CCT, Rosco and Tomcat. ys interested in new product ranges for theatre, concert and television. Contact Juha Ihanamaki, Telephone: INT+358+31+2143933 Fax: INT+358+31+2133077. Add Address Hatanpaanvaltatie 4A, 33100 Tampere, Finland

SYLVANIA

Special Products Group SYLVANIA LIGHTING INTERNATIONAL Tel: (32) 16 80 03 69 Fax: (32) 16 80 03 67 **ELECTRO POWER OY** Tel: 358 0 17 54 00 Fax; 358 0 65 93 95



FRANCE

Clay Paky & Pulsar SARL

Batiment 4, 5/9 Rue Marcel Paul 94800 Villejuif, FRANCE Tel: 010 331 49588686 Fax: 010 331 49588687

VARI*LITE VARI-LITE FRANCE

Tel: (33) 1 41 14 01 00 Fax: (33) 1 45 07 96 79



SYLVANIA

Special Products Group SYLVANIA LIGHTING INTERNATIONAL Tel: (33) 1 64 29 62 14 Fax: (33) 1 64 29 62 83 **ESL**

Tel: (33) 67 69 27 17 Fax: (33) 67 69 00 89 **EXPELEC**

Tel: (33) 50 60 32 93 Fax: (33) 50 60 37 80 GOTE S.A. Tel: (33) 50 60 23 14 Fax: (33) 50 60 21 87

LOPILUX Tel: (33) 1 34 10 43 43 Fax: (33) 1 34 10 49 63



*lite*structures

Astralite Bilite Quatralite Minilite S.E.D. FRANCE TEL: 27 25 48 38



TO HIRE ALL OVER THE WORLD

THE ONLY ONE INTELLIGENT 4 KW XENON WITH 16 COLOURS

> Tel:(33).1.49.63.23.69 Fax:(33).1.49.63.23.90

GERMANY

Clay Paky & Pulsar Vertriebs GmbH An Der Talle 26, D-33102 Paderborn GERMANY Tel: 010 49 5251 14340 Fax: 010 49 5251 143490

VARI*LITE VARI-LITE GERMANY

Fel: (49) 221-582088 Fax: (49) 221-5801979



GILDESTRASSE GILDESTRASSE 55 49477 IBBENBÜREN Tel.: (49) 5451-59 00 20 2chnik Fax: (49) 5451-59 00 59

AMPTOWN LICHTTECHNIK GmbH

Wandsbeker Str. 26, 22179 Hamburg Tel: (49) 40-64600440 Fax: (49) 40-64600445

SYLVANIA

Special Products Group

SYLVANIA LIGHTING INTERNATIONAL Tel: (32) 16 80 03 65 Fax: (32) 16 80 03 67 COEMAR

Tel: (49) 731 60 12 05 Fax: (49) 731 62 852 **ECKERT BUEHNENLICHT**

Tel: (49) 202 59 20 58 Fax: (49) 202 59 15 03 LIGHTPOWER SHOWTECHNIK GmbH Tel: (49) 5251 41 84 Fax: (49) 5251 40 74 04 LIGHTRONIC

Tel: (49) 40 753 40 54 Fax: (49) 40 752 13 17 LMP

Tel: (49) 5451 59 000 Fax: (49) 5451 59 00 59 STEINIGKE SHOWTECHNIC GmbH Tel: (49) 931 46 971 Fax: (49) 931 46 901 STIERS GmbH

Tel: (49) 89 22 16 96 Fax: (49) 89 231 704 25



lıte structures

Astralite Bilite Quatralite Minilite LMP LICHTTECHNIK TEL: 05451 590020

TOUR SERVICE LICHTDESIGN

Hanse Str. 9, 33689 Bielefeld

Tel: 0 5205 22 800 Fax: 0 5205 22 889

Concert, stage, TV and industrial lighting Design and Production Services Representative of PanCommand systems



GREECE

SYLVANIA



SYLVANIA LIGHTING INTERNATIONAL Tel: (32) 16 80 03 69 Fax: (32) 16 80 03 67 **BON STUDIO**

Tel: (30) 1 380 96 05 Fax: (30) 1 382 78 68



HONG KONG

SYLVANIA

Special Products Group SYLVANIA LIGHTING INTERNATIONAL Tel: (32) 16 80 03 69 Fax: (32) 16 80 03 67 SYLVANIA LTD

Tel: 852 369 55 31 Fax: 852 721 86 21



VARI*LITE VARI-LITE HONG KONG

Tel: (852) 2715-7878 Fax: (852) 2761-1593

ENGINEERING IMPACT LIMITED 6/F, Blk 2, Tien Chu Ctr. IE Mok Cheong St. Kowloon Tel: (852) 2711-0222 Fax: (852) 2761-0633

ITALY

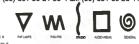
SYLVANIA

Special Products Group SYLVANIA LIGHTING INTERNATIONAL Tel: (33) 1 64 29 62 14 Fax: (33) 1 64 29 62 83 **GP ELETTRONICA**

Tel: (39) 90 71 81 81 Fax: (39) 90 71 81 81 ILC S.r.L.

Tel: (39) 6 89 62 96 Fax: (39) 6 89 32 61 TECLUMENS.r.L.

Tel: (39) 376 77 92 00 Fax: (39) 376 77 93 83 TECNITRON ELETTRONICA Tel: (39) 831 39 21 36 Fax: (39) 831 39 28 41



*lite*structures

Astralite Bilite Quatralite Minilite SPOTLIGHT S.A.R.L. TEL: 39 2 714078



Z TEATRO

Teatro Srl, via Ubertini 3 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'

JAPAN

lite structures Astralite Bilite Quatralite Minilite H.ITO TEL: 81 33 667 3268/9

NETHERLANDS

SYLVANIA

Special Products Group SYLVANIA LIGHTING INTERNATIONAL Tel: (32) 16 80 03 69 Fax: (32) 16 80 03 67 ULTREX LAMPS LIGHTING B.V. (31) 20 65 33 663 Fax; (31) 20 65 33 672



LIGHTING SOUND RIGGING

Flashlight®

Flashlight Utrecht Holland Sales B.V. Tractiewed 190 3534 AP, Utrecht Tel: 030-44 48 42 Fax: 030-44 76 06



JANSEN&JANSEN light sound



lite structures Astralite Bilite Quatralite Minilite

STAGE TELEPHONE 03402 45780

NEW ZEALAND

SELECON

Manufacturers of high quality stage and display luminaires - Zoomspots, Fresnels, PC, CYC, Floods, L. Voltage, Metal Halide Display Spots. Dealer enquiries to: 26 Putiki Street, Grey Lynn, Auckland 2, New Zealand Tel: 64 9 3601718 Fax: 64 9 3601719

NORWAY

SYLVANIA

Special Products Group SYLVANIA LIGHTING INTERNATIONAL Tel: (32) 16 80 03 69 Fax: (32) 16 80 03 67 LARNS FARNES A/S



*lite*structures Astralite Bilite Quatralite Minilite AVAB NORGE A/S TEL: 47 2 11 3030

PORTUGAL

SYLVANIA

Special Products Group

SYLVANIA LIGHTING INTERNATIONAL Tel: (32) 16 80 03 69 Fax: (32) 16 80 03 67

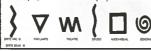


SINGAPORE

SYLVANIA

Special Products Group

SYLVANIA LIGHTING INTERNATIONAL Tel: (32) 16 80 03 69 Fax: (32) 16 80 03 67 SYLVANIA LIGHTING INTERNATIONAL LTD Tel: (65) 734 38 55 Fax: (65) 733 04 98



SPAIN

SYLVANIA

Special Products Group SYLVANIA LIGHTING INTERNATIONAL Tel: (33) 1 64 29 62 14 Fax: (33) 1 64 29 62 83 **COMLUX ILUMINACION**

Tel: (34) 1 405 06 94 Fax: (34) 1 405 09 62 FRESNEL S.A. Tel: (34) 3 210 73 51 Fax: (34) 3 219 94 60

GRAU LUMINOTECNIA S.A. Tel: (34) 3 325 76 11 Fax: (34) 3 426 30 29



VARI*LITE **VARI-LITE SPAIN**

Tel: (34) 1 464 1092 Fax: (34) 1 479 58 25

*lite*structures

Astralite Bilite Quatralite Minilite SPOTLIGHT S.A. TEL: 34 3 4008117

SWEDEN

Autotrack The NEW powerful sky-and

eventlight for in- or outdoor use HMI/MSR 4000 Wilamp Pan-Tilt-Focus-Shutter-Colou Soft-Set " and DMX-512



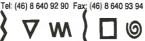
EUENI-TRADE Sweden
Tel: (46) 8730 21 61 Fax: (46) 8730 11 37

VARI*LITE

VARI-LITE SCANDINAVIA Tel: (34) 1 468 654 1855 Fax: (34) 1 468 652 8358

SYLVANIA

SYLVANIA LIGHTING INTERNATIONAL Tel: (32) 16 80 03 69 Fax: (32) 16 80 03 67 TEATERTEKNIK AB



lite structures Astralite Bilite Quatralite Minilite TEATERTEKNIK A.B. TEL: 08 40 92 90

Salsmästaregatan 32B 422 46 Hisings Backa Sweden Tel: (46) 31 585200 Fax: (46) 31 582999

SWITZERLAND

POWER LTGHT

Fabrikmattenweg 8, CH-4144 Arlesheim

Tel: (41) 61 701 82 28 Fax: (41) 61 701 8338 en (41) of 1/01 62 26 Fax. (41) of 1/01 63/c quipment rental and services. State-of-the-art lighting equipment for TV, stage and concert product launches roughout Europe: Xenon Troupers, Panis, Avc Celco, Thomas, Verlinde, Strand, CCT, Sky Trackers and searchlights At the heart of Europel

SYLVANIA

Special Products Group

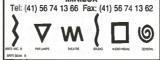
SYLVANIA LIGHTING INTERNATIONAL el: (33) 1 64 29 62 14 Fax: (33) 1 64 29 62 83 BACKSOUND

Tel: (41) 21 36 68 68 Fax: (41) 21 36 78 88 ECM S.A.

Tel: (41) 91 93 25 61 Fax: (41) 91 93 38 09

SYLVANIA LIGHTING INTERNATIONAL Tel: (32) 16 80 03 65 Fax: (32) 16 80 03 67 DIGI LIGHT SHOW

Tel: (41) 31 961 60 40 Fax: (41) 31 961 40 10 MINILUX



lite structures

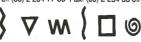
Astralite Bilite Quatralite Minilite A.S.L. ELECTRONICS TEL: 061 361 2220

THAILAND

SYLVANIA

Special Products Group

SYLVANIA LIGHTING INTERNATIONAL Tel: (32) 16 80 03 69 Fax: (32) 16 80 03 67 SYLVANIA (Thalland) LTD Tel: (66) 2 254 77 86 Fax: (66) 2 254 33 69



USA



New York

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

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



PRODUCTION SUPPLIES & SERVICES

2102 W. Kenmere Ave 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) 694 7070 Fax: (915) 689 3805



DAYMAX

Metal Halide Lamps · Stage · Film · Disco · Theatre

> ILC Technology, Inc 399 Java Drive Sunnyvale, CA 94089

Tel: 408 745 7900 Fax: 408 744 0829



STRONG INTERNATIONAL, INC. FOR THE WORLD'S BEST FOLLOWSPOTS

4050 McKinley Street, Omaha, Nebraska 68112 Tel: 402-453 4444 Fax: 402-453 7238



Wybron Inc

The ones the pros use. And use. And use. TEL: 719-548 9774 FAX: 719-548 0432

UNITED KINGDOM

litestructures Astraliae Biliae Quatraliae Miniliae CEREBRUM LIGHTING TEL: 0181 949 3171

lite structures

Astralite Bilite Quatralite Minilite LITESTRUCTURES TEL: 01924 240800

SYLVANIA

Special Products Group

SYLVANIA LIGHTING INTERNATIONAL Tel: (44) 1274 59 59 21 Fax: (44) 1274 58 06 32 **AC LIGHTING**

Tel: (44) 1494 44 60 00 Fax: (44) 1494 46 10 24 **ACTION LIGHTING**

Tel: (44) 181 965 68 00 Fax: (44) 181 965 09 50

ACTION LIGHTING (North) LTD Tel: (44) 161 876 05 76 Fax: (44) 161 876 05 17 ARRI (GB) LTD

Tel: (44) 181 848 88 81 Fax: (44) 181 561 13 12 **CP LIGHTING** Tel: (44) 181 547 05 00 Fax: (44) 181 547 08 84

DC LIGHTING Tel: (44) 1235 77 07 15 Fax: (44) 1235 77 07 20

INTERNATIONAL LAMPS LTD Tel: (44) 1992 55 44 11 Fax: (44) 1992 58 77 66

LAMP MERCHANT Tel: (44) 1932 23 10 10 Fax: (44) 1932 23 25 87 LIGHTING TECHNOLOGY GROUP

Tel: (44) 181 965 68 00 Fax: (44) 181 965 09 50 MGC LAMPS LTD Tel: (44) 1473 46 18 75 Fax: (44) 1473 24 00 81

MICO LIGHTING LTD Tel: (44) 1532 56 71 13 Fax: (44) 1532 57 23 58

PKE LIGHTING LTD Tel: (44) 161 72 84 593 Fax: (44) 161 72 84 594

PRIMARC (MARKETING) LTD
Tel: (44) 1734 59 67 77 Fax: (44) 1734 50 59 64
SPECIALIST LAMP

DISTRIBUTORS LTD Tel: (44) 171 708 07 51 Fax: (44) 171 708 22 51 SPECIALIST LAMP

DISTRIBUTORS LTD Tel: (44) 161 873 78 22 Fax: (44) 161 873 80 89

TECHNICAL LAMPS LTD
Tel: (44) 181 979 66 52 Fax: (44) 181 979 90 07 VALIANT ELECTRICAL

WHOLESALE LTD





VIEWPOINT

Peter Sarner on

Life Beyond Theme Parks

This is an incredible time to be alive! Over the last ten years alone, technology has thundered forward at a remarkable rate. We are surrounded by computerisation, satellites, information super highways and virtual reality, to name but a few. In our hands we now have a whole range of high-tech tools which enable us to turn dreams into reality - far beyond any previous expectations. We have at our fingertips the means to do almost anything we can imagine . . .

There is now more leisure time, more spending power, more pressure - all of which produces a potent desire to escape, rapidly, into a world of make believe! It's no wonder then, that themed visitor attractions are being planned, developed and expanded throughout the world at an incredible rate.

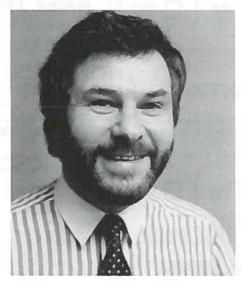
But, how many large theme parks can we have? Is the market big enough? Is there enough room? Will they become repetitive? In most locations we simply cannot draw the many millions of visitors required to ensure commercial reality. No matter how modest or spectacular an attraction may be, one thing is certain: visitors today are sophisticated. They expect, and demand, extremely high standards. They want something they cannot get at home - where they are bombarded with television and high-tech games. Over the years, a significant part of leisure and entertainment has been drawn increasingly closer to the gaining of information, knowledge, and experience. Today we even have a proliferation of 'discovery centres'.

Many of the earliest technically-based visitor attractions were known as 'Experience Shows' (San Francisco, Niagara, London) and they told people, in an entertaining way, about the heritage of the places they were visiting. Young people are a major part of the visitor market, and most parents want their children to gain something, at the same time as enjoying themselves, because this benefits them more than transitory thrill experiences alone. In fact, this type of thinking has led to a gigantic multi-billion pound 'play learning' industry which exists world-wide.

I do not mean that we are suddenly being presented with a high-brow mass market. I do believe however, that the desire to gain something new and factually interesting is common to a far wider audience than some in our industry may, perhaps, believe. If in doubt, think: Jurassic Park!

A significant increase in consumer spending on experience attractions and visitor centres over the last five years supports the view that people want 'infotainment'(!). This sector has achieved a 60% increase in visitor numbers - which is more than four times the equivalent increase for theme parks.

A typical attraction project will cost around £1m-5m, some more, some less, and can be built relatively quickly without the need of major infrastructures. It will handle between 250,000 to 1m visitors a year.



Peter Sarner is MD of Sarner International. Since providing the audio-visual and automated displays for 'Man on Moon' back in the sixties, he has contributed to more than 100 major visitor attractions throughout the world. Sarner's creative and engineering departments often work with others - providing technical systems, production, and creative services to attraction designers and end users alike.

My company, Sarner International, designs and builds themed visitor attractions and also helps others who are doing likewise. But the ability to successfully complete a project, which itself becomes a commercial success, is not a matter of luck, but rather the result of many years of experience and a constant desire to learn. An inappropriate copy of an unrelated project should be dismissed as a lazy, and probably financially hazardous, approach.

I have never believed that the standard American theme park can be exported to Europe and elsewhere with the same success enjoyed in the USA. But what is the correct approach? Each company will have its own method but I only know my own, and as it has been successful all over the world I will outline the 'Sarner Method'.

First, we investigate and consider the socio-economics and demographics of the anticipated visitors. Second, we agree the catchment numbers and throughput capabilities including the optimum duration of visit. Third, we decide what sort of project is suitable, depending upon whether it will be a stand-alone or part of a bigger site or theme park.

Only then do we begin the creative process. We seek out the most interesting factual material - and together with this influence develop the theme and begin to design the whole visitor experience. This is critical - without an interesting story-line the task is monumental. But with the right one - it's magical. Once the shape is clarified, we develop interesting and novel ways of bringing this to an exciting, dynamic and 'theatrical' experience.

What methods do we use to bring the project to life? What technologies can be used? Will multi-lingual facilities be needed? What subtle art, craft and trickery can be employed to inject the magic ingredient?

It is crucial to maintain human interest - the psychology and 'feel' of the project: how to derive maximum visitor reaction. This is part of the magic which sets one attraction apart from the rest. The peaks are the best moments - they do not just happen by chance! By fully automating the attraction to one twenty-fifth of a second accuracy we can ensure that every 'performance' happens exactly the same way, every time.

We are continuing to refine this methodology, and have carried out some research into the emotional responses of sound and colour, as well as other subliminal associations. I believe that it is important to 'touch' visitors in some deeper way - because this can help reach the vital essence which makes us humans; when this is achieved there is an entire additional world of visitor benefit and satisfaction. We try to leave the visitor with something which lasts long after the experience is over - we try to 'infotain' rather than simply entertain. This longer lasting value is at the end of the day that intangible moment of magic.

I believe that there is indeed life beyond theme parks and it lies in our hearts and minds; the scope for themed visitor attractions is limited only by our imaginations.



TELE/FAX: 01827 69382 MOBILE: 0973 221312 !! NEW PRODUCT !! Sleeved pin 15A Connectors. Plus

* Custom Gobos * Blakes Fireworks *

* Lantern Refurbishment *

* Flamecheck * Topdeck *

* Replacement Lamps *

ADVERTISER'S INDEX	24	JEM	23/47	Martin Professional	50/51	Rosco	12	
	CTS	61	JYG	57	Pani	13	Selecon	41
5 Star Cases 10	Clay Paky	20/33	Lee Filters	4	Par Opti Projects	61	ShowCAD	38
A&B Theatre Services 8	Coemar	16/17	Leisuretec	58	Pfaff	57	SGM	19/21
ADB 54	Dial	32	Light Beams	30	PLASA Show	IBC	Starlite Systems	12
Alistage 8/56/61	ETC	7	Light Opera	74	Playlight	53	Strand Lighting	OBC
Audio Technica 62	FLY	IFC	Light Processor	22	Pulsar	11	Theatre Vision	10
Avolites 42	Gradav	57	Light UK	8	PW Enterprises	6	The Effects Company	60
Beyerdynamic 3	Harman (AKG)	39	London Laser Co	13	RB Lighting	40	Wilkes Iris Diaphragm	40
Cerebrum 15	High End Systems	9	M&M	5	Robert Juliat	18	Wybron	6

All

Get off at Earls Court for PLASA 95.

Visit the world's greatest Light and Sound Show.

London, long considered one of the top entertainment capitals, is now firmly established as the centre of the entertainment industry.

chang

See the latest advances in professional lighting technology.

Hear the new developments in specialist sound equipment. Experience the industry event that truly buzzes.

And if you pre-register now you can be amazed for just £5. (£10 on the door.)

thone the credit card hotline to get your half priced entry ticket, plus details on presentations, travel packages, the free show catalogue and newsletter.

Then all you'll need is a tube ticket.

HOTLINE: Please call Bridget

Beaurepaire on 00 (44) 171 370 8229

or fax on 00 (44) 171 370 8143

at

Marls

Court

P&O Events, Earls Court Exhibition Centre, Warwick Road, London SW5 9TA







Lighting for architecture advanced products and systems from Strand.

With a lifetime of experience in theatre, film and TV lighting, Strand brings a dramatic creative influence to architectural lighting, with an award winning range of products, including:

NEW
'OUTLOOK'
MANUAL/PRESET
CONTROL
STATIONS

- Controls from simple, yet stylish manual sliders, to the world's most advanced, fully programmable PC based system
- Dimmers for every kind of application including sophisticated, fully digital units.

 Strand Lighting means creative lighting for offices

Strand Lighting means creative lighting - for offices, conference suites, hotels and even theme parks ... Call us today for further information.



Strand Lighting Limited, Grant Way, Isleworth, Middlesex, TW7 5QD. Telephone 0181 560 3171. Telex 27976. Facsimile 0181 568 2103

LONDON ROME WOLFENBÜTTEL BRUSSELS STOCKHOLM LOS ANGELES NEW YORK TORONTO HONG KONG