

LIGHTING+SOUND

International



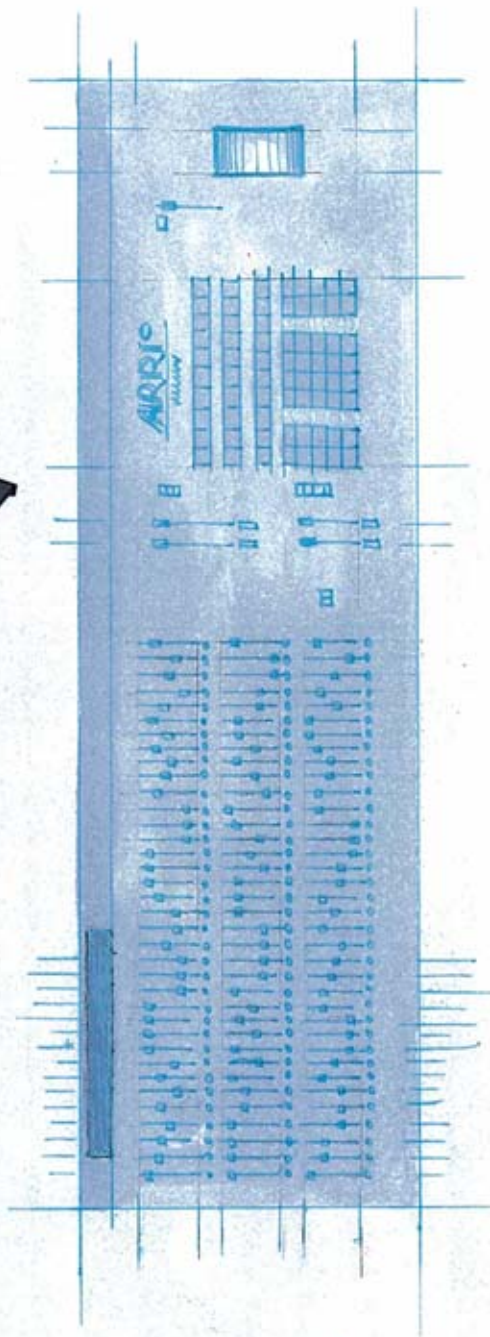
THE FANTASY WORLD OF SIEGFRIED AND ROY

- Siegfried and Roy, Magic and Mystery in Las Vegas
- Technical Changes at Le Palais
- Dukes of Chelmsford
- Lighting the Ballet Rambert
- Frankfurt Review
- Checking out Chess On Tour

APRIL 1990

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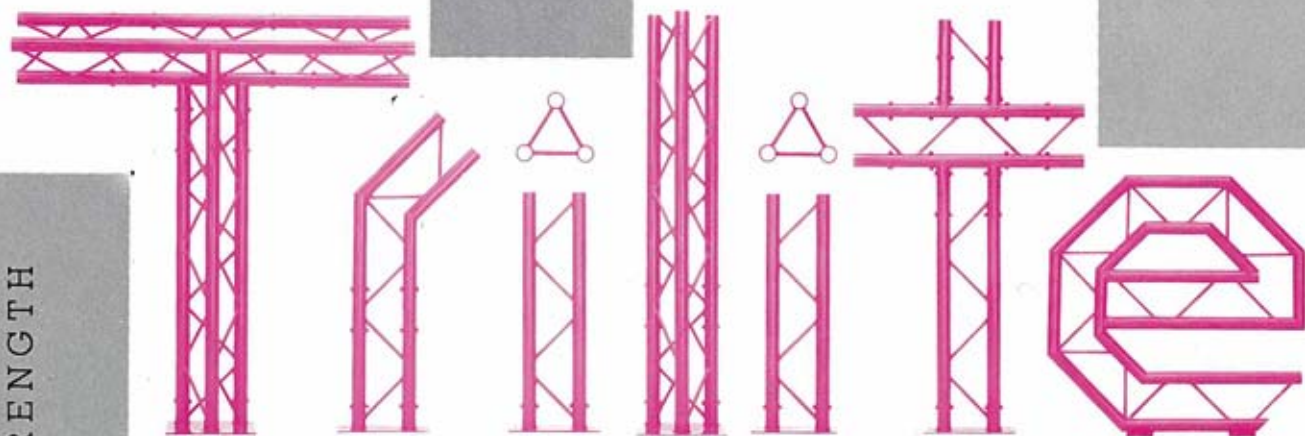
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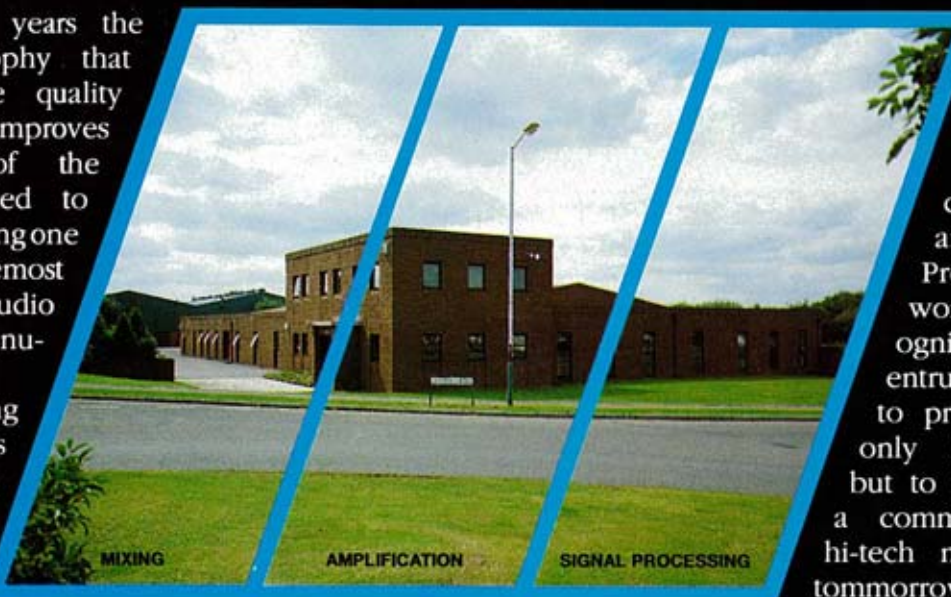
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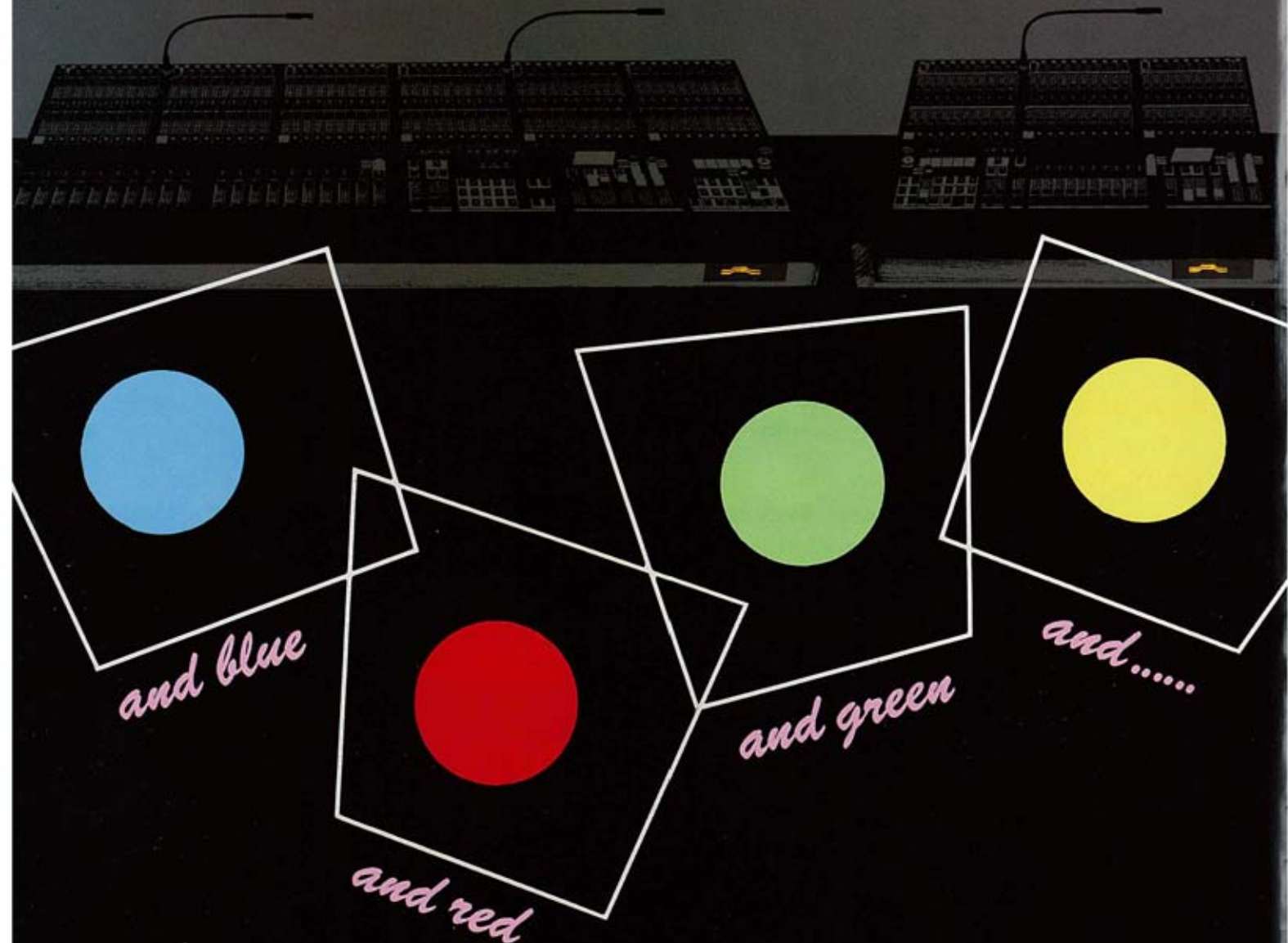
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Celco products are manufactured and distributed by: Celco Ltd, 1/3 Bellingham Road, London SE6 2PN, England tel: 01-698 1027 tlx: 927624 (CELCO G) fax: 01-461 2017 and Celco Inc, 30B Banfi Plaza North, Farmingdale, New York 11735, USA tel: (516) 249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

Celco. Enough said.

April 1990

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L+SI sent Julian Williams to Las Vegas to spirit out the background to Siegfried and Roy's magical trickery and theatre mystery at the new Mirage Hotel. The show's essential secrets remain but David Hersey, Rick Belzer, Jeff Johnson and Andrew Bridge throw some light on the \$50 million project

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Phil Roper investigates the technical changes behind the new-look Le Palais



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Mike Wood and Standard Lamps



Light & Sound Show

9-12 September
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From May 1990
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LIGHTING SOUND International

published monthly by the Professional Lighting and Sound Association

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Editor: John Offord

Assistant: Ruth Rossington

Advertising: Alison Hunt

Published from the PLASA Office:

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

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

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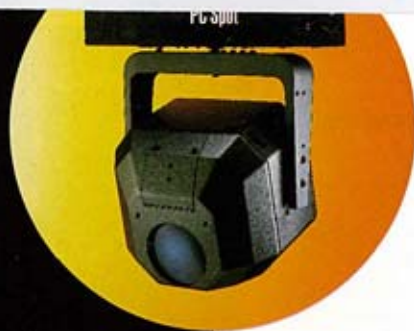
The magazine is available on annual subscription:

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

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LIGHTING+SOUND *International News*

Pulsar/Clay Paky France

A deal is near completion that will see Pulsar Light of Cambridge and Clay Paky of Bergamo, Italy, join forces to promote their products and other distributed lines in France.

The new company, which will take over from the present Pulsar France set-up, may well be called CAP, but at the time of going to press confirmation wasn't available. Equity will be held equally by both owning companies, and Pulsar's Ken Sewell told L+SI the prime reason for setting up the new venture is to provide a much better service in France.

The existing base of Pulsar France at Bretteville sur Odon near Caen in Normandy will soon be doubled in size to cope with a much higher geared operation. Claude Lanos of Pulsar France stays on to head-up the new company.

Plasa Exhibitor Deals

News from the Light and Sound Show exhibition organiser is that this year's show (September 9-12) will be the biggest in its 13 year history. The show will be augmented by the addition of almost 2,000 square metres of stand space on the new Lower Ground Floor, and an extra 'no sound area' on the Second Floor.

To encourage new exhibitors to the show, stands on the Second Floor are being offered at the member rate of £125.00 per square metre and will include mains and power point fitting, table and chairs, 50 complimentary tickets to the show, and inclusion in the 'New Exhibitor' catalogue feature. David Street of 3D Services told L+SI: "The aim is to offer new exhibitors the complete package on a 'suck it and see' type basis." For further details, contact 3D Services, 12 Brentford Business Centre, Commerce Road, Brentford, Middlesex TW8 8LG. Telephone 081-569 9742.

Return to Palladium

MAC are returning to the London Palladium with the E & B production of the Pirates of Penzance. The system will be based on a DDA 'D' Series 50 channel mixing console, with the main PA being Meyer UP1 and Renkus Heinz SR1 and a Proac Super Tablette delay system of nearly 50 units. Amplification will be by BGW and HH Electronics with radio microphones by Micron.



Celco and LiveWire Integrate Control

Lighting highlight from the recent Frankfurt Music Fair was undoubtedly Celco's presentation of their new Panorama control systems and LiveWire's universal control system package 'Now!'. The combination of the two facilitates the control of numerous effects and offers greater flexibility for the lighting industry. Flagship of the range the Panorama 120 was linked to Golden Scans from Pulsar/Clay Paky, PosiSpot from Amptown and

colour changers. Also on display was a 16 screen videowall from Electrosonic driven from the new Celco 60 Major Special Edition via the LiveWire controller.

The controller is able to interface many kinds of effects equipment together such as Celco control consoles, Vari*Lite's, lasers and smoke machines. For further details see feature on page 62.

DOD Expansion

1989 saw the continued growth and expansion of US signal processing equipment manufacturer, DOD Electronics. Based in Salt Lake City and currently rated as the state of Utah's third largest foreign exporter, DOD Electronics now employs around 300 people at its two factories to produce the DOD, DigiTech and Audio Logic lines.

The newer of the two facilities which houses final assembly, engineering, final testing, packaging and shipping departments, alongside the company's third Amistar automatic parts insertion machine, has added another 25,000 square feet of factory floor space to the operation, virtually doubling DOD's capacity in the process.

Harrison at Frankfurt

Mike Harrison reported HIT's 'best ever' visit to the Frankfurt Trade Fair. Not surprising, on the face of it, but only a few weeks earlier Harrison Information Technology Ltd had gone into receivership.

Reports of 'sabotage' and a break-in at subsidiary company, Innovation International, led to them losing data on a new mixing console estimated to represent £1 million in development costs, we understand, and at the time of going to press, Cambridge C.I.D are reportedly still investigating.

Mike Harrison said we (the press) should take a positive attitude to the situation. "It's hard enough for British exporters already," he commented. Mike Harrison did confirm to L+SI that the new company (Harrison Electronics Ltd trading as Harrison Information Technology) would continue to give full warranty on all products sold under the Harrison Information Technology banner.

Award for PALS

Strand Lighting's PALS lighting system has taken a top award for technical excellence at this year's Electrex exhibition at the National Exhibition Centre, Birmingham. PALS (Precision Automated Lighting Systems) was designed primarily for theatres, TV studios and concert halls. It was chosen from hundreds of contenders by an independent panel of judges for the 'Electrex 90 Award of Merit for Technical Excellence'.

The award, an encapsulated Electrex logo mounted on a plinth, was made to Strand Lighting's marketing director, David Brooks, by Fred Gardiner, deputy chairman of Electrex Limited, at a special presentation at the NEC on February 28th.

Astralloy Appointment

Leeds-based Astralloy have appointed new distributors for their modular construction systems in Switzerland, France and Belgium. Astralloy now have 30 outlets worldwide for their tubular aluminium systems, which have a variety of applications in lighting support, exhibition and stage display and building construction.



Cerebrum Relocate

As of the 2nd April 1990, Cerebrum Lighting Ltd and sister company Presentation Consultants Ltd are based in two purpose-built units on a new business estate in New Malden, Surrey. The new details are: Cerebrum Lighting Ltd, Units 4 & 5 Shannon Commercial Centre, Beverley Way, New Malden, Surrey KT3 4PT. Telephone 081-949-3171. Fax 081-949-3649. Telex 892337 CELCO G.

Situated on the A3 at Shannon's Corner, only 3 miles from Cerebrum's old premises and around 10 miles from central London, the new buildings combine offices, warehousing, sales counter and a new showroom. Cerebrum told L+SI that the longer opening hours (8am to 6.30pm), a faster service for personal callers, ease of access and parking, plus a well appointed showroom will all go to improving the service to both the UK and overseas clients.

Light Angles

Mickey Brett and George Ashley-Cound are the driving force behind Light Angles, the London-based lighting design consultancy. Identifying a need in the market for truly independent designers, not tied to any one manufacturer's products, led them to form Light Angles in July 1987.

The company's motto is simple: 'Listen to the client and design to meet his or her criteria with flair'. Their full-time design team of four are highly qualified industrial designers who enjoy the challenge of creating something just that little bit different. Although they have a wide and varied project list, Light Angles' forte is in special effects lighting for nightclubs.

Both Ashley-Cound and Brett are concerned with the current image of consultancies within the industry, and are keen to offer a quality service to clients. Whenever a new product is launched it can immediately be added to their comprehensive catalogue. They also feel it important to devote time to each project, seeing it through from conception to opening night.

Increasingly, they are being asked to take on responsibility, not only for the lighting design, but also for project management. Both feel that the future trend for consultancies such as theirs will be towards complete design and build packages.

Light Angles have, on average, six to ten projects on the go at any one time. Their current portfolio includes hotels, nightclubs, and a cinema complex. At the end of the year, thousands of Christmas shoppers will see the result of many months of hard work when the lights go on in Oxford Street. Although the company works closely with only a handful of trusted contractors each job is always put out to tender. The aim is to give the customer an excellent design package at a competitive price.

As the use of independent consultancies grows, Ashley-Cound and Brett view the future with confidence. Light Angles will continue to promote not only the sale of high quality products and excellent design, but will also continue to highlight

the need for independent consultancies within the industry. Of the new companies springing up, they both feel the same: that a little competition can only improve the service to the industry.

Award for Economy



Economy Lighting have been awarded American UL approvals for the manufacture of toroidal transformers. Their factory has been officially approved to manufacture transformers to Class H (180°C). The Company now claims to be the only manufacturer of toroidal transformers in Europe with UL approvals. The approvals were gained in association with Du Pont, a leading worldwide supplier of electrical insulation systems and materials.

Cadac Advance

Clive Green & Co, manufacturer of Cadac theatre consoles, is demonstrating the successful 'E' type console with a major new automation feature at

this year's APRS exhibition. Following an extensive research and development programme, the company has designed an advanced motorised fader package, representing one of several new products which the company plans to introduce in the near future.

Clive Green & Co has a longstanding reputation for product development and innovation, specialising in consoles for theatre sound applications. Cadac desks are in use on many of the world's most successful musical productions, including 'Starlight Express', now in its sixth year, and international productions of 'Phantom of the Opera'. The company has also recently installed a 40 input 'E' type console at the Barbican Theatre for the Royal Shakespeare Company.

Emergency Services

London-based Rosco are offering an emergency screen service. The in-house facility for making projection screens is expected to have a 24 hour turnaround time.

Rosco have also introduced a range of materials for wide projection screens giving a full 2.4 metres (7' 8") seamless screen, including front white and two rear projection products.

Milab Campaign

As the UK's sole distributor for Milab microphones, Klark-Teknik has launched a major promotional campaign to boost sales of the Swedish range of condenser and dynamic microphones. The campaign will focus on Milab's new dynamic microphone, the D-37, which will be available directly from Klark-Teknik, or from local Milab dealers.

The D-37 is ideally suited to almost every market sector — professional musicians, hire companies and broadcasting. Klark-Teknik believe that this campaign will increase the awareness and recognition of Milab as a manufacturer of quality, high performance microphones.

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Major Changes at Strand Lighting

Last month saw the formation of a UK Trading Division within Strand Lighting. The division is to be responsible for developing the markets for Strand products, and the company hope that this will establish a more balanced trading structure across international markets. Russell Dunsire, previously sales director with the company has left, and Ian Haddon will take up the post of general manager UK Trading.

DAK Design

DAK Design are currently developing an intelligent sound limiting system to assist compliance with the new HSE regulations and the imminent European legislations in this area. Any installers or end users who would like to offer comments or ideas as to the facilities such a unit might incorporate, should address all correspondence to DAK Acoustics Ltd, 28 Huntingdon Close, Lower Ealey, Reading, Berkshire, RG6 3AB.

Cad/Cam Process

Complex reflecting surfaces of lighting systems are traditionally checked under laboratory conditions using a prototype to measure the illumination pattern and intensities. Austrian manufacturer Zumtobel AG claims to have eliminated this stage in the development of lighting products by using a Matra Datavision computer-aided design and manufacturing (CAD/CAM) system.

Called Euclid-Is, the solid modelling-based CAD/CAM system handles the data processing and graphics. Zumtobel's research department wrote and integrated its own software for simulating the performance of different reflector designs. According to the company, Euclid-Is lends itself to integration of customer modules.

In addition to the basic package, Zumtobel is using Euclid's advanced surfacing software for complex surface design, and a 3-axis NC manufacturing (CAM) package. The latter speeds production of lighting systems reflectors and other components on CNC machines, using data made available from the computer-aided design.

Lite Smiffs

Lite Smiffs was founded in April 1989 with the aim of supplying lighting consumable products into the UK and Europe targeting the film, theatre, TV and entertainment markets. The company's product line includes most leading manufactured brands of colour effect/correction filter, replacement lamps, portable lighting, grip equipment and all associated ancillary items.

Lite Smiffs have recently become the exclusive distributor agents for the Wolfram film, TV and theatre lamps in the UK and Europe. Both Bob Jeffs and Gordon Smith who run the company worked for the Lee Group.

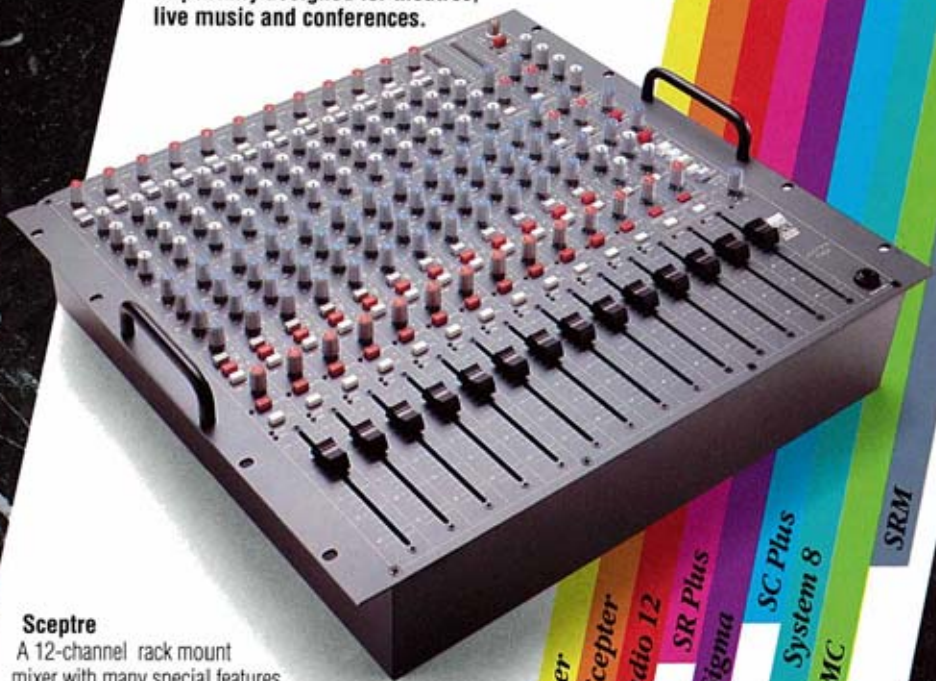
Students Award Finals

Eleven of Britain's best young design brains are working on prototypes for the final of the Student Lighting Designer of the Year competition organised by the Decorative Lighting Association. Final assessments of the prototypes will be made by the panel during the 23rd and 24th May at the Gloucester Hotel, London.

"The standard of work has risen dramatically each year since we started the competition in 1986, and this year's flatwork shows that colleges have instilled students with a strong sense of commercial practicality to run alongside their flair for design," John Tengwall, director of DLA, told L+SI. Students from all over the UK will be vying for the £1,500, £750, and £250 cash prizes.

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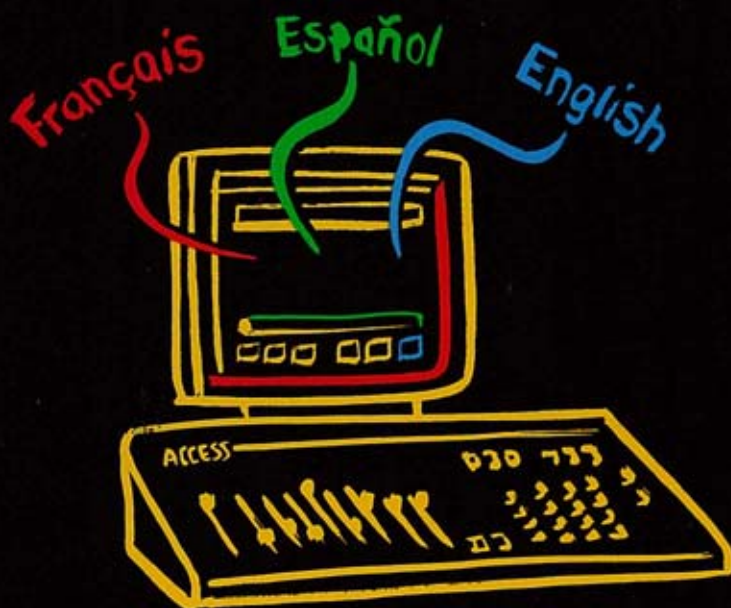
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Discotec 90

Preparations are underway for Discotec 90 — the International Light & Sound Entertainment Fair — which takes place from the 5-9 November. The exhibition will take place in halls 11 and 12 of the Dusseldorf Trade Fair Centre, with a combined net display area of 10,000 square metres.

For this year Messe Dusseldorf has worked out a noise reductions concept, together with its associates, aimed at showing the way to organisers of comparable events. The core of the programme will be the reduction of noise levels to 70 decibels. Approval must be sought from the Trade Fair organisation for any louder demonstrations. The organisers hope this will permit discussions to be conducted without disturbance.

As in past years, Discotec will take place in conjunction with the Hogatec International Trade Fair. Companies planning to exhibit at Discotec 90 should submit their registration forms to Messe Dusseldorf by the 31st May, after which the stand space allocation procedure will commence. Further details are available from the organisers in Dusseldorf on (0211) 456 001.

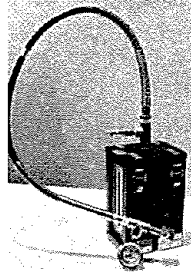
Trevor Cash Appointed

The services of musical instrument and pro-audio marketing consultancy Trevor Cash International, have been enlisted by Italian sound reinforcement equipment designer and manufacturer dB Technologies. The consultancy, headhunted only 18 months ago by US signal processing equipment manufacturer DOD Electronics, will set up an international distribution network for dB Technologies and spearhead its world-wide sales and marketing campaign.

dB Technologies design and manufacture products to the specifications of major international clients while many more are manufactured under its own brand name. Products bearing this name include loudspeaker

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enclosures and mixing consoles in both powered and non-powered versions, powered wedge monitors, wireless microphone systems and a new, revolutionary multicore system that dB Technologies call 'Snakeless'.

Avolites Change

Derek Halliday, managing director of Avolites, has confirmed the departure of research and design directors Paul and Dick Ollett who left the company at the beginning of March. He stressed that the departures were in no way related to the company's recent buy out by Carlton Communications. Paul Ollett was based in London, and Dick Ollett was based in California.

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Launch into Europe

Disco Mirror have just announced the launch of a new publication, European Discotheque Review. The first issue is to be published in June with a circulation of over 20,000 mailed to all European countries. The editor will be Colin Gawne. Each country's coverage will be written in both its native language and English. Disco Mirror claim that EDR will be the first multi-lingual magazine to circulate in quantity to every country in Europe.

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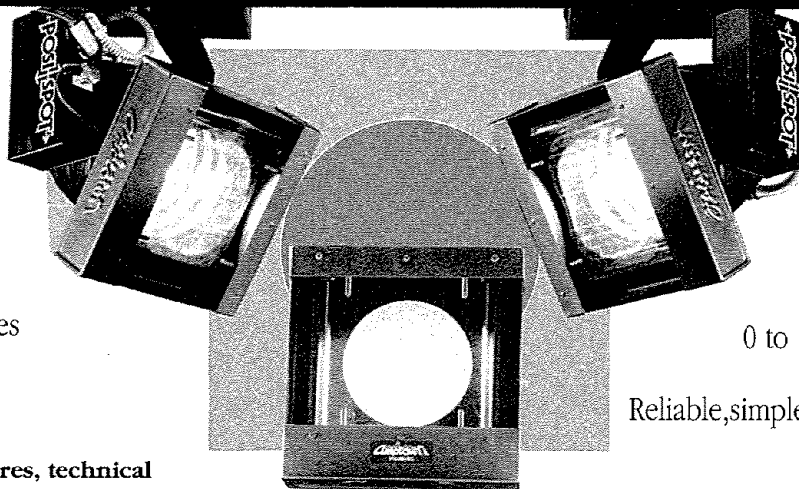
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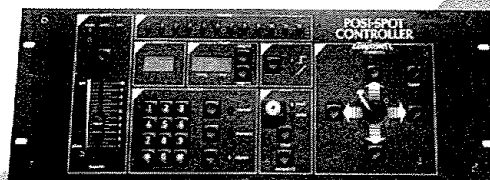
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THE DREAMS AND FANTASIES OF SIEGFRIED AND ROY

L+SI sent Julian Williams to Las Vegas to spirit out the background to Siegfried and Roy's magical trickery and theatre mystery at the new Mirage Hotel. The show's essential secrets remain, but David Hersey, Mike Barnett, Wendy Bodzin, Richard Knight, Rick Belzer, Jeff Johnson and Andrew Bridge throw some light on the \$50 million project



The impressive frontage of the Mirage Hotel with multiple lagoons, waterfalls and a 54 feet volcano.

"Anything is possible if you want to throw enough money at it," is usually the remark made to designers by 'realizer' Mike Barnett, who also made this comment to me, as one of the British designers who were congregating in Nevada.

Housed in the \$700m Mirage Hotel, which opened last November, the showroom and show alone cost \$50m. The theatre itself was intended to open on the 18th December and following delays eventually did so at the beginning of February. It has been purpose-designed to house this legendary act with all its wild animals. Siegfried & Roy play three weeks in every four, twice nightly — the theatre becoming available for headliner acts for a week in each month.

As you walk up to the 'World of Mirage' with its palm tree setting and purpose-made river along its quarter mile, \$40million-plus, frontage, you can hardly fail to notice the Volcano.

Every evening, before showtime, the volcano hisses, emits a leaping jet of some 10ft of flames, and then erupts — in 30 minute cycles! It literally stops the Strip.

Lighting designer David Hersey was

asked to design a 'water feature' and his volcano was inspired by a Polynesian Lost World type of scene. "The whole concept was approached like working on a theatre set," said Hersey.

Having previously carried out a million dollar test on a side site during construction, to prove that the steam, gas, water, and flame combination would all work together, they then 'treated' the water to make it respond to light and achieved the right angle for the effect. The sophisticated control system has to monitor all weather conditions and decide which sequences to run in the following cycle. The scene is gently lit in white light, with a red lighting change to complement the 'volcanic eruption'.

"There's no discharge lighting anywhere," explained David Hersey. "I wanted everything on dimmers — the whole lot, even if it is just static, so that it can be balanced."

Once inside the hotel, there are tropical fish tanks, the famous Royal White Tigers of Nevada in their own habitat, and a future home for the Mirage Dolphins. Far away at the back, behind the large array of

gambling tables in the lobby, is the entrance to the Theatre Mirage.

The spectacular design of the show was conceived in collaboration with Siegfried & Roy by John Napier, who also co-directs with John Caird. The lighting is by Andrew Bridge. It is almost as if it was an extension of their highly acclaimed 'Time', still generally considered to be the most 'technical' of shows. And this unique combination of magician's trickery and theatre mystery is all enveloped within a total staging concept and present-day technology.

As you enter the darkened stage 'space age' auditorium you are completely unaware of the fact that this showroom has supposedly the largest-ever fixed lighting rig in it, considered to be worth around \$10m. (Part of it is owned by Irvin & Kenneth Feld Productions — the producers of the huge 'Ringling Bros and Barnum & Bailey Circus' and Disney Ice Spectaculars). They have a five year contract in Las Vegas with this act, and are anticipating a run of over a decade.

John Napier has created a theatrical theme around Siegfried & Roy's famous

illusions and animal show, with a Nordic style of Folklore fairytale, which may be based on similar lines to Wagner's 'Siegfried'.

At the top of the show we journey through a 'magical circle', as the Trolls cautiously walk into the 'otherside' where dreams and fantasies are made. The first part of their show literally hurls us through an hour of non-stop theatre. It takes us through a series of transformations with effects and staging centred around this tale of Acolytes and Trolls, and climaxes with the entrance of a real Dragon — well, almost.

This miraculous piece of machinery is brought to life by wizard Mike Barnett, the 'realizer' of designers' imaginations. This monster has 24 different axes and needs four people to control it.

"Everything has to be precision perfect," said Barnett who was responsible for the hydraulics, structure, and mechanics of this beast. He also contributed the 'works' for the 'A' Frame and Gantry electric stage trucks. Showtech Inc., the scenic contractors, organised the computer interface controller for the Dragon, which comes from existing technology as used in the automobile industry. It is simply programmed by recording preset joy stick controllers.

It would seem that the achievement of these tricks of light, so essential to complement the Siegfried & Roy act, may have been an impossible task without the availability and facilities of Vari*Lites. The units have to be so precisely positioned in this space, both for instant patterns for effect, and for lighting, and in as many variations as the acts themselves — and quickly.

After an opening scene where the entire circular dome backing has rotating shafts of light, Andrew Bridge once again makes his lights become characters. In the opening, moving pods descend forward like several pairs of red eyes peering through the gloom and Siegfried & Roy carry out their illusions intertwined with transformations with their disappearing and reappearing collection of 24 animals, including a snake, a cheetah, a horse and an elephant.

At one of the performances I saw, an illusion forced us to hold our breath as Siegfried had to prevent a covered cage from being suspended, which he had previously showed us with its gate open, and with one of his White Tigers inside. It began to rise from only one end, tipping it perilously towards the other — and for two or three minutes, in full stage light, he calmly corrected the problem without us actually seeing what he was doing, successfully revealing Roy when the cover was taken off.

Talking to assistant lighting designer Wendy Bodzin, who showed me around the rig of almost 4000 lighting instruments (with 2000 dimmers), she explained: "There are 12 panels altogether which surround the set. Four of these are main dome panels around the upstage which do a combination of lifting and tracking to

MAIN RING	
STROBETUBE	269

DS LIGHT RING		
PAR56 4509X		
UNITS	CHANNEL	COLOR
17-16	777	NC 250
17-24	777	NC 250
25-32	777	NC 250
33-40	777	NC 250
41-48	777	NC 250
49-56	777	NC 250
57-64	777	NC 250
65-72	777	NC 250
73-80	777	NC 250
81-88	777	NC 250
89-96	777	NC 250

3 LIGHT RING		
STROBETUBE		
NEON		
PAR56 ACCUTRA		
UNITS	CHANNEL	COLOR
4-7-10	151	L 201
2-5-8-11	151	L 201
9-6-9-12	151	L 201
13-16-22	151	L 201
14-17-20-23	151	L 201
15-21-24	151	L 201
25-28-31-34	151	L 201
29-32-35-38	151	L 201
27-30-33	151	L 201

DS LIGHT CURTAIN		
PAR56 VNSP		
UNITS	CHANNEL	COLOR
714	L 201	
715	L 201	
716	L 201	
717	L 201	
718	L 201	
719	L 201	
720	L 201	
721	L 201	
722	L 201	
723	L 201	
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726	L 201	
727	L 201	
728	L 201	
729	L 201	
730	L 201	

DS LIGHT CURTAIN		
PAR56 VNSP		
UNITS	CHANNEL	COLOR
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DS LIGHT CURTAIN		
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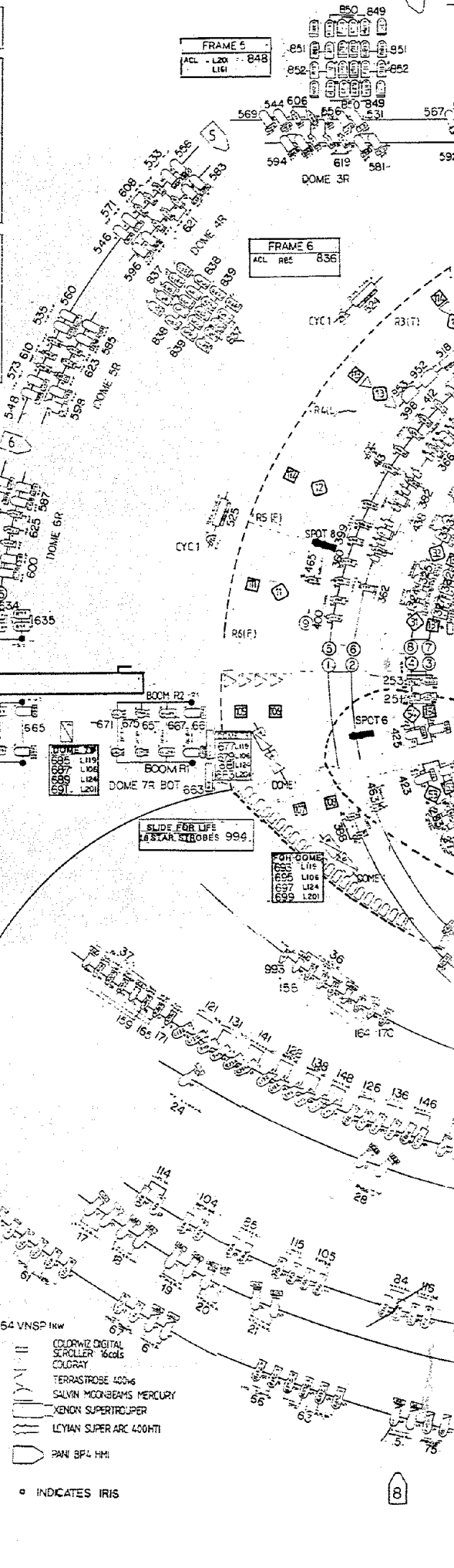
DS LIGHT CURTAIN		
PAR56 VNSP		
UNITS	CHANNEL	COLOR
714	L 201	
715	L 201	
716	L 201	
717	L 201	
718	L 201	
719	L 201	
720	L 201	
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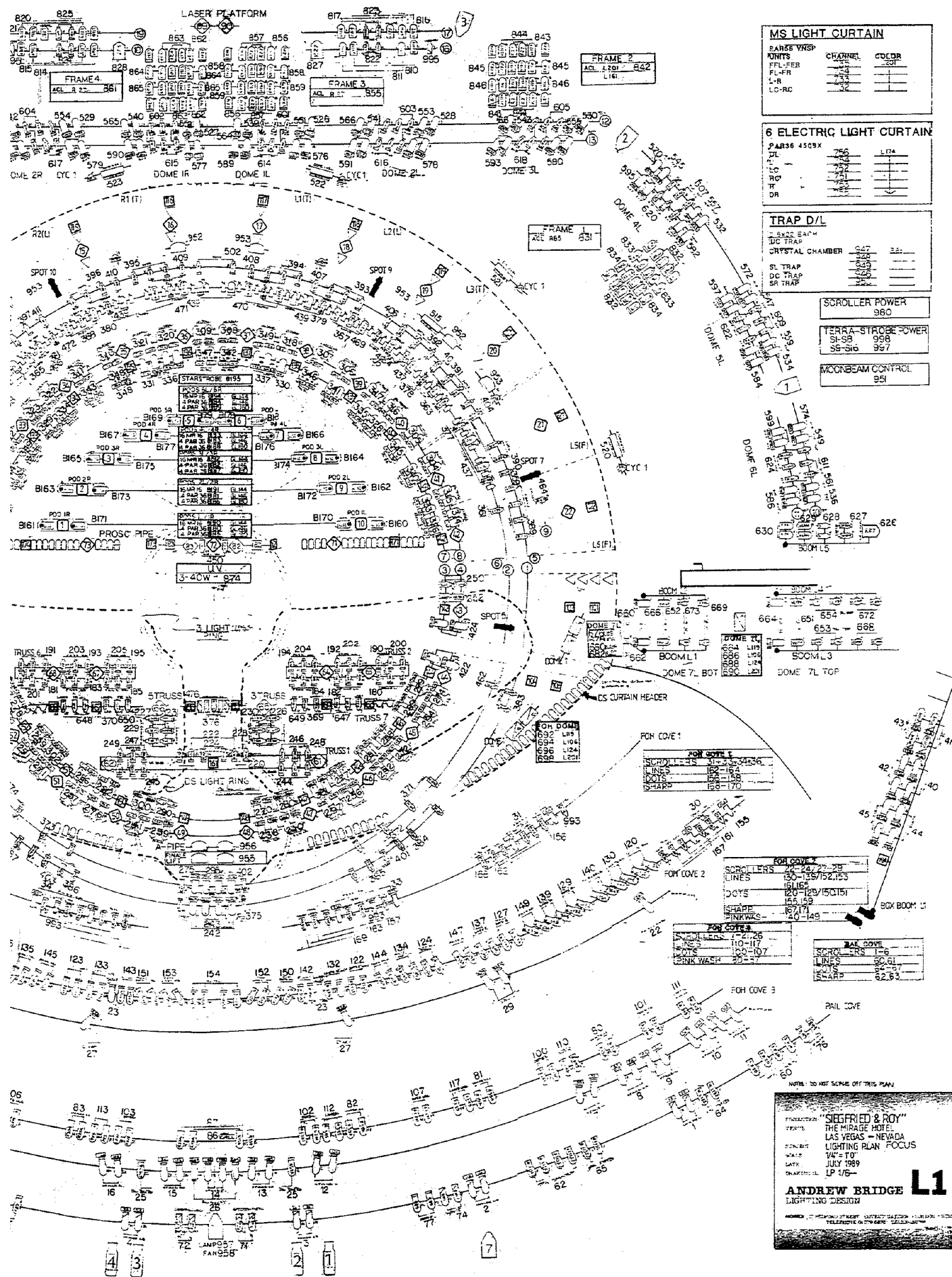
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DS LIGHT CURTAIN		
PAR56 VNSP		
UNITS	CHANNEL	COLOR
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DS LIGHT CURTAIN		
PAR56 VNSP		
UNITS	CHANNEL	COLOR
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717	L 201	
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719	L 201	
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726	L 201	
727	L 201	
728	L 201	
729	L 201	
730	L 201	





MS LIGHT CURTAIN		
PARSE VNSP UNITS	CHANNEL	COLOR
FL-FER	1-2	
FL-FR	3-4	
L-R	5-6	
LC-RC	7-8	

6 ELECTRIC LIGHT CURTAIN		
PAR36 4503X	786	L17A
DL	787	
FL	788	
FR	789	
TR	790	
DR	791	

TRAP D/L		
3 SACS EACH	904	
DC TRAP	905	
CRYSTAL CHAMBER	906	
SL TRAP	907	
DC TRAP	908	
SR TRAP	909	

SCROLLER POWER	
	980

TERRA-STROBE POWER	
SI-SB	998
SG-SIG	997

MOONBEAM CONTROL	
	951

FOY COVE 1		
SCROLLERS	150-155/152,153	
SCROLLERS	156-157	
DOTS	158-159/150,151	
SHAPE	160-161	
TRUNKS	162-163	

FOY COVE 2		
SCROLLERS	164-165/166,167	
SCROLLERS	168-169	
DOTS	170-171/172,173	
SHAPE	174-175	
TRUNKS	176-177	

FOY COVE 3		
SCROLLERS	178-179/180,181	
SCROLLERS	182-183	
DOTS	184-185/186,187	
SHAPE	188-189	
TRUNKS	190-191	

BOX BOOM 1		
SCROLLERS	192-193/194,195	
SCROLLERS	196-197	
DOTS	198-199/200,201	
SHAPE	202-203	
TRUNKS	204-205	

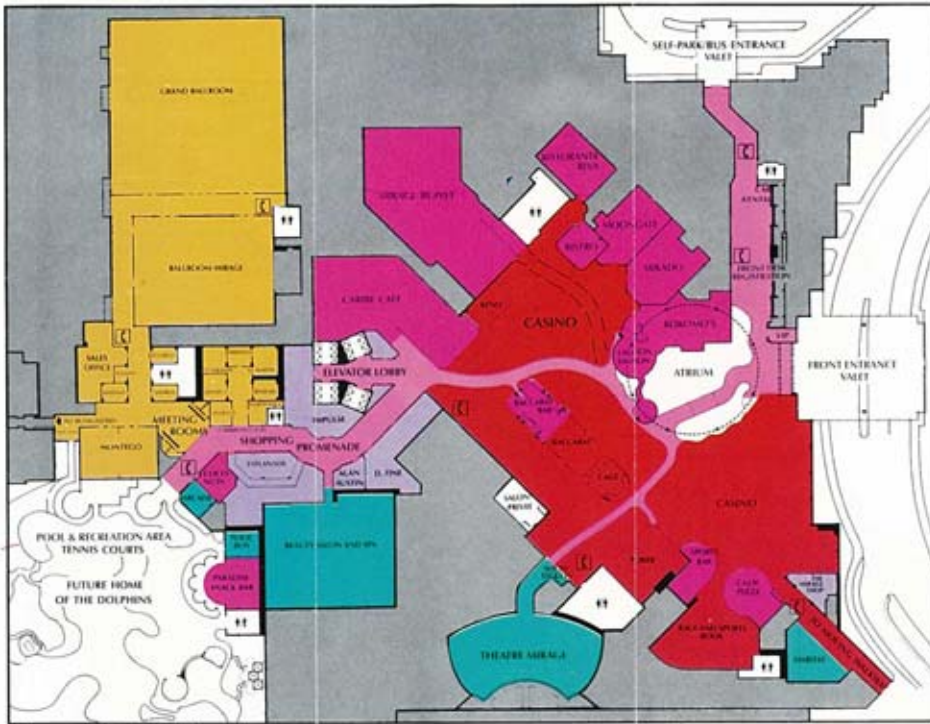
RAIL COVE		
SCROLLERS	206-207/208,209	
SCROLLERS	210-211	
DOTS	212-213/214,215	
SHAPE	216-217	
TRUNKS	218-219	

NOTE: DO NOT SCREW OFF THIS PLAN

MANUFACTURER: "SIEGFRIED & ROY"
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 LAS VEGAS - NEVADA
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 SALE: VAN'S TO
 DATE: JULY 1989
 DRAWING: LP 1/6-

ANDREW BRIDGE L1
 LIGHTING DESIGN

TELEPHONE: 0179 666 6666



The world of The Mirage.

create an opening up-stage centre, four panels wide, which forms the backdrop.
 "These panels are covered with RP screen on one side, with bobinette on the front. In the material of the dome panels they have fibre-optic points in them and Lumenyte. Also, along the base of the panels are strobe tubes. They open in various configurations to let the scenery through — most of which tracks on, such as panels which come on from either side to close down the stage.

"We have six Pani BP4 projectors from behind, projecting mostly abstract images. Each unit has a 32 slide random access slide changer. Also there are three Pani BP4's projecting from the front," continued Wendy.
 "On the front of these panels are three sets of rotating Par battens controlled by specially designed software from a PC. Also included are a couple of Color Rays and a 2B Vari*Lite.
 "We have 126 Vari*Lites, Color Rays,

and very narrow beam 4509X GE high intensity lamps. There are light curtains above, and Par 56 units uplighting in the stage floor. All along the passarelle there are MR16 mini-strips and above there is a light curtain with Par 56 downlights around the proscenium which we call the canopy here. We also have at mid-stage in the proscenium a set of downlights, interspersed between the Vari*Lites and Par 56 units.

"In the big dip, down in front of the arch, there is a circular truss that has moving fixtures on it. This comes in and slowly spins at the opening of the show.

"The main light ring, which forms the basis of the rig, is a circular position that goes all the way around the top of the dome and has nine positions on it. It is overhung twice and also has two lower positions. These positions have Par Cans and Vari*Lites and above that, there is a mixture of everything!

"Underneath the dome at the sides there are five pods on each side, each with one 2B Vari*Lite, two Par 64's, MR16's, and Par 36's. These pods, which track on and off stage, can come into centre stage, and into a low trim about 10ft from the stage. There are six Lycian short throw follow spots in the ring itself, and four Super Troupers in the light booth."

I was next shown the 'rear wall of light', which comes into its own primarily during the Dragon sequences, and uses some 120 Par 64 lamps.

Wendy Bodzin again: "To run this show requires 28 electricians, all of whom are full time contractors and responsible for



Only in Las Vegas could one discover a Polynesian Lost World coming to life in spectacular style.

the maintenance of their machinery, and who then run the performance twice each evening. There are 10 follow spot operators, a follow spot cue caller and a lighting cue caller, who is also the resident lighting director."

Here in Vegas it seems to be the norm to have a lighting cue caller as well as a follow spot cue caller, but due to the short time available to tech the show, it probably wouldn't, in any case, have been possible to have one person to cue all of the lighting.

There are 15 operators in the light booth, which runs the full length of the auditorium, and they are all connected by Clearcom into, what is reputedly, the largest headset system for a show in the world, with 98 stations on eight channels. Nine of these are for lighting, which includes the lighting director who calls the lighting cues, one who just runs the Par Batts and the Dome which go up and down from a PC, two Prestige 2000 Colortran boards linked together to run the majority of the conventional stage lighting, and the Strand Lighting Impact that runs the lights incorporated with the scenery. Then there's a Panache colour scroller board (controlling 370 units), the Vari-Lite Artisan Board, projection board, Laser Color Ray and Optikinetics strobe controls.

There are two electric gantries which can drive all over the stage, and which house a Vari*Lite, surrounded with downlighters. Like a kind of fork lift truck, but with self-levelling platforms at both

ends, they transport people and animals onto the set for the various illusions.

One can imagine the problems that will inevitably arise where there is a dedicated lighting rig of this size, particularly in the week of the month that they let in a touring 'headliner act with its own imported rig!

Concluding my tour of the rig with Wendy Bodzin, who has been with the show for almost 18 months, and who was busily completing the plotting at the time with other members of the production staff, she explained: "Everything is documented in terms of position, trim and location. We are as well covered as we can possibly be for that situation, and, yes I am expecting the phone to ring for all of us when we've gone!"

There can't be many technicians who can buy a 19ft Cadillac with a per diem, but Vari-Lite programmer Richard Knight managed it.

He contacted me from Japan, where the ever mobile 'Starlight Express' was once again rolling in for a stop. This time a repeat stadium version in Tokyo, where there was the first attempt to use the 200 series on a technical production two years ago. Today, they are using 50 VL2's and 24 VL4's. Again reducing the conventional rig, replacing par cans and scrollers on the truss.

Speaking of the integration of the Vari*Lite becoming the core of a stage lighting rig with the new VL4 units, Knight commented: "We now have a new tool available to make it easier.

"There's no real separation," he added,

"between smart lights and dumb lights. In this show they are up all the time and they are used for 'looks' more than the conventional lighting," — albeit they asked for 250 of them.

Knight went on: "My biggest problem on this show was the length of time the whole process took! Inventing the show 'here and now' showed some lack of planning." He felt that this contributed to the lateness of the lighting, leaving him no time for tweaking in the end.

Moving on to the very high standard of the lighting team, he praised the work of production electrician Greg Husinko and Vari-Lite technician Mark Freeman, who made life easier with their technical teams.

In conclusion, he felt the show to be "one of the most effective things I've ever seen. I hope the 'show running crew' are allowed to keep it that way. It's a very complicated show technically."

If you spend four months on the Strip it's hardly surprising you learn to live that way. He's now looking for a buyer for that car!

Vari-Lite L.A. which opened in spring 1988 employs a staff of 15, including contract personnel. The office is dedicated to the Los Angeles market and, through its satellite sales office in Las Vegas, the market there. The television and film industries make up 80% of the clientele, although market share in industrial shows and productions such as Siegfried & Roy is steadily growing. The advancements and new product developments in the Vari*Lite system are a direct



Part of the show with the circular dome backing housing at the top, Vari*Lite's and at the bottom, Color Rays.



Siegfried (in the mouth of the Dragon) and Roy — masters of illusion.



The entrance of the Wicked Queen. The circular light ring is clearly shown above.



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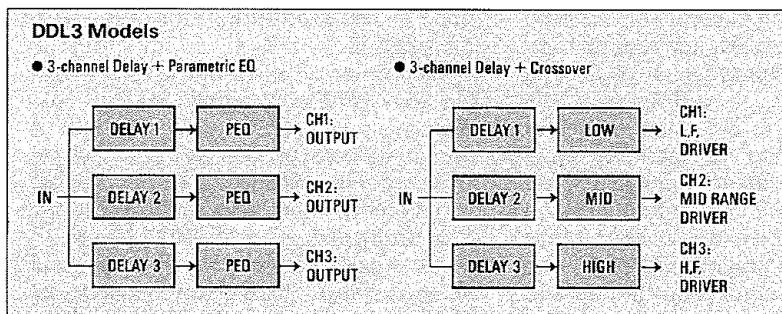
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result of market demands. I asked David Alley at Vari-Lite L.A. for further comment. "The Siegfried & Roy production currently represents the largest installed Vari*Lite rig." I then questioned him as to whether the VL4 had undergone any refinements. "Due to Vari-Lite's dedication to research and development, both hardware and software advances are an on-going process. The VL4, which first appeared in mid-1989 on the Who tour, is no exception to the rule. However, no refinements have been made specifically for the Siegfried & Roy show."

I then managed to talk to ultra-active associate lighting designer Rick Belzer, who is never without his right arm — a mobile cellular. He keeps everyone in touch, at the same time as speaking with his N.Y. office and organising his summer stock theatre in Connecticut, preparing for the next stop of 'Starlight Express' in Los Angeles, and finalising an 18 month stint with this show. Much credit should go to him for my initiation with this show, as he also found the time to call me regularly in England over the previous months with updates of the show, at a time when it seemed it was never going to open. He had the headache of co-ordinating the lighting, but enthused that "this type of theatre is more fun."

Rick Belzer handles many large musical projects, and big shows are his speciality, he told me, having just turned down a Canadian 'industrial' in favour of a musical in Japan. His first involvement with British designers was with 'Cats' on Broadway, and this show is the first time he has worked with Andrew Bridge.

"When I first came out here, it was just a hole in the ground," he said. "The complete hotel was built in two years and on what they call 'fast track big time'. At one point it was known as the largest and most expensive construction project in the U.S.A. in terms of dollars going out the door!"

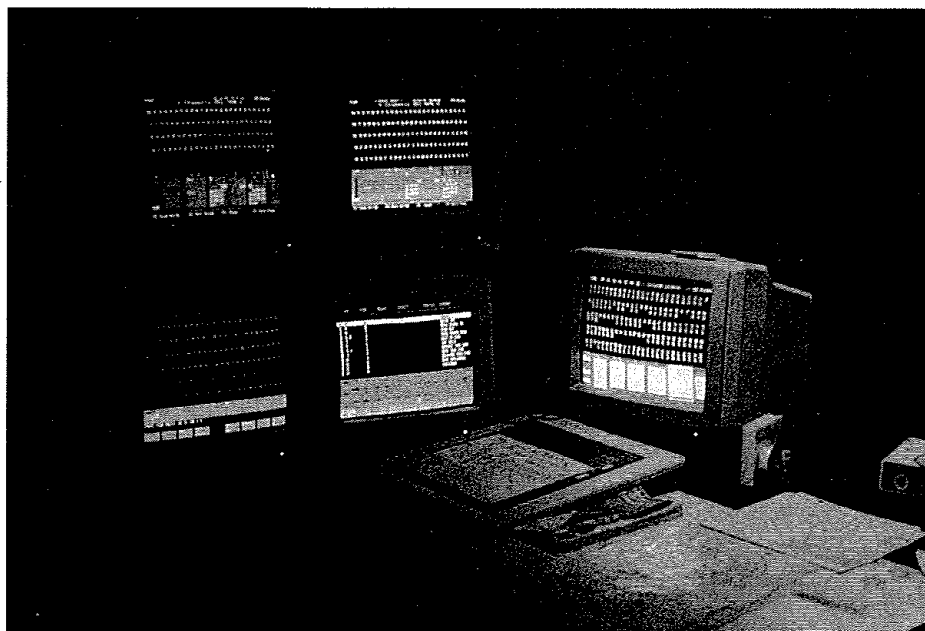
When he arrived he was immediately accused of being behind — the contractors needed to know every circuit in the building in two weeks — soon to be reduced to a single week!

"Two days later I was on a plane to Andrew Bridge's office in London. Andy was doing 'Phantoms' everywhere and I spent an hour or so with him to discuss this project in between," said Rick Belzer.

"We both had to come out to Vegas within two weeks of that meeting to plan the wiring of the building without knowing anything about the show! We covered ourselves, and told them so, overwiring by around 20%. We did multidrops from the grid so they could go anywhere. In fact it's worked out very well to allow for circuits to cover any headliner act," explained Belzer.

During the following six months Belzer and Bridge had many meetings in Las Vegas and in England, and while this was going on there were two different teams working: one with the 'Siegfried & Roy World Tour', then in Japan, and the other on preparations for the Vegas show.

Resident lighting director for the



The control area of resident lighting director Jeff Johnson.

Siegfried & Roy World Tour company, Jeff Johnson, calls the show here. He joined us and I asked him why it took so long, from September, when both teams came together in the theatre, through to February when the show opened.

"There were a lot of problems in co-ordinating the different factions of the show. What was the concept? There wasn't a director for the show until August — a year after I got involved with the tour," explained Johnson.

"There was also a waiting period to allow for the tour to get back and for the dancers and company to rehearse. I was bouncing between Japan, New York, Dallas and here. It needed all of us in one place, and then they got a little behind with the choreography, and so it just snowballed and there wasn't time to tech every move.

"Lighting was ready — we put together the biggest lighting rig in the world. We were ready to go. We would have scrambled. You bash through it, take notes, and you fix it," interjected Belzer. "It's a Broadway calibre show, still in its preview stage, and Siegfried & Roy are perfectionists," said Johnson.

I asked them what they considered to be the technical achievements in the show. Belzer: "The Dragon. In itself it was almost a million dollar piece of scenery. It took four men two weeks to programme the machine."

I asked them if there was anything new about the lighting equipment. "The Wyvern digital scrollers, which were in development, were pushed and used for the show. I think we also pushed the Vari*Lite development along with the bugs worked out for the model 4's. The Pani projection was using the first random access slide changer, being custom-built and designed. Also the Lumenyte fake fibre optic neon, fed with dichroic colours to enable a blend of any colours," said Belzer.

"Another first was the mini par batten light curtains on the stage. There are 38 separate stepper motors to run them. We did a lot of research on the 4509X lamp, as

it's the only lamp with the beam characteristics in it, but it only has a 25 hour life!"

"It could be the industry's demo theatre — it has every instrument that's going," suggested Johnson.

Why was it intentionally such a big show, I asked. "You're dealing with the biggest act in Vegas for the last 10 years, and you're dealing with the biggest casino/hotel in Las Vegas," said Belzer. "It's definitely a town where they spend a lot to make it the biggest and the greatest. There's going to be a gradual upgrading of the shows here now."

Later I was able to talk to jet-hopping Andrew Bridge in New York before he was about to become entrenched again, this time with the lighting for 'Aspects of Love' at the Broadhurst Theatre. He thought the biggest achievement was "Being able to manipulate the whole system easily. We had so many switchboards, and so many different types and quantities of units, it could have been a nightmare controlling it all. The way we broke it down, and the way we got the lighting design team working, was great," he said. "Rick Belzer was the politician, Vivien Leone (assistant lighting designer) was the gearbox, and I was the pilot. And it was all good," he continued.

"From my point of view, one of the big problems of the long delay was that you can get visually stale. After three months it was sheer tedium to see the same style of lighting, and you couldn't get excited by it, so you didn't know whether you were doing something good or bad. You have to try and get a break somehow and get on top of it again. The other thing that was an achievement was building a show of this scale over the length of time. With so many people involved it was a very difficult, political and technical jungle that we went through, but the artistic side came in at the end.

"I was asked to do this two years ago," continued Andrew Bridge. They were expected to move quickly. "The architects were asking 'how much electricity will I need?' We did the circuit diagram on the



Rick Belzer (right) associate lighting designer with Wendy Bodzin, assistant lighting designer.

building architects plan, and a lighting design just about prior to set design. We did an equipment list before the set was finished, or even what was going to be the show, and we coloured it months before we got on site.

"Having won the battle of a good quantity of Vari*Lite on the show, with a suitable number of follow spots, I knew that the excitement, visibility and specials could be catered for, so therefore the vast space left could be covered very broadly, which most designers don't have the option to do. I went for three enormous gobo coverages with 400 instruments in each and also the same with the colour scrollers, as block colour.

"We had some backlight on the dome with the projection and some effects, and the rest of it was meant to be a cacophony of beams crashing around in space filling up the atmosphere.

"It's a big area and you need that quantity of gear. Some people might say that with this quantity of equipment you can do anything. But it was a difficult task getting them, and that was possibly one of the most important parts of what I did."

In my efforts to bring you a fully detailed story, I ran into unforeseen difficulties. Photography can be a big problem. For example, on my visit to the Broadhurst Theatre in New York I had hoped to be able to take a picture of lighting effects specialist Howard Eaton, working on part

of the lighting ring for 'Aspects', with some of the technicians there. This was forbidden by the union steward, who said we would have to pay the whole crew if I clicked the shutter.

To some extent one can appreciate management's feelings on such an unusual show as Siegfried & Roy, where we were again forbidden to take any practical working pictures of either the crew, or simply of the lighting equipment, for fear of a flash gun causing a stir. Since writing this piece, however, we managed to break this precedent and obtain permission from the producers for a photographer to take some production pictures on our behalf with the co-operation of Vari*Lite. And that's the reason L+SI decided to delay this feature to this April issue so that we could include the pictures . . .

But then as Andrew Bridge said in explanation: "You have to realise here, they are the world's highest paid cabaret artists, who have invested millions in the secrecy of their illusions. They wouldn't even let me see some of the illusions I had to light!"

And where you have a combination of a few technical problems and an environment with animals who are not always co-operative, it's no wonder a show can be delayed. Things can go wrong . . .

Palm trees quantity approx 3.5K
Lighting Control from ETC lighting desk interfaced with computer.
Intrusion Alarm Electronic Beam system in operation.

Equipment List:

Impact:
2 x 4 MR16 JDR-N 120v @ 400 watts
2 x 6 MR16 JDR-N 120V @ 600 watts
2 x 8 MR16 JDR-N 120V @ 800 watts
10 x 8 MR16 EYF 12V @ 600 watts
8 x 24 MR16 EYF 12V @ 1800 watts
116 Proj MR16 EXT 12V @ 50 watts
1 x Proj MR16 ENL 12V @ 50 watts
5 x Proj MR16 ENL 12V @ 35 watts
6 x Proj MR11 FTE 12V @ 35 watts
102 MR16 ELH @ 300 watts
57 x Par 36 DWE @ 650 watts
2 x 2 Par 36 DWE @ 1300 watts

6 x 3 Par 36 DWE @ 1950 watts
2 x 1 Par 36 4509X 13V w/13V trans. @ 100 watts
2 x 2 Par 36 4509X 13V w/26V trans. @ 200 watts
4 x 2 Par 36 4509X 13V @ 200 watts
2 x 3 Par 36 4509X 13V @ 300 watts
14 x 4 Par 36 4509X 13V @ 400 watts
2 x 5 Par 36 4509X 13V @ 500 watts
2 x 6 Par 36 4509X @ 600 watts
71 x 8 Par 36 4509X @ 800 watts
10 x 12 Par 36 4509X 13V @ 1200 watts
2 x 14 Par 36 4509X 13V @ 1400 watts
4 x 16 Par 36 4509X 13V @ 800 watts
12 x 16 Par 36 4509X 13V @ 1600 watts
4 x Par 46 4535 6V @ 30 watts
8 x 8 Par 46 4553 28V @ 2kW
36 x Par 56 4541 28V @ 450 watts
11 x Par 56 VN5P 12V strip @ 2500 watts
36 x Par 64 Raylight @ 1950 watts
6 x Par 64 Raylight @ 1300 watts
20x Par 64 VN5P @ 1200 watts
8 x Par 64 NSP @ 1kW
16 x Par 64 MFL @ 1kW
1 x Color Ray (no wattage specified)
25 x Color Ray @ 175 watts
25 x Color Ray PWR (no wattage specified)
6 x Grain O'Wheat (no wattage specified)
34 x Lumenyte (no wattage specified)
10 x Moonbeam (no wattage specified)
16 x Quartz Fix @ 300 watts
4 x Quartz Fix @ 500 watts
10 x 4 Starstrobe (no wattage specified)
2 x 6 Starstrobe (no wattage specified)
1 x 14 Starstrobe (no wattage specified)
1 x 30 Starstrobe (no wattage specified)
20 x Vari*Lite 4 @ 400 watts
24 x Vari*Lite 2B @ 400 watts
3 x Fluorescent (no wattage specified)
2 x Pyro
8 x Volcano

Prestige:

40 x 5 DEG @ 1kW
20 x CS for 5 DEG
116 x 10 DEG @ 1kW
12 x CS for 10 DEG
84 x 20-40 DEG @ 1kW
46 x C8 for 20-40 DEG
6 x 6x9 @ 750 watts
29 x 6 x 9 @ 1kW
2 x 6 x 12 @ 750 watts
168 x 6 x 12 @ 1kW
12 x 6 x 12 iris @ 1kW
117 x 6 x 16 @ 1kW
12 x CS for 6 x 16
6 x 22 @ 1kW
12 x 6 x 22 iris @ 1kW
24 x 4.5 x 6 @ 750 watts
144 x Par 36 4509X 13V @ 100 watts
6 x 1 Par 36 4509X 13V @ 100 watts
3 x 2 Par 36 4509X 13V @ 200 watts
5 x 6 Par 36 4509X 13V @ 600 watts
6 x 7 Par 36 4509X 13V @ 800 watts
22 x 8 Par 36 4509X 13V @ 800 watts
12 x 2 Par 46 4553 28V @ 500 watts
3 x 2 Par 46 4553 28V @ 800 watts
3 x 4 Par 46 4553 28V @ 800 watts
3 x 4 Par 46 4553 28V @ 2kW
3 x 6 Par 46 4553 28V @ 800 watts
3 x 12 Par 46 4553 28V @ 3kW
3 x 18 Par 46 4553 28V @ 5kW
32 x Par 56 VN5P 12V @ 240 watts
41 x 8 Par 56 VN5P 12V @ 1920 watts
32 x Par 64 VN5P @ 1kW
118 x Par 64 NSP @ 1kW
64 x CS for Par 64 NSP
246 x Par 64 MFL @ 1kW
200 x CS for Par 64 MFL
8 x Par 64 WFL @ 1kW
8 x CS for Par 64 WFL
48 x Par 64 ACL 28V @ 240 watts
12 x Par 64 ACL 28V @ 250 watts
11 x Far cyc
4 x lanairo fresnel @ 5kW
12 x Molefay @ 5850 watts
8 x CS for Molefay
2 x Moonbeam (no wattage specified)
10 x Moonbeam @ 400 watts
1 x Pani Projector @ 2kW
6 x Strip MR16 JDR-N 120V @ 3100 watts
12 x Strip MR16 JDR-N 120V @ 3200 watts
16 x Starstrobe
4 x Strobetube
16 x Terrastrobe @ 400 watts
1 x Neon
24 x Tapelt
3 x 4' UV tube @ 40 watts
39 x Vari*Lite 2B @ 400 watts
39 x Vari*Lite 4 @ 400 watts
6 x fans
10 x spots

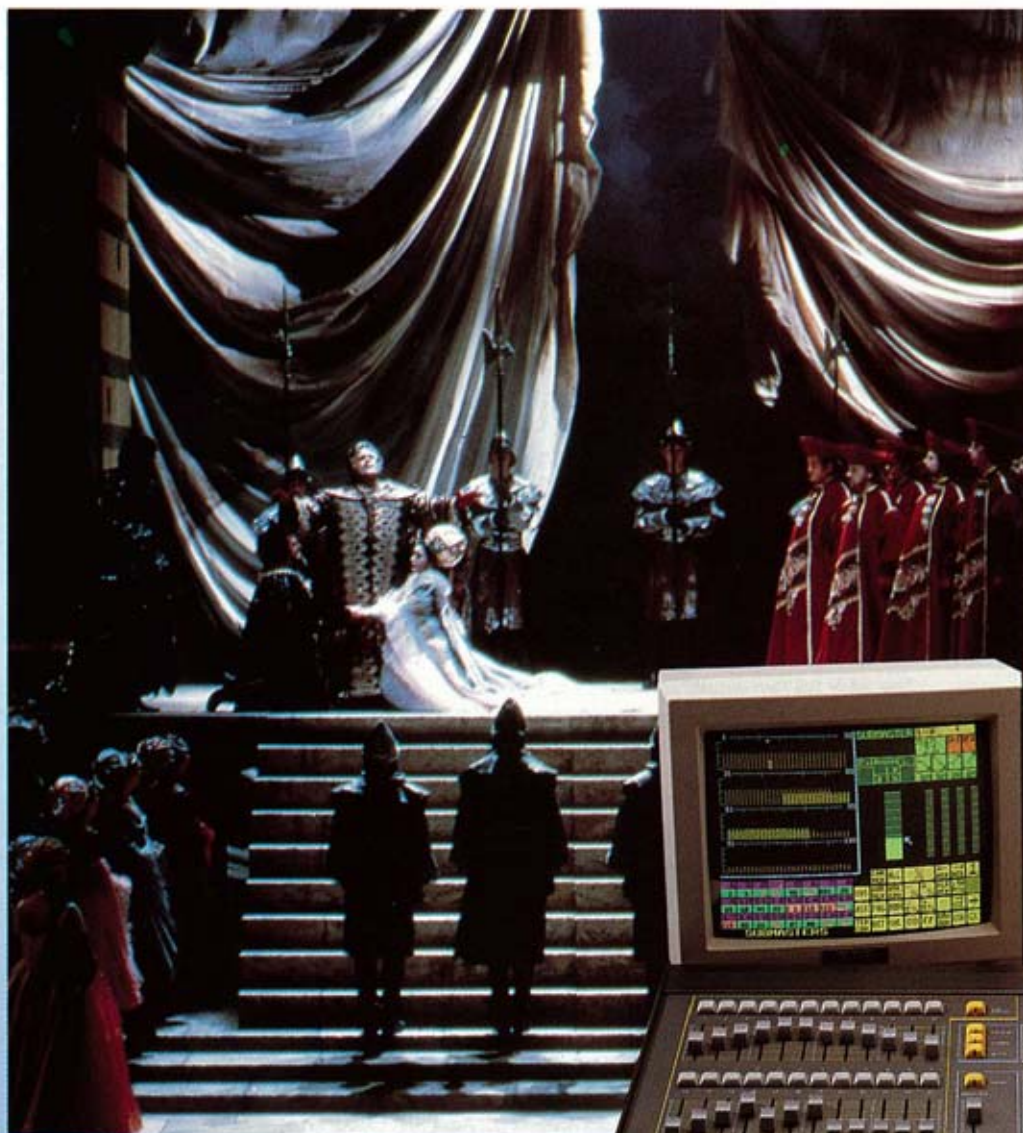
Siegfried and Roy

Production electrician: Greg Husinko
Resident lighting director: Jeff Johnson
Head spotlight operator: Tracer Finn
Assistant lighting designers: Wendy Bodzin, Vivien Leone
Assistant production electrician: Don Lawrence
Vari-Lite consultant/programmer: Richard Knight
Assistant: Mark Freeman

Statistics on the Mirage Frontage

DHA sourced the lighting from Production Arts, and the flame control from John Rogers at Aisco.
GFI- Ground Fall Interruption Breakers are in use.
3000 Instruments (combination of low voltage, tungsten and Par 56 lamps. Each unit is connected with 600ft cables.)
Total Hotel Mega watts intake based on approx 70k population capacity.

the Tenor



- 240 channels (up to 512 dimmers)
- 24 play-back submasters and 2 crossfade submasters
- 255 memories
- 12 flashlines, 24 programmable chasers, ability of memorizing 20 colour scrollers and 20 special effects
- 5 dimmer law curves
- programmable keys
- direct and total access for modifications during the show
- all informations on VDU colour monitor
- memory card, infra-red remote control, printer
- USITT DMX 512

ADB
lighting systems

N.V. ADB S.A.
Leuvensesteenweg 585
B-1930 Zaventem
Belgium
Tel +32/2/722 17.11
Tx 22154
Fax +32/2/722.17.64

ADB-Sofair S.A.
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F-92120 Montrouge
France
tel +33/1/42.53.14.33
Tx 206428
Fax +33/1/42.53.54.76

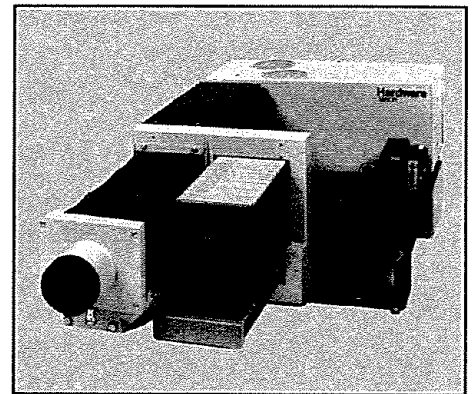
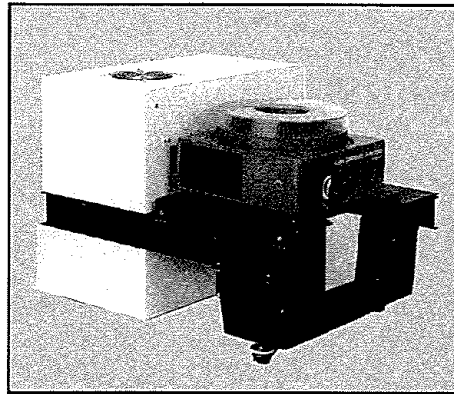
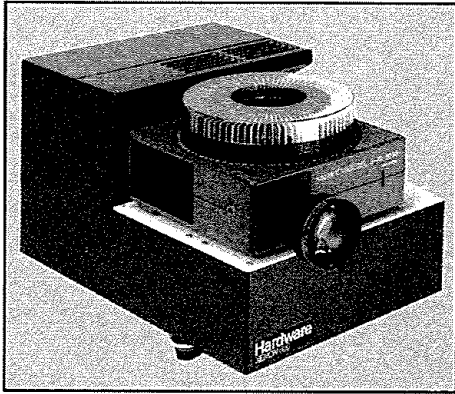
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Hardware for Xenon

**HIGH POWER
PROJECTION AND
LIGHTING FOR
COMMUNICATIONS
AND SHOW
APPLICATIONS**



SLIDE PROJECTORS (600 TO 7 000 W)

All Hardware for Xenon equipment is portable and operates automatically. It is compatible with all control devices : remote control units, timers, synchronizers. In addition, Hardware for Xenon equipment is compatible with dissolve multi-vision systems.

XENON 600 W - 4 000 Lumens 24 x 36 mm slides

A compact projector that enables ambient light to be maintained for taking notes in a conference room. Image up to 7 metres wide.

XENON 1 000 W - 8 000 Lumens 24 x 36 mm and 60 x 60 mm slides

The 24 x 36 mm model is often used in multi-vision mode for conferences, sales conventions and stands. Image up to 10 metres wide.

XENON 1 600 W - 14 000 Lumens 24 x 36 mm and 60 x 60 mm slides

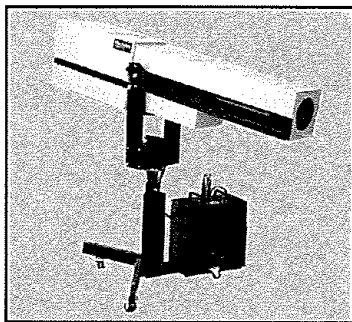
Same applications as the 1 000 W projector. The 60 x 60 mm model can be used for theatre backdrops, giant posters, and projecting decors for films and television programmes. Image up to 14 metres wide.

XENON 4 500 W - 70 000 Lumens 180 x 185 mm slides

Designed for giant projection in large auditoriums, on to monuments, châteaux, inflatable structures or any medium created for a specific event. Image up to 40 metres wide. The 4 500 W projector is compatible with standard multivision systems. The slide changing is microprocessor controlled with a removable 40 slides tray and a rapid search random access.

XENON 7 000 W - 100 000 Lumens 180 x 185 mm slides

Same applications as the 4 500 W projector. Image up to 50 metres wide.



FOLLOW SPOTLIGHTS (1 600 TO 7 000 W)

Hardware for Xenon has developed a new generation of follow spotlights that provide :

- twice as much light as follow spotlights currently available.
- photographic quality definition by means of a 5-lens zoom that enables the diameter of the beam to be varied from 3 to 12 metres at a distance of 50 metres.
- optimized cooling of the coloured filters, the iris, the gobos, etc.

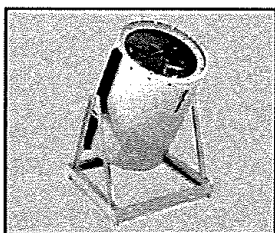
XENON 1 600 W - 16 000 Lumens. Use distance : 15 to 150 metres.

XENON 2 500 W - 27 000 Lumens. Use distance : 15 to 200 metres.

XENON 4 500 W - 60 000 Lumens. Use distance : 15 to 300 metres.

XENON 7 000 W - 85 000 Lumens. Use distance : 15 to 300 metres.

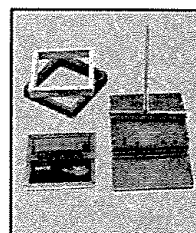
Hardware for Xenon offers a "short model" follow spotlight in 1 600 and 2 500 W versions.



SKYLIGHTS (2 500 TO 7 000 W)

The Hardware for Xenon skylights are leak-proof. The beam movement can be programmed via a 0,10 volt controlled mirror and 0,10 volt controlled shutter.

XENON 2 500 W - XENON 4 500 W
XENON 7 000 W.



HIGH POWER SLIDE MOUNTS FOR 24 x 36 MM AND 180 x 185 MM SLIDES

The Hardware for Xenon special slide mounts without glass for high power slide projectors avoid the need for refocussing and avoid condensation.

SEE US AT VISION AND AUDIO '90 —STAND 955

SALES AND RENTALS

Hardware for Xenon will soon have an address in the UK, but in the meantime please contact

Hardware
for Xenon

126 avenue Pablo Picasso
92000 Nanterre - France
Tel. : (1) 47.76.00.29 - Fax : (1) 49.06.07.13

SHANGHAI

LE PALAIS AGAIN

Phil Roper investigates the technical changes behind the new-look Le Palais, Hammersmith

Things have been a-changing at Le Palais, Hammersmith, where Carlsbro Technical Services have recently completed a major technical re-fit and re-design. With a Stephen Court designed sound system, a Memotech videowall and an Enigma controller, Ivor Green and his team have created something rather special.

As Bert Sale, Mecca's manager at Le Palais tells everyone: "I now have a venue I can sell. Great lighting, mega sound and the UK's largest videowall."

When Carlsbro began work, they were unable to utilise much of the existing equipment. The only items retained were the Par 64 cans, four of the original six columns around the edge of the dancefloor, and the video monitors. During the installation the re-siting of the videowalls necessitated the installation of major steelworks including the fitting of two 40ft long girders which each weighed in excess of 500kg. All the installation works were carried out whilst the Palais was fully trading, and the team of engineers on the project worked from the close of trading at 3am through until 8pm each day. The engineers even had to work on the ceiling during opening hours.

The first phase involved the assembly of the equipment enclosures on the principal stage and the re-siting of the video walls. The main rig changeover was accomplished between the 6th and 21st of January using a team of 16 engineers. The Court speakers, weighing in the region of 500kg each, were suspended directly from the roof structure using high tensile steel cables. Further alterations are still to be carried out on phase adjustments. Ivor Green also told me of some constraints on the bass system performance as there is an environmental noise escape problem at low frequencies. No doubt this will be dealt with.

Japanese glass has been used for some of the neon as it allows deep colours to be utilised which can easily be manufactured in UK glass shops.

The use of the Enigma control system (more of which later) has simplified much of the circuit wiring. Ivor Green commented on its application: "It offers very exciting possibilities from a control point of view. It proved to be a great convenience having a serial data link from the Enigma sited in the DJ console to the Enigma interface units located on the main stage. Almost all of the lighting equipment on the rig is driven from an individual dimmer pack or switch pack channels thus facilitating much more complex sequencing and 8 band sound to light control."

The Enigma is an exciting concept in lighting control. I asked Ivor Green how the Midi and SMPTE interfaces improve on its abilities. "We are exploring the possibilities of the Midi and SMPTE interfaces built into the Enigma. Essentially both facilities offer exciting new control interfaces for the operator. Midi allows exploration of the fact that a music keyboard is velocity sensitive and the Enigma interface allows us to

interface this with lamp or neon brightness thus allowing the operator a much greater degree of 'expression'." During commissioning tests, Carlsbro established that suitable offsets could be applied to both tungsten and neon lighting to allow lamp brightness to be precisely related to key velocity. It is a straightforward process to allocate different areas of a keyboard to different areas of the lighting rig. It will be possible for a band on stage to be allocated control of the whole lighting scheme through their midi output.

SMPTE control allows complete synchronisation of the light show to a piece of pre-recorded material, thus allowing pre-preparation of lightshows to music with all step cues coming from the time code. Communications from the Enigma to the videowall will be added during the next three months. It is obvious that controllers like the Enigma will proliferate and that their costs will come down. It offers the nightclub industry an exciting future in terms of the control of the more complex installations.

The sound system at Le Palais was designed and built by Court Acoustics of Windsor. As Le Palais is a rather unusual venue in that most clubs and discotheques are either square around the dance floor, or long away from the DJ console, it requires a short throw sound system — only around 60 feet, but with a wide dispersion of around 180°. Le Palais is a live music venue as well as a discotheque, so the stage area is very much an acoustical focus, and it is appropriate that the sound source is on the stage rather than around the dance floor.

The other consideration is the new sound level law. Historically, most people — not just DJs — confuse the excitement in music with level. Understandable because most sound systems don't start to get exciting until the volume is wound up. This may be a clue to those operators and owners who are

horrified at the prospect of being legally limited to 95dB. The excitement in music is not just what you hear, but what you feel by bone conduction — bass. 95dB is not very loud or exciting when you have the usual array of horns blasting three kHz razor blades at you, but 95dB at 20Hz and 20,000Hz is very exhilarating.

A Court sound system was used at the Hammersmith Palais in the seventies, with George Macrae on tour, and the venue's unique qualities were evident then. Combining these with the new sound level laws gave the design criterion for the new sound system.

It was decided to create a stage-based sound system that would cater for the dynamics of compact discs as well as records, and for live performance without feedback and overspill which has always been a problem at this particular venue. The system also had to provide an intense sound field on the dance floor up to the control console, as well as a very wide horizontal dispersion to cater for the upper and lower bar areas to the sides of the stage.

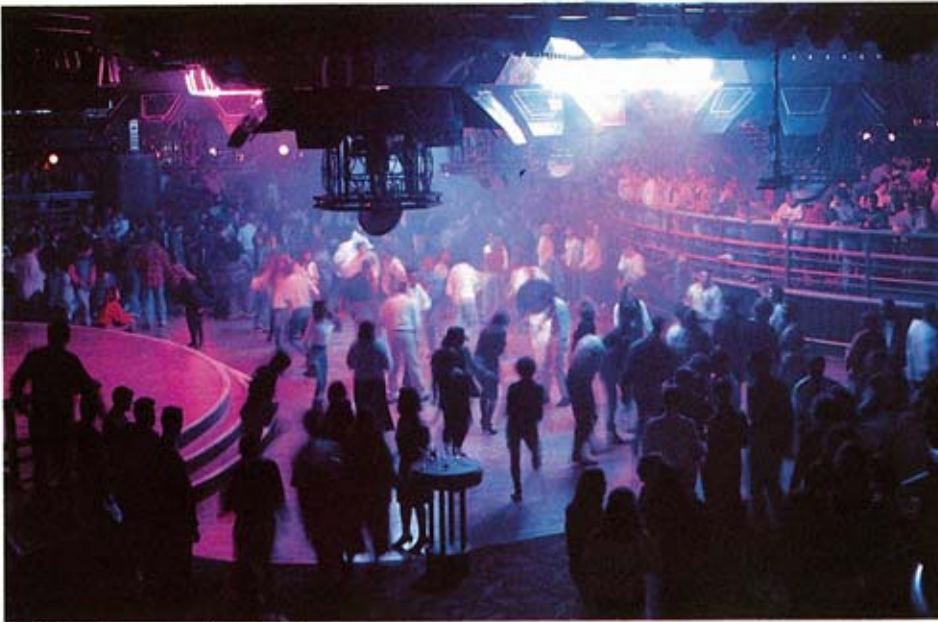
The Court System 1000 was used for its particular qualities in design. When used as a single speaker system, it provides a typical horizontal dispersion of 90°. When they are stacked, they perform like a line array which has certain unusual qualities. A line array gives an intense sound field on axis, but reduces vertical dispersion, thereby avoiding unwanted reflections from the ceiling which is particularly low at Le Palais and is covered in a host of lighting apparatus.

Since you are only hearing part of the line array, you can also stand quite close to it at high sound levels without being blasted. As you move away from it, you hear proportionally more of the array, so instead of reducing in volume as you move away from the sound source, it actually maintains its level.



Great lighting, mega sound and the UK's largest videowall.

Photos: Shariah Vafa



Le Palais: A new era for the club.

Le Palais' System 1000 is arranged in two massive enclosures measuring eight feet wide by six feet high and weighing over half a ton, suspended over the stage and dance floor in the form of two hi-fi speakers. High frequencies are handled by 16 ring radiators in Di-radial line arrays and cover the frequency range 8-2000Hz. Mid frequencies are handled by eight 4" titanium compression drivers in bi-radial horns, covering the frequency range 1.5kHz-8.5kHz. Low mid frequencies are handled by eight extended bass mid range 12" drivers in conical horn flares. The conical horn has the advantage of high gain to match the compression drivers and covers the frequency range of 80-1.5kHz. With a power handling of 2.4kW

and high efficiency of 103dB this band is especially important for live performance as well as recorded material.

Bass frequencies are handled by eight extended bass 15" drivers in conventional Court bins. These are 14' folded horns with reflex loaded back chambers. With a total power handling of 3.2kW and an efficiency of 106dB over the frequency range 20-200Hz.

Low bass frequencies are further augmented by eight 8" drivers in sub bass resonators covering the range 20-90Hz and with a power handling of 4.8kW giving Le Palais a total bass power of 8,000 watts with a potential low frequency output of more than 130dB at one meter.

The system is run 5 way active from a variable phase electronic crossover feeding an array of C Audio power amplifiers with a total output capacity of 16,000 watts. To combine the best advantage of both types of amplifier, whilst the high frequencies will continue to be run by C Audio's Mosfet amplifiers which have an excellent transient response, the low frequencies will be driven by C Audio's new bi-polar amplifiers as soon as they are available.

Sounds are mixed by a Formula Sound PM80 with sound level monitoring and control, and live mix is from a 30 channel Soundtracs studio/live mixer. It is hoped that Le Palais will soon convert to all digital records in the form of compact disc and DAT and be the first club in the UK to go all digital.

Le Palais originally had two Cameron 5 X 5 videowalls. Memotech Computers, in conjunction with Carlsbro Technical Services, have re-installed the system making it the largest club videowall in the UK.

As the equipment had seen a long period of hard use, it was decided the best course of action was to remove it completely. It was economical to use the Barco monitors again following a full re-alignment. All of the electronics were replaced to take advantage of new technology. Memotech have installed their System 2000 so the club can take advantage of new features as and when they become available.

Installed alongside these at Le Palais is the Reflex Touch Controller which, Memotech say, reduces almost to zero the amount of specialist training involved. Any operator can now achieve the best effects from the wall. The company is currently working with Advanced Lighting Systems to ensure full compatibility with the Enigma controller.



A view of the neon-decked rig showing the videowall at the rear.



Memotech's videowall – the largest in the UK.

(They will be sharing a stand with ALS at SIB/Magis 90 in Rimini displaying a 3 × 3 videowall).

Because of the non-standard aspect ratio of the new 10 × 5 videowall at Le Palais special care had to be taken in the signal processing.

To display a full screen picture, the operator can choose between image compression or cropping in order to fit the format: the selection depending on the type of material being shown. A colour camera with pan and tilt has now been installed and with a video typewriter it means the system is extremely versatile.

The main controller at Le Palais as already mentioned is the Enigma from Advanced Lighting Systems of Scotland. John MacPhail of ALS is probably the most difficult man in the industry to pin down, but after extensive hunting . . . success! The Enigma already boasts quite a pedigree and is installed in the Discotheque Royale in Manchester; Empire, Leicester Square; Magic Circus, Madrid; Dady'O, Mexico and Eden Beach in Malta. ALS always assist on an installation, particularly if it is the first one. Installation of the Enigma itself takes only two to three hours. As regards the operator training, most operators are familiar with using the controller in one to two hours, while the programming procedures and complete familiarisation with it can take another four to six hours. I spoke to John MacPhail about the applications of Enigma: "It is very flexible both from a programming and real time aspect in relation to the overall lighting design and fixtures. As in any situation, you very much get out what you put in, and this is particularly true of moving lights."



Le Palais in full swing.

Carlsbro requested that a sound to light bar graph facility, i.e. 20 channels of neon sequenced horizontally in bar graph fashion, be incorporated for Le Palais. ALS also made available 16 different attack and decay parameters applicable to Enigma's eight channel sound/light analyser. This gives a very accurate and emotive interpretation of lights to music, particularly with the hundreds of independent neon channels in Le Palais. The system allows residual brightness and modulation. In addition, you can apply any one of the eight sound/light bands to trigger an audio chase, e.g. you can have a bass chase on the Par cans and a snare drum type chase on neon. Carlsbro also requested access to memories via a fader panel which is to be released shortly.

Communication between videowall and Enigma is via the RS232 ports. Enigma will access the memories within the Memotech computer and will also provide additional memory storage on the internal hard disc. 128 memories can then be instantly accessed from switches on the 32 way touch panel. It can then incorporate the videowall effects within a master sequence for all the lighting, and apply any of the Enigma facilities including Midi, SMPTE, and sound to light triggering to the videowall memories. A spectrum analyser effect can be simulated on the Enigma preview colour monitor and then displayed on the videowall.

Enigma has been designed with particular emphasis on very fast, real time access to any part of the system. As such it is ideally suited to nightclubs and discotheques and also for live use. ALS have been speaking to companies in the touring market who have expressed a serious interest in the controller,

in particular with reference to an 'expert version' moving light package which has been developed with television, stage and live performance applications in mind.

Enigma is currently able to operate lasers and has done so since its first release in 1988. On the installation in Mexico, Enigma runs a 4 scan Argon and Krypton laser, the beam actuators and the colour box. On other installations, Enigma controls hoists, elevators and smoke machines. Since it is a software based system it is relatively easy to adapt to new effects as they become available. In Le Palais, Carlsbro have utilised all the dimming channels and it is the only installation to have used all 512 to date. In its current form, Enigma will control 512 dimming channels, plus 1000 switching channels and is expandable to accommodate over 1000 dimming channels.

Since Enigma will control multiple channels, it can be adapted to a wide variety of applications including museums, theme parks and leisure centres. Indeed any situation where a multiplicity of channels need to be controlled from a central point.

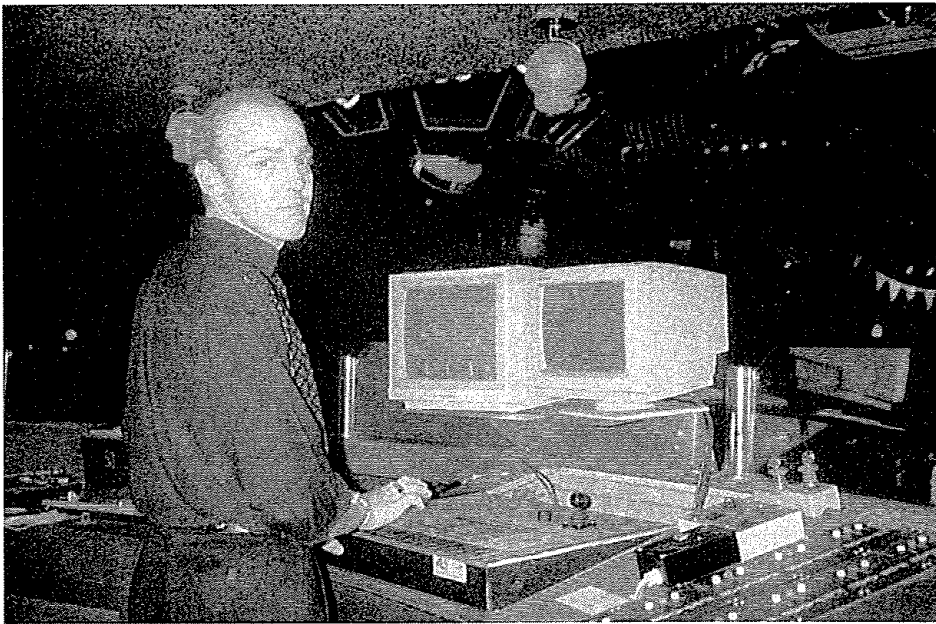
Sadly, I was unable to have a go on the Enigma as Le Palais was trading. But I was able to speak to Richard Gibbons, prize winning light jockey who operates the controller every day. I questioned him on the operation of the system. "It obviously depends on the individual and in my case the ability to absorb a lot of information in a very short space of time. After half an hour with John MacPhail I came away with an understanding of what Enigma could do, but not how to do it. After visiting Carlsbro and taking an Enigma back with me for a day, I grasped the basic operation. Once you have



The 1200 MSR Coemar venue in action.



The Venus lowered from the central Japanese neon rig.



Richard Gibbons, resident light jockey at work on the Enigma control system.

broken down the terminology used then everything falls into place. I would like to see the 'help' menu extended to show step by step basic procedures. I would say that it would be a distinct advantage for all lighting jocks to have experience of the Enigma. I think that it is inevitable that a computer in one shape or form will become the tool (and not the replacement) of light jocks. I view the Enigma as a very complex programming instrument which still has to be operated with a degree of talent."

It is a credit to Ivor Green and all concerned that Le Palais has been professionally installed to a very high

standard, considering the difficulties faced en route. It is interesting to see that a discotheque light show can still be effective without any 'intelligent lighting' in sight. Ivor Green did tell me that 24 units were re-installed, but Mecca asked him to take them out. Say no more.

Equipment List

- 96 × Par 64 cans
- 48 × Coemar Antares cans
- 1 × Coemar 1200MSR Venus
- 4 × Coemar 750w Bellos
- 20 × Optikinetics Par 56 Soundscanners
- 6 × Fabtronic Scanners
- 8 × White Lightning strobes

- 80 × Par 56 cans Soundtech
- 256 × Par 36 pinspots Soundtech
- 48 × Fabtronic F70s
- 4 × Rotosurfers
- 336 × individual elements of neon
- 64 × Mode dimmer packs
- 8 × Mode switching packs
- 1 × Enigma computer
- 9 × Enigma interface units
- 2 × Jem ZR 20 smoke machines
- 1 × Pulsar Rockdesk (backup controller)
- 1 × Memotech Video Wall incorporating 50 Barco monitors, System 2000 electronics and a Reflex controller
- 1 × Court sound system comprising JBL components
- 1 × C.Audio power amplifiers using both SR808 and SR606 models

THE NEW

> ENIGMA <

Micro

REAL-TIME USER FRIENDLY CONTROL
FOR THE SMALLER VENUE

COST-EFFECTIVE CONTROL FOR:

- 128 CHANNELS
- JUPITERS/GOLDEN SCANS/
BRIOS/INTELLABEAMS
- MEMOTECH VIDEOWALL

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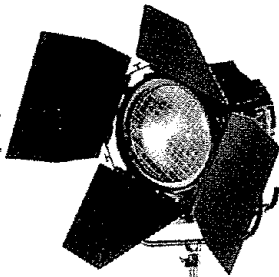
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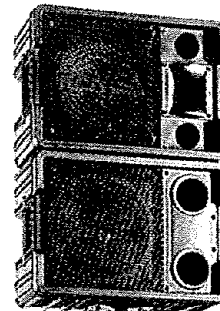
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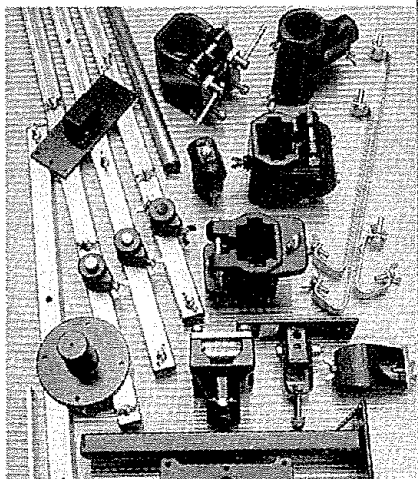
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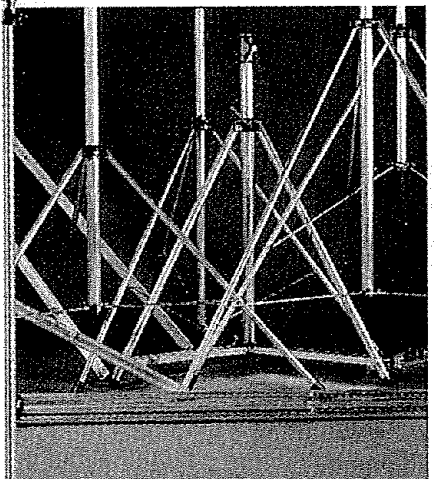


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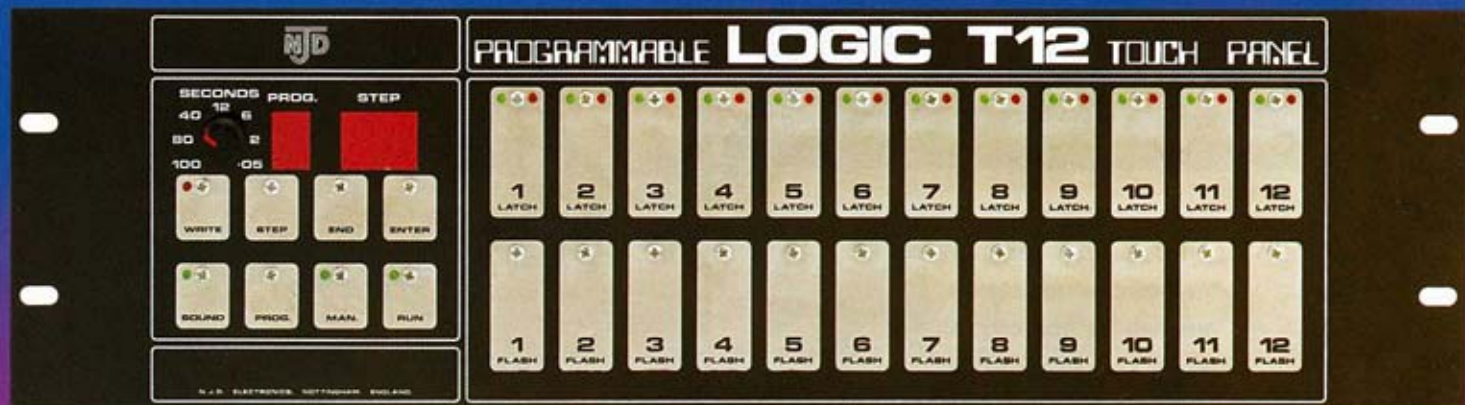
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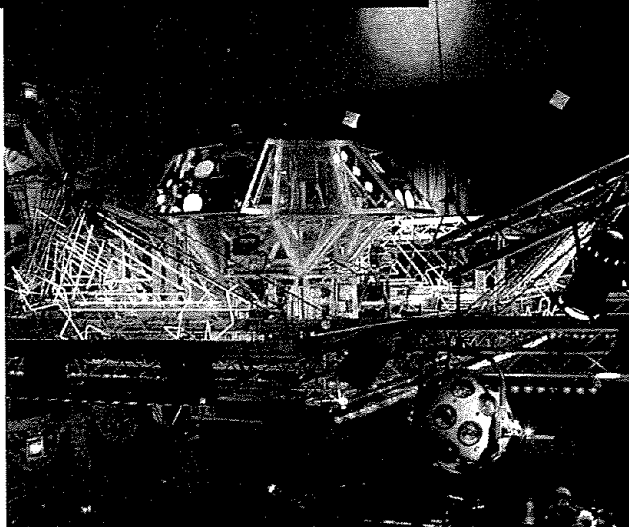
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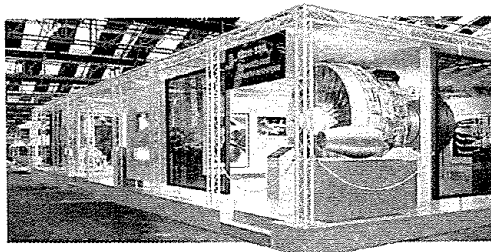
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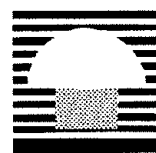
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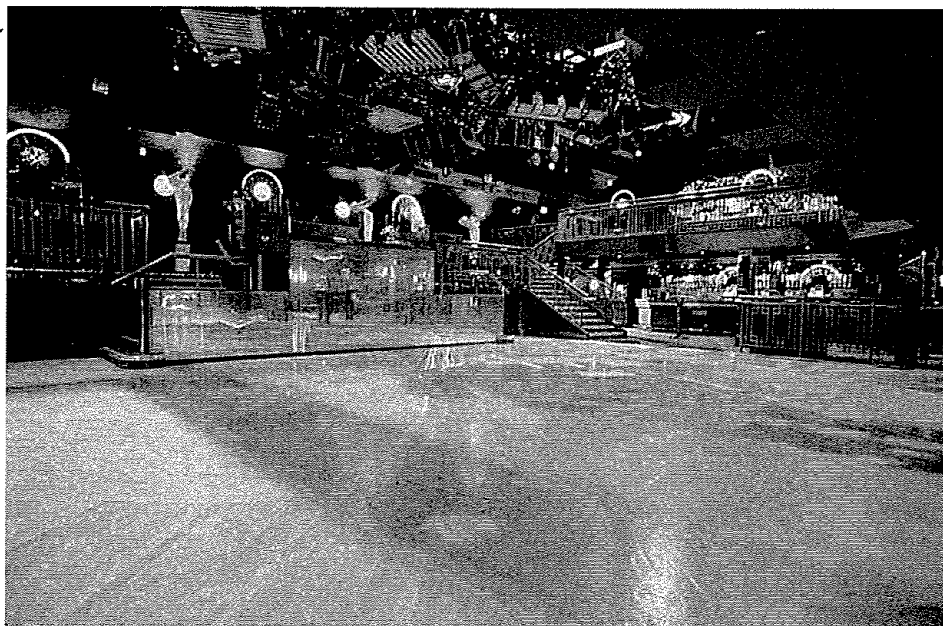
Vincent Rice samples some Chelmsford nightlife

What is it about Essex that drives the children of that fair county to lust after the products of the Ford Motor Company, especially Escorts of any vintage? In the process of finding a sneaky parking spot under the railway station in Chelmsford I came upon a huge gaggle of guys, girls and souped up XR3is — a nightly occurrence apparently, and entirely in keeping with the Essex Dave'n'Tracy image. Of course these days it's all Timberland boots and Acid House. The true inheritors of the 'bimbo' culture were to be found, metaphorically and actually, on the other side of the street queuing to get into the latest Essex fun palace — the 'Dukes Experience'.

The entertainment stakes are high in this neck of the woods and Dukes owners, Essex Entertainments, are relying on a massive investment in sound and lighting (over £250,000) to deliver local domination. The lighting, with a few minor quibbles, is undoubtedly a triumph for designer Graham Barron. The sound system, a joint effort between Essex Entertainments technical director Chris Adams and consultant John Frederick is a different box of speakers altogether. More of which later.

On entering the be-neoned portico entrance of the club one is met by what at first seems to be yet another re-run of the hackneyed 'art deco' nightclub theme. On closer inspection however, the interior design, by Ashley Rowland of Leonard Ashley Design, raises itself a cut above the rest by the quality of the custom fittings, the abstract carpet design and a tendency towards the 'art nouveau' style — a weird and much more interesting period of design (and my pick for the next wave of commercial retro discovery). In the club proper, several balcony levels have been added to good effect and the barn-like nature of the building has been successfully disguised.

Totally dominating the interior are two things — the massive lighting rig and the massive 6x6 Cameron videowall that is obscured by it. It came as no surprise that it was intended to raise the steels supporting the lighting rig by three metres prior to installation. The idea was unfortunately abandoned on grounds of cost which



Ready and waiting for the 'Dukes Experience'.

Photos: Chris Pearson

suggests a certain strangeness of priorities since there is now nowhere in the club that affords an uninterrupted view of the splendid videowall. Similarly, views from the balcony tend to be blocked by the complex workings of the lighting rig. Fortunately, the installation by H. A. Lee is neat and there is an interesting industrial moving landscape for the punters to watch.

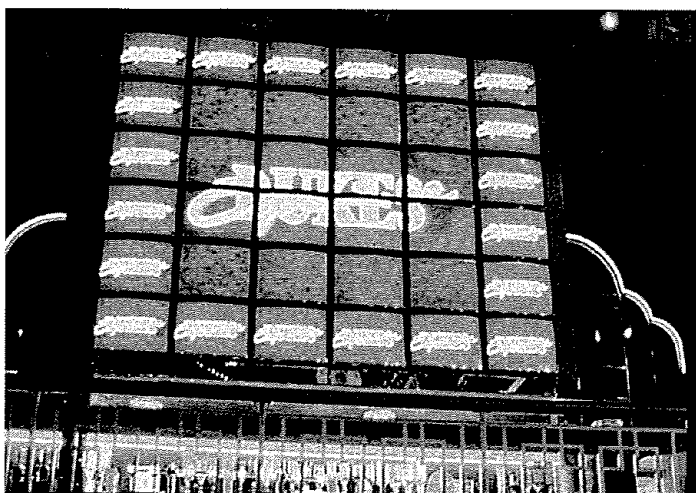
The lighting rig itself consists of a central tetrahedral aluminium mirror/neon feature surrounded by a larger steel frame triangle with steel frame squares off each face. Surrounding these central features are six 'delta' shaped steel frames. What makes the rig unique so far is the range of movements and controllability of that movement, with some 25 motors supplied by Lynx Lighting, all of them controllable proportionally with a standard 0-10v signal.

The central neon feature moves vertically; within the squares off the central triangle there are smaller square frames that move vertically and also slowly rotate and tumble to any position. The outer 'delta' sections move vertically and by the use of two motors can tilt inward or outward. Three of these outer frames also contain square

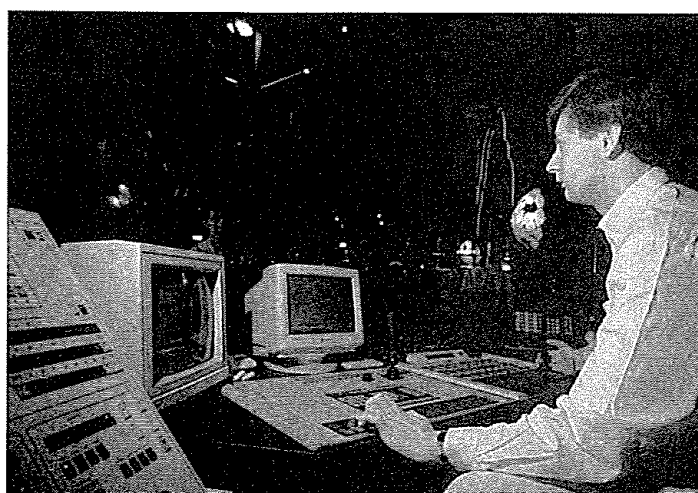
frames within them that can tumble. As you can imagine, the physical shapes possible are endless, and by making control of a motor system available to even the humblest controller (an idea prompted by our good friend T. Gottelier I believe) Lynx Lighting are likely to obtain more work than they can handle — possibly more from the presentation and rock'n'roll markets than disco.

In terms of actual light fittings Graham Barron has taken something of a rock'n'roll feel by eschewing the use of overtly discotheque units and using a range of static lanterns of different powers and beam sizes (Par 36s, F70s, Lynx SXs, Coemar Fortes and Par 64 Raylights), high power strobes and outlining neon, getting the movement of the rig to do the expressive work. The only exception on the rig being the regulation issue 12 Clay Paky Golden Scans, in three sets of four.

I take issue with this concept slightly. Modern discotheque, as opposed to live rock'n'roll which consists of a finite number of separate lighting scenes designed to enhance the mood of each song, tends to be a single dance groove that rises and



An unobscured view of the Cameron videowall.



Getting to grips with the Enigma system.



"The wonderful world of Dave 'n' Tracy."

in tempo and intensity to give peaks and troughs of excitement within a continuum of music. Certain tempos and musical feels can, in my opinion, only be expressed by the spinning of a 'helicopter' or the tumbling of a 'harvester', which is why their forms were thought up in the first place.

Everyone is aware of the danger of clutter and bad taste in discotheque lighting design, but I would love to have seen these simple effects given a new slant, literally, by the extensive angular movement opportunities of the rig.

The other problem with this approach is

that one has to rely a great deal on the quality of the lighting operator and the present incumbent simply ain't cutting it yet. He is obviously in the first nervous stages of getting to grips with the powerful Enigma controller and the hugely versatile rig, and there seems to be an attempt to use every single piece of the movement and lighting about every ten minutes or so. Having said that, a simple continuous movement can relate directly to a musical tempo, a complex mechanical choreography repeated endlessly simply becomes tedious. The rig movement should be used to create

unique physical shapes and the possibilities of each shape exploited for a period of time using the lighting. No doubt things will get better when he calms down a bit.

An interesting piece of lighting in the rig is the use of six Thomas Par 56 light curtains with M&M gel scrollers (used extensively in the musical 'Anything Goes'). An example of the possible crossover from theatre which I am sure we will see more of. A puzzling addition to the lighting armoury and not the choice of Graham Barron was the addition to the rig of 14 Laser Systems' Gyrolights,



Atmospherics from the designs of Graham Barron.



The lighting rig dominates the interior.

DEALING WITH SHADOWS

Jason Barnes, production manager of the National Theatre's Cottesloe Theatre, talks to Peter Mumford, lighting designer for the Rambert Dance Company



Curralao: close backlighting of the cyc with 'sawn off' short nosed Par cans.

Scratchy 78s in the wings, and jam tin floats at the Mercury Theatre in London's Notting Hill Gate is, I am pleased to say, a decidedly wrong, and outdated impression of this fine company's work.

As a mere theatre person, I approached the second of Rambert's programmes in their March season in London with an open, but prejudiced mind. My first reactions were of relief to find the Wells orchestra pit open for business, and on looking above to the sides of the proscenium, and circle front, surprise to find just 31 lanterns comprising the entire front of house rig! Of these, four were illuminating the tabs. Ah! Of course, ballet lighting comes from the sides — sculpt the body and kill the shadows.

The programme started with the premier of 'Dealing with Shadows' to Mozart's piano sonata in A Major (the one with the Turkish Rondo at the end), and 'Hymnos', with score by Peter Maxwell Davies (1967 — a haunting clarinet with piano), both choreographed by Rambert's artistic director Richard Alston, no lighting designer credited. The first had indeed dealt with shadows. Strong side horizontal boom positions created well lit dancers, who entered and exited constantly into the glare, and the subtly changing range of pastel colours enhanced English Eccentrics' hand printed costumes against the evenly lit cyclorama behind.

In contrast, Hymnos, the second piece of the evening used less side lighting, and introduced strong directional top back lighting, and end of spot bar positions. I asked Peter Mumford if there is a basic approach to laying out a ballet rig — especially where several designers are sharing a programme, with revivals and new works in one season. "Yes, the standard 5 point cover is one of the basic techniques. Front of house is seldom used as, on tour, the theatres have very varied front of house positions and equipment, so a solid backstage rig is the best and most reliable basic 'palette'. There is an attitude that one must have side light, but I always argue against any rule — while rim, top and back light do predominate in dance, I like to cut through this from time to time. I've lit whole pieces with no side light.

"The basic technique for side lighting is to start at the bottom with 1K profiles on booms, and follow on upwards with 1K fresnels one above the other, and finish with par cans at the top, focused on the floor. To avoid flooding the masking on the opposite side with light, the trick is to angle the black wool wing flats slightly up-stage on the off stage side, and therefore to throw the flats into shadow.

"If I'm lighting for Second Stride Company, who don't tour a rig, unlike

Rambert, the local theatres may not have sufficient similar equipment to the originating venue, which really makes it difficult to reproduce. In that case I would design an A, B or C plan as a bottom line. For Rambert who tour with both rig and Lee Colortran Prestige 2000c board, running magic sheet and riggers with 96 X 2.5kW dimmers with soft patch duel control outlets, the lighting is reproduced by either Malcolm Branville, technical director, or Ken Coker, chief electrician using a standard rig, and perhaps 40 or 50 specials, but it's tight!"

I asked about the other two major tools — first colour. Peter has worked extensively with painters such as Howard Hodgkin and Richard Smith. But the stimulated imagination has to be turned into practicalities. Was there one colour call for the whole of the programme? "No it's possible to do live colour changes during the action, and of course, as scenery is very often limited to wing arrangements, it is usually possible to drop in the whole of the backstage rig during a 15 minute interval for re-colouring.

The other great tool is change of light, and I asked Peter how he approached his planning for cues in a particular piece. Was the discussion with choreographer, composer or conductor? "The technical schedule offers little time for experi-



Peter Mumford's lighting design for 'Sounding'.

mentation," he told me, "and so I will work off the score if it is available. Sometimes the choreography for a new piece may not be finished until a week before production. I can score read, and I often work with a piano tape. Orlando Gough, the composer of *Currulao*, the second of the pieces I have lit in this particular programme, writes for synthesiser first, often using his skills as a mathematician, but he will orchestrate later. The musicians may wear cans and follow a backing track, but the initial synthesiser recording will get my ideas going."

I wondered what the dance version of a runthrough might be. "Try to get to rehearsal early — it's not always possible. On *Currulao* I got in late, but I had had the full score on tape to work with. There were three or four runs of the ballet in the rehearsal room, this perhaps less than usual, but unlike theatre, a video tape of rehearsals is often made, and that is really useful." I asked Peter if there was any union resistance to this, as the theatre seems unable to successfully negotiate with all the relevant performance unions. "There really is no threat of exploitation from recording rehearsal tapes, and it is almost common practice," he explained.

Ballet colours seem to read strongly and I asked Peter his view. "I don't consciously colour the dancers themselves — maybe very softly for sculpting. Available colours have become very subtle, say correction tints. I often use Cosmetic Aqua Blue and

frosty tint from Lee."

The opening of the last piece, *Currulao*, had the curtain rise on a shimmering magenta line of light across the floor, which silhouetted the entrances of the dancers. A 'scenic' effect and a useful one where setting pieces can seldom occupy the dancers main area. Peter Mumford had achieved this with the cyc top batten coloured with Lee 181, Congo Blue, dropped in behind a black border, which rose and was flown out slowly with the lighting bar permeating the whole floor with the colour. As the filled cloth and sharktooth fronted gauze cyclorama was revealed, a pulsating green was apparent. Peter assured me that there was no green colour employed, but a trick of complementary colour apparent to the eye of the audience.

The intensity of the opening effect was stunning, and achieved by Rambert's basic RS1 1K quartz strip units. Had Peter monopolised the colour ways available? "Well, there are only two on a roller rig, but we are hoping to move to colour scrollers. London Contemporary Dance use colour changers on their top wash in a nine point and 20 point rig, but the units are outmoded. They are the old semaphore four colour cassettes. They get worked into the standard repertoire, but too many people are using the four colours available in any one programme, and they are difficult to change in an interval. Scrollers take many more

colours."

The piece gave me the impression of strong floor bounce, with soft under face light, which is difficult to achieve off a black ballet floor. However, he did like the effect that footlights can give. Seeing the dancers feet can be rather eclipsed by rows of 'S' battens on the front of the stage, and therefore his excursions into this source position were usually limited to units on the floor on either side of the proscenium, casting strong shadows up stage. The second 'scenic' coup Peter had in store at the end of *Currulao* was achieved by close backlighting the cyc with 'sawn off' short nosed par cans on bench stands, placed quite close to the foot of the cloth, and focused up, giving the distinct impression of gas flames at the bottom of an oven. Rambert have christened this the 'cookability' look, and I found this variation from the traditionally even cyc wash very welcome.

The first piece Peter Mumford had lit in the evening, 'Sounding' to a score by Giacinto Scelsi *Okanagon* (dating from 1968) beautifully realised for amplified acoustic harp, percussion and double bass, and choreographed by Siobhan Davies, was played through a front gauze throughout. This allowed Peter to produce a three dimensional scenic effect with a yellow zigzag on the gauze at the front, across the floor and up the cyclorama at the back. Meticulous focusing of a series of Sil 30s both from front of house and backstage, produced a framework of light through which the dancers could weave. The effect of the front gauze, and light falling on the upstage side, created a distinct impression of smoke. A wry smile spread across Peter's face — he had tricked one of his own kind. There were no smoke guns in that piece!

Finally, I asked about paperwork. Peter uses the super paint programme on Apple Mac, with a menu of lantern outlines which he draws, and from this he can cut and paste from Rambert's basic rig, which is held on disc. This can be brought up and specials added for specific ballets. "I couldn't draw a rig for a play on the computer. The thinking is different. I will go back to the proverbial drawing board to work out structures, shapes and angles. The screen is too small to allow one the different thinking needed for drama. After I've designed the rig for a play, I may well transfer it to the computer programme, print out, and reduce the print to A4 to fit on a clip board for focusing on stage."

The mystery of ballet notation intrigued me. Had Peter learned one system? "No, I use my own system, and make my own notations in a little black book! At the first run I watch for the feel of the shape of the ballet, and then later will make notes with little groundplans. I use my own notation system to record the movements of the dancers and the shape of the dance. I use this system to get the choreography into my head. At that stage I don't necessarily know where the cues will come.

"Rambert's busy schedule allows only one and a half hours to focus, and three hours to light a ballet the day before opening. The essential thing is to define the space within the previously chosen parameters of colour and change of light. Each section will be lit, and one can stop the dancers to re-run a portion if necessary. The dancers will usually be in costume for the lighting rehearsal. The Sadlers Wells Royal Ballet do not, however,

(continued on page 37)

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provide the balletic equivalent of 'walking for lighting' as one would find in the theatre, although London Contemporary Dance Company would expect to do so."

I wondered how one freezes an amenable dancer in mid air to tidge the focus on that all important profile. Well, it seems one doesn't. It's in the imagination of all like Peter Mumford who capture space, and provide a world of three dimensional colour and light to illuminate for us the world of dance.

Peter Mumford studied Theatre Design at the Central School of Art and was a founder member of the group 'Moving Being' around which most of his early work was centred. Since 1978 he has worked widely in the field of contemporary dance and music theatre. Recently, he has designed lighting for 'The Overgrown Path' at the Royal Court, 'Yerma' at the Abbey Theatre, 'Faust' at the Lyric Hammersmith and 'As You Like It' at the Old Vic.

He designed the lighting for five of the ballets featured on the original 'Dance on 4' series, designed and co-produced 'dancelines' for Channel 4 and co-produced three TV works including Strong Language. He has also directed TV versions of Siobhan Davies' Wyoming and White Man Sleeps.

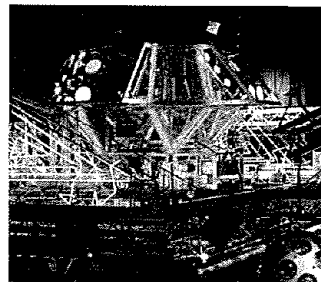
The Rambert Dance Company can be seen from the 21st-26th May at the Theatre Royal, Brighton and from 12th-16th June at the Bristol Old Vic. Further performances are planned for October and November.

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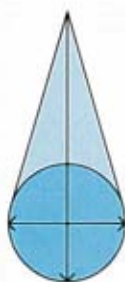
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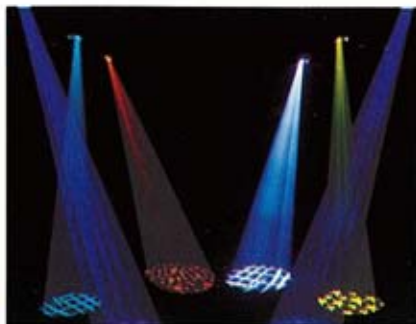
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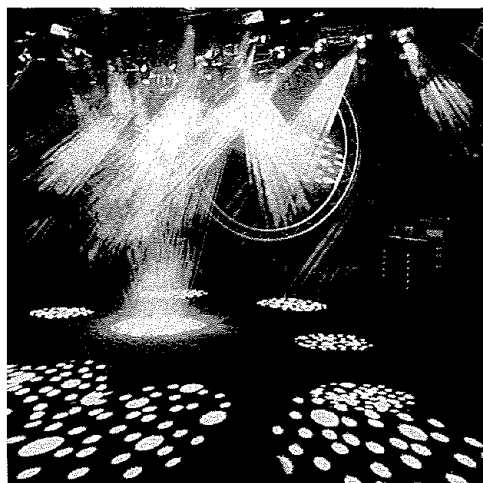
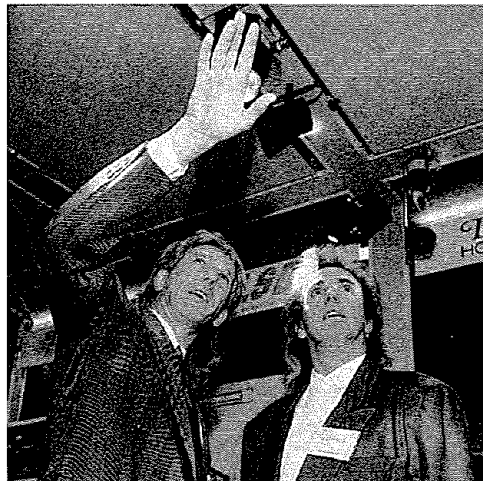




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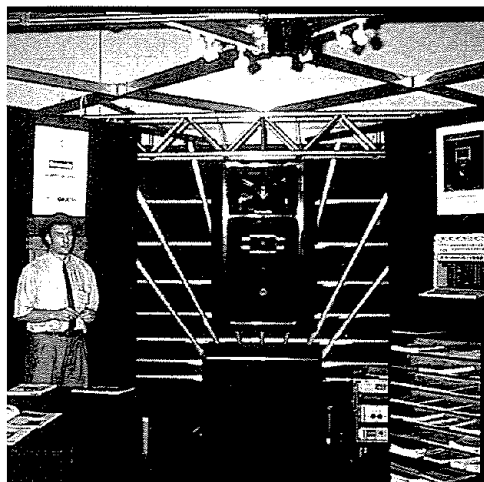
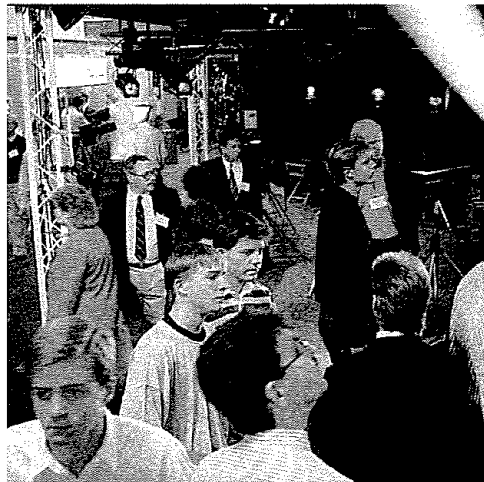
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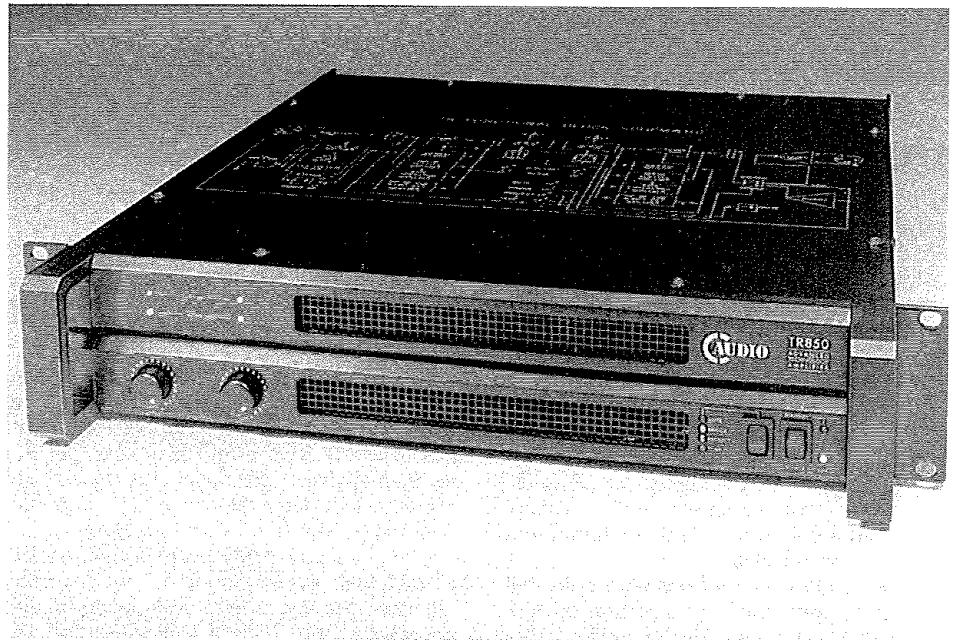
FRANKFURT 90

Ben Duncan and John Offord at the 1990 Frankfurt Music Fair

I'd come to Frankfurt on a separate mission, with the return flight booked for the afternoon of the first day of the show. My English host had taken a wrong turning on the Autobahn on the way in. The Germans don't allow for such errors, so after a tour of the local Autobahn system, we arrived at the show an hour late, leaving me with just four hours to seize on the key exhibits. Despite missing the previous two years' shows, it wasn't as difficult as it sounds: the layout hadn't changed that much, with just a few sound companies displaced below, into Halle 9.1 mit dem guitars and studio equipment.

C Audio were showing a new series of 'hybrid' Bi-polar/MOS-FET power amplifiers, which will be available early in April. Models TR850 and TR650 are both '2U' high and produce 850 watts and 650 watts/ch respectively. High specifications have been achieved using cascaded input circuitry, followed by MOS-FET drivers coupled with the latest generation of fast bi-polar output transistors; so they should be worth a listen. The TR series amps also feature state-of-the-art heat-exchangers and overall 'management' circuitry which monitors safe-operating-area, prevents clipping (hence protecting drive-units), and generally provides an intelligent response to misuse and accidents. It should help to build on the company's existing reputation for road-going reliability and ultra-solid construction. C Audio have also released three graphic equalisers, their first foray into signal processors. EQ 152, 311 and 312 are 15 band (1/2 octave) stereo, and 31 band (1/3 octave) mono and stereo units respectively. Individual calibration of band centres, -24dB per octave high-pass filters, gold-plated bypass relays (ones which work without crackles when there's a power failure!) and peak indicators with adjustable -10 to +20dB threshold, makes them distinct from other makers' models.

Carver have relaunched their entire range of professional power amplifiers. Bob Carver and his team have produced what they consider to be the next generation of 'magnetic field' power amplifiers. 'Magnetic field' is Carver's term for an elegant space and energy-saving power supply, first used in 'The Cube' in 1980. The new amplifiers consolidate the range of pro-models that have grown up rather haphazardly over the past five years as well as incorporating detailed refinements suggested by users worldwide. The new model numbers logically describe their function (PM = 'Pro Monitoring') and 4 ohm power ratings: PM-120, -300, -600, -900 are stereo 60, 150, 300 and 450 watt per channel units respectively. There's one bigger model, PT-1250 which produces 625 watts per channel into 4 ohms, and as its initials imply, is mainly made for Pro-Touring. Other new products from Carver that will interest installers in particular include cassette decks, preamplifiers, tuner-preamplifiers and CD players, including a compact front-loading multi-player into which you can stack 10 discs. Carver's colour brochure makes for interesting reflection on the depleted state of large scale audio



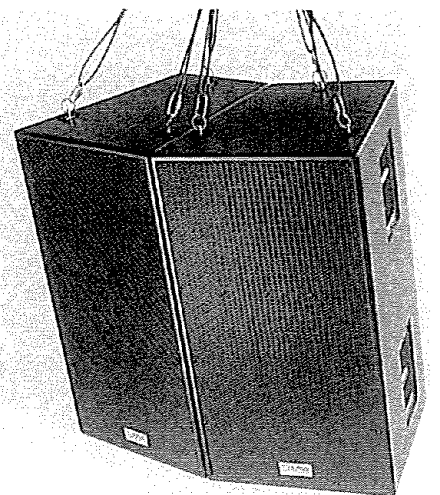
C-Audio's TR850 'hybrid' bi-polar Mosfet power amp.

manufacturing in the US, for the way it describes Carver Corporation (with its 300 employees) as "... one of the largest consumer audio manufacturers left in the United States." Like everyone else's, Carver's cassettes and CD players are sourced from the Far East, though they're looking into using the Philips CD mechanism, the only one made outside of Japan.

Dynacord were showing the present flavour in small instal speakers: a 3-way, full-range trapezoidal enclosure. The SRC 200 can be used singly or in clusters and is equippable with flying accessories. A single cabinet has a programme rating of 400 watts, giving a maximum SPL of 125.4dB at 1 metre. US company **EAW** (Eastern Acoustics Works) were showing two new PA cabinets, KF600 and KF300. Both deliver high acoustic output (up to 13dB SPL at 1m with a 250w amplifier) from unusually compact 3-way boxes. EAW claim they employ 'virtual array technology' or 'VA' which "simplifies creation of idealized arrays." Translated into plain English, EAW are presumably trying to say that their enclosures are designed from the ground upwards to work successfully together in horizontal arrays without too much fuss. It's not an original claim; perfection is not so easy as it seems on paper, and so far, only one PA loudspeaker maker in the world has dared to publish polar graphs which chart the actual performance of tandem enclosures. The KF600 employs a truncated 'Forsythe' mid-bass horn (named after designer Kenton Forsythe), with a finely-tuned compound flare, and a 'displacement plug' which looks like a 'variation' on a well-known UK maker's patented technique. The nett result is said to be constant 60° coverage. For bass, there's a 'Transverse Geometry vented LF subsystem'. Translating another American hi-tech euphemism into everyday English, the 'subsystem' appears to be just a well-researched development of the classic vented bass enclosure, with the Theile-Small-

type parameters carefully tuned to attain wider bandwidth and lower than average distortion as well as reduced cone-excursion at the lower bass frequencies. Both sides of the driver radiate through ports via resonant chambers, and the driver's rear-side outlet has been twisted (the 'transverse' bit), presumably so it works with (rather than fights) the direct radiated sound field. It all goes to explain how such a small cabinet should be taken seriously. The system as a whole is driven via EAW's MX800-6 CCRP processor, which is actually a special modification of BSS Audio's FDS-360, the de facto 'industry standard' crossover. It provides 'assymetrically sloped' 4-way crossovers, phase correction and multistage overload protection. Like EAW's other enclosures, the KF600 is available in 'Road' and 'Instal' versions. The 'Road' version has EP6 connectors and 4mm test-point sockets, while both types have flying facilities. The KF300 is similar to the KF600, but even smaller.

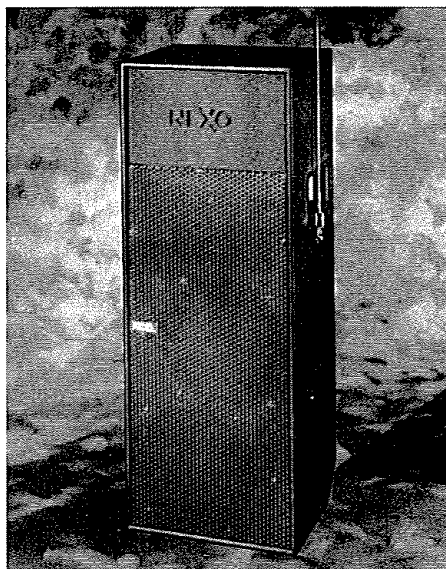
Kelsey Acoustics had three particularly



EAW's KF600 Virtual Array System.

apposite accessories. Peterson Systems' Yellow Jackets are modular, truck-proof cable protectors. They're invaluable if you're rigging touring and temporary sound or lighting systems, and need to lay delicate multicore or mains power cables across roads, corridors and open spaces. The protectors are made from yellow and black hipethane, an impact absorbing plastic that Peterson Systems have been developing in the USA for over 27 years. Signex is a 'budget production' patchbay made in the UK. Having been continually refined over seven years, it meets state-of-the-art needs (with numerous options for normalising, MIDI, and a choice of phono jacks and tie-wrapped rear-connections) to give performance practically as good as outrageously pricey 'GPO style' patch racks, without the setbacks and shoddy construction that's been the hallmark of other budget bays. **Electronic Audio Systems** in West London have recently introduced a duo of multiple DI boxes, beta-tested at leading London studios. MDI-8 is rack-mounting with 8 channels; MDI-4 is a four channel stage box. Distributed by Kelsey, they're aimed at enabling oriental keyboards (with their sub-standard output levels and high source impedances) to be connected to consoles' mic inputs, for minimum noise, greatly expanded headroom and the abandonment of earth-loop buzzes.

Martin Audio's stand boasted a colourful newsletter, complete with a picture of their award winning Japanese dealer and a notable stateside F2 cluster, as well as news on Martin systems (and some of Martin Audio's team exploits!) from around the globe. New products include the CT Series. CT2 is a compact trapezoidal speaker employing a 12" coaxial drive-unit. It's particularly aimed at theatre and A-V installations. It can be partnered with CTX, a compact, separate sub-bass cabinet which is ported and contains a single 18" driver. MX2 is the matching 2-channel system controller. CTW is a 12" coaxial wedge monitor developed from the CT2. For bigger events, Martin have introduced the F1 to complement their successful F2 series. In return for dispensing with the modular 'rack-mountability' of the F2 enclosure, the F1 is smaller. It's a two-part system; the top-box features a titanium diaphragm compression driver with a 1 1/2" (38mm) throat, and a 12" mid horn with a



Nexo's MSIV2.

nominal 70° coverage. A super-tweeter can be optionally added to enhance the response in the 10kHz to 20kHz region. The F1 bottom box is said to have astonishing bass 'punch' for its small size. High efficiency is gained with Martin's proprietary 18" drive unit and the hyperbolic flare of the F1's bass horn.

Old colleagues **Midas** were bought-out by Klark-Teknik several years ago. They've finally launched the last project undertaken by the old Midas, the XL is a state-of-the-art PA console primarily intended as an add on fan out for sound mixing consoles, although it is also useful as a stand alone mixer for keyboards and for line level signal mixing and distribution. The unit includes 8 inputs/outputs and direct outputs, internal power supply and a PFL output. The PFL output is enabled via 8 pushbutton switches with LED status indicators, situated on the front right hand side of the unit. This in conjunction with the meter change over switch on each module permits the monitoring of PFL input signals or PFL matrix signals. In addition each input/output module contains a 20 segment LED peak level meter, with which either the post fader direct output or the post fader matrix outputs can be metered. All the inputs and outputs are electronically balanced and appear on the rear of the unit on XLR3 type connectors. Each input/output module

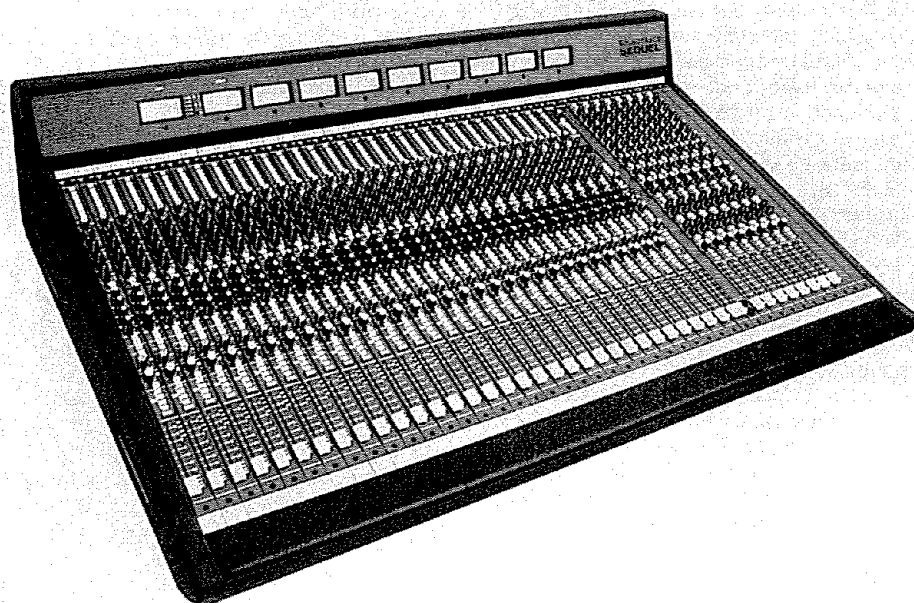
contains a direct output with independent level control and mute, eight rotary level controls with on/off switch for matrix mixing, a master fader and mute. Transformer balancing and a 1U add on pre fader insertion unit are available as optional extras.

Nexo from Paris were also premiering new PA enclosures at the Messe. The MSI 2 cabinets build on Nexo's original MSI range, which are now five years old. MSI C2 is the standard, compact format for PA. MSI V2 is shallower, columnar variant which is easily wheeled about, while MSI W2 is the wedge version, though it can equally be flown from ceilings! The new range is active, to be used in conjunction with Nexo's MSI TDC Controller, which monitors voice-coil temperature, amplifier overdrive and other perils. There's also a range of three new sub-bass cabinets, L Sub, together with a dedicated crossover, which has adjustable slopes and dedicated bass EQ.

OHM, UK makers of budget PA cabinets has completely revamped its range. New products include MOS-FET power amplifiers, 2 x 12" coaxial wedges and a 2 x 18" sub-bass cab. Californian power amp maker **QSC** is celebrating 22 years in business. Recently introduced for install, the MX-700 is 2U high and rated down to 2 ohms, where it gives 350w per channel.

Soundtracs has finally come up with some live sound mixing equipment that's set to recoup the ground hitherto lost by UK mixer manufacturers to some well-known Japanese producers in this field. SPA, their new Super PA Console, launched at last November's AES show in New York has local auxiliaries, eight VCA groups, eight mute groups, eight matrices, numeric red LED fader readouts . . . and is readily converted from FOH to monitoring duties by switching the grouping configuration. Two consoles busses are easily linked to give 96 channels, while the signal path is entirely balanced for extremely low crosstalk. SEQUEL is . . . well, the sequel. Originally named the Quartz and subsequently changed to 'the sequel' it was officially launched at Frankfurt. It's a honed-down version of SPA with many of the features. For about £13K you get a rugged modular construction, with a balanced buss, a choice of mono or stereo input modules, local auxiliaries and a fourband sweep EQ. The channel strip has the subgroup knobs and input gain and pad transposed, so the latter two controls can be tweaked without incessant stretching.

Wembley Loudspeakers have amended and expanded their range of instal and small PA cabs. Top Box 2824, a mid/high enclosure, has been redesigned. Its complement of custom-designed radial fibreglass horns cover 200Hz to 20kHz, with an average 70° x 40° midband dispersion. Mid is handled by a 10" cone driver rated at 200w rms, and there are four different HF compression drivers: you can choose from Beyma, JBL, RCF or Renkus-Heinz, depending on budget, required ruggedness, and which sound suits your tastes or application best. Wembley Loudspeakers' Paul MacCallum reports that the recently introduced 2820 bass cab is selling 'like hotcakes'. What do you get when you put a single 18" heavy-duty Beeline 500 driver in a ported enclosure? A flat response to 40Hz, and a programme rating of 900 watts giving 128dB at 1m, all in a 28" x 27" x 20" box. Hence the title, '2820'. And a product that's eagerly sought by reggae operators, crowded rock pubs and cramped nightclubs.



Soundtracs 'Sequel' sound re-inforcement console.

Ben Duncan

A step onwards from their acclaimed Delta console, **Soundcraft** launched the 'Venue', a fully modular 8 bus mixer with a host of facilities dedicated to live mixing, whether it's in a medium-sized theatre or concert hall, conference auditorium or church.

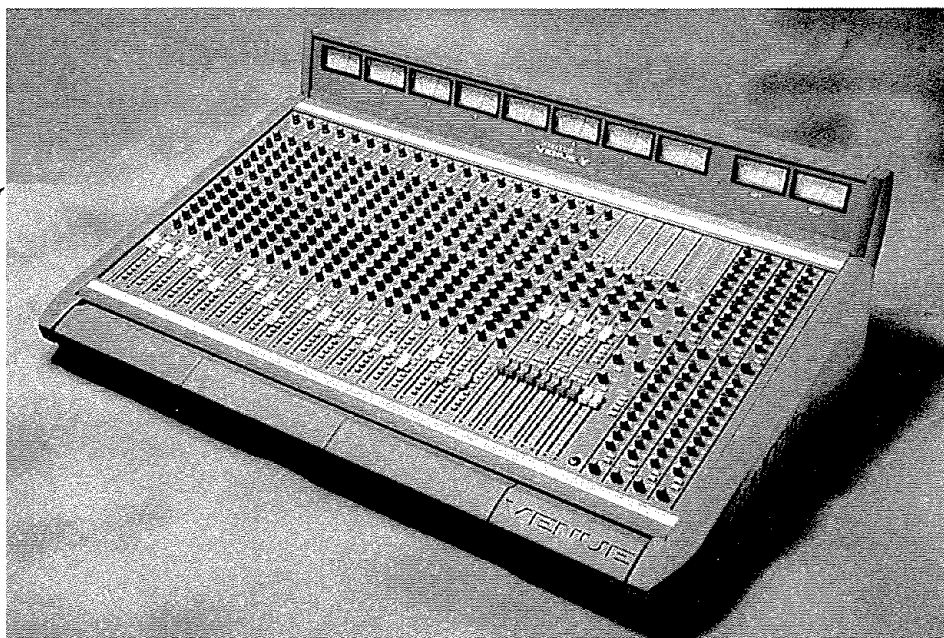
Designed to meet the requirements of both fixed installations and PA touring, the Venue is available in four frame sizes: 16, 24, 32 or 40 channel. Any combination of individual input and output modules can be specified. As well as full 8 bus routing and six independent auxiliary controls, both mono and stereo input modules provide optional mute group facilities, allowing each channel status to be controlled by four master mute buses for rapid re-setting of the console during a live performance. A further innovation on the stereo input is a stereo width control, enabling the width of the stereo image to be continuously varied, from mono through to stereo and onto phase-enhanced wide stereo — useful for theatre sound effects.

The output section of Venue has a wide range of options to suit all types of front-of-house mixing. A dual matrix module allows two additional output mixes to be created from signals present at the group and mix outputs. Designed for theatres using a matrix of speaker feeds, a full 8 x 8 matrix is created using only four modules although any number can be specified. The combined dual group/stereo return module contains all the features required for generating audio subgroups and stereo effects returns, providing a compact format for handling a large number of inputs and outputs. The new dual group/EQ module provides an ideal way for adjusting EQ across grouped signals without the need to change individual EQ settings on each input channel. With a 3 band sweep EQ section on each group, precise adjustments can be made with the speed and accuracy essential for live mixing.

Attention to detail includes illuminated switches for clear status control even in poor lighting conditions, 20 segment wide-range bargraph meters on the group and master modules, and a moulded armrest for added comfort.

Allen & Heath exhibited their full range of consoles including the Saber 24, available in either 28:16:24 or 36:16:24 packages. The PA version now offers an optional matrix module with eight outputs in addition to refinements it shares with the recording version. The new SC Plus range of modular live sound desks (see L+S March) is now available with 16, 24 or 32 inputs. Also on stand was the Scepter high-spec rack mounting mixer.

Three new mixing consoles were launched at Frankfurt by **Third Generation**. Their 16-2 is based on the existing 12-2 and a pair of 8-2's completed the trio, one of these being a powered version. The 16-2 is equipped with features such as 3-band EQ, four auxiliary



Soundcraft's 'Venue'.

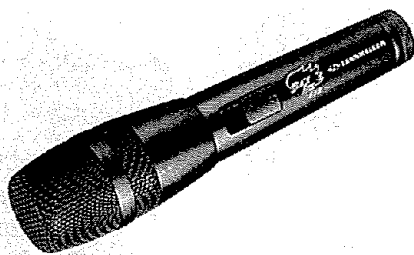
sends, external power supply, LED bargraph metering, 100mm faders, pre-fade listen and peak indicators. The two 8-2's feature 3-band EQ, two aux sends, LED bargraph meters and adaptors for 19" rack mounting, with the powered version offering 100W per channel into 8 ohms.

Still on consoles, **TAC** showed a totally new range of products including their 10 strong 'Bullet' range. This includes a 30/4/2, a 28/8/2 and a free standing or rack mounting 10/4/2. The 10/4/2 is also available with AFV interface. Stereo modules, VU metering and electronically balanced outputs are available as options on all formats.

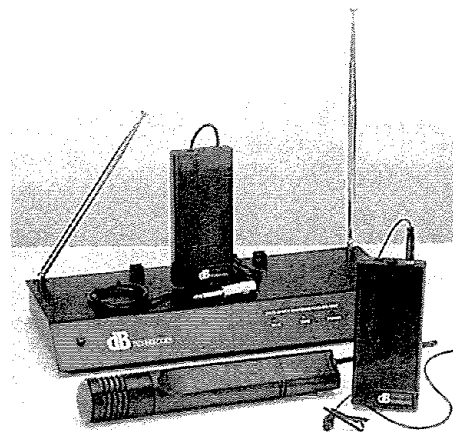
Switching our attention to microphones, **Audio Technica** launched their new ATW-1031/1032 systems. The 1032 is a hand held system based around the ATW-32 hand-held mic/transmitter. Built-in is the Audio Technica Pro 4 dynamic cardioid microphone capsule. The 1031 belt pack system includes the model ATW-

T31 Unipak body-worn transmitter, and the included connecting cable features a locking type miniature plug to assure no interruptions during use. The cable provides connections for guitar or other high impedance sources. The unit also offers connections for low impedance mics, high impedance mics and circuitry, guitar, and phantom voltage for condenser/electret mics.

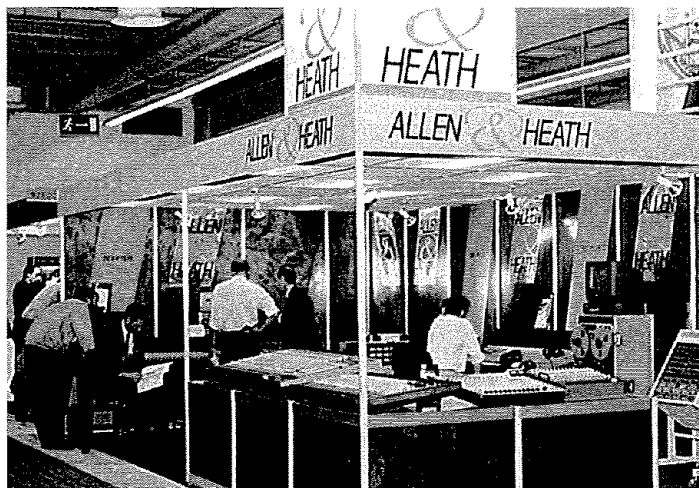
Samson Technologies showed their VLP 'budget' wireless microphone systems for the first time in Europe. While the lavalier and hand-held VLP transmitters offer mute switching, sensitivity control, on/off switch and a fixed battery cover, the VLP is expected to broaden



The Sennheiser Black Fire 530.



dB Technologies Series 90 Wireless Microphone System.



Allen & Heath had a full range of consoles on view.



Audilec's Phil Price with Audio Technica's new wireless microphone system.



Tannoy launched their new Monitor Series.



New speakers and up-dates for the Scott Sound range.



Sandra Cockell promoted Formula Sound from the Amptown Electroacoustic stand.



Regular export award winners: Soundtracs plc.



Monitech: Audio precision from the Cambridge company.



Volt Loudspeakers: a new drive unit and horn range.



The latest from Midas.



Kelsey Acoustics: "three particularly apposite accessories."

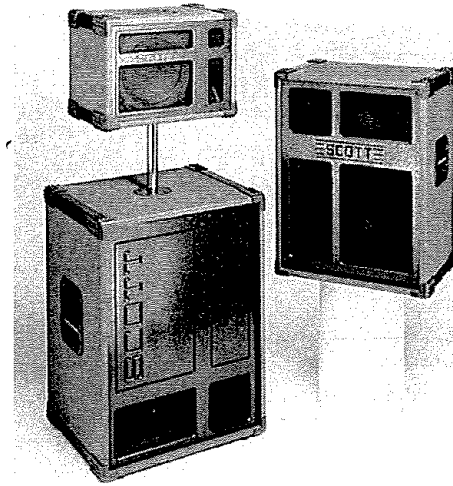
the appeal of wireless systems by providing a realistic entry level price for guitar players.

From Italy, **dB Technologies** were demonstrating their Series 90 system. The hand-held transmitter incorporates FM diversity technology without the limiting facilities found in other systems. Instead, the receiver's two antenna will monitor, react to and compensate for any loss of signal that would result in drop-out. The system, reckoned to be suitable for both live and broadcast situations, is offered in three different formats: hand-held (M90), instrument (G90) and lavalier (L90) lapel-type transmitters, all with an operating distance of up to 100 metres. The M90 has an AKG D300 dynamic capsule while the L90 incorporates a condenser capsule and built-in limiting and compression.

Sennheiser offered their new 'Black Fire' mic for 'personalised sound'. It is claimed to be the first microphone a soloist can adjust to match the personal timbre of his voice. The Black Fire 530 should be good news for heavy and thrash metal bands, say Sennheiser, where at enormous sound pressure levels the sound is transparent and can be achieved on stage without any feedback. This simple technical innovation is obtained by varying the distance between the recording basket and the microphone capsule. By altering the length of the mic, the performer can determine the personalised full-bodied sound for live gigs.

First time exhibitors at Frankfurt, and members of the PLASA/DTI group, **Metro Audio** had on display their complete communications system, including master station, power supply, communications belt pack, loudspeaker station and splitter box. "We were expecting a good response to our products," said sales manager Pete Maciuk, "but the level of business this show has generated is quite phenomenal." And that was when I spoke to him on day two.

Fane were the first of the speaker people



Scott Sound's latest Gemini.

I talked to, and they had their newly consolidated range on full display. Managing director Mike Wood gave me the background to latest developments following the recent reverse takeover of Audio Fidelity plc whereby Wharfedale have acquired both Fane and **McKenzie Acoustics**. "We are the only speaker manufacturers to have the BS5750 quality standard (see L+SI News, March). It took us two years to get it, and it's our aim to bring the same quality assurance to McKenzie and Fane," he said.

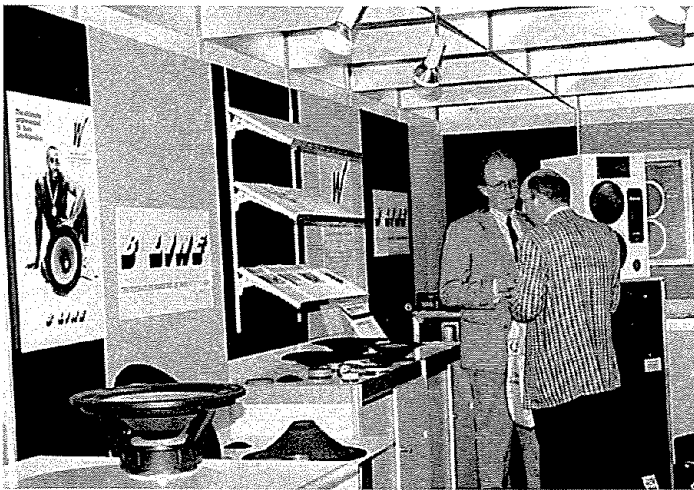
On the **Wharfedale** stand the highlight was their new System 2130 aimed at the commercial market where high quality and compact dimensions and operating flexibility are important factors. To reproduce rich bass notes, Wharfedale have developed a single sub-



Tannoy's 215 DMT is their new Monitor series.

woofer incorporating twin 8" drivers equipped with multi-layer voice coils and oversized magnets to ensure high power handling combined with stability. The mid and upper regions are handled by their innovative pair of satellite speakers, each incorporating two special tweeters precisely aligned at 90° to each other. A third mid-bass driver is also included with the satellites.

Renkus-Heinz were showing their new C-1 touring system. R-H say this true point source system integrates highest quality components with proven Smart processor technology into an innovative design that they also reckon sets new performance standards. Packaged into compact arrayable modules, the system delivers excellent clarity, definition and detail at very high SPL with controlled, even coverage in



Wembly Loudspeakers: expanded and improved range.



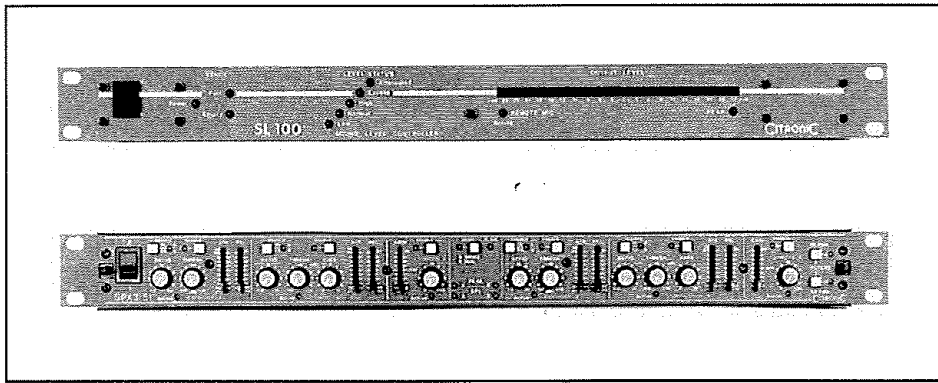
Citronic: two new products.



Pete Maciuk (left) on the Metro Audio stand.



Carlsbro Electronics' new Delta series.



Citronic's SL100 (top) and SPX3-51 — both new at Frankfurt.

large arrays or in single stacks. Late of Hill Audio, European marketing manager for Renkus-Heinz is Graeme Harrison whilst UK distribution is through Smart Acoustics. Also new on stand were the CM61 and CM81 speaker systems for small band/installation work. Both are compact, full range systems.

PLASA members **Scott Sound Systems** showed their updated professional speakers as well as several new products. The Specialist series now uses the Celestion HF50 Bullet unit situated behind a slant plate acoustic lens for more even high frequency dispersion. The Gemini cabinet is now rated at 200W RMS and has a newly styled fascia panel. The GR15 bass unit has a 2 way crossover system to improve performance when used with the GR10.

Scott's all new GR250 is a 3 way compact system designed for near-field applications, making it ideal for installation use or for on-stage monitoring and PA in smaller venues. Also new for 1990 is a range of modular enclosures which stack together in different configurations and can be used for PA, disco, guitar, bass or keyboards.

In addition to showing their SR Series with the latest additions of the SR3 and Compact, **Celestion** had their new K Series loudspeakers for PA use. Available in 10, 12 and 15" configurations, the high efficiency K units benefit from cloth cone surrounds for improved bass response.

Turbosound were encamped with their white 'tent' demo enclosure with examples from the TSE and TXD range in operation. Only product not seen before at Frankfurt was their TSW-121, which is capable of 133dB SPL at peak.

Tannoy had their stand covered with units from their new Monitor Series (see this month's

Equipment News). "It goes into production in the immediate future," said a Tannoy spokesman who followed up with the comment that "it's the best response we've had at Frankfurt for a long time."

David Lyth of **Volt Loudspeakers** launched a new drive unit and a range of flat fronted constant directivity horns. The CX200-1 is a medium power 8 inch coaxial unit intended for use in fixed installations. The horns cover a range of applications from floor monitors to concert PA systems and feature a midrange device with phase bung. A matching treble horn is sized to allow modular interchangeability for flexible system design.

PLASA members and Frankfurt stalwarts **Cloud Electronics** had their new DM700 19" rack mount mixer and two new consoles, the Warwick and Caernarfon, on view. Their latest versions of the Balmoral, Sandringham and Windsor consoles are identical to the previous models apart from the mixer where use of the DM700 provides an up-grade at low cost. The DM700 itself incorporates a crossfade and five-band graphic equaliser on the music channels and the mic channel has a three band graphic EQ and automatic voiceover.

Not far away on the **Vestax** stand, Rob Peck had a wide range of products on display including signal processing equipment, DJ mixers, turntables, amps and speakers. New was their PMC-20S DJ mixer with eight second sampling, a range of loudspeakers and amps, the PDT-1600 turntable, graphic equalisers, crossovers and a wireless mic system.

Formula Sound were located far away from their more usual PLASA habitat, one floor below on the wide expanses of Amptown Electroacoustic's stand. Sandra Cockell had their

System 2000, PM80 mixers and the later AMX6 on display.

Taking half of the Le Maitre stand, **Icelectrics** showed the latest addition to their DPA range. The DPA 900 punches 450 watts per channel in a 2u box, and Dick Carrier was there to push home the message.

Citronic has added the SPX3-51 to its signal processing product range. This dual expander compressor limiter can be used in dual mode for stereo processing, as two completely separate processors, or as a slave for another SPX3-51. Each channel is identical and comprises the following functions: Expansion — variable ratio, threshold, attack and release time as well as side chain input and enable/disable control; Compression-variable ratio, threshold, knee, attack and release time plus side chain input and enable/disable control; Limiting — variable threshold and enable/disable control. There are indicators to show when expansion, compression and limiting are taking place and to indicate the user selectable functions side chain, enable, dual mode, slave mode as well as peak and signal present. Each channel has an independent gain control and all controls are on the front with all connections on the rear.

Citronic's other new piece was their SL100 sound level control system, designed to meet the needs of system designers to control maximum sound levels in sound reinforcement systems. It allows the commissioning engineer to set maximum volumes and will attenuate the signal if the timed warning to the operator is ignored.

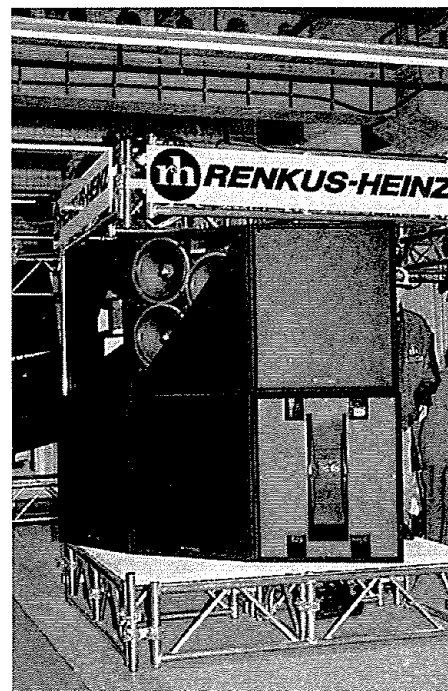
Italian pro audio equipment manufacturers **dB Technologies** launched their S series of compact mixing consoles, with two configurations on offer: the S1600 16/2 and S2400 24/2. Features include onboard one second digital delay, LED bargraph metering with peak memory, two separate monitor lines, auxiliary sends, headphone monitoring and effects send and return. Both designs feature 3-band fixed frequency equalisation on all input channels with master 5-band stereo graphic equalisation at the output stage.

dB also launched the PS series range of stereo powered mixing consoles, the first of which is the 16/2 configuration PS1600. The 350 watt per channel power section utilises T Mosfet technology.

Carlsbro Electronics had their new Delta series of professional PA cabinets on view and these will be detailed in our Equipment News



Iain Price-Smith of Multiforum Lighting (left) with fellow PLASA member Roy Millington of Cloud Electronics. Both companies had new products ready for Frankfurt.



C-1 touring system from Renkus-Heinz.



Ted Rook (left), technical manager of Allen & Heath with technical director Glenn Rogers.

pages in a future issue. Another major new addition is the DX series of stereo powered mixers incorporating digital reverb with 128 programmable memory slots. The entire Carlsbro line of amps, PA systems and mixers has undergone cosmetic and 'open heart' surgery. Metal grilles, black and red graphics and a tough charcoal grey finish complement a revamped range that now includes over 30 new and upgraded products.

On the LMC Audio Systems Limited stand, **Toa Electronics's** Saori digital signal processor was on view. A highly versatile piece of equipment, it performs the functions required between the mixing console output and the power amplifier in live sound reinforcement, performing art centres, auditoriums, concert halls and recording studios — and anywhere that requires multi-complex sound processing.

A single Saori replaces two 30-band equalisers, two constant directivity horn compensators, two four-band notch filters, two four-way crossovers and eight digital delays — all in a five rack space body. By keeping the signal in the digital domain through these processes, the unit eliminates signal degradation and reduces rack space requirements. The system is expandable and each signal processor is provided on a separate field replaceable modular card, permitting custom tailoring of a Saori to the particular application's requirements.

Allowing greater flexibility and precision in the application of digital technology, the Saori has eight complete pattern-memory presets, allowing instantaneous selection of settings and zone requirements. All parameters of signal processing modules are independently programmable and external PC control permits additional presets and real time control from a remote location. There is digital delay on every output band in 21 microsecond increments, allowing for time alignment of multiple driver systems and level adjustment of post-crossover bands in precise one-quarter decibel steps. The crossover functions permit totally asymmetrical parameter adjustment within each side of a single crossover transition. These include filter slopes, rolloff frequency and independent selections for Butterworth, Bessel, and Linkwitz-Riley filter types.

Under the **Expotus** banner (they were also looking after previously mentioned Allen & Heath), **Klark Teknik** had their new series 500 dynamics in operation alongside **Drawmer's** new DS301 dual expander/gate. Other companies promoted by Expotus in overseas markets include Turbosound, BSS Audio and HH Electronic. Managing director Gisela Burg commented: "For the 18th successive year, Expotus are back in Frankfurt with the finest British sound equipment."

Further equipment on the Adam Hall stand included **Third Generation's** power amplifiers.



TOA's Saori integrated sound processor.

The HP200 made its debut, and the HP400 was shown in its new modified form, following a comprehensive internal re-design. Also on stand was the recently announced GA4 crossover plus the DA2 dual activator (enhancer), DN2 dual noise gate/fader and the DC2 dual compressor/expander.

Harrison Information Technology had a full range of equipment including their new GQ series of graphic equalisers. I didn't get a chance to talk to Mike Harrison about recent structural changes that have been going on at their Harston, Cambridge HQ, but you will read something about that elsewhere in this month's issue. Sufficient to say here that HIT looked 'just like before'.

DOD Electronics had three new designs from **Digitech**. The rack mounting GSP-21 is a digital multi-FX unit offering 21 effects, and up to 10 of those simultaneously. The IPS-33B, also rack mounting, is a smart shift harmoniser creating 2 and 3 note harmonies from a single note. Finally, DOD are introducing a line of 8 and 12 channel stereo mixers, the 820 and 1220 series, and both are available in three configurations, namely line only, standard and rack mounting — the latter two featuring XLR balanced lines.

Plasmec Systems of Farnham were highlighting their Mosses and Mitchell range of audio and video jackfields (see this month's Equipment News) alongside a host of exclusive

products from their comprehensive network of principals.

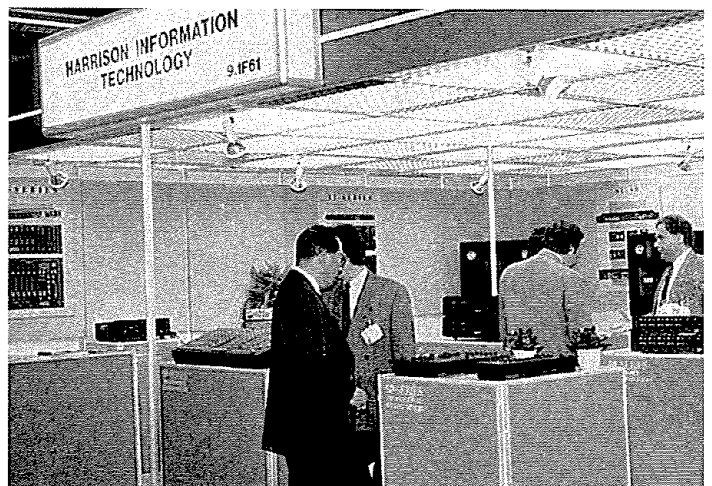
For the OEM market **Cliff Electronics** released a custom LSI-based PCB which provides a choice of 127 different digital effects amongst numerous other items. Another highlight was their WB5-ML, a breakthrough in mic-to-line amplifiers, they claimed. With current consumption less than 2mA and built-in phantom powering, the highly compact WB5 unit has switchable 40dB/60dB gain and claims distortion less than 0.05% from 100Hz to 20kHz.

Last on the sound front, but not least, **Sifam Ltd** of Torquay make many of the bits that are visible on audio equipment around the world. They make control knobs, accessories and things like panel meters. Many are of a standard design, but then customised to requirement whilst a big proportion of business is devoted to specials. Sales manager J. R. Tamsitt explained it was their first time at Frankfurt, and two days in he was more than pleased with response, only wishing he'd been better prepared for the onslaught!

Of course, there was much, much, more. But we've done our best to bring you the highlights of what the 1990 Frankfurt Music Fair had on offer for our corner of the industry, sound-wise. Anything missed will no doubt come up within our Equipment News columns over the next couple of months.



LMC Audio Systems' stand.



A full line-up from Harrison Information Technology.



Pan Command on the Tour Service exhibit.

Over the past few years the lighting element of the Frankfurt Music Fair seems to have grown steadily away from discotheque equipment towards the more 'mainstream' gear for touring and presentation work. So stands of the major touring, production and control companies were much in evidence, with German concert production companies taking centre stage and displaying gear from (largely) British and American companies.

However, the major outfits representing themselves directly were in the majority British, and the biggest story of the show for me was Celco's offering, which features as our lead news story this month (see News pages). I have the feeling we could well see the subject of integrated control the top story for 1990. It's been talked about for long enough; but now it's happening!

Pulsar had another Oska/Golden Scan display, but their big news will come at Rimini when Super Scan is launched. "It's a true multi-functional projector," said Ken Sewell. Full details will follow with our SIB/Rimini report in May, but the principal difference over Golden Scan is that the Super version has 12 channels and some of the original 6 of Golden Scan have also been modified/improved. The up-graded channels provide: colour wheel with 8 instead of 6 colours with the facility of bi-colour projection and 'rainbow' effects, another gobo wheel and the ability to mix them, plus bigger mirrors for pan and tilt. The six new channels will provide: prism wheel to mix patterns and

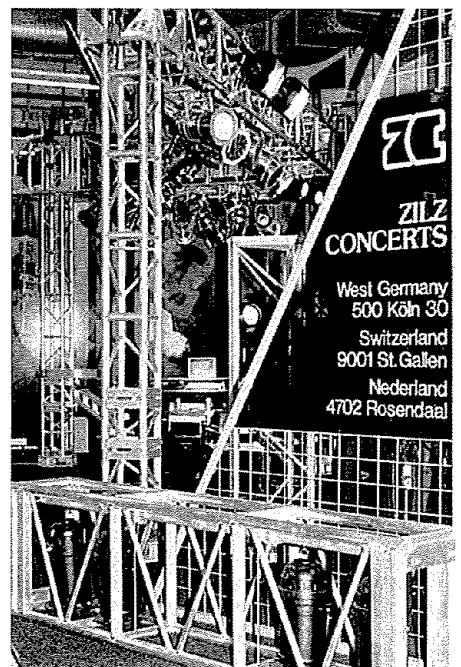


Le Maitre's Anna Sassi with LSX low smoke converter.

produce some 'stunning effects', mechanical dimmer to 100%, electronic focus, red/green/blue colour mixing system enabling virtually any colour to be achieved. In addition, control protocol is DMX512, RS232 or 0-10v. I'm sure I'm not the only one eager to see it! Ken Sewell is certainly confident Super Scan will move parts that Golden Scan hasn't reached.

Next door to Pulsar Zero 88 Lighting had a pyramid of lighting control equipment making its Frankfurt debut. Sirius 24 now has the features of the 48: remote control of submasters, sound to light, data storage, and an insert facility for another memory between cues. They also had their 'Level' series of control boards, launched quietly at SIEL in Paris in February, but more noisily here. The range includes a 6 channel single preset and 12, 18 and 24 channel 2 preset units. We don't normally list prices, but the price IS news in this case, ranging from £59 to £399 from smallest to largest. Completing the grey liveried display were Zero 88's Betapak dimmer units, launched in the summer of 89 in the UK.

Cerebrum Lighting have now been to Frankfurt for 13 consecutive years, and to no-one's surprise they had the latest offerings from Powerdrive including the new Midihoist 12ft wind-up stand alongside the Chrome range of lighting and audio stands. Light & Sound Design's range is marketed by Presentation Consultants, an associate company, and equipment included lanterns and truss/control plus Colourmag, Molemag and a prototype

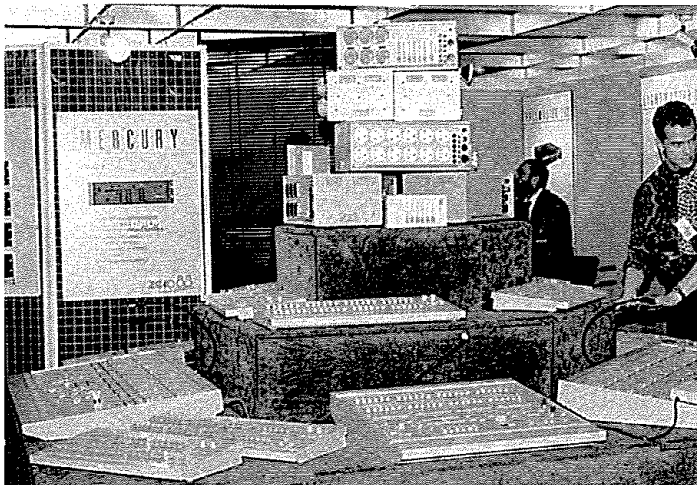


Total Fabrications's new single hung Par truss on the stand of Zilz Concerts.

Minimag changer. Cerebrum's 'White Light' optical effects system, now embracing cloud, snow, rain, flame and tubular ripple effects, was also put through its paces. Control of lighting was by Celco boards and Anytronics' new Series 192 dimmers were also in operation. Meanwhile, MD John Lethbridge was busy working on Midilux, a new Midi controlled system that enables lighting to be controlled direct from keyboards, drum machines and other external midi devices. On stand, it showed its ability to track automatically the path of visitors walking under a light beam. Elsewhere in this issue you'll find news of Cerebrum's move to new premises in April.

Multiform Lighting showed two additions to their range of band and stage lighting equipment. The Aquarius, an 18 channel 2 preset desk, has flash buttons and timed dipless crossfade. Rakpac 605 is a 6 x 5A dimmer pack with options for hard wired or IEC output sockets. In addition, Iain Price-Smith and his German distributors Michael Schneider and Peter Pöppel of Lightronic Licht & Lampen, were demonstrating Multiform's Scorpio programmable rock desk, the Rakpac 610 dimmer packs and their complete range of discotheque lighting effects controllers.

Over the passageway, MJL's range of lighting control equipment was on display. It has all been re-designed and made more 'user friendly'. It included their 'Rock' boards and the Footace 10, for lighting control by foot.



Sirius, Level and Betapak from Zero 88.



Cerebrum Lighting: Midilux tracked you on stand.

Handy if you've got both hands on the guitar or holding drum sticks.

Still with the PLASA group, it was a first Frankfurt showing for **Lighting Technology**, and they kept PLASA's interpretation service busy with enquiries ranging from flicker candles to searchlights. On stand were David Morgan, Philip Norfolk, Richard Maunder and Gary Nelsson.

Sharing a booth with Scott Sound Systems, first-timers **South West Lighting** showed their range of own-manufactured lighting products including a new 4-head dichroic helicopter, a new range of 'up-market' pinspots, and a 4 channel 4' wired steel bar.

Penn Fabrications from Bucks had many of their standard range items on display including linear floodlights, Parcans in various guises and their structural truss and hoist system — "ideal for fashion shows, discos, etc."

Back to the PLASA group, **Le Maitre** had their

LSX low smoke converter (first time at Frankfurt) and their line-up of pyrotechnic firing systems. Working either with Smoke Processor III or Powermist, the LSX's low-lying smoke regularly crept under the dividing wall between Le Maitre and PLASA's own stand, originally planned as a non-smoking environment. We can happily report no side effects whatsoever. They also had a very new product brochure, complete with inserted translation.

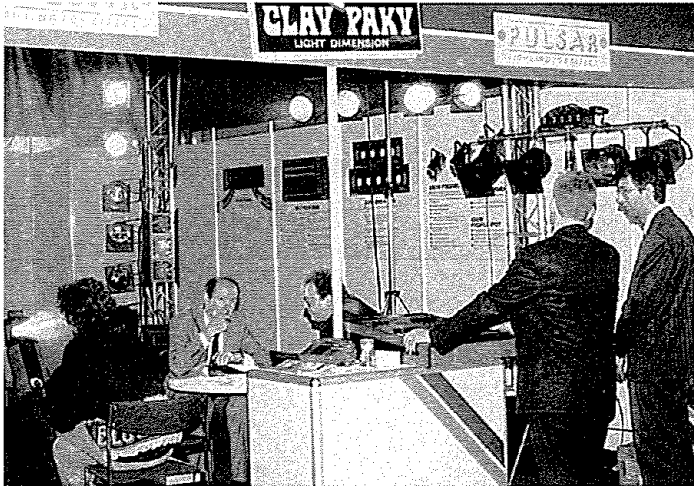
Next to and with Le Maitre was **Icelectrics** (already reported on in our sound coverage). On the lighting side, they launched the Pakmaster 4, a low voltage 14 programme four zone lighting controller that works with the redesigned Icepak 4 x 5 amp Triac pack. And not to miss out on the 'House' scene, Ice released the Mega Starflash strobe — blinding at 1500 watts!

Now to a list of the big stuff, the vast majority of which has been previously reported on in this

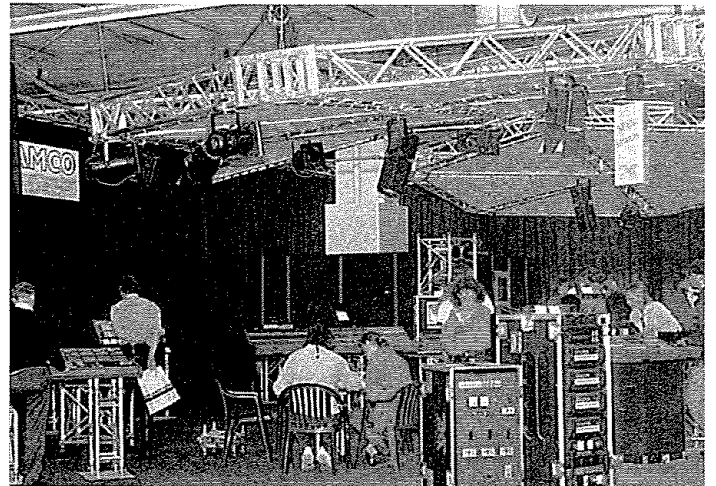
magazine. Stacco had **Coemar** and **Teatro**, and Lightpower had **Rosco** and **Lycian**. Multi-Lite Lichttechnik Handles had **Jands**, **Manfrotto**, **Celco** and **Powerdrive**. LMP Lichttechnik represented a stack: **Altman**, **Astralite**, **Genie**, **Thomas**, **Littlite**, **Lee**, **Freevox**, **Litecraft** and **Light Processor** plus **Coemar**, **Teatro**, **Zero 88**, **Pulsar**, **Le Maitre**, **Powerdrive** and **Citronic**. But one of their main features was **High End Systems' Intellabeam** units.

On the stand of **Camco**, **LSC** of Australia were showing their **Focal 1** with **Jef Hammersley** plus **Avolites** (and **Steve Warren**) and **Slick Systems** as usual. **Zilz Concerts** had a range of their own equipment plus **Total Fabrication's** new modular **Parcan** and single hung **Par truss** (see L+SI 'News', March). Finally, **Tour Service** had the powerful **Pan Command** system on demonstration.

John Offord



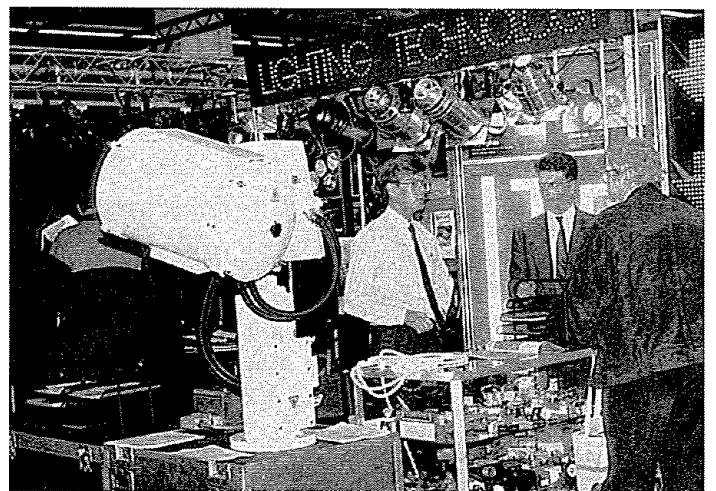
Pulsar: Super Scan to follow at Rimini in April.



Camco showed Avolites, LSC and Slick Systems from the UK.



Keith Dale with Celco's new Panorama control system.



Flicker candles, searchlights and much else from Lighting Technology.



Name check: Rod Bartholomeusz (left) of Cerebrum with Jean-Francois Cheron of Fiat Lux (France).



Coemar and Teatro on the Stacco stand.

Still No 1

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

But the Pinspot is still on top.

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

The answer is surprisingly simple.

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

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

The GE Pinspot.

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

The GE Pinspot, Still Spot-on.

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



USA

GE Lamps United Kingdom & Eire



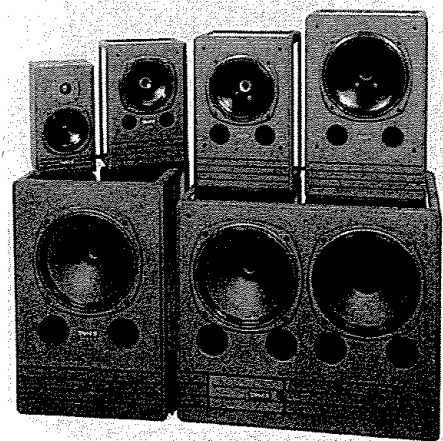


The GE Pinspot

The World's No.1
Disco Lamp

Tannoy Monitor Series

Tannoy has recently announced the introduction of a revolutionary new range of studio monitors. Extensive research by the company has resulted in a range of drive units formed from the first design principles but utilising all that is currently available to the modern acoustic and production engineer. During this period it was discovered that the interaction of different materials in contact had considerable effect on the sound quality in almost every aspect of loudspeaker design, resulting in a full study of Differential Material technology (DMT).



Tannoy's new Monitor Series.

The Tannoy Monitor Series ranges from the System 215 DMT through to the baby of the range — the System 2 NFM which, although being a cost-conscious discrete two way design, also benefits from DMT.

The System 2 NFM features discrete two way 15" tall design, a minimum diffraction DMT braced cabinet design, bi-wireable, hard wired crossover and a liquid cooled duralumin DMT 25kHz H.F. unit. Systems 8, 10, 12 and 15 are increasingly sophisticated versions, whilst the top of the range System 215 DMT features 15" DMT Dual Concentric PcQ phase coherent drive unit, secondary 15" L.F. drive unit, H.F. waveguide for ideal spherical wavefront, user adjustable H.F. response, individual optimised drive unit enclosures each with twin laminar flow port tubes, low frequency adjustable 'window', twin laminated MDF walls within a grey soft-texture space-frame minimum diffraction DMT cabinet, user servicable, self-centring H.F. diaphragm assembly, 101dB sensitivity, high quality Van den Hul internal wiring, bi-wireable, hard-wired crossover, gold plated terminals, and vented die-cast drive unit chassis with cabinet/drive unit diffraction ring. For further details on the complete System DMT Series, contact Tannoy in Strathclyde on (0236) 20199.

Astralloy on a Curve

Following the installation of a new ring roller at Astralloy's manufacturing plant, the company can now supply curved sections in any customer-specified radius, from 500mm up, for its lightweight modular construction systems.

Curved sections give added design flexibility to Astralloy's Astralite, Bilite, and Quatralite systems which are based on a range of fully compatible standard components.

Astralloy told L+SI that their re-usable systems, including the smaller scale Minilite and Structuralite, have demonstrated their strength and durability in countless applications where performance and visual effect are essential. Full details are available from Astralloy in Leeds on (0532) 465331.

Strand launches Multidim

Multidim, a range of modular plug-in dimmers and control stations for architectural and commercial lighting applications, has been launched by Strand Lighting. Able to be built into an integrated system to control a mixture of lighting loads, Multidim retains the flexibility of Strand's successful Environ 2, which it replaces, and incorporates a number of major improvements and new features.

These include: module ratings of six, 16 and 32 amps; each dimmer is fitted with MCB load protection; versions suitable for tungsten, transformer-fed or fluorescent loads; genuine 'load independent' hard firing of thyristors ensuring the quality of fluorescent dim; 'fast-start' feature for dimming of high frequency electronic dimmable ballasts; ventilated top and bottom panels for cooler running; new style control stations with screwless faceplate, available in a variety of finishes; infra-red remote option, hand-held selection of presets and a full range of accessories to simplify installation.

Each Multidim module is supplied with its own base unit, to fix directly onto a wall or Strandrail, ready to terminate all wiring connections for the dimmer. Modules can be installed individually or in groups. For further information contact Peter Burrows at Strand in Isleworth on 01-560 3171.

New Scenic Paint from Rosco

Following the launch of their Paint Frame, Rosco have announced a new scenic paint specially developed to allow anyone to paint backdrops and sets with good production values, regardless of the limitations of their budget. With the appropriate name of 'Off Broadway', the colours are true scenic paints, and are completely matt and flat so will not reflect stage light from the painted set. The full theatrical palette of 22 colours includes two whites, earth tones, brilliant primary colours and metallic silver and gold. The range can be extended by intermixing the colours.

Off Broadway can be used on virtually any surface in stagecraft including gauze, canvas, wood, metals and most plastics, and when dry is waterproof. Its vinyl acrylic binder is flexible and flats may be painted over and re-used. Off Broadway is available in one and five litre containers. Further technical information is available from Roscolab Limited. Telephone 081-659 2300.

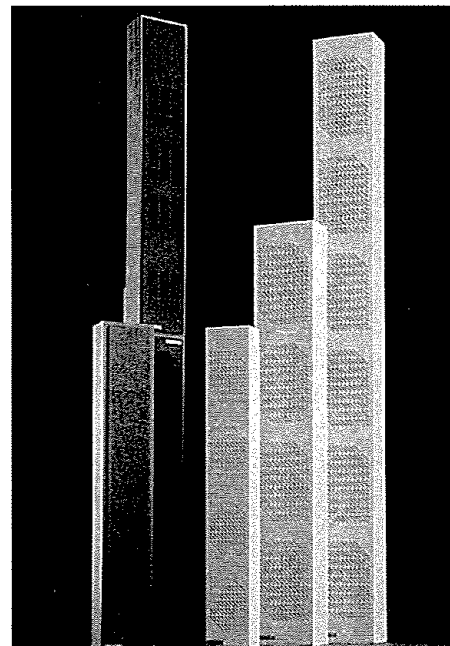
Sirius 24

Zero 88 have announced the release of a new, and vastly improved version of their best selling Sirius. The new Sirius 24 has all the features of its larger 48 channel brother including: insert memories, sound to light and memory card. Zero 88 told L+SI that economies of scale and improved technology have enabled them to offer the improved version at an extremely competitive price. For further information contact Zero 88 in St Albans on (0727) 33271.

Making Contact

MEM Santon Switchgear has introduced a new range of enclosed contactors designated 'HL' to control heating and lighting loads. This new range which can also be used to isolate and control groups of motors, extends the popular 'MS' range of MEM Santon open contactors.

Capable of controlling loads from 16A to 275A (AC1) and from 9A to 250A (AC3) per phase, all ratings include a neutral link connection. Units suitable for AC coil voltages of 250V or 415V can be supplied and optional extras including isolators, reset push buttons, key switches and instruments ensure that the requirements of most applications can be met by the new range. Full specification details are available from MEM Santon Switchgear in Newport on (0633) 283116.



Column Speakers

Electro-acoustic specialists Planned Equipment Ltd have just introduced a new range of slimline column speakers, suitable for either indoor or outdoor use. Finished in white with matching metal grilles, the three models in the range (RC60, RC1015 & RC1025) are fitted with anti-theft brackets as standard. They are suitable for either low-impedance or 100V line installations.

RC60 and RC1015 are 20W units, whereas RC1025 has a capacity of 30W. Respective SPL values (1W at 1m) are 94, 96 & 97dB. Dispersion angles are 40 x 170, 25 x 125 and 20 x 125 degrees. The new units are highly directional and the company claim they are ideal for use in areas of high reverberation such as churches and cathedrals. Further details of these and other column speakers are given in a new catalogue, available from Planned Equipment in Northolt. Tel: 01-841 6251.

Professional A-gauge

The A-gauge jack is one of the most widely used means of connection in the audio industry as a whole. It is found in low to medium price sound mixing consoles, amplifiers, effects boxes and electronic musical instruments. The broadcast and professional audio market however, have had an uneasy relationship with this jack, generally preferring the similar, but not compatible, B-gauge jack, known also as the Post Office 316 type.

Recently there have been improvements in the quality of A-gauge plugs on offer. 'Designer' plugs with gold plating and prices to match have emerged and leading companies offer robust high quality products. The plug of course forms only half of the connection. Most jack sockets offer very good value for money, but with their moulded body construction and spring steel contacts they should not be compared with a professional jack socket having a long frame steel chassis, long leaf springs and palladium contacts. Plasmec believe there is a real demand for a professional A-gauge jack socket and are widening their Mosses and Mitchell range to meet this need.

The Mosses and Mitchell A-gauge jackfield has two rows of 24 jacks in 1U. The front panel is aluminium, anodised in black or silver with integral designation strip holders. A plastic coated steel lacing bar is fitted as standard. For further information contact Plasmec Systems in Farnham. Telephone (0252) 721236.

New Sound Package from Electrosonic



A sophisticated software/card package for recording, editing and playback of audio using a computer hard disk drive has been launched by Electrosonic. Des (Digitally Edited Sound) is primarily a production tool for recording EPROM used in the Electrosonic ESTA range of tapeless audio product. It is also a stereo audio recorder for the simple editing and replay of soundtracks.

Des's facilities include: recording sound direct from the audio source onto hard disk, selection of bandwidth, choice of file name, recording in mono or stereo, audio playback and editing, selection of individual sound effects, and the recording of audio and control EPROMS for ESTA Tapeless Audio Cards.

Electrosonic's package includes software which comprises an IBM AT plug-in card, Des software on floppy disk, and a comprehensive user guide. The programmer is a self-contained unit with sockets for eight audio or show EPROMS and 1 ESTA control EPROM. For further information contact Electrosonic in London on 081-855 1101.

Video Jackfields

Plasmec Systems have added a new range of video jackfields to their line of Mosses and Mitchell products. The range of video jackfields, which are being manufactured at the company's new facility in Farnham, Surrey, includes models with 18, 20 and 24 MUSA connectors per row.

Plasmec say the range is designed to meet the very highest broadcast standards and cite the use of top quality components throughout, including MUSAS with solid standard silver plug pins. All models in the range will be available with test points, if required, to allow the use of scope probes without degrading the signal.

To complement the range, Plasmec will also be offering a full selection of video patchcords and U-links available in traditional form or with moulded finger grip, the company is also offering a custom design and manufacturing facility for customers requiring specialist video jackfield products. For further information, contact: Plasmec Systems Ltd in Farnham. Telephone: (0252) 721236.

JHS DM1002 Microphone

A new addition to the already popular range of JHS 'DM' microphones, the DM1002 offers outstanding value for money. Housed in a satin grey metal case with silver metal mesh and ball end, this microphone is extremely robust, say the company. It features an on/off switch and comes complete with 6m lead, microphone stand clip and safe case. The frequency response is 30-18kHz, with impedance at 250 ohms and a sensitivity rating of 76dB + 3dB at 1kHz. For further details contact John Hornby Skewes on (0532) 865381.

Matamp Update

Following last year's inclusion of a 1300 watt (650 per side) version of the Quasar series of amplifiers, Matamp are pleased to announce that the whole range will shortly be available with optional balanced inputs. This new series will continue to be of the highest technical standard and have superb sonic performance with the addition of high tech designer looks. For further details contact Richard Mathais at Matamp in Huddersfield on (0484) 534575.

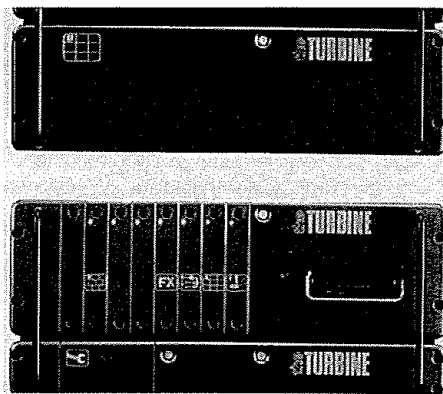
Xylo launch Turbine

The Turbine, a new video/sound control system, will be launched to the nightclub, disco and fun-pub market in April. It will make its debut at the Pub & Club show at Olympia, April 3-5, on the Enlightened Audio/Disc Eyes stand.

Later in 1990, Xylo will launch a Turbine system configured for theatrical and live concert usage. In each field the Turbine will offer a new level of effects integration. In nightclubs, the company claim that the Turbine will change current perceptions of using video. It is not a videowall, but can control videowall as part of an installation.

It can spread video images right around a dance floor and create visual effects never before possible, synchronising them precisely with music. Four video sources can be handled simultaneously.

The Turbine can use any TV display with a PAL (or SECAM or NTSC) input. The displays are not built into a wall, but spaced around a venue, usually in groups. Any combination of different size screens can be used, from 6" monitors through to 27" monitors to 8 feet projection screens. These screens can be arranged to suit the design and operating requirements of any venue.



The turbine output control matrix (top) and central processor and interface rack.

The control panel has been designed for three different levels of operators, with ergonomics very much in mind. There is no 'Qwerty' keyboard or VDU. Instead, panel displays give precise information on current activity and information on effects available. The panel gives instant access to a massive library of effects. While one effect is running, the operator can call up a second effect and combine the two 'on the fly'. Or the operator can use the spinwheel to move through the pages and cue the next effect. Hitting the 'Go' button executes the next effect instantly. The spinwheel also allows tempo to be controlled while an effect or sequence is running.

The Powerhouse is the digital heart of the Turbine system, containing the central processor module and interface rack. The processor runs at phenomenal speed to ensure that even complex effects can be synchronised accurately with music.

A floppy disc drive allows for saving of effects and sequences. The interface rack allows the Turbine to control a combination of different devices. For example: matrix, digital effects, video disc, etc. Input cards are also available to allow the Turbine to be driven from a MIDI instrument. Xylo will be releasing a series of interface cards to allow the operator to continue to update and expand his video system in easy stages.

The flexibility of the Turbine allows an installation to be designed in 'zones'. It can handle up to four zones, with their distinctive programming, at the same time, which can be integrated when necessary. For further information please call Tim Davies at Xylo in London on 071-359 3509.

Announcer Extends PA

Telipager, the digital speech announcer recently launched by Whiteley Electronics, allows direct access to a PA system from any telephone, while solving the traditional telepaging problems of acoustic feedback and misuse.

Whiteley describe the new speech announcer as "the most fundamental change in public address systems in the last decade." The unit universally interfaces public address systems with PABX/PSTN,

fire alarms and industrial control systems. It also extends PA versatility by incorporating an emergency/alarm announcer. It combines normal microphone and recorded paging, telepaging, pre-recorded messaging, speech programming, message monitoring/abort facilities and activation by alarm control panels.

Normal direct microphone paging has the usual operator signals. Pressing the record button, however, stores and forwards the message to the PA system, giving automatic zoning if required and the options of no repeat, single repeat or continuous repeat. Most importantly, say Whiteley, the technique totally eliminates the problems of acoustic feedback.

Telipager records and automatically plays the telephone input over the PA system, giving priority to emergency announcements in operation at the time, eliminating unnecessary pauses, and monitoring the message length. Extensive use is made of the keypad facilities on DTMF telephone to access stored messages etc.

Fixed announcements are digitally recorded onto pre-programmed EPROM cards, supplied separately. Up to 31 different messages can normally be accommodated and are selected via the user's telephone keypad. The unit's integral interface is suitable for manual control and automatic fire/smoke detection systems. A rack mounted version of the Telipager gives interconnection with special systems or user-provided control panels. For further information, contact Whiteley Electronics in Mansfield on (0623) 421300.

New CAD System

Leeds-based modular construction systems manufacturer, Astralloy, has upgraded its computer-aided design facilities with a British-built CAD system that works ten times faster than their previous machines. Speeding delivery as well as design, the new system also calculates which of a range of standard components will be required to complete a particular design, and then relates this requirement to stock levels.

Other features, including an in-built memory of basic design shapes and a three-dimensional modelling facility, help to make experimentation a more viable proposition at the design stage. The system comprises an Intersession computer, a Summasketch 2 digitiser tablet, a Hitachi high resolution monitor and Supervision 3000 software from ATS. With a Roland GRX4000 plotter, it can produce visuals and working drawings up to AO size.

Astralloy will use the new computer to design and visualise modular packages for countless applications from exhibition stands to lighting rigs, shopfitting displays to construction projects. The company also plan to make their CAD resources available to other organisations on a contract basis. For further information contact Astralloy in Leeds on (0532) 465331.

DMS 100SM

A new version of Studio Power's popular DMS 100 is now available. The loudspeaker designed jointly by Russell Kauffman (Studio Power) and Colin Wonfar (Incatech designer) is known as the DMS 100SM.

The new speaker uses not only a 1" metal dome tweeter but also an 8" metal coned bass unit in a medium sized reflex enclosure. A design feature of the enclosure is the use of four front to back bracing struts positioned directly behind the screw holes for the bass unit. 50mm length screws are used which bite into the bracing struts thus giving a very strong mechanical bond between the driver and the cabinet. A further bracing strut is mounted across the cabinet to strengthen the side walls. A sealant is used to further bond the unit in place.

The cabinet is 22mm (approx 1") thick, an unusual feature say the company as most cabinets are between 15-19mm. This extra thickness gives additional rigidity, produces less colouration and a tighter bass.

The combination of the metal coned bass unit and cabinet construction offers excellent control, Studio Power believe, on bass transients and a very open mid-range. This is the first Studio Power loudspeaker to offer a bi-wire facility which should make it a good partner for the new Incatech Quattra Amp that has been designed specifically for bi-wire speakers.

For further details contact Studio Power in Guiseley on (0943) 870057.

Anglia Angles for Success

An all British product was launched recently by a company based in Anglia — Angle-X Structural Systems Ltd. The company has developed a unique range of re-configurable framework connectors, primarily for use with a 25mm square tube.

Traditionally, only right angled connections have been possible, unless welding was used. With the new Anglex 25 system the user can instantly build finished geometric shapes and structures, with ease and without specialist tools, skills or muscle. These can then be clad with panels, grilles or glazing as required. Anglex System 25 has further benefits including: total re-usability of components, choice of fixing options, strength and the ability to be used with a variety of related products and accessories.

The connectors are available in black, chrome or natural and are machined from solid aluminium using the latest computer technology. Angle-X are currently seeking manufacturing and/or distribution deals in markets worldwide as well as in the UK. For further information contact Angle-X Structural Systems in Braintree on (0376) 23461.

Space Age Tech

Advanced Technology connectors developed on the United States Space Shuttles are embodied in Program Lighting's new Axis Plug-in system — a concept which is proving to be a remarkable asset for the innovative display environment, particularly in retail merchandising.



Just some of the many low voltage spotlights available in the Axis range from Program Lighting. The Axis plug-in system combines safety with design flexibility through the use of connectors originally designed for the space shuttle programme.

An installation of multiple Axis points provides any interior with true design flexibility and instant ease in the development or relocation of display lighting. When connected, each Axis probe provides extremely secure support of up to 60kg and yet is simply removed by applying slight pressure to the spring-loaded collar. The probe is also fully 360° rotational to facilitate precise spotlight adjustment.

This elegant, intrinsically safe, low voltage lighting system permits unobtrusive vertical or horizontal installation. Equipped with gold-plated contacts for perfect electrical connection, it is complemented by a wide range of compatible spotlights from the Program Lighting collection. Axis points can be supplied for recessing in mineral fibre, plaster and metal ceilings, as well as in a version for surface mounting. For further information contact Program Lighting, part of the SA Group, in Reading on (0734) 664211.

Loudspeaker Power

Italian designer and manufacturer dB Technologies has introduced a series of self-powered loudspeaker enclosures. All utilise a D.I.P. or Dynamic Impulse Protection circuit to constantly monitor the incoming signal and divert the stronger transients arriving at the crossover network to a passive circuit.

dB Technologies' PW 10.0 features a single high quality 12" driver that combines with a compression horn to deliver 100 watts into 8 ohms. A second unit, the 150 watt PW 15.0 has a 15" driver and a compression horn. The third choice on offer from the design team at dB Technologies, the PW 40.0 provides power from a 15" driver, a 6 1/2" midrange unit and a diffraction ring tweeter. This enclosure delivers 250 watts into 4 ohms.

Also from the company is the SE Series loudspeaker enclosures recommended for all PA applications. The SE 70.0 matches a high quality 12" driver with a piezo tweeter and delivers 70 watts into 8 ohms. A second unit, the 100 watt SE 10.0 also offers a 12" driver, but this time combined with a compression horn. The third product from the dB Technologies design team, the SE 15.0, pairs a single 15" driver with a compression horn to deliver 150 watts into 8 ohms. For further information contact dB Technologies in Bologna, Italy on (51) 732 677.

Acoustech Technology

Created in the summer of 1989, Bradford-based Acoustech began developing a range of high power speaker systems suitable for a variety of installation and mobile applications. The result is the RZ, LZ and FZ series. To complement the speaker systems, a range of power amplifiers and signal processing devices are now being developed and are due to be launched in the near future.

The FZ 112 consists of a 200 watt two way driver combination. It is designed to give optimum efficiency from a compact and durable enclosure. Finished in tough laminate and protective aluminium extrusion, it is best suited, claim the company, to mobile discotheque and general

purpose PA applications. As with the FZ 112, the FZ 115E is fitted with the same rugged hardware. It is intended for use where additional lower frequency



reinforcement is required. With its 300 watts RMS power capacity, and used in conjunction with the FZ 112, it can create a very portable, yet efficient, 1 kilowatt 'rig'.

The RZ 110 is designed primarily for use in background music systems. This unit also has the power capability and efficiency to serve as an effective foreground enclosure, say Acoustech. Comprising of a 100 watt 10" bass driver and a highly efficient low distortion dome H.F. unit, it can deliver quite a punch from a compact cabinet. The RZ 210 enclosure is recommended for use in conjunction with bass/sub bass units for high power, high quality music system installations. Suitable for use driven from the high-pass band of frequency divided systems or with full range signals, its medium/long throw characteristics make it an ideal 'flying' enclosure for the disco/nightclub market.

Visually identical to the RZ 210, the RZ 112 is a short/medium throw enclosure designed for use in high-pass or full range applications. Ideal uses, say the company, would be as part of a dancefloor overhead system of for audio/visual presentation. Adopting a combination of reflex loading, folded horn and pyramidal enclosure principles in its design resulted in the LZ 115 being extremely responsive, yet physically smaller than one would expect. With a 400 watts RMS capability, it is accurately matched for use with the RZ 210 and 112 enclosures. Ideal for frequency divided systems in disco/nightclub installations.

The 400 watts RMS multi driver LZ 212 can be applied to many tasks. Designed for use in 'stacking' or 'flying' situations and as a full range of high-pass unit it is equally at home in high power disco systems or band PA rigs. Using the same principles as used in developing the LZ 115, the LZ 215 enclosure comprises of two low resonance 15" drive units, increasing the power handling and the efficiency whilst maintaining the same smooth shattering response. When used with the LZ 212, a 2 kilowatt system can be created. For further information on the Acoustech range, contact the company in Bradford on (0274) 669112.

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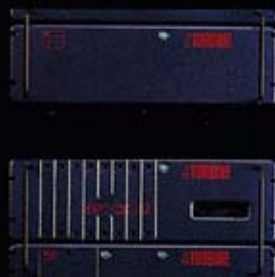
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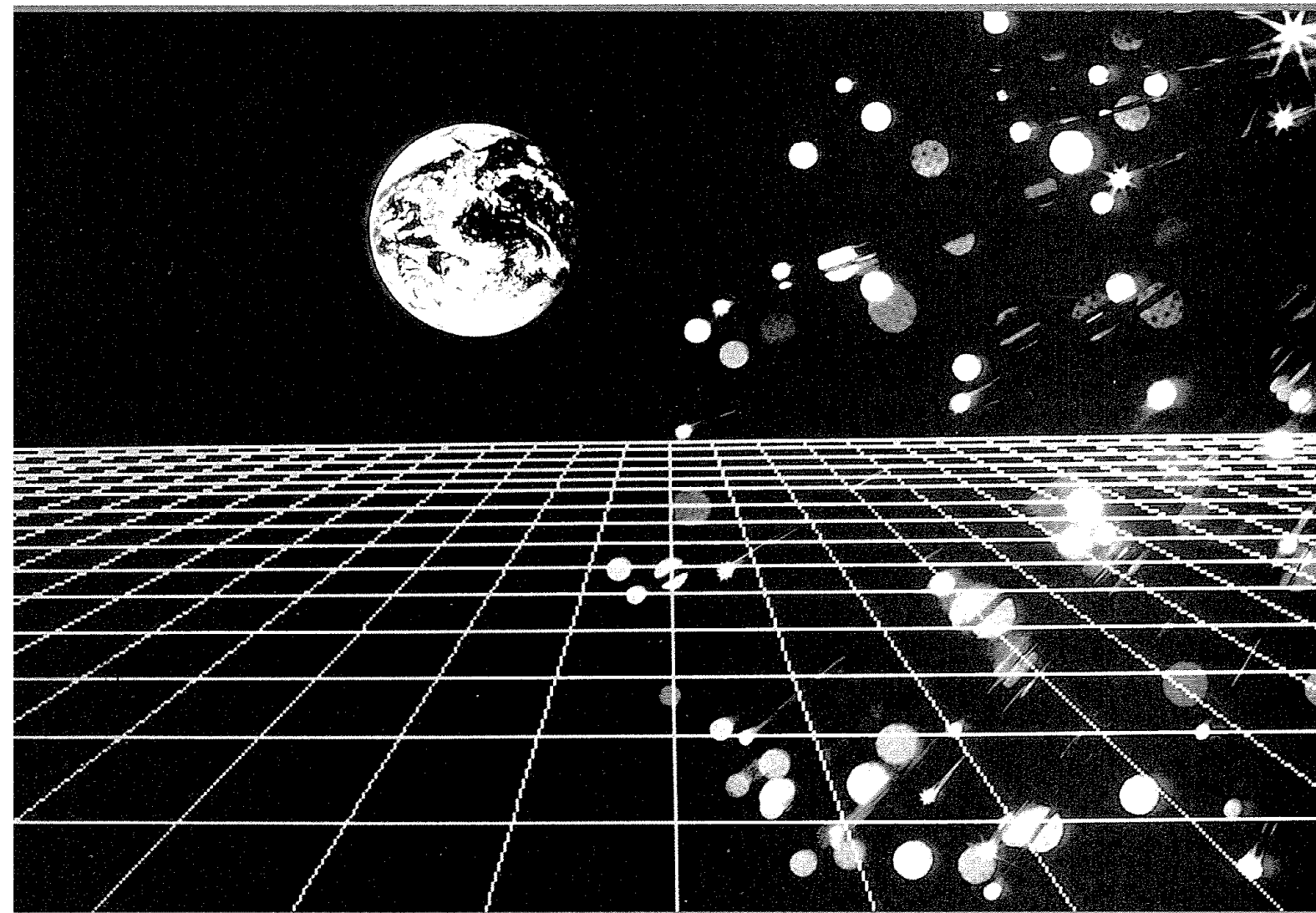


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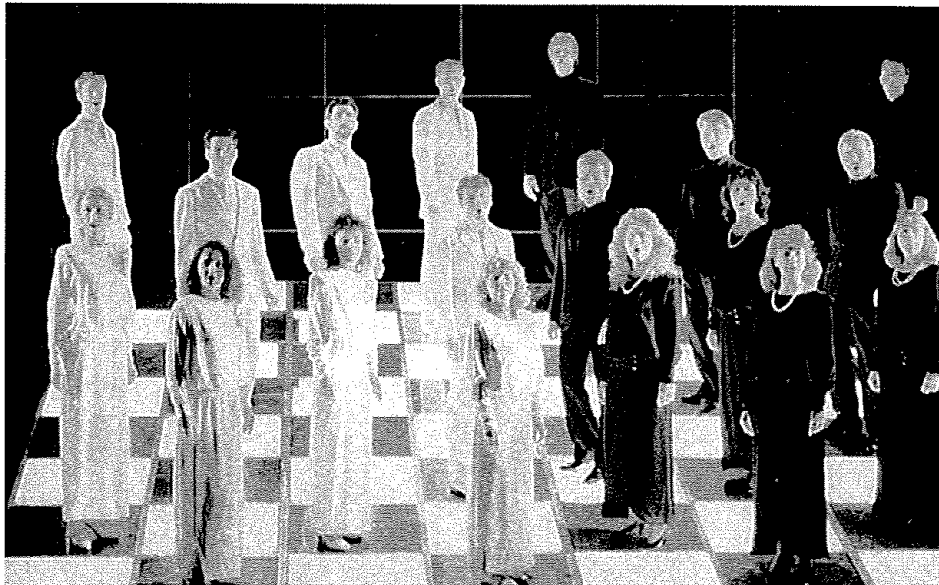
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TRAVELLING CHESS

The story behind 'Chess' on tour



The new production of Chess, which opened at the Theatre Royal, Plymouth in March, will be touring major theatre venues in the UK for the next 52 weeks. With the typical turnaround time from venue to venue being only three days from curtain down to curtain up, the prime consideration for both sound and lighting design is ease of installation. With a production on the scale of Chess it is important that things run as smoothly as possible.

The musical, centred around a challenge match between Russia and America, opens with individual chess pieces taking their positions on the board for the commencement of the game. The board, which was assembled in London prior to installation in Plymouth, comprises 64 squares, all of which are lit from beneath by two 200w K lamps fed by 64 2 amp dimmers. The dimmers, on a 60 amp single phase mains, are multiplexed via three Strand 24 way positive mux boxes which are situated inside the central floor revolve mechanism. The floor rotates through 360°, and the central section rises to 45°.

When audiences across the country watch Chess, they will be unaware that they are watching the fruits of a collaboration between many companies and individuals. Stage Electrics, who supplied the lighting for the production were very much involved in improving the functional aspects of the installation by designing various time-saving devices which make the touring side less stressful.

Lighting designer Nick Richings put together a lighting rig that would perform just such a function, as he explained: "At every venue the rig is the same — it is a touring rig. The only thing which changes is the front of house lighting, but this is always compensated for. The show does not have to be re-lit." When Nick Richings was asked to do the design for the UK tour, he had never even seen the show. He watched rehearsals, studied the groundplan of the set and took it from there. The rig is comprised entirely of Strand equipment with the Cantata, Cadenza, Jupiter and Harmony Fs rubbing shoulders with the ever-popular Par 64s.

Each venue that the tour visits supplies the

production with 19 Profiles and two fresnels for the front of house cover — the rest has to be brought in. In addition to the drawn rig (shown on page 60) the company is touring seven large neon signs together with two practicals, each with their own remote control facility for use on moving trucks.

This particular production of Chess was the first use of the Strand Gemini 2+ lighting control board in a tour situation. The updated board can control up to 360 channels, and provides video outputs for two colour monitors. A second video display can be selected to show an additional page of channel and level information or a tracking Memory List. Its cue capacity has been doubled. Even at 360 channels, complex shows can be recorded without the need to load memories in from disc. Gemini's electronic patch now provides the opportunity to direct any dimmer to act as a non-dim, and it can utilise up to two dimmer profiles recorded on the Strand Galaxy.

The show is also remarkable for having the most Rainbow Scrollers ever to go on tour. Some 36 in all provide dramatic effect for the action. Stage Electrics had to wait for the Rainbows to arrive from Sweden before they could preassemble the rig prior to its transfer to the theatre. The dimmers, all multiplexed, were placed in five custom-built racks designed by Stage Electrics. Mark Buckingham, project manager at the company, told L+SI that the racks, like so many other things on the show, had been designed to improve the 'transferability' of the equipment from venue to venue. Stage Electrics took the basic six channel units and bulk mounted them in 36 racks, effectively removing the need for them to be re-plugged at every venue. The company also custom-built the production mains box which has a 200 amp 3 phase camlock input. Being involved in the hire and sale of lighting and sound equipment enables the company to offer more than just a supply service.

On the sound side of things, Heywood-based Wigwam were the main consultants. The design brief for the sound system was provided by director, Anthony Van Laast. He asked the company to specify a sound system that would clearly reproduce the



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vocal sounds of the principals in the cast, give high impact of the chorus vocal lines, and a controlled orchestra sound — again with impact on the up tempo songs, but without excessive volume — and which would miss none of the subtleties during the more melodic songs.

When working on the brief, Wigwam kept in mind the need for the loudspeaker system to be capable of being easily reconfigured to suit the many different venues that the production would visit on its UK tour.

The main sound system is arranged using left and right loudspeaker arrays and a flown centre cluster. A combination of 16 Meyer Sound UPA-1 and UM-1 loudspeakers are being used along with four Meyer Sound USW subwoofers. The main system is supported using 24 Proac delay speakers for balconies and rear stalls. The system is controlled using two customised Soundcraft 8000 series consoles, perhaps now the industry standard for touring sound systems.

Eight matrix outputs are available giving independent control of the various loudspeaker systems. To reduce rigging time, a flexible system of patching to outboard effects, equalisation equipment and stage microphones is employed. Multiway connectors render the quite sophisticated control system ready for use in a matter of minutes.

To give flexibility to the cast, and to



The dimmers, all multiplexed, were placed in five custom-built racks by Stage Electrics.

reinforce the important vocal areas, a specially constructed Sennheiser radio system is employed. The Sennheiser MKH 70 shot gun microphones are used to good effect to capture members of the chorus line not using personal radio microphones. A selection of high quality microphones and DI boxes are used to reinforce the orchestra.

To provide a click track system and for spot effects, a much improved version of the Sony DAT machine is used — the RS DAT 1000. Instant start facilities are provided on these machines along with the audio quality associated with Digital Audio Tape. To date, the equipment has only been employed on one venue, but press reviews of Chess have given specific mention to the sound quality of the system. Its design and implementation was undertaken for Wigwam by Greg Pink.

Chess: Equipment List

Lighting:

- 1 × Gemini 2+ memory controller
- 25 × 6 × 10A Act 6 dimmer rack multiplexed
- 1 × 200A 3 phase production mains box
- 2 × Camlok extension set
- 86 × 1000W Par can and frame
- 62 × CP62 1000W wide Par 64
- 44 × CP61 1000W medium Par 64
- 20 × 1000W par can with nose brace
- 16 × 200W Cadenza fresnel
- 41 × 1200W Cantata profile and frame
- 32 × 1000W Harmony fresnel
- 12 × Par 56 12x300W 4 circuit batten
- 2 × Jupiter 6x120v FCX
- 8 × Orion 1000W 4 circuit groundrow
- 36 × Rainbow 10 colour scroller
- 1 × Rosco 1500 smoke machine

Sound:

- 4 × Meyer Sound USW
- 8 × Meyer Sound UPA-1A
- 2 × Meyer Sound RP-05 rack
- 3 × Meyer Sound M1 rack
- 8 × Meyer Sound UM-1A
- 24 × Proac delay speaker
- 4 × HH V800 rack
- 1 × Soundcraft Series 8000 40 channel console
- 1 × Soundcraft Series 8000 24 channel console
- 1 × 63 Ampere mains distribution system
- 5 × Klark Tekniks DN360 graphic equaliser
- 2 × Yamaha MV 802 sub mixer
- 1 × Yamaha MLA 7 sub mixer
- 2 × Sony RS DAT 1000 machine
- 9 × Rane mixer
- 6 × Martin Audio CXW wedge monitor
- 4 × Boss powered monitor
- 4 × BSS AR116 DI boxes
- 5 × Beyer M88
- 9 × Sennheiser MKH 70 shotgun microphone



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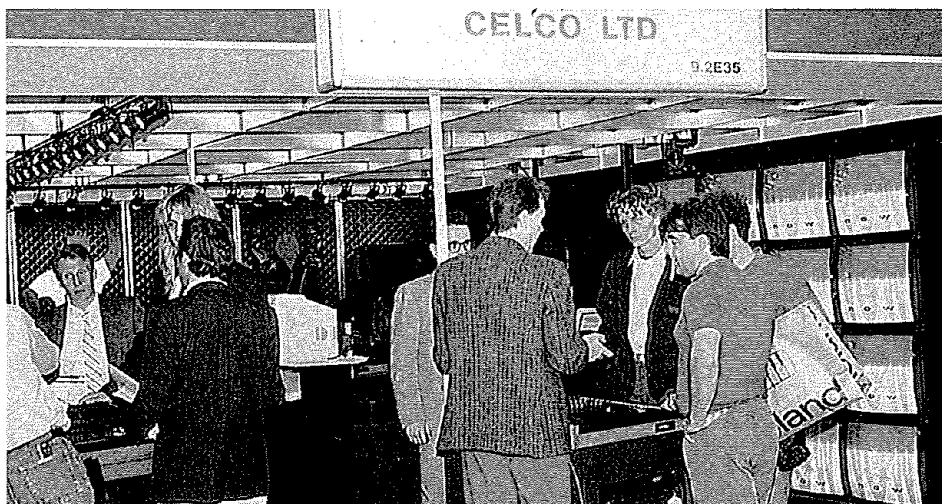
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INTEGRATION WITH INNOVATION

L+S report on Celco and LiveWire's Frankfurt highlights



Down to business on the Frankfurt stand.

At the Frankfurt Music Fair, Celco, one of the leading designers, manufacturers and world-wide distributors of lighting control equipment for concert, television, video and theatre productions, launched a new range of control consoles, dimming systems and associated hardware.

Following two years of extensive research and development, the company hope that the new Panorama Range of control consoles will find favour with lighting designers, programmers and operators who require the synchronised and automated control of light intensity, movement, position and colour.

Over the past few years there has been a dramatic increase in the use of colour changers and moving lights in all areas of the entertainments industry. In response to the growing demand many new companies have entered the lighting arena with various versions of colour scroller, colour wheel, moving mirror and moving yoke. However, as no one manufacturer has given much thought about integrating the control of these units with generic lighting, the synchronisation of cues has been a somewhat haphazard affair. Celco have designed the Panorama range to fully centralise all aspects of effects lighting into one neat and simple package. Flexibility and ease of use will be the key to their success, say the company.

The Panorama range works on a basis of 'latest takes precedence' as opposed to the more common 'highest takes precedence' form. This very important difference is essential for the control of moving lights and colour changers. On an analogue colour changer different control voltages are used to represent different colour frames with zero volts being used for the first colour and ten volts for the last. Obviously, zero voltage is as important as ten volts with regard to colour. With intensity the opposite is true, zero voltage is off and ten volts, on. This is why colour changers are best controlled from a 'latest takes precedence' console. Here the latest cue 'sent' or 'moved' controls the output of the channel. If that cue contained channels stored at zero voltage then the output of the console would be changed to zero voltage, regardless of its previous setting.

Consequently all colour changers would move to colour frame one. The same principles can be applied to the position of a moving light where zero voltage is as valid a position as ten volts. Celco have produced four versions in the Panorama range. The smallest is the Panorama 60 Wing. This unit is designed to be linked to, and controlled from, any Celco 88 Range console. It does not have any mastering facilities of its own as it takes its control direct from the master console.

The Panorama 90 delivers 30 'highest takes precedence' channels and 60 'latest takes precedence' channels in one console. With 300 available cues and 48 sequence patterns, it can integrate all forms of lighting and effects. The Panorama 120, the flag ship of the range features 60 channels of both highest and latest takes precedence form. To cope with all the permutations available with movement, colour, position and intensity, it has 450 cues and 48 sequence patterns.

Designers and programmers working within the Audio Visual field will find Celco's new Digital Real Time application of great assistance in programming and synchronising lighting cues to Midi, SMPTE and other similar time codes. The product, a software-based program designed to run on the new Celco PC AT Computer, enables the entire show sequence to be recorded onto the computer's hard disc, or floppy for subsequent playback. The software features advanced graphic-based menus and displays which mimic the operation of any Celco control console. Alternatively the show structure may be compiled utilising the computer alone for subsequent connection and playback on The Box, a neat output only device that can be used to replace a control console.

The Box can be used in many applications from an additional console on tour to a sophisticated Audio Visual Display. It is now possible to plot a show, for instance, with a 30 Major linked to a Celco Gold, thereby achieving the required amount of channels. The 30 Major's contents are then loaded onto a Q-Card. The 30 Major can then be exchanged for The Box and the Q-Card information loaded in. By linking The Box to the Gold, in an identical manner to the 30

Major, you are able to set off on tour with the desired number of channels of control. The potential applications of The Box are numerous. It can be used to output cues from the LiveWire controller to generic lighting offering complete show automation of moving lights, colour changers, lasers, smoke machines, and, if required, it can be connected to a variety of Audio Visual controllers using the internal relay interface or via a Celco AVI.

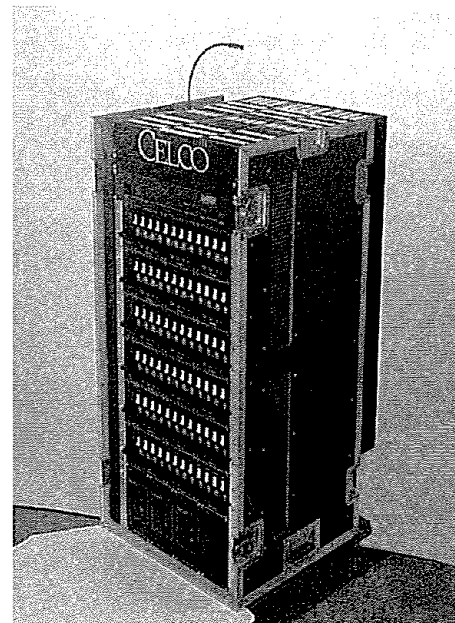
The rack mount DSI, a stand alone Digital Storage Interface, which also can be connected to any Celco Plus console or pre 88 Series 2 console running SoftOptions. Once connected the DSI can record the memory content onto a Q-Card for subsequent archiving and playback in the same or different console.

Because of the high speed data access system employed, a DSI unit also offers the designer an increased number of Cue and Sequence memories on the console. Having programmed two Q-Cards, one for the first half of a performance and the other for the second, the designer is able to completely update and replace the memory content of the console as desired.

Celco have recently added two new dimmer systems to the Series 2 range, namely the Compact 4824 and Compact 2412. Both dimmer racks are designed for high density touring applications and feature surface mounted hot patch, digital interface and single plane input/outputs.

In addition to all these, Celco were also displaying at Frankfurt their famous Gold console along with the Celco 60 Major and Celco 30 Major. All the consoles mentioned feature what Celco always refer to as the 'incredible' Q-Card digital storage interface and share a common system architecture. New to this range is the 60 Major Special Edition, a deluxe version of the 60 Major.

The LiveWire controller can interface many different lighting and effects units together. For instance, on the stand in Frankfurt, it was to be seen controlling an



The Celco Compact 4824.

Electrosonic Video Wall, Golden Scans and a Jem Smoke Machine. To demonstrate its versatility the changes were being initiated from a Celco 60 Major SE, Midi and SMPTE time codes and infra-red beams.

The Syncrolite Mini-Arc II moving light units have been developed to offer an affordable alternative to leasing or renting existing systems. They offer high power arc lamp source, 77 dichroic colour system, five gobos, variable beam size and dimming. To offer a totally integrated control environment they can be controlled from any Celco control console.

Established in 1981, Celco has built up an enviable reputation as one of the world's most renowned designers, manufacturers and distributors of lighting control equipment for the entertainment industry. Celco in London caters for the European, Far Eastern, Asian and Australasian markets, whilst New York-based Celco Inc meets the demands of Central and North America.



Colin Whittaker (left) and Matt Deakin (centre) from Celco with LiveWire's Wally Brill.

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LETTERS

Dear Editor,

In his article 'Debating DMX' (*Lighting + Sound, International* - February 90) Ian Ibbitson correctly assesses the strengths and weaknesses of DMX, but is SMX the answer? I have read Strand's proposed standard in some detail and it raises many questions: The physical RS485 interconnection which both standards use, allows up to 32 physical devices on one link. This doesn't cause too much trouble with DMX where one physical device typically means 96 dimmer channels and the unidirectional interface can be buffered with repeaters. But how will SMX cope with a large rig full of colour scrollers? Or worse a mixture of moving lights and other effects from many different manufacturers?

If SMX is intended as a universal datalink to control all aspects of lighting within a theatre then it must compete with such systems as Ethernet (or Cheapernet) which though much more complex have all the benefits of mass application, with chipsets and other components

cheaply available off the shelf. If SMX is not intended as a universal link then why not? and why is it so complex?

Any attempt to introduce a universal interconnection of this sort - Strand must be congratulated for trying, and for putting it in the public domain - inevitably raises further questions about the overall control strategy. It is plain that current lighting desks may be very good at dimming lights but are hopeless at much else, as anyone who has tried to control something as simple as a colour changer knows. For a standard like SMX to have much relevance the people making lighting controls must wake up to the fact that lighting involves, not just dimmers, but also anything from smoke machines to multi-axis moving lights. They should take this into account in both the output features - SMX or otherwise - and even more in the ergonomics and operation of their desks. Until the functionality of lighting desks is up to the job we'll continue to have the jumble of odd controllers and incompatible equipment we deserve.

Philip Nye
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Pulsar GmbH,
AM Vorort 23,
D-4630 Bochum 7, West Germany.
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PLASA News

Serving Members

Recently appointed standards officer, George Thompson, has produced the first in a series of newsletters relating to standards within the lighting and sound industry. Issue one covers regulations, directives and standards harmonisation in the common market, and has been forwarded to all Plasa members within the last week.

LDI — Orlando

Details of the DTI's joint venture proposals for the exhibition are as follows:

	Space & Shell	Space & Shell & Display Aids
Qualifying firms, standard area and justified additional space	4.70	9.90
Non-qualifiers, standard area	10.74	22.31
All other additional space	9.41	19.79

Qualifying companies will have received DTI support on less than three previous occasions in the USA. Travel grants of up to £260.00 per person are available, and the standard area is 100/150 square feet. Display aids will include panelling, benches, shelving, plinths, counter, graphics, overhead features, lighting and other electrics. Cut-off date is Friday, 27th July, but please register your interest with Chris Sogno at the Plasa office on (0323) 410335.

Call for Unity

The National Outdoor Events Association's all-industry Technical Standards Working Party recently issued a call for unity to improve standards following a report that a number of other bodies were attempting to produce limited codes of practice for the outdoor events industry. The NOEA, representing the interests of over 55,000 practitioners throughout the industry, set up the Technical Standards Working Party last year to produce the first national safety code

covering all outdoor events.

The NOEA code of practice is the only one which is to be issued as a British standard and will include planning and management, health and safety, site layout, temporary structures and other matters relevant to the organisation of every type of event. Plasa is currently looking at becoming affiliated to the Association.

New Plasa Members

Carlsbro Technical Services Ltd.
Unit 8, Anglia Way,
Southall Road West, Mansfield,
Nottinghamshire NG18 4LP.
Tel: (0623) 656390
Fax: (0623) 420893
Contact: Ivor Green

Orpheus Publications (Jocks Magazine)
Fourth Floor, Centro House,
Mandela Street, London NW1 0DU.
Tel: 071-387 3848
Fax: 071-388 8532
Contact: Eddie Fitzgerald



PLASA at Frankfurt

Assisting visitors to the Plasa stand at the recent Frankfurt Musik Messe. On hand to deal with any enquiries was our interpreter Ute Eisen (in picture), who assisted Plasa representatives at the show.

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Exhibition Diary

SIB/MAGIS

April 1-4, 1990.
Rimini, Italy.
UK Enquiries: The PLASA Office,
7 Highlight House, St Leonards Road,
Eastbourne, East Sussex BN21 3UH.
Telephone: (0323) 410335.

USITT

April 11-14, 1990.
Milwaukee, Wisconsin.
National Office: 330 West 42 Street, Suite 1702,
New York NY 10036.
Telephone: (212) 563 5551.

PUB, CLUB & LEISURE SHOW

April 3-5, 1990.
Olympia 2, London.
Enquiries: Angex Ltd, Europa House,
St Matthew Street, London SW1P 2JT.
Telephone: 01-222 9341.

VISION & AUDIO 90

April 22-25, 1990.
Earls Court, London.
Enquiries: Emap MacLaren Exhibitions Ltd,
840 Brighton Road, Purley, Surrey CR2 2BH.
Telephone: 01 660 8008.

SHOWTECH

May 8-10, 1990.
Berlin, West Germany.
Enquiries: AMK Berlin, Ausstellungs-Messe-
Kongress GmbH Messedamm 22, D-1000 Berlin
19, West Germany.
Telephone: (30) 3038-1.

EXPO MUSICA

May 16-20, 1990.
Madrid, Spain.
Enquiries: IFEMA, Avda de Portugal,
s/n Casa de Campo 28011 Madrid 1101.
Telephone: 470 10 14.

APRS

June 6-8, 1990.
Olympia 2, London.
Enquiries: APRS, 163a High Street,
Rickmansworth, Hertfordshire WD3 1AY.
Telephone: (0923) 772907.

ABTT TRADE SHOW 90

June 28-30, 1990.
Riverside Studios, London.
Enquiries: ABTT, 4 Great Pulteney Street,
London W1R 3DF.
Telephone: 01-434 3901.

PRO AUDIO ASIA 90

July 11-13, 1990.
Hong Kong Convention Centre
Enquiries: Business and Industrial Trade Fairs Ltd,
28/F Harbour Centre, 25 Harbour Road,
Wanchai, Hong Kong
Telephone: 5-756333

PLASA LIGHT & SOUND SHOW

September 9-12, 1990.
Olympia 2, London.
Enquiries: David Street, 3D Services,
12 Brentford Business Centre, Commerce Road
Middlesex TW8 8LG.
Telephone: 01-569 9742.

PHOTOKINA

October 3-9, 1990.
Cologne, West Germany.
UK Representative: Tony Pitman,
12/13 Suffolk Street, London SW1Y 4HG.
Telephone: 01-930 7251.

DISCOTEC/HOGATEC 90

November 5-9, 1990.
Messe Dusseldorf, Dusseldorf.
Enquiries: Dusseldorfer Messegesellschaft GmbH,
NOWEA, Postfach 32 02 03 D-4000 Dusseldorf 30,
West Germany.
Telephone: 0211 45 60 01.

LIGHTING DIMENSIONS INTERNATIONAL

November 17-19, 1990.
Orlando, Florida.
Enquiries: Pat Mackay or Jackie Tien,
Lighting Dimensions, 135 Fifth Avenue, New York,
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Intensity modulate
Stereo audio inputs
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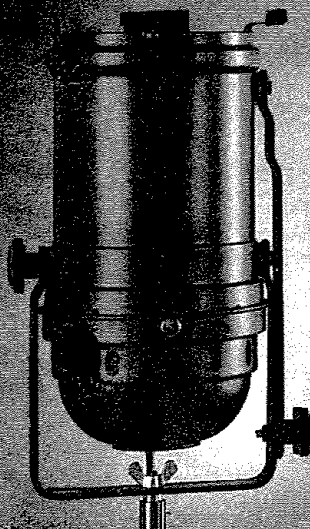
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AGENTS: M & M Lighting Limited, 87 Gloucester Avenue, London NW1 8LB. Fax: 01-722 3940 Telephone: 01-722 4147

Lightpower showtechnik GMBH, An Der Talle 26, 4790 Paderborn, West Germany. Fax: 49 5251 407404 Telephone: 49 5251 4184

ON TOUR

Catriona Forcer

Chris Rea started his tour last January with a couple of sell-out Wembley dates. Unfortunately, I didn't get to see him then but I was glad that I caught his return concerts in early March. Ian Cameron, lighting designer, combined his talents with those of Fisher Park to produce a theatrical and very atmospheric show.

The same weekend, I caught Ruby Turner in concert. Sometimes I get asked to review shows which I'm not particularly keen to see, this was one of them, but I was delighted to find an exceptional singer and a remarkable lighting designer. John Melon managed to produce a stylish and creative show from what was really quite a small rig. A refreshing experience.

Chris Rea Wembley Stadium LD: Ian Cameron

Ian Cameron is a modest man who seems to be constantly surprised at just how far he has got in the lighting business. Most people who saw one of the recent Chris Rea shows would understand why. Spectacular lighting and

amazing mechanicals designed by Fisher Park, combined to produce a stunning stage show. The finale of the show featured a large mechanical cube on stage which reflected the graphics from the recent album 'Road to Hell'.

"I regard the show as a major triumph for me because Chris has always done small shows previously," explained Ian. "This is the first really big tour that he's done for ages. It started last January in England and then went to Germany, Belgium, France and Holland for about six months. After these shows we're returning to Germany, France and Scandinavia."

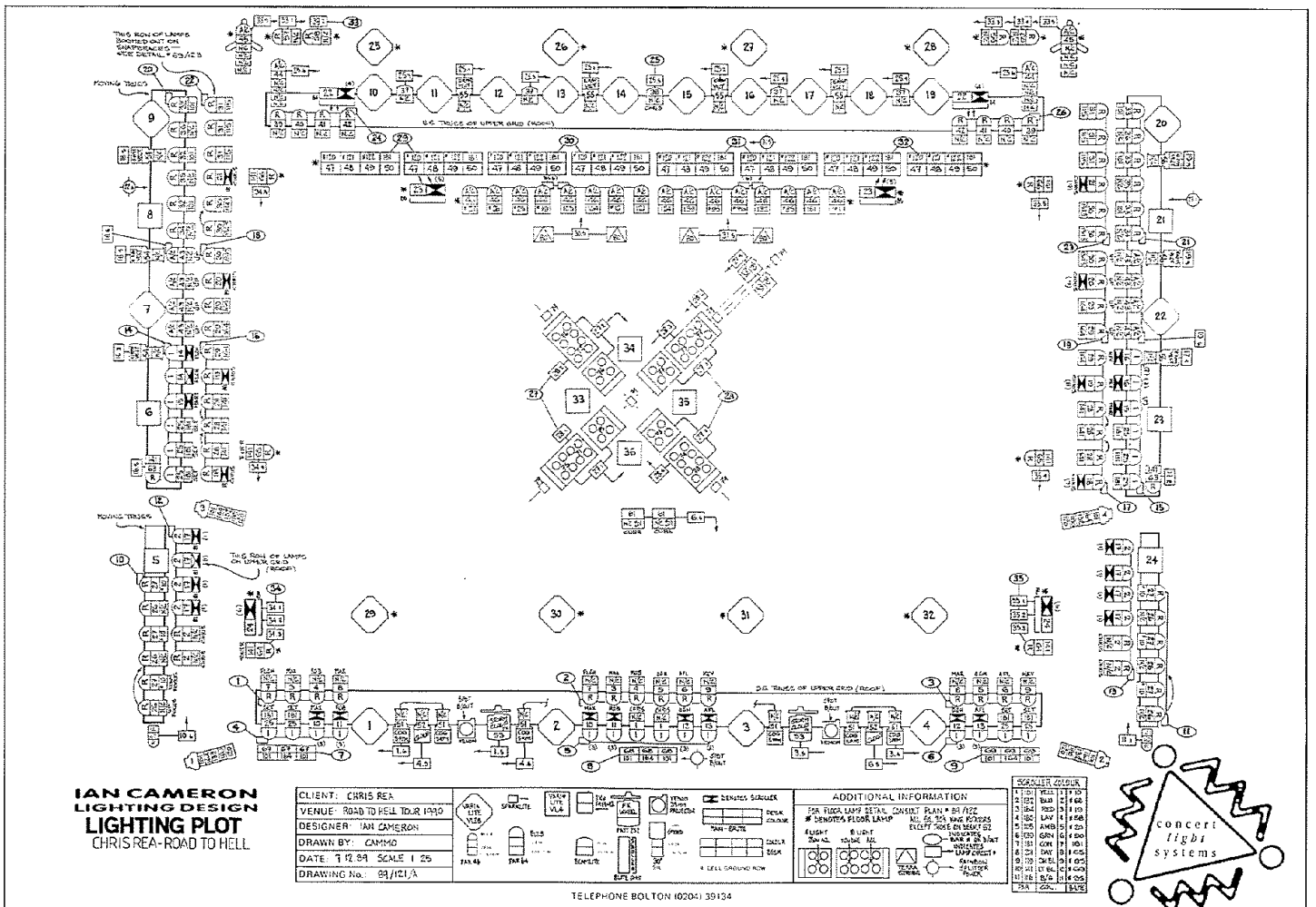
"Fisher Park designed the flying mechanicals and the cube whilst I designed the roof structure, all the lighting and moving trusses as well as co-ordinating the whole thing. Kemps, the engineers, actually built the two mechanical objects. We also had a mechanical flying man at the beginning of the tour which we've now abandoned because it was impractical and didn't achieve the desired effect."

"We're using 36 Vari*LiteS altogether, 12 VL4s and 24 VL2bs 400w HTI version. There are probably around 300 conventional lights which is a fairly low count, but we use a lot of scrollers (Rainbow scrollers). There are 36 Par scrollers and six 8-light scrollers, so they save a lot on the lamp count. They each carry 11 colours so they save probably another 300 Pars. I'm using DHA gobo rotators, about 14 to

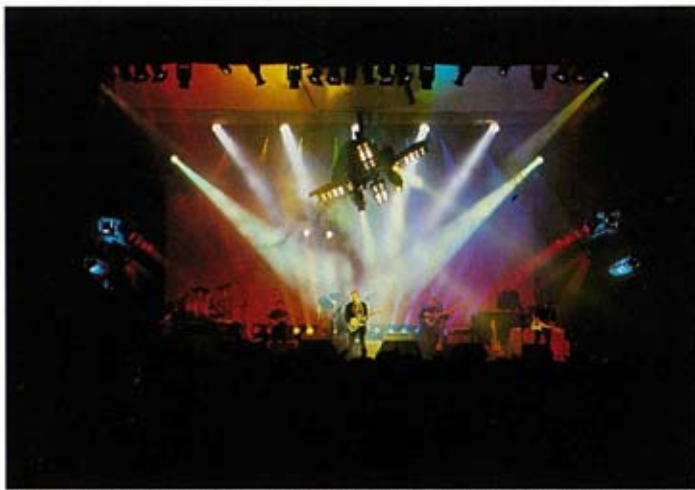
rotate over the audience, which the Vari*LiteS can't do. I use a lot of projection on the backdrop as well as more gobo rotators which rotate cogs for the song 'Working On It'. There are also the moving side trusses."

These vertically re-position themselves throughout the show. They combine with the flying mechanical which moves horizontally above the stage, sometimes with revolving parts, to produce an eerie drama. Ian is enthusiastic about theatre lighting which he leans towards, although he has never done theatre. He likes the principles involved and the influence was clear in the show that I saw.

"From my point of view it's quite difficult to design for Chris because the band are very static on stage," he explained. "Although his music is perfectly capable of helping itself along, the lighting needs to do something to make the whole thing move and make it more interesting. There has to be Vari*LiteS or some form of moving light to keep the show live. I worked for Vari-Lite for about three years so I'm slightly biased. I appreciated my time at Vari-Lite because it put me in touch with a lot of people. The only detraction was that you're never a lighting designer at Vari-Lite, you're always a servant to somebody else and I quite enjoy being a LD with my hands on the control. I met Dave Ridgeway in Australia where I was working for the company that was providing the lights for an earlier Chris Rea tour. I asked



Ian Cameron's lighting plan for the Chris Rea 'Road to Hell' tour.



The amazing mechanicals designed by Fisher Park combined with Ian Cameron's lighting design for Chris Rea.

Photos: Rob Haywood.

him to get in touch if he ever needed somebody else to do the job and he did. It's thanks to him that I became a lighting designer.

"This show is completely different to the one I did when working with Transvision Vamp. I enjoy the contrast. Although Chris is the sort of show that I like doing, Transvision Vamp is good because it makes me take chances and flash things. If I kept on doing Chris Rea-type shows all the time I'd end up becoming really boring, slow and horrible! My former Chris Rea show was very theatrical, this one is slightly more 'heavy-metal' in areas, but nevertheless the basis remains theatrical.

"One band that I would really like to design for is The Christians as I'm into their music. Some time ago I did some gigs with Black and I'd like to work with them again. Unfortunately I've always been doing other things when they've toured since.

"The show that most impressed me was the Phil Collins 'No Jacket Required' tour. It really inspired me although I can't remember who the LD was. I don't see many shows that I don't really like. I tend to be non-objective about the lighting and I try not to look at just the lighting when I see a show but take in everything. I suppose that if the act isn't very good then I start to look at other parts of the show.

"To be honest, I never really expected to get this far in the business so I'm very happy to be here. Eventually I would like to be a lighting

designer that doesn't go on the road. I'm really interested in the designing side rather than the operating side. I wouldn't say that I'm fed up with touring, but it would be nice to spend some time at home.

"The equipment on this tour comes from Concert Light Systems of Bolton and they've been doing Chris Rea for some time through my choice. I don't mean to give them a plug or anything, but they are a very good lighting company. Their equipment is fantastic and the service you get from them is quite a lot better than from other companies. They've spent time and money doing things for this show which other companies probably wouldn't do."

Chris Rea 'Road to Hell' tour

Concert Light Systems Crew:

Harry Box (crew chief)
Tim Eastham (dimmers)
Mark Whittaker (scrollers)
Deryk Dickinson (rigger)

Vari*Lite Crew:

Fraser Elisha (operator)
Marcus Robinson (technician)

Mechanicals:

Bill Lawford
Bob Niering

Equipment List:

350' Thomas 'A' type truss

300' Thomas 12' x 12'
4 x Thomas spot chairs
8 x Tomcat sleeve blocks
8 x Tomcat towers
36 x 1T verlindes & control
12 x 1/2T verlindes
12 x 6 bar par 64
18 x 4 bar par 64
6 x 8 lite
16 x sic 30
2 x Leko
5 x Beam lites
36 x Rainbow scrollers
6 x Rainbow 8 lite scrollers
2 x 252 projectors c/w clouds
4 x Genie Tew smoke machines
2 x Turbo fans
2 x London fans
1 x 8' mirrorball
4 x Pani 1200 spots
3 x Terra strobes
10 x floor specials
8 x 4 way groundlow
3 x Maxi brutes
2 x Avolites 72 way dimmers
1 x Celco Conexion system (to run Rainbow)
1 x Celco Gold
36 x Vari*Lites and control
1 x curtain track c/w black tabs
1 x cyc screen
1 special effects flyer c/w the following:
4 x 8 lites
4 x 4 lites
2 x Starlette fresnel
6 x Stick strobes
4 x Vari*Lites

Ruby Turner Dominion Theatre LD: John Melon

"I've been involved in lighting for about 13 years and five years ago I started my own company — Prism Lights. The company is growing all the time. We've probably invested five times the amount we originally invested to set up the company and, that's just in additional equipment. The difficulties arise when you find yourself in the position of competing with big companies because they always have the upper hand at the end of the day as they've got the money.

"I run the company single-handedly but I have a person who works for me full-time and four or five part-timers who work whenever there is work available. That's the only way I can sensibly work because I'm not big enough to employ staff full-time in the workshop which doesn't earn any money. A lot of people who book you for work don't realise that whatever you're charging for a rig out on the road, there's 'x' amount of work involved back in the workshop preparing and maintaining equipment. All that work is not paid for so it has to be allowed for in the budget of the tour. A lot of

managers aren't aware of the expense of running a warehouse. The only thing to do is invest all the time. The more you invest, the more you keep ahead. As long as you can be

seen to be making an input all the time then I think people in this business will respect you for it.

"No one is respected if they spend the



Aircrafts have been integrated into the rig to give separation.

minimum and earn the maximum — you've always got to spend to earn. A policy I try to keep is that if ever a tour is going out I try to make sure that people don't have to compromise on what they want if it's within the budget. If I haven't got it, I'll always try to buy in rather than make do. I attempt to do this all the time, even though it usually means I haven't got any money left at the end of the day!

"We've got The Almighty tour out at the moment and they wanted a couple of strobes which we haven't got in stock, so I bought some for what is really a little tour. I spent £800 on this tour just for some gobo rotators which are nice, but they're luxury items really. There are too many luxury items in lighting nowadays. There are so many things on the market and people are using technology for technology's sake. Phil Kerrick, who is doing The Almighty, has worked with bands big and small and I've watched him use anything down to 24K rigs but he has always got the most out of what he has. He doesn't need special fancy bits, it's all down to where he points it and the way he uses it. That counts for an awful lot more than people think. The classic statement 'we need to use loads of lights because it's a big venue and a big band' just doesn't follow. Tonight I'm using 80 lamps on the rig which isn't a lot to cover the amount of people in the band, but I feel that if you looked at it at any one particular time it probably looks just as good as someone using double the amount of lamps.

"You can always take rock 'n' roll to mean flashing lights and they do suit a lot of bands. I'm not knocking that at all. Unfortunately the people who over-use lights usually over-use with too much movement and they don't appreciate that to use lamps in the right positions, can create a mood that is nice to look at without flashing lights. In this show I might leave stuff up for maybe half a song because I feel that it is the right mood for that song and there's no need for it to change.

"Another tour I did was in autumn '89 with Runrig and their designer used something like 230 lamps on that rig. To be honest I never saw anything which stood out in any particular form because he used so many colours at once. He was using anything up to six colours at any one time and they just seemed to blend into one mist. One key thing that I've always felt conscious of is colour. I'm into pure colour and I love the idea of mixing primary colours with a lot of separation. I don't like to be too critical of other people because I'm not the perfect judge of anyone's design. Being a designer, it's easy to over-criticise other people because it's not what you would do, so you immediately think it's wrong.

"I've used some aircrafts on this rig which people usually use in fans and banks but I've integrated them into the rig. When you split them up they do give some really nice separation. I've used them in white on this but I think they would work equally well with colours because you can then use two colours together which wouldn't merge.

"Ruby is very easy going and up until this tour I've been using house rigs with her. Last year we did a lot of shows which were university gigs or low budget theatre shows which basically meant we had to use what was available. This is the first tour where I've been able to put everything into a design. The set is moody and there are a lot of slow songs which I tend to favour.

"One problem with this tour is that a lot of it has been in very clean non-smoking venues and just the fact that people are smoking is enough to enhance the atmosphere. I use as much smoke as I can, but I hate to see acts use smoke for its own sake. Smoke, to me, is an enhancer and that's as far as it goes. I have to be



Ruby Turner in performance at the Dominion Theatre. Lighting design by John Melon.



careful with the smoke because of Ruby's throat. People who blast smoke out like there's no tomorrow just bore me — they just choke people's lungs.

"We're based in Cheshire and we're one of the few companies that survive pretty well considering we're in the middle of the country. We're in a very small village and, although we tour all over the country, we don't get any passing trade! We've progressed a lot in five years though. The advantages are that the rates are low and the security is a lot better. It's also a contrast as I love rock 'n' roll and I always will, but I like the idea of a quiet life as well. I have the best of both worlds.

"The plans for the near future are to build on the equipment that we've got and to improve it all the time. Another one of my acts, Thomas Lang, is touring soon and he really is one of my favourites. It's one of those sets I really get a buzz from. He's really laid back — a bit of a male Sade with a little bit more of a jazz influence. I'm looking forward to working with him."

Ruby Turner:

Equipment List:

70ft Thomas A type truss
2 28" Corner blocks
11 x 6 way Thomas lamp bars
8 x 4 way Thomas lamp bars
2 sets Aircraft lights

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Rainbows for Dukes

M & M's Rainbow Scroller, which found fame through the West End productions of Miss Saigon and M. Butterfly, and has also been used in various dance and rock tours such as Chris Rea and Deacon Blue, is now being used as a permanent feature in a nightclub.

Dukes Discotheque in Chelmsford, which has just undergone a complete refurbishment, (see feature this issue) has installed six Rainbow Light Curtain Scrollers fitted onto the DHA slim-line nine batten light curtain. This is the first permanent installation of the Rainbow Scroller in a nightclub.

Graham Barron of Lizard Lighting Designs who produced the lighting scheme for Dukes, saw the Rainbow Curtain Scroller at its launch at last year's PLASA show, and chose the system because of the unique visual effect it produces.

The Light Curtain Scroller is 6ft long, scrolls through 11 colours in under 1.5 seconds and is completely silent in operation. Full technical information is available from M & M Lighting.

Midsummer Takeover?

Once again, the corporate leisure companies are filling the columns of the financial pages of our national newspapers.

The company under the microscope this time is Midsummer Leisure. Speculation arose that Midsummer was the target of a takeover bid when their share price began to move. Fleet Street favourite to bid for the Midland-based company is European Leisure who recently bought the Hippodrome from Peter Stringfellow.

DJ Championships

Wembley Arena hosted this year's Technics World DJ Mixing Championships. Mixers from all over the world contested the final and the eventual winner was David Fascher from Germany. Also on hand was Stanton's Frank Conlan, who presented the 1990 Stanton DJ Awards.

The winners in the UK section were:
Best Dance Record Back to Life, Soul II Soul
Best UK Album Club Classics, Soul II Soul
Best UK Group (Dance) Soul II Soul
Top UK Male Vocalist Roland Gift
Top UK Female Vocalist Lisa Stansfield
Most Promising Newcomer Caron Wheeler
Best UK Producer Danny B
Best UK Remixer Mackintosh/Dorrell
Best Dance Radio DJ Jeff Young

In the World section the awards went to:
Best Dance Record 1989 Ride On Time, Blackbox
Album of the Year Rhythm Nation, Janet Jackson
Best Group Soul II Soul
Best Male Vocalist Bobby Brown
Best Female Vocalist Adeva
Most Promising Newcomer Neneh Cherry
Best Producer LA & Babyface
Best Remixer Knuckles/Morales
Best Remix I'm Every Woman, Chaka Khan by Danny D

The House section winners were:
Best House Record French Kiss, Lil Louis
Best House Artist Inner City

Light Engineering

Light Engineering have announced that after ten years with the company, co-founder Paul Newton has retired. Newton plans to set up his own independent consultancy while Stephen Demeza has been promoted to sales director.

Pro Light and Sound

London-based M.S.L. Pro Light and Sound report a busy start to the year. Formerly, Martin Sound & Light, they have changed their name to 'reflect the company's attention to the quality of service and facilities offered', and regard their new name as more representative of their position in the industry.

Armed with their new corporate identity, they recently launched a programme of franchise packages throughout the UK. They intend to create a network of tied outlets that will be able to duplicate all the services offered by the London office, but at local levels. This will include retail and trade supply, small scale installation, service and equipment hire. To assist with the setting up and co-ordination of the new franchise scheme, M.S.L. have retained former PLASA general secretary, Tony Andrew.

Finally, M.S.L. have moved their hire division to new premises at 110A Blackstock Road (opposite the main M.S.L. offices) and have considerably increased their extensive stock to include Clay Paky Golden Scans and Turbosound loudspeaker systems.

Water Call

Paul Adams of P.A. Installations has won the contract to supply the Welsh Water Board with 76 mobile PA systems fitted to their vehicles. It seems that they cannot just turn the water off anymore. The Water Board has to inform their customers beforehand, and using vehicles with PA seems to be the answer.

P.A. Installations are also involved in installing a conference system comprising of TOA, Bose and Citronic equipment, for the Council Chamber of Sidmouth in Devon. Following on this theme of diversification, P.A. will be carrying out for main contractors Vaughan Sound of Swansea the installation of a £2 million in sound system for Cardiff Arms Park.

L.S.D. Installations

L.S.D. have just completed two sound and lighting installations in Brighton. The rebuilds were in the Rank Kingswest Centre and involved the old Busby's. Now renamed 'Oriana', L.S.D. have installed Martin Roboscan's for the first time, using Light Processor controllers. The second installation was in the former Top Rank Suite, now renamed 'The Event'. Bose Sound Systems were installed in both venues.

On the home front L.S.D. have moved their offices within their Purley Road headquarters and now have a separate entrance at the rear of 316 Purley Road. This enables them to offer full demonstration facilities. At the same time L.S.D. announced that they are now distributors for JBL sound equipment.

Starlight Design

Starlight Design have added to their Starflower/Sunflower range with the introduction of the Dichroflower, which uses a dichroic filter. Other news is that they have appointed pro-dealers for the Roboscan. On the sound front, Starlight have launched the RX Series of loudspeakers, amplifiers and mixers which were previewed at last year's Light and Sound Show.

Missen-Hardy

Keith Hardy, who has done most things in the discotheque/nightclub industry, including building sound systems, running nightclubs, owning discotheques and even writing on the subject, has gone back to his roots and together with his partner, Trevor Missen, has opened up for business as Missen-Hardy. They plan to operate in the sound installation market offering 'high quality JBL-based speaker systems'.

March Madness

Leamington Sight & Sound's offer to Graham Marshall to visit their showrooms and carry out as much equipment as he could in 25 minutes was eagerly accepted. This was part of a prize Marshall won at the TVDJA exhibition earlier this year. He managed to lift a pair of ProgramSistem Mephistos, a pair of nodding scanners, a Le Maitre PyroFlash two way system, one NJD SA110 amp, a pair of McCoy's Multis, a Mystical 30 x 20 Screen and a Comus Screen.

What Leamington's Ian Potter had not bargained for was another visit to his showrooms, this time at night, two days later. "We have a phone security system installed here, but the thief, s looped the line before cutting it," Ian told us. Anyway, they walked off with a number of Teac PD115 CD players and a quantity of Optikinetics projectors and wheels, but there is no record of how long it took them.



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Squire Go Mega

A four day long party heralded the arrival of Squire Sound and Light's new Birmingham Megastore in West Bromwich. The celebration's from the 7-10th March culminated in an all day mix party with special guests, the Commission.

The company has re-located from a site in Broad Street to a purpose-built industrial unit on the outskirts of West Bromwich. Squire UK retail manager Steve Rolfe masterminded the move which took just 20 days. Therelocation means that the Squire facility offers easy access from the M5 and ample parking space. But these are the least of the benefits. With 2,000 square feet of display area, the company is able to demonstrate a comprehensive range of the latest technology to be in seen across the lighting and sound industry.

Notable amongst the many names that bedecked the showroom were the Roboscans from Martin of Denmark, first launched at the PLASA Light and Sound Show last September. The Roboscan features four colours and four gobos, and has either 250W halogen or 400W HTI lamps. Stepper motors with optional micro-stepping are also incorporated and the unit features, what Martin claims to be, one of the fastest shutters in the business. The menu driven 2032 can instruct up to 32 projectors whilst smaller systems are catered for by the 2U rack mounting 2008. The Roboscan can even operate independently with sound activated random animation.

Also in the showroom were such stalwarts of the discotheque industry as Lampo Derbys, ElectroVoice speakers, Studio Due

Baby Moons, Lynx Elevators, a Coemar Belo, the Alien from ProgramSistem, a Fabtronic rolling box, Opus amps, Amcron amps, Numark stereo audio mixers, and a whole lot more, along with Squire's own Megastobes, the new Ultimate and the complete range of Squire effects.

Squire's MD Simon Cummings told L+S: "Our whole philosophy in this business has been that the future lies in industrial estates rather than shop fronts. Squire have never really had the chance to offer Birmingham the same sort of high quality products and standard of service which it offers the rest of Europe. We recognise Birmingham's status as the UK's second largest city and intend to turn Squire Birmingham into our most successful Megastore in the country."

The company, which was recently bought by County Sound, has more recently re-launched its Guildford branch. As the UK headquarters of the Squire empire, it will have 1,100 square feet of selling space in which to demonstrate its comprehensive stock.



From left to right: Steve Bettles, Alan Rayner (manager), Steve Rolfe, Simon Cummings (MD).

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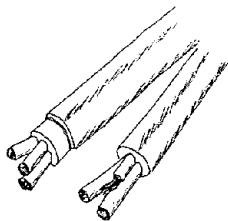


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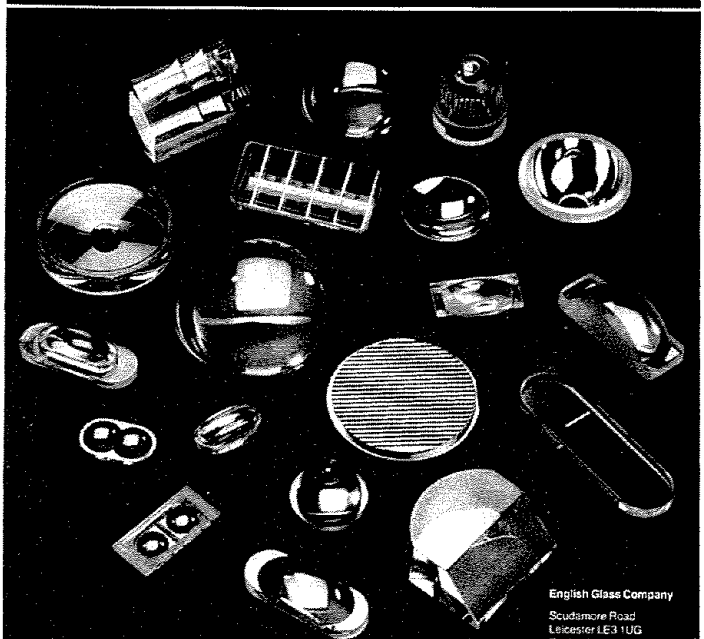
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Filters make their mark

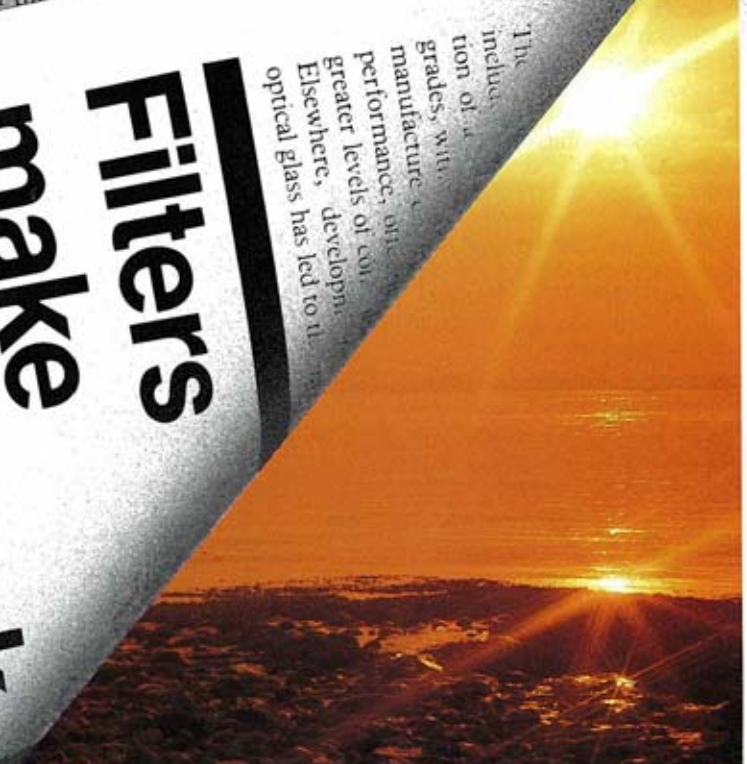
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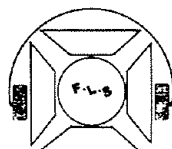
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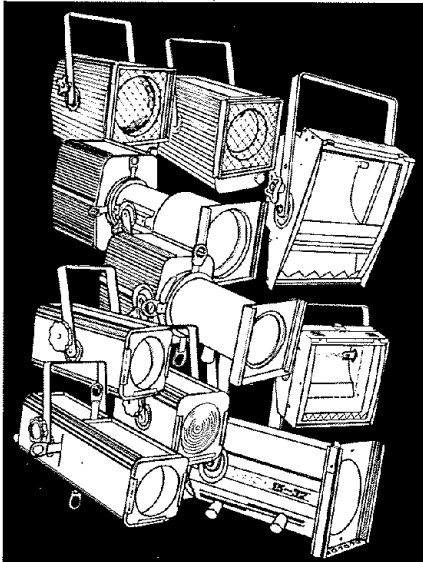
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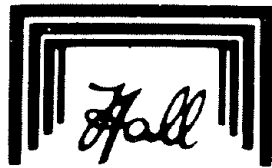
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that you don't even think about where the numbers are. Your brain switches from calculator prodding to phone jabbing without being aware of this fundamental change in a 'standard' layout.

When you go on holiday and hire a left-hand-drive car it takes hardly any time for you to adjust to the difference. OK you try and change gear with the window-winder a couple of times but it soon feels perfectly natural.

If you don't notice, and it doesn't cause you a problem, does it matter?

In recent years there seems to have been a gathering movement for compatibility and uniformity in everything. Lighting desks should be laid-out one way, sound mixers another, all in the cause of standardisation. It can be quite depressing at trade shows to see the ranks of 'cloned' equipment all identical except for the name.

In practice close-but-not-quite compatibility very often causes more of a problem than total incompatibility. The BBC a few years ago went through a stage of trying to make all lighting desks, no matter how different they were internally, appear the same to the operator. Button names, colours and layout were changed to match the mythical ideal. This was done for the best reasons to try and reduce operator confusion and frustration. The result was more confusion — operators became muddled as to which console they were using, apparently identical buttons did slightly different things. The resulting increase in operator frustration more than outweighed any advantages gained by not having to learn how to operate a new console.

In the end the operators were much happier with different desks in different studios that looked different and acted differently. They knew exactly where they were and the expected problems with operating many different desks just did not arise. It's the same as

towards you and in radio studios (more conventionally) by pushing away. The reason given for this was that if you knocked a fader accidentally you were more likely to close it than to open it — although I was never clear why this should be important in television and not radio. Still, the point is that this apparently absolutely fundamental difference in operation actually caused people very little problem. Operators who used both types switched between them with alacrity, the mixers looked different and worked differently — no problem.

The coming of International Standards only compounds the problem. Not only are there strong economic pressures to conformity but also pressures from official bodies. Take theatre lanterns for example. Standards now tie you down so much (with great justification, I should add) that it is difficult to vary much from the norm. It has become almost impossible to distinguish one manufacturer's anonymous 'black, powder-coated, die-cast and extruded aluminium' 1000W profile spot or fresnel from another. A Strand-Electric Patt 264 may not have been as efficient as a current fitting but at least it was an interesting shape and different from a Leko or Major (come back Fred Bentham, all is forgiven!).

It is always exciting to see a product which is different. Look at the interest there has been in the ALS Enigma and Pulsar Osk lighting desks. Neither of them is anything like a conventional desk in use, but operators have taken to them with no problems. In fact they have welcomed them for the flexibility they can offer. I thought that the success of these products would have led to a rash of competing systems, but not so far. Perhaps at this year's PLASA Light and Sound Show?

I admit that to a certain extent I'm playing Devil's Advocate. There are usually very good reasons for conformity and regularity. All I ask is



Mike Wood.

that we should never have standardisation purely for its own sake or in the belief that it always somehow makes people's lives easier — it often doesn't.

Mike Wood has been, at various times over the last 15 years, a stage electrician, freelance lighting designer, design engineer, and planning engineer with the BBC. He is currently technical director of W.B. Lighting Ltd, and is at present a member of the PLASA executive committee.

VIEWPOINT

If you have a view to offer on any aspect of the lighting and sound industry, why not air it in this column?

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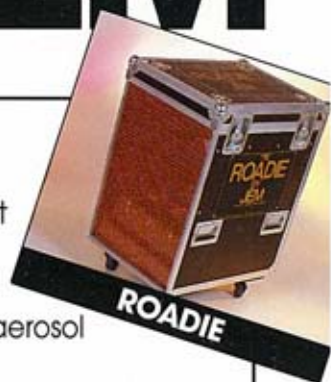
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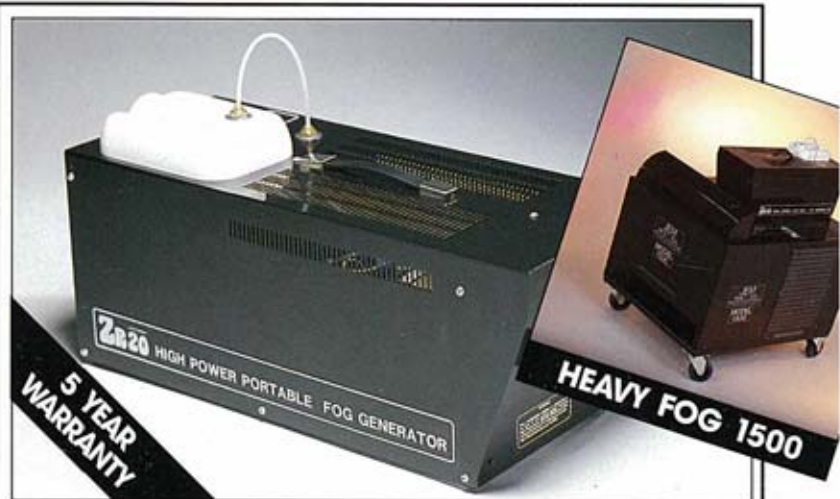
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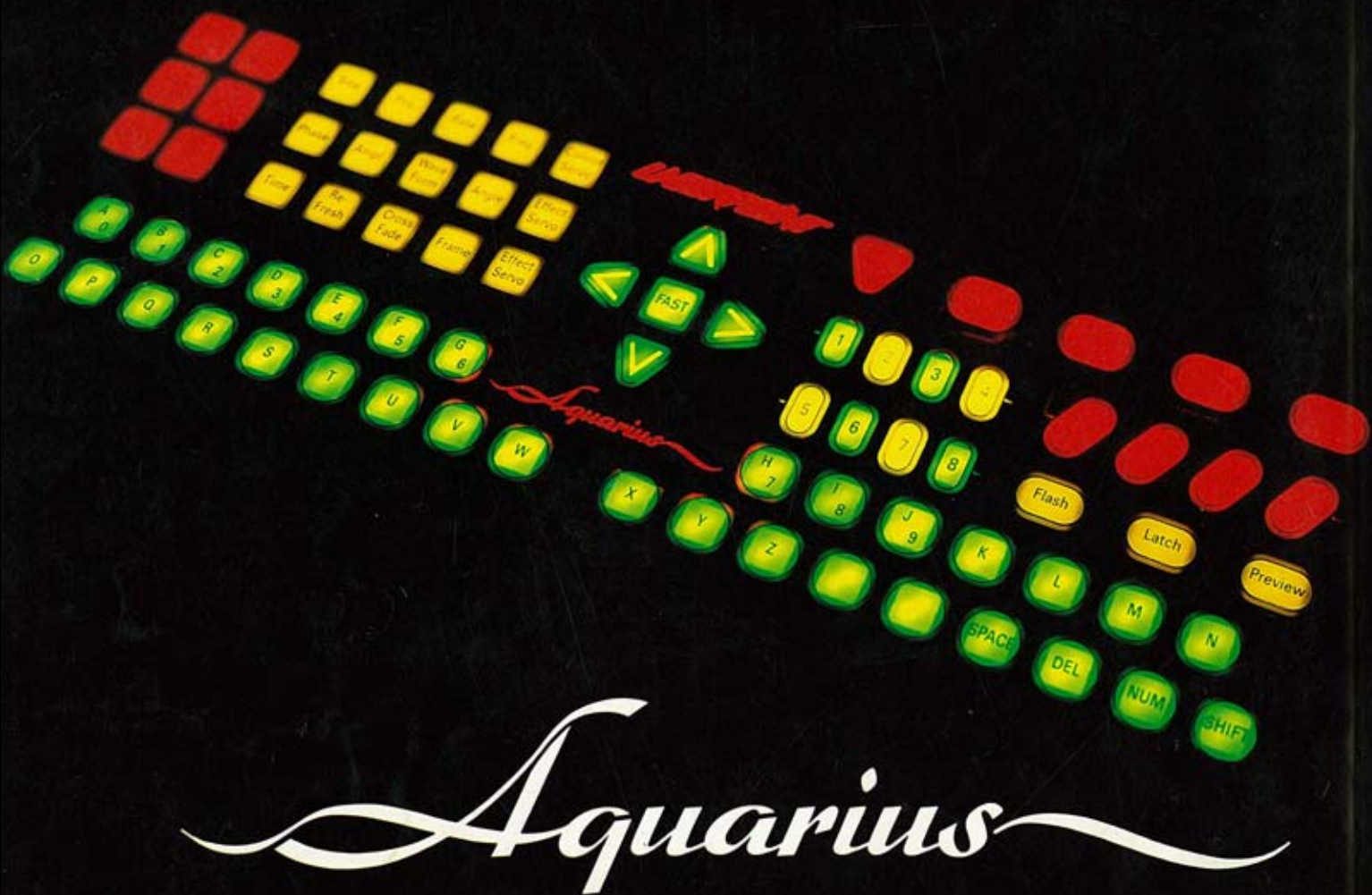


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