

# LIGHTING+SOUND

*International*



THE ROXY, BURY (SEE DISCO AND CLUB SCENE)

- City Theatre Reykjavik
- Restoring Historic Canadian Theatres
- Paul McCartney and Simply Red on tour
- Smoke Without Fire: the latest on smoke and fog
- CADAC in Performance
- MAC and Wharfedale featured

**FEBRUARY 1990**





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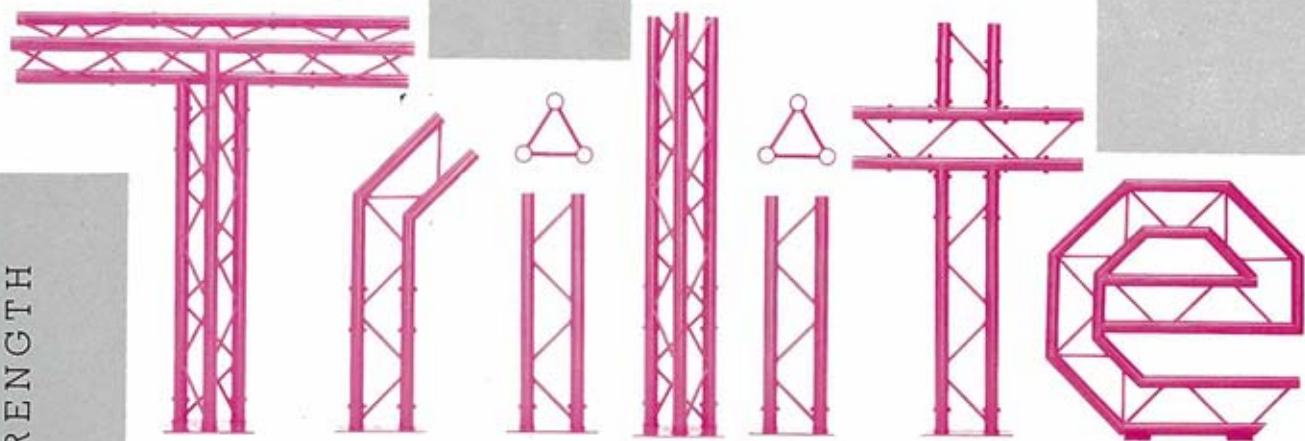
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*Celco. Enough said.*



# LIGHTING+ SOUND *International*

February 1990

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Lighting + Sound International  
ring Alison Hunt on  
Eastbourne (0323) 642639

# 90

## Light + Sound Show

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Olympia 2

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

# LIGHTING+ SOUND *International*

published monthly by the Professional Lighting and Sound Association

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## Spectacle at the Porte de Versailles



**SIEL 89, complete with Arc de Triomphe. Surprises in store this month?**  
Our March issue will carry a full report.

The forthcoming SIEL exhibition in Paris (Feb 17-20) at the Parc des Expositions, Porte de Versailles, will see numerous British and other international companies commencing the 1990 round of industry trade shows. The majority will be present on the stands of their French distributors, so it will be a case of familiar faces in unusual surroundings.

L+S contacted some UK exhibitors for an up-front report, but we get the idea there will be a few surprises. Remember the Arc de Triomphe last year? And Zero 88 won't tell us anything, either.

Following the success of last year's show, Avolites will once again be exhibiting a wide range of their lighting control equipment. The stand centrepiece will be the powerful QM500TD coupled with the new TV25 dim-

ming system which will be making its debut at the show. The TV25 is a touring dimming rack with 48 x 25 amp channels capable of running extremely quietly at full rated load every day.

The modules incorporate a DMX512 input, 3 phase supply and a high level of status indication. Also on show will be the QM180 Way, the Q-Patch System, the Rolacue and Geljet Version 2.

All of the above products will be shown on the **Regiscene/Paris** stand. On the sound side, Regiscene will be exhibiting DDA Mixers, Turbosound, BSS, White, Diless and Modulation Sciences.

**Lee Colortran's** French division, **Lee Colortran (France) S.A.** will be exhibiting a complete new range of low voltage fittings specially designed for theatre use, such as the mini Profil 90 TI and MR 16 mini Striplight.

Also on display will be the innovative

Windsor range of modular theatre lanterns and budget priced Powermaster dimmers, as will the compact and rugged Baby luminaires from 500W to 10kW for film and television location work. The complete range of Molefay and Minibrute luminaires, designed to take Par 36 120V bulbs, will be on show alongside polyester and polycarbonate colour effects media from **Lee Filters**.

**Rosco** products will be displayed by French agent's **Dimaphot**. The Rosco Chiller Module and 1300 budget fog machine combine to form a cost-effective method of creating low-lying fog effects. New products include the Rosco Supergel range of polycarbonate Blue Theatre Boosters and a new range of acrylic scenic paint 'Off Broadway'.

**Lazare Electronic** will be demonstrating the new Soundtracs SPA ('Super PA') sound reinforcement console on the **Stacco** stand.

The SPA, a high specification public address console, is the company's response to demand for a 'higher quality' live console which is light enough to be conveniently transportable and not prohibitively expensive. Although aimed at sound reinforcement installations and rental companies, it will also be of interest to theatres. Primarily designed as a front of house desk the SPA can be reconfigured, via a single switch on each group, to double as a monitor desk.

**Cerebrum Lighting** and sister company **Presentation Consultants** will be displaying the Powerdrive range of lighting and audio stands, Light & Sound Design luminaires, truss and Colourmag colourchangers. They will share the **Fiat Lux** stand with Stacco, the truss manufacturers. Supported on the truss will be an Amptown Posi-Spot and ACC Colourchanger rig. The White Light optical effects including projected flame and cloud effects together with a tubular ripple effect, will also be featured.

The **Pulsar France** stand is host to **Le Maitre** who will be showing their revolutionary new two-way and six-way controllers. The two-way will come complete with logic testing facility. The new six-way features four separate firings per channel, i.e. channels one to six have up to four selectable firing pods per channel, which enables the operator to set up four separate scenes without having to reload. All channels have

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an automatic test facility.

Also on the stand will be the new *Icelectric* budget smoke machine which the manufacturers say will 'lead the way in quality and reliability'.

*Pulsar* will be exhibiting a wide range of products in association with Clay Paky. In particular the **Pulsar France** stand will include an impressive display of Golden Scan intelligent spotlights controlled by OSKA, the world-famous 512 channel lighting control desk.

**CCTL** who manufacture CCT luminaires in France will be showing some of its more popular products. The Minuette range has been winning friends during the past few years, particularly the Minuette Condenser Optic Profiles.

Being shown for the first time in France will be the Minuette 'Pursuit' follow spot. The need for such an efficient and operator-friendly spotlight is shown by an increasing order book since it was introduced in 1989. CCTL director, Frederic Nguyen, and his associates will be on the stand.

## L.M.C Expansion

L.M.C Audio Systems of London, well known for its sales and distribution of high end professional products, such as Soundcraft, C-Audio and Klark Teknik, have announced a new expansion programme to take them into the 1990's. L.M.C's Paul Hinkley told L+S: "The company has grown significantly over the last two years, selling mainly into the professional rental company market. We feel that one of the main contributory factors to our success is our ability to provide customers with more than just the product itself, and we pride ourselves on the level of customer service that we are able to maintain. L.M.C is a sales and distribution company and is not involved in rental or installation work like many of our competitors, we feel that we should support our customers rather than compete with them directly, and this is one of the fundamental reasons for our popularity."

The expansion will be centred around increased efforts into areas such as the fixed installation and audio visual markets with nationwide sales coverage and again an emphasis on service and technical support. L.M.C will also be exhibiting at this year's Frankfurt show in March, where they will be showing their latest product portfolio for the first time.

The company has also made a major investment in terms of staff to enhance the sales and marketing effort. Andy Simmons, previously with Britannia Row Sales, has been appointed as UK sales manager, bringing with him considerable experience of the professional audio market place. Similarly the appointment of Paul Ward, previously with Toa Electronics, as marketing manager, has given L.M.C. the necessary marketing skills to further increase their market position and Sean Hames and Wayne Barker are now responsible for technical sales support.

## Harrison and Tomcat

Harrison Information Technology Limited went into receivership on January 16th. The joint administrative receivers have stated that they consider "there is a good prospect that the business may be sold as a going concern and that sufficient orders have been placed with the company for trading to continue for a limited period". A statement also confirmed that a meeting of the creditors will be called in due course.

Also in January (6th), Tomcat Engineering Limited of Pershore ceased trading. The assets and name were bought by James Thomas Engineering Limited as from January 22nd.

## Memotech Distributors

Videowall manufacturers Memotech have appointed some top industry names as distributors for their video products. Enlightened Audio, Carlsbro, Lightfactor, MAM Communications and Tobysound have been appointed to offer full videowall sales, installation and maintenance service to the trade.

Together with Carlsbro, Memotech have just completed a refit at Mecca's Le Palais in Hammersmith and provided the country's largest club videowall, a massive 50 monitor wall spanning one wall of the venue. Using their brand new System 2000 electronics coupled with the Memotech Reflex controller a breath-taking display has been created with a host of effects including a full Cinemascope type picture available at the touch of a button.

Memotech are involved in the marriage of video with computer control with several new products including a sophisticated video matrix switcher (of the 'any image to any monitor' ilk) controlled by either a standard computer or their flexible Reflex Image Director. For further details contact Colin Mitchell at Memotech on (0993) 778691.

## Jivelight Move

With effect from February 12th, Jivelight Ltd, importers and distributors of special effects lighting, have a new address: 316 Purley Way, Croydon, Surrey CR0 4XJ. Telephone 01-667 9117 or Fax 01-667 9114.

## Beyma Move

Beyma UK, importers of loudspeaker components have announced a move into new premises at Unit 11b, Acton Vale Industrial Park, Cowley Road, London W3. The move means that Beyma will operate independently of L.M.C., the London based Pro-Audio distribution company, with whom they originally shared premises.

Beyma have also announced the appointment of Martin Claydon as sales and marketing manager to head the new operation. Martin brings with him considerable experience in the sales and distribution of loudspeaker components having previously been head of Pro-Audio sales at Celestion.

## ABTT Glasgow Course

The ABTT is arranging a short course to coincide with the Arts Council's international conference 'Arts Without Frontiers'. The course, which takes place at the Scottish Exhibition Centre in Glasgow, on the 15th and 16th March, will set out to improve understanding of how management and technical skills relate. The ABTT hope the course will provide a foundation in the new skills successful managers need.

Of particular interest to people who have just moved into management roles or who have come to management via a non-technical route, the course will cover, amongst other things, personnel management, production management, touring, health and safety, technical management and administration. Joe Aveline, Bill Graham, Nick Kidd, John Watts and Richard York will all lead sessions. For further information contact the ABTT in London on 01-434 3901.

## Scratch, Rap and Bop

Tecnation Digital Atmosphere Ltd have been chosen by Light Angles to provide the visual effects, logos and titling for the 1990 World Mixing Championships and DJ Convention at Wembley Arena in March.

The professional Bit Bopper will be making its public debut to provide a spectacular computer graphic sound-to-light experience on two giant Tele Tape Videowalls. The Bit Bopper's graphic capabilities allow Tecnation to digitally mix live information such as the names of winners on top of the visual effects keeping the atmosphere electric right through the contest.

Tecnation will be showing two Professional Bit Boppers at Vision and Audio 90 (see exhibition diary on page 52 for dates). One Bit Bopper will be on stand 1429 connected to a video projector, whilst the other will be on the company's own stand, 1430, connected to a 4 x 4 Videowall loaned by Electrosonic.

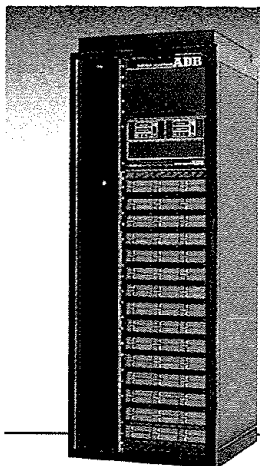
## New Celestion Dealers

Celestion has added six more dealers, this time in Ireland, to the 60 strong dealer network it has created for its SR Series enclosures. The new dealers in Ireland are Michael Foley - Carlow, T. Cradley - Cork, Savins Music - Limerick, Joe O'Neil - Glenmaddy, Reynolds of Raphoe - Raphoe, Sound Shop - Drogheda and Music Maker - Dublin.

## Distributing Success

John Hornby Skewes & Co Ltd have just achieved the DOD Electronics Corporation award for Distributor of the Year (1989). JHS are the exclusive distributors in the UK and Eire of all DOD products, including Digitech and Audio Logic branded merchandise.

DOD are located in Salt Lake City, USA and are the largest manufacturers in America of effects pedals and signal processing equipment. The company beat off the competition from USA-based distributors as well as all other distributors worldwide to achieve their success.



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## Designs on the Disco Market

The colour schematic (pictured above) for the lighting rig at the newly-refurbished Dukes Discotheque, Chelmsford was part of the presentation package put together by Graham Barron of Lizard Lighting. Graham Barron is interviewed in this month's Disco and Club Scene.

## Smart Dealership

Smart Acoustics have been appointed the new UK distributors of Ashly products. The range of products includes equalisers, crossovers, noise grates, compressor limiters and also one of the few 'Lucas' approved range of amplifiers. Units

from the complete range will be exhibited at the Sound 90 exhibition on the 20/21st of this month.

Smart will be looking to establish a nation-wide network of dealers for the product and would like to make contact with companies already using the equipment or those that would like to be dealers. For details contact Smart on (0633) 252957.

## Wharfedale now a Plc

Having won shareholder approval for its reverse takeover of Audio Fidelity, the Wharfedale management has cemented its success by announcing the renaming of the group to Wharfedale plc.

The reshaped group is comprised of Wharfedale Loudspeakers, Fane Acoustics, MacKenzie Acoustics and Fanfare Electronics. Whilst each company will maintain its individuality, Wharfedale plc will add strength and management expertise to each. The Chairman of Wharfedale plc is Keith Mellors, finance director of York Trust, with Ashley Ward as Chief Executive of the group and Chairman of Wharfedale Loudspeakers. See main feature on page 32.

## Star Hire Contract

Following the success of nine shows in 1989, event organisers Strategic Sponsorship Limited have contracted Star Hire to provide all the stage technical services for the '1990 Baileys Summerstage Series'. This comprises 18 outdoor classical or jazz music concerts, scheduled between 9th June - 8th September at mainly English Heritage and National Trust sites throughout Great Britain.

'Contain-A-Stage' is a new concept of integrated mobile stage equipment, exclusive to Star Hire, and available from them on hire with additional technical services if required. Weighing around 15 tonnes, and dimensioning 40' x 8' 6" in collapsible mode, it is driven to site on an articulated low-loader transporter.

It opens out to provide a weather-proof curtained stage some 500% bigger than when it arrives, giving a stage area of 36' x 24' with additional wings for housing the public address system.

The stage also features a roof support capability of over 100kg and its own generator supplying the PA system, working lights and 24kW stage lighting system. There are extensive systems for rigging sponsors' banners, extra lighting, 'scenery' and display equipment, and up to four stage exits and a full complement of safety equipment.

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## Laser Creations

Laser Creations were recently contracted to provide both laser effects and a laser video projector as a key part of the beginning of Visit Malaysia Year. The event was held in Merdeka Square, Kuala Lumpur, amongst an audience of 120,000.

The laser video projector was fed by two Spectra Physics 18 watt Argon lasers and a Spectra Physics dye laser, to produce a 40' x 30' image. This was projected from 300' onto a specifically constructed screen in the shape of the Daya Bumi building. 1" video material was used, running off an Ampex Nagra.

A simultaneous laser beam and graphics display from the laser video projector produced beam structures and scanning effects over the audience and onto the Daya Bumi building, depicting messages and animation for the New Year, and the sponsors Malaysian Airlines.

Leading up to midnight, an amazing array of 200 dancers, well-known Malaysian singers, and two elephants entertained on a massive stage in the square. At the stroke of 12 the Merdeka was lit up by a co-ordinated spectacle of fireworks and laser beams.

## Laser Grafix

Laser Grafix Ltd of Royston, Hertfordshire, were recently chosen by Spectrum Communications Ltd, one of the biggest UK production companies, to supply laser display equipment for the launch of the new DRS 6000 Computer System from I.C.L. at the Forum NEC Birmingham.

As one of the largest productions of 1990 the total audience of 7,800 people were turned through 180 degrees, on a massive revolve, to finally face the reveal section. Laser Grafix produced a host of laser special effects with their Prisma Controller, which encompassed the whole audience in cones, scans and multiple effects in the full colour spectrum.



A scene from the ICL product launch at the NEC.

Brett Salmon, technical services manager of Laser Grafix, told L+S: "The whole two weeks went without a hitch; we didn't miss a single cue." The laser element of the show was produced from a new coherent K3 Krypton ion laser operating in red and a coherent Innova 70 Argon ion laser operating in blue and green which were combined to produce white, coupled with a Prisma control system and a precision optical table incorporating an actuator bank with on-board remote effects. The entire laser show was time coded via MIDI through SMPTE and run from tape.

Laser Grafix' next project is the Newey and Eyre exhibition stand at Electrex 1990 at the NEC. The stand has been purpose-built to accept Laser Grafix effects. The company is also, in association with Thorpe Leisure Park, staging a spectacular laser light show at Thorpe Park Conference Centre, Surrey, on 2nd March 1990.

The aim of the presentation is to officially launch Laser Grafix' new white light laser which, they say, is the first high powered, low-cost laser available in the world, and is to promote the extensive conference and exhibition facilities available at Thorpe Park.

The laser show, which will include the latest 3-dimensional effects and images promises to be quite spectacular, and the presentation will be shown hourly throughout the day.

## Laserpoint

A major feature on the work of Laserpoint of Cambridge will be included in our March issue.

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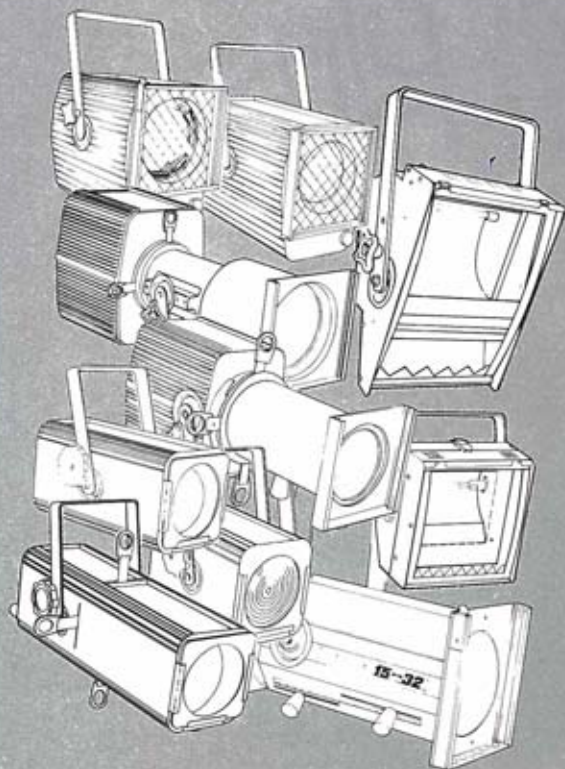
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## YAMAHA



The Yamaha MC Series Mixer

The new Yamaha MC and MR Series mixers are purpose designed for theatre and conference use. Both Series come in 8, 12 and 16 channel formats, the MC Series with stereo outputs and the MR with four subgroups, 3 band e.q. with sweep and 48v. phantom power. Full monitoring facilities and inserts on every channel are also featured. In addition, the MR Series has separate phono/tape inputs.

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## Lighting the Vaults

The Lighting Design Partnership has been appointed overall lighting design consultant for the 'Glasgow's Glasgow' exhibition - one of the pivotal events of Glasgow's European 'City of Culture' year during 1990.

The exhibition, formerly known as 'The Words and The Stones', is to take place in the vaulted space beneath Glasgow's central station. It opens in April 1990 and runs for six months and is expected to be a major focus of attention, not only for visitors, but also for Glaswegians themselves.

As well as specific exhibition areas dealing with various aspects of the city's cultural, industrial and scientific history 'Glasgow's Glasgow' includes performance, educational and film and audio-visual facilities. The project involves lighting 27,000 sq.ft of exhibition space which is completely without natural light. Andre Tammes, one of the consultancy's founding partners, told L+S that Lighting Design Partnership intends to create a theatrical environment drawing on stage lighting techniques, with adaptability to the eventual arrangement of exhibits built in from the start.

Most of the equipment used will be low voltage, 50W or 100W, 12 volt lamps. A variety of filters, lenses and other attachments will be used to col-

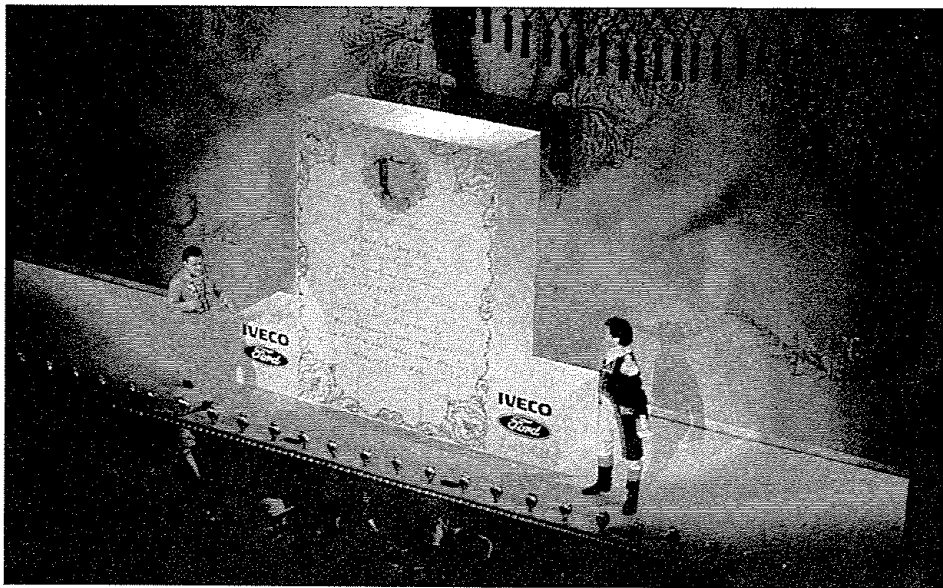
our, spread or focus their light on specific features. The partnership also intends to fit each light source with its own dimmable transformer, making it possible to vary the intensity of each individual light.

Lighting Design Partnership is also looking at solutions to a number of technical and practical problems. These include the positioning and fixture of light fittings within the 18 brick arched vaults which comprise the exhibition space.

## Harman Acquisition

Following the release of Harman International's half-year results, the company has announced its intention to buy DOD Electronics Corporation. The transaction is expected to close this month.

DOD is a leading manufacturer of signal processing equipment, equalisers, mixers and special effects devices, sold primarily to professional audio and musical instrument dealers. Its principal trademarks include 'DOD', 'Digitech' and 'Audio Logic'. DOD designs, engineers and manufactures its own products. Commenting on future prospects for Harman International, Chairman, Sidney Harman, told L+S: "We are pleased with the direction of the company and are determined to continue investing in its future."



A motivation exercise with a difference: a special version of Cinderella formed the highlight of a gala evening for Iveco Ford Truck dealers at The Lyceum Theatre.

## A Night at the Lyceum

The Lyceum Theatre in London's West End was re-opened recently for a one-night only spectacular after three years of standing empty.

The moving spirit behind the Lyceum's sudden renaissance was Iveco Ford, the large trucking company. They wanted to say 'thank you' to their franchised dealers for a year of hard work and dedication. Written and staged by Imagination, the design and communication company, the evening was a unique mix of entertainment, awards ceremony and a five course dinner for 1,000 people!

Imagination were briefed to produce an event which would not only be entertaining but also set the scene for the Truck Masters' Guild Awards. Stars from TV and stage took part in the show, but for the guest it was a case of 'for your eyes only'. Members of the public were not invited. Imagination project director, John Whittington, told L+S that although the theatre had been closed for some time, its unique potential as a venue immediately appealed to the client.

"The Lyceum was ideally suited for this event," Whittington explained. "It's a beautiful theatre with a false ballroom floor covering the stalls. And very few theatres could take 1,000 people restaurant-style".

As the Lyceum has been empty for so long, Imagination had to mount a round-the-clock operation to transform the theatre, involving steam cleaning and dressing the exterior portico, painting walls and floors, and restoring essential services. In addition, the front entrance was bathed

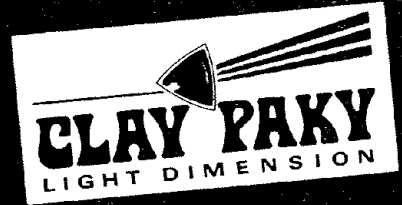
in a blue wash of light and red carpets were rolled out onto the pavement to give guests the 'star' treatment.

Inside, a lighting scheme designed by Simon Bruxner-Randall of Imagination enhanced the Edwardian architecture while simultaneously concealing those areas beyond immediate repair. A large stage (20 x 13 metres) was put in, together with a false proscenium and new cloths. The set, designed by Imagination's Martin Grant, included five large 'baroque' screens onto which images, based on 18th century engravings were back-projected.

## Rolling Stones: Steel Wheels Tour

In our November issue, we incorrectly stated that the largest colour changers in the world, measuring 8' x 4', as used exclusively on the Rolling Stones tour, were supplied by Presentation Consultants Ltd. Presentation Consultants have asked us to make clear that these particular colour changers, known as MegaMags, which were shown at the 1989 Light and Sound Show, are manufactured by Light & Sound Design Ltd of Birmingham, who supplied them on rental to the Rolling Stones 'Steel Wheels Tour', via Samuelsons Concert Productions of Dallas.

They are not available for resale, but if it is decided to do so in the future, they will be distributed by Presentation Consultants, who handle sales only of Light & Sound Design products. Anybody interested in renting a MegaMag system is invited to contact Simon Austin, Steve Dawkes or Terry Lee at Light & Sound Design Ltd.



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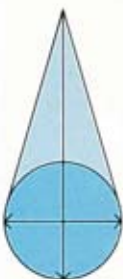
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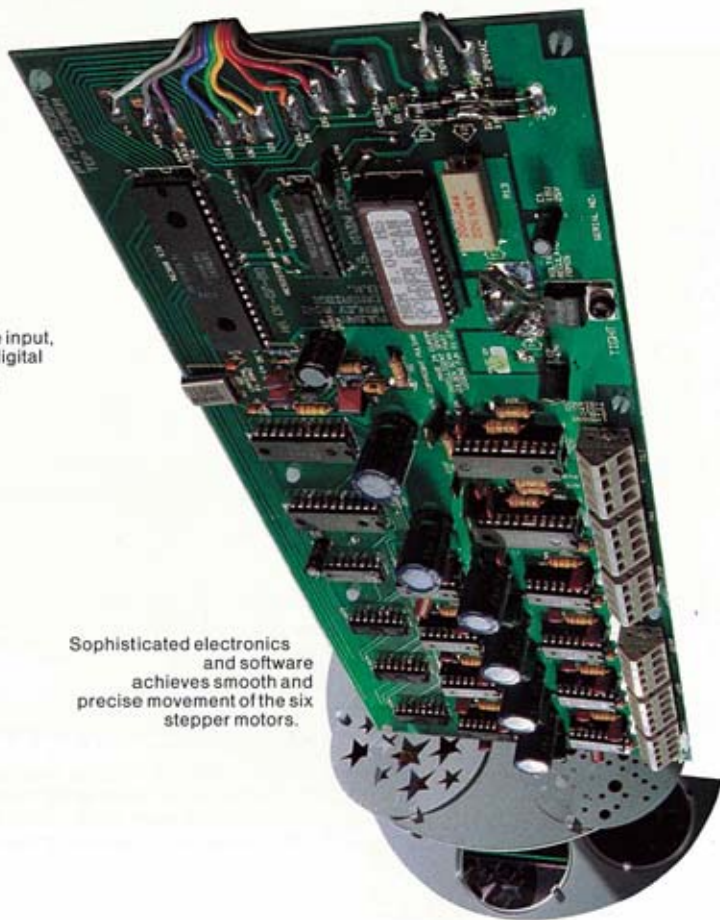
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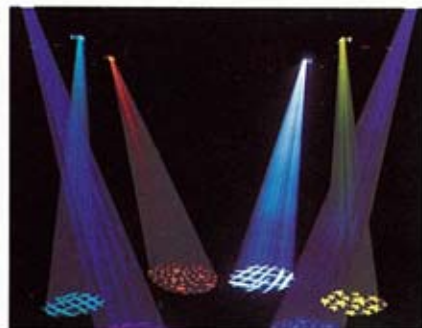
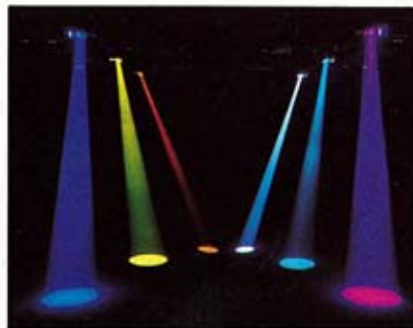
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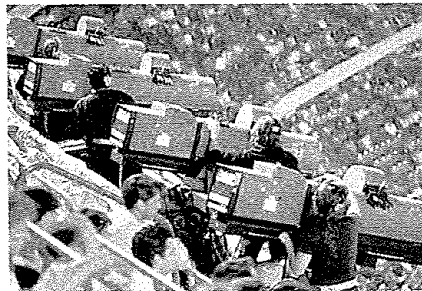


- A. Rolling Stones '89 Tour**
- B. The Toronto Sky-Dome Opening**
- C. The French Bicentennial Celebration – Paris**

If you picked "A", you're right. If you picked "B", you're also right. If you picked "C" ... right again. The fact is, producers and lighting directors responsible for important events, regardless of how large or how small, pick the light universally known as the standard of the industry.

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# ICELANDIC TALES

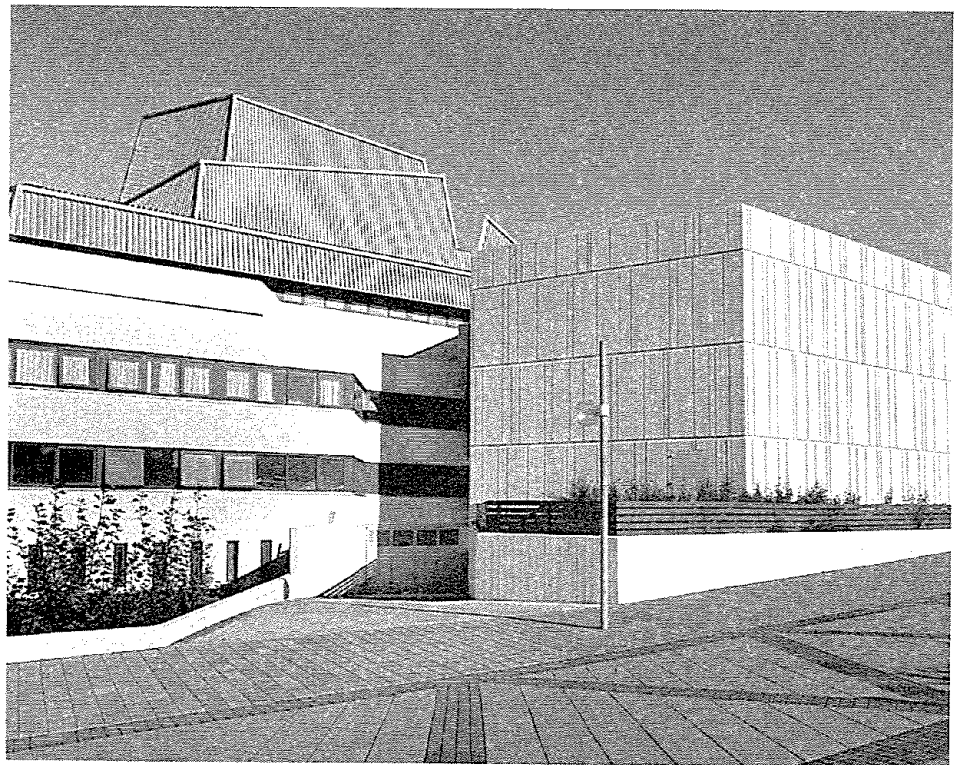
Ruth Rossington travelled north to take a look at Reykjavik's new City Theatre - the latest addition to the country's growing arts portfolio

When the Reykjavik Theatre Company (RTC) opened with a new play, the Palace of Summerland, in late October of last year, it was more than just an opening night: it was the prelude to a new era for the arts in Iceland. The RTC was launching its first season in its new home, the Reykjavik City Theatre - Iceland's first purpose-built theatre for nearly 40 years.

The RTC has transferred from the Iðnó Theatre which still remains on the banks of the lake in the old town. Built in 1896, the tiny timber theatre seated only 220 people and preceded the formation of the RTC by only one year. Until the opening of the National Theatre in 1950, the RTC was the only permanent theatre company in Reykjavik.

Designed by a team of local architects, the new theatre is a remarkable tribute to the status of the arts in Iceland. It dominates the skyline of the new Reykjavik city centre. Rubbing shoulders with the Hard Rock Cafe, and a brand new art deco shopping centre, its distinctive angular features symbolise a more aggressive and positive approach to the arts in the city.

Architects Thorsteinn Gunnarsson, Gudmundur Kr Gudmunsson, Olafur Sigurdsson and head of design Stenthor Sigurdsson studied modern theatres all over Europe before drawing up the plans for the 10,400m.sq theatre complex. Its final completion, expected early next year, draws to an end a programme that has spanned four decades. The idea for a new theatre was first put forward in 1953, and at the time it was suggested that it should reside by the lake in the old city centre, close to the Iðnó. These suggestions, however, gave way to a determination to site the theatre in the new city centre, then on the drawing board at the city planning offices. It was not until 1970 that things actually started happening; by the middle of the decade plans for the development were finally approved, and construction started on the 31st October 1976. In 1980, the project was given a further boost when a local businessman left one fourth of his estate to the City Theatre. Some nine years later, the Reykjavik Theatre Company commenced rehearsals for The Palace of Summerland. Although RTC members have made steady contributions over the years to the building fund, most of the costs - about ISK 1,500 million (£15 million) have been met



The imposing figure of the Reykjavik City Theatre stands central to the new city centre.

by the city of Reykjavik.

Far from being a stumbling block, the time factor has worked to the theatre's advantage with any necessary alterations to the original design, being easily accommodated in the lumbering machinations of bureaucratic and civic activity. And why did it take so long? Well, nobody is really quite sure, and nobody, it seems, is really concerned. Pragmatism is a trait of the Icelandic nation, and provided things are done well, the time taken is not an issue.

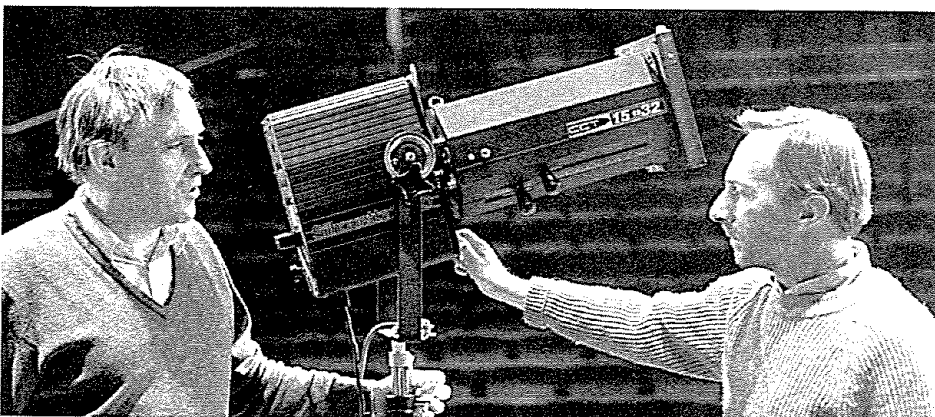
In spite of their names, neither the RTC nor the City Theatre actually belong to the city as official municipal ventures. Both receive grants from the city and state but remain, to a degree, independent by deriving revenue from other sources. On a day to day basis the money from the state accounts for 7-8% of the total revenue, with 40% being footed by the city itself and the rest generated from the takings at the box office. Currently, the

funding is on hold until the theatre establishes itself as part of the arts provision in the capital. A measure of its standing with the local community is that the City Theatre is never mentioned as one of the controversial funding programmes for the city, despite its £15 million final spend. The people of Iceland have never contested the right of the theatre to be built, but have campaigned against the building of new municipal headquarters to house the government offices.

So have the Icelanders got value for money? Well, one look at the City Theatre will dispel any thoughts to the contrary. The building is impressive to say the least and offers a comprehensive range of facilities.

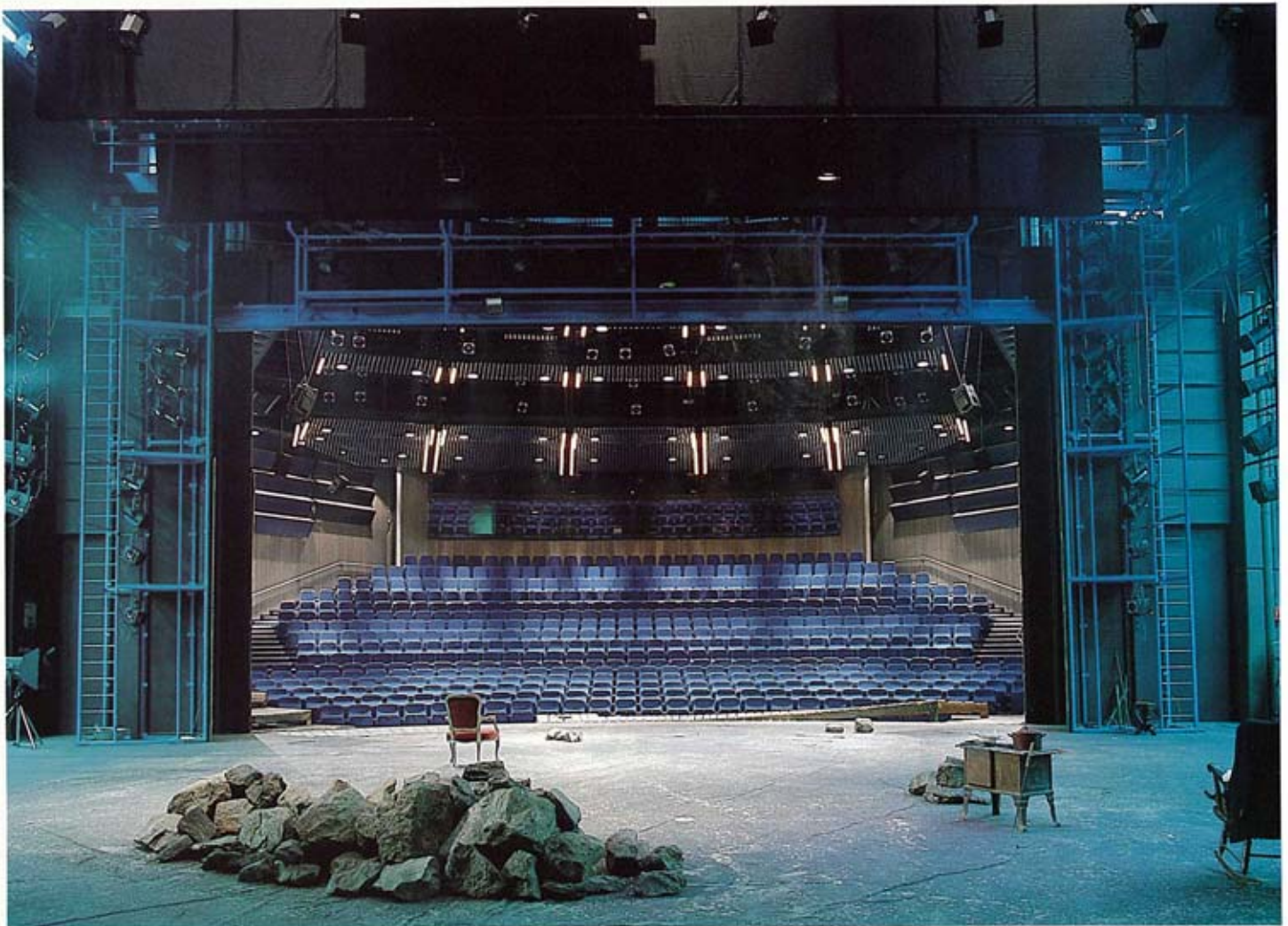
The theatre complex houses two auditoria, the larger is a conventional proscenium arch theatre which seats 570 in a single block of seating. It offers great scope with high tech control, sound and lighting equipment that has been carefully chosen to cover the theatre's needs. The stage is a massive 16.5 x 20 metres which extends into the distance with a startling degree of depth. Part of it can be raised and lowered travelling up to two metres in depth. Its main feature is a 14 metre revolving centre-stage system which grinds away in the depths of the stage areas.

My attention was drawn, in the first instance, to the well-equipped lighting rig in the auditorium. After checking out every major luminaire manufacturers product, Thomas Zoega, technical manager of the theatre, together with the various consultants, asked CCT to supply over 500 of their luminaires, including 260 Silhouette Profiles, Starlette Fresnels and Pebble convex spots, all the cyclorama flood lighting and a host of effects equipment. Thomas



Thomas Zoega (left) with David Manners of CCT.





From behind the extensive stage areas looking out to the main auditorium.



ADB equipment is installed in the lighting control rooms situated at the rear of the main theatre.

Zoega was quick to emphasise the overall flexibility that such a lighting scheme provides. And as actions speak louder than words, he immediately summoned a range of lighting states to further strengthen his argument. Belgium company, ADB, supplied 1200w follow spots, a Svoboda light curtain and the ES28 light console.

On the sound side, an Allen & Heath Saber mixer heads the equipment line-up. Thomas Zoega outlined one of the problems faced by theatres such as the City Theatre: "Not many mixers are custom-made to suit the theatre environment, quite often they are too sophisticated, and we end up using only part of the board's potential." He feels the sound mixers to be too studio-orientated and would like to see a board that caters for a smaller theatrical environment. An unusual feature of the control room, which is situated at the rear of the auditorium, is a window which opens, allowing the sound technician to access the volume of the sound effects during rehearsals. However, it is rarely open during an actual performance and the technician still relies on an interphone system for his sound cues. In the control rooms are such familiar names as Klark-Teknik, who have supplied the equalisers, Harrison's Mosfet X1300 power amplifiers and graphic equalisers and the IED 6000/5000 series of power amplifiers, together with a Révox C270 4-track.

Theatre Projects of London were the main consultants on the project during its design stages, and most of the major technical equipment is built to their specification. To ensure sound quality, the theatre referred to Icelandic acoustic consultant, Stefan Einarsson, whose specifications have given the theatre, according to Thomas, a very good acoustic definition. The stepped walls



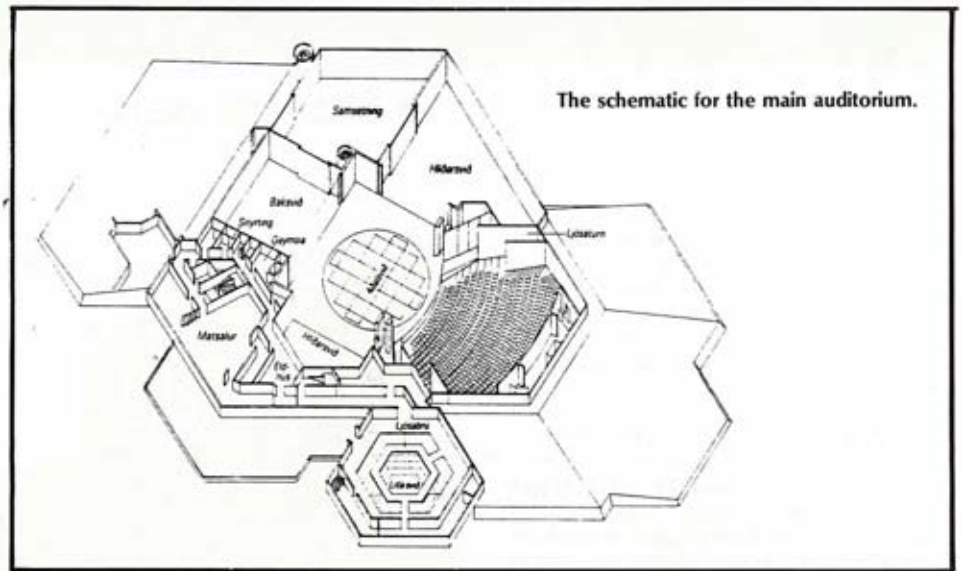
form an unusual feature of the main hall whilst being both decorative and functional at the same time.

In the smaller auditorium, which seats up to 250, the design emphasis is on flexibility. Offering a somewhat frightening aspect after the refreshing openness and large scale proportions of the main auditorium, the theatre-in-the-round features heavy black supports and ironwork materials which combine with the grey/black colour scheme to dominate the eyeline, and yet its size lends it an intimacy that is not evident in the main theatre.

Here again the bulk of the lighting has been supplied by CCT. The rig includes Minuette fresnels and Profiles. The latter's versatility is well-demonstrated in this theatre. With the gate shutters open the independently adjustable zoom lenses provide, without being relocated, a wide range of beam sizes which can be focused hard or soft. ADB again supplied the lighting control, this time an S28.

The sound provision features equipment from the UK, United States and Japan jostling for space in the balcony areas, and the mixing desks are again Allen & Heath. Telegest were involved in the installation of the revolve control equipment which glides the stage in a circuitous path, and gives a breadth to the scope of drama possible. The control system for the revolve was designed and manufactured locally, Thomas Zoega feels that such is the merit of this system, that there is a possibility that the design may be marketed and exported some time in the future.

The RTC is marking this important milestone in its history with an all-Icelandic season of plays. Icelanders are avid storytellers and the popular plays are those that tell a story. According to Thomas, the City Theatre will leave it to the National Theatre to stage the prestige productions, whilst it will concentrate its efforts away from 'boxed musicals' in favour of traditional Icelandic drama. There exists in Iceland a very strong cultural heritage, and in Reykjavik itself there are some 40 theatres. The City Theatre is one of only three professional theatres in the country, but the arts flourish amongst amateur societies which form the backbone of the country. For Icelanders, the arts are a way of life.



One of the CCT Silhouettes, part of the comprehensive lighting and effects package at the theatre.



The small auditorium's flexibility allows for more experimental drama.



A scene from Palace of Summerland, the opening play at the new theatre.



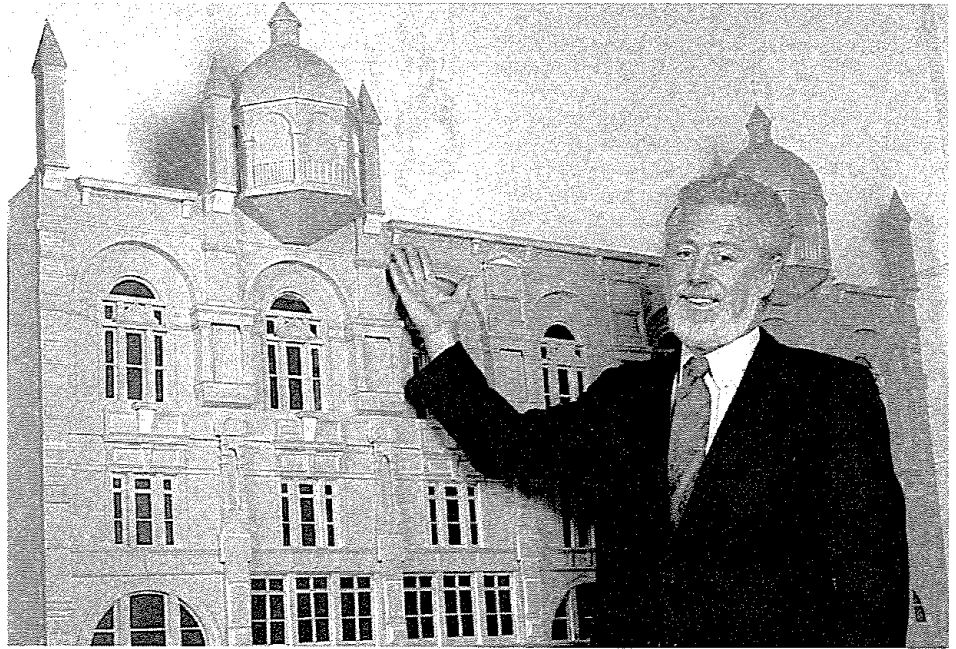
# RESTORING HISTORIC CANADIAN THEATRES

Francis Reid

In the late nineteen sixties and early seventies, the bicentenary of Canada's federation stimulated a surge of new theatre building which included major lyric and drama complexes in Montreal, Ottawa and Quebec. The impetus has continued right up to the present with a steady construction programme providing theatres of appropriate size and form for communities from coast to coast. Recent new flagships in the international class have included the clutch of performance spaces in Calgary. And Toronto's future includes the **Ballet Opera House** now in its advanced planning phases and one of the many major contracts of Theatre Projects Consultants which led Richard Pilbrow to relocate his family home in North America.

In addition to new building, Canadians have joined the growing international trend towards restoration of their theatre architecture heritage. The recent formation of a **Theatres Trust** (also known, since Canada is a bi-lingual nation, as **Société des Salles Anciennes**) signifies future interest and commitment, although the restoration bandwagon is already rolling well. The first issue of the Trust's newly launched magazine (in back-to-back Français or English according to whether you read it upside down or downside up) indicates considerable potential for returning historic theatres to performance use. And last year's London exhibition at the Canadian High Commission confirmed the nation's serious and effective approach to maintaining performance archives.

Toronto's **Pantages Theatre** has been refurbished to house *Phantom of the Opera*. Built 70 years ago and originally seating 3,600, this is typical of the houses declared obsolete not many years ago but now in demand everywhere for its international megamusicals. Also just completed in Toronto is the 15 million pound restoration of the 1913 *Elgin and Winter Garden Theatres*. These theatres are vertically stacked with the ground floor *Elgin* housing *Cats* while work began in the upstairs *Winter Garden* which had been dormant since 1928. Initial programming for the restored *Elgin* includes



Paul Thompson, director of the Canadian National Theatre School with a model made by design students at the school for the restoration of Montreal's Monument National Theatre. Photo: Pierre Brault.

Mozart seasons by the Canadian Opera Company, pending the anticipated 1994 opening of the new Ballet Opera House which will replace the O'Keefe Centre as their permanent home.

In Montreal the current major refurbishing project is the **Monument National**, scheduled for completion in time for its 100th birthday in 1993. Both the Federal and the Quebec provincial governments are committed to help the private sector finance this project which is likely to cost at least seven million pounds.

The stage, where Sarah Bernhardt acted and Anna Pavlova danced, is now used by the National Theatre School of Canada. After renovation it will continue to be used by them for productions and for teaching technicians but will be available to house

tours for half the year. The Monument National was built by Le Societe St-Jean Baptiste, an organisation formed to promote French-Canadian nationalism and was its headquarters for 70 years, becoming the birthplace of modern French-Canadian theatre.

Canadian stage lighting has evolved from a mixture of European and United States practice with Strand having a strong presence established by Philip Rose who is now with CCT, also prominent exporters to the Canadian market. A truly indigenous Canadian Theatre is still evolving from cross-fertilisation between English textual analysis and French physical attack. The Theatre School is a major catalyst in this process and the renovated theatre complex has the potential to cradle an exciting future.

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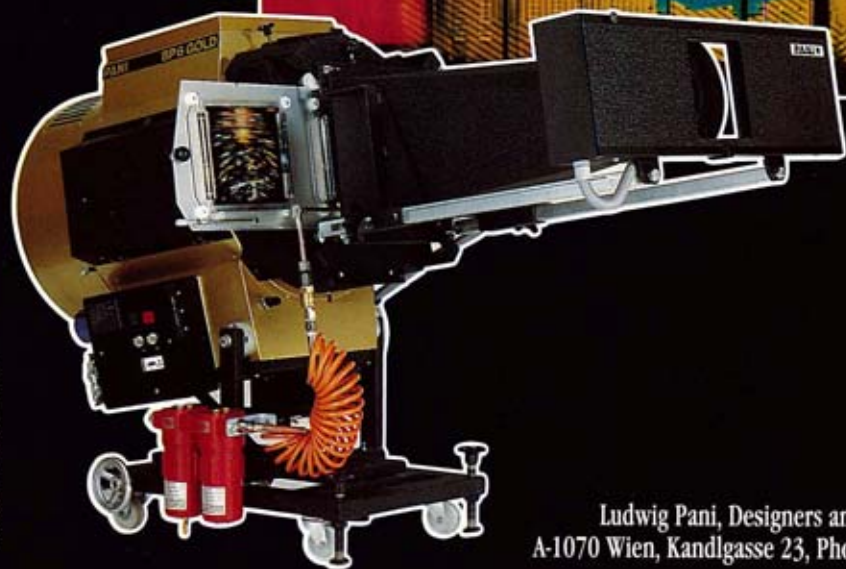
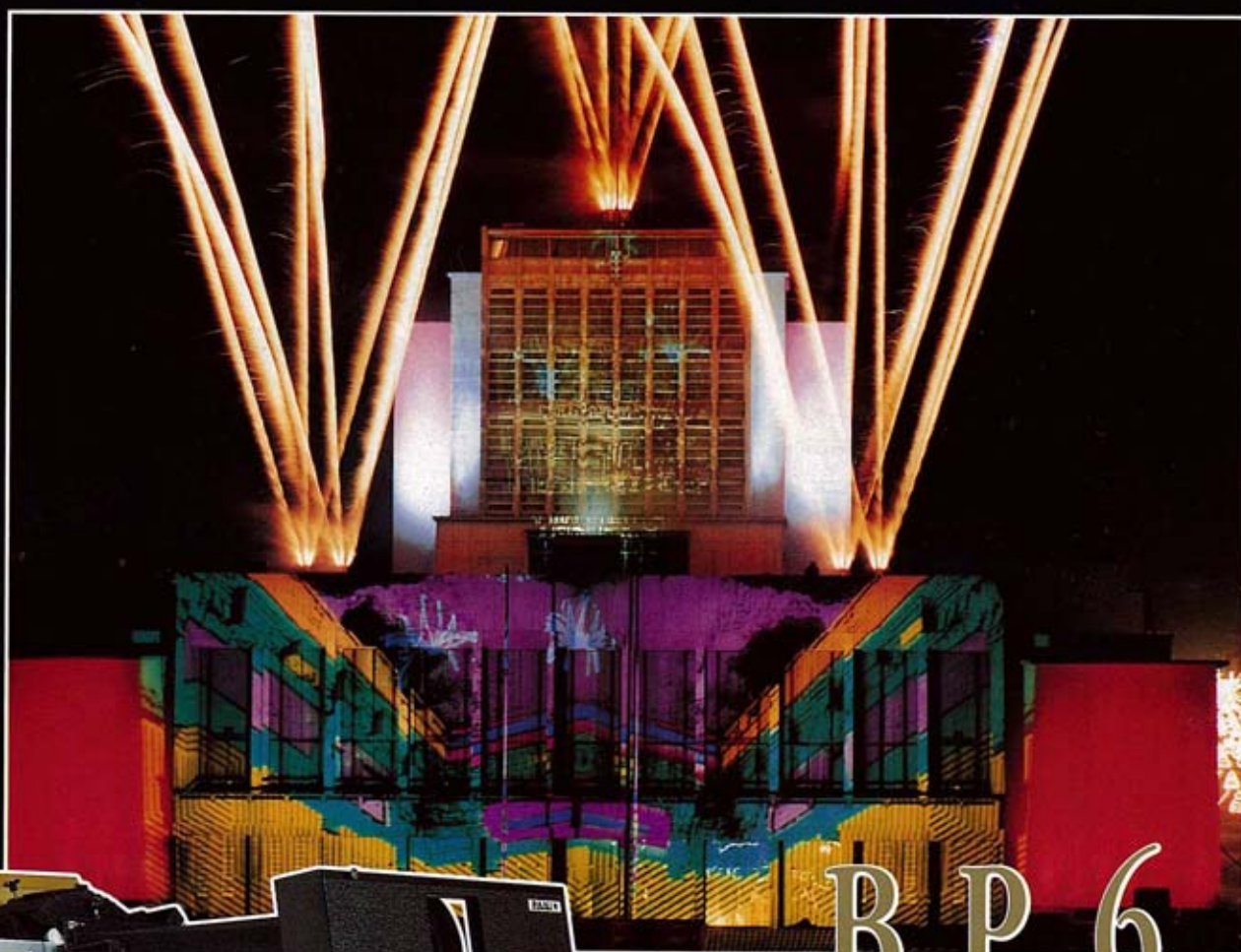
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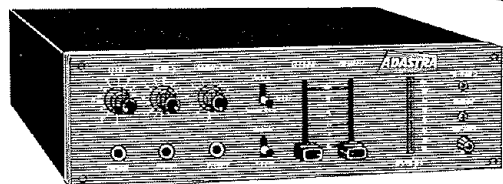
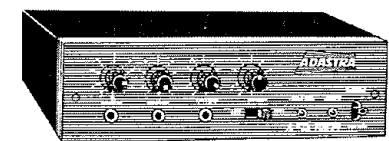
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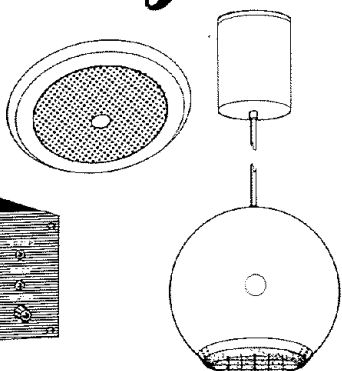


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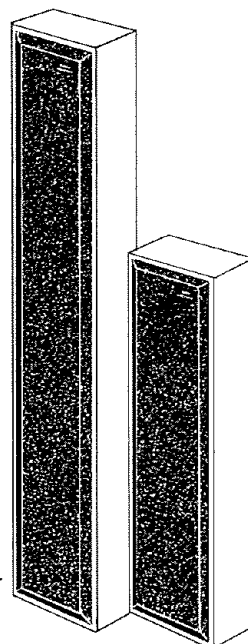
# "Engineered Sound"



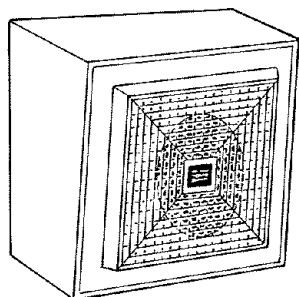
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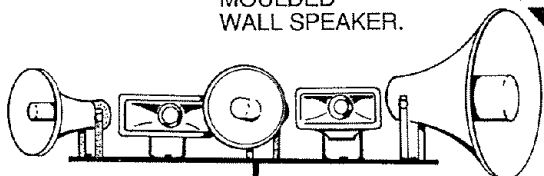


'1800' RANGE OF COLUMN LOUDSPEAKERS.

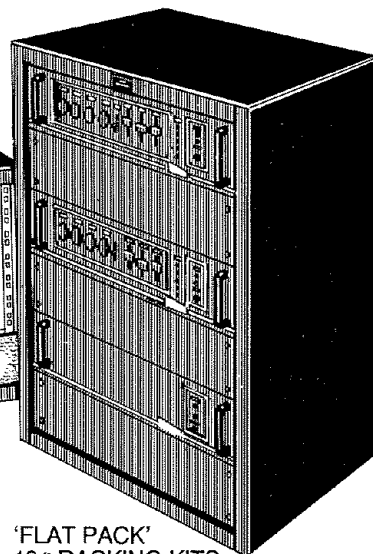
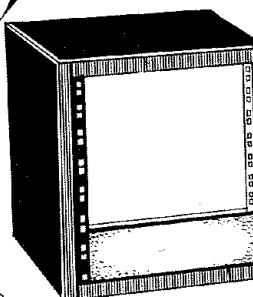


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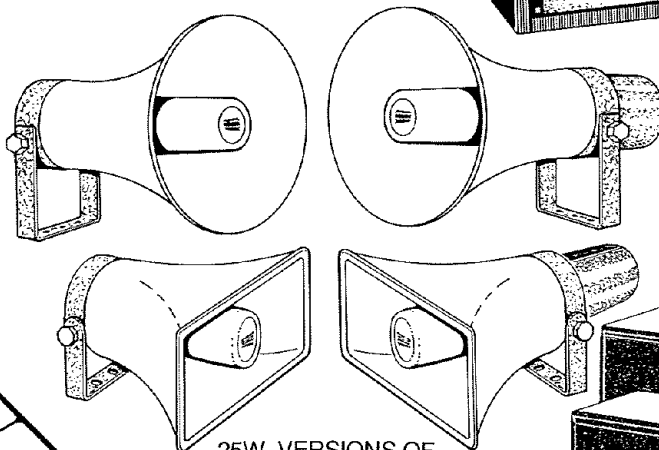
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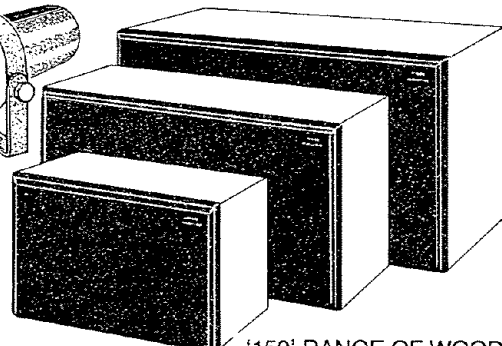
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# SERVING FOR SOUND

## Cheshire-based MAC know a thing or two about the audio market. Tim Frost sounds them out

Merseyside Audio Consultants, more popularly known to all as MAC, have been around for 13 years. In that time the company has grown, moved, sharpened its image and continued to concentrate in the areas that it started in - sound hire for the theatre with radio mics a speciality.

MD Clement Rawling set the company up in 1976. At that time, he had been chief engineer at the Liverpool Playhouse, which had started doing a lot of musicals. Instead of hiring equipment from London with the expense and the uncertainties involved in getting gear up from the smoke, Clement started building up his own stock of radio mics, mixers and speakers and started hiring them out.

For the first few years, things jogged along quite happily until the early '80's when decisions had to be made to decide the future size and style of the company. Clement went for a level of growth. "It slowly grew with a few of us until 1983, when we had to decide whether to stay the same or enlarge the company. We decided to build the company up, and moved to the new building at

the end of 1984. It was good timing, because in February of '85, we did *Pirates* at the Playhouse, which was a huge system."

To hit a big show like *Pirates of Penzance* just when you are expanding, not only helps finance the changes, but means that there is a good commercial reason for investing in all-new equipment. 80% of the system for *Pirates*, including most of the cabling, was bought especially for that show and settled the direction for the company once and for all. Clement has fond memories of the show and what it enabled them to do.

"It started us working in different ways, and headed us in the direction of improved quality. The big shows like *Pirates* give you a big block of income that you can invest and when that comes off, the gear goes elsewhere and it becomes a stepping stone."

MAC has come full-circle with *Pirates* as they are currently supplying the sound for the show at the London Palladium.

MAC has always specialised in radio mics. Having hired mics in from London, people were telling Clement that radio mics were doing big business in the States, and that the

UK would follow in five years or so. The company started buying in radio mics and haven't stopped since. "It has paid off because we are still known for having a large stock of well-maintained radio mics and people have been hiring them from us for nine years. It opened a lot of doors, people would try some out and come back and buy more from us."

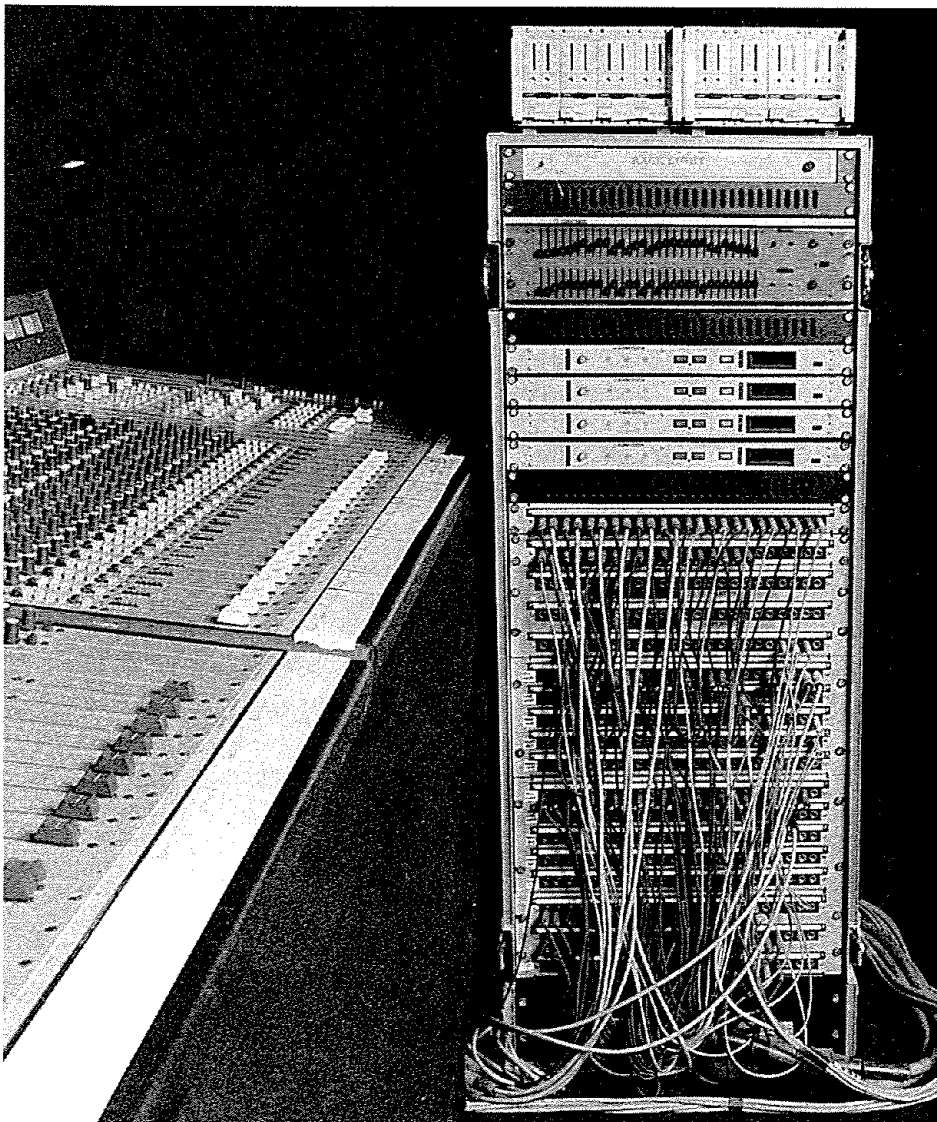
The current range reflects the trends towards both UHF and legality, a sticky problem that is now slowly being sorted out. MAC stock includes Micron and Sennheisers with units being sold off or frequency changed to meet the new regulations. The radio mic business has grown dramatically with more users becoming aware of the benefits of radio mics in general, and diversity in particular - and from some unexpected areas.

"The startling thing," Clement noted, "is that in the past few months we have had amateur companies phoning up for diversity mics. Not only do they have the knowledge of what diversity mics are and why they should have them, but they also have the funds to pay for them. We have companies that take six or eight diversities at a time and a full sound system.

"Amateur budgets have grown and grown and some of the systems are huge, where the rep theatres are finding their budgets getting tighter and tighter. The nice thing also is that if you deal with amateur groups and they are happy, then they come back year after year."

The current status of the amateur market is one that could not have been predicted a few years ago, and it is proving increasingly difficult for hire companies to plan for the future with the reduced spending power of many theatre groups, the increased specialisation on the specifications for the big shows, and the uncertainty surrounding some of these shows. All this has led MAC down a natural path of diversifying the customer base to include non-theatre hiring and sales amongst the regular customers.

"We are also doing a lot of AV through pro-

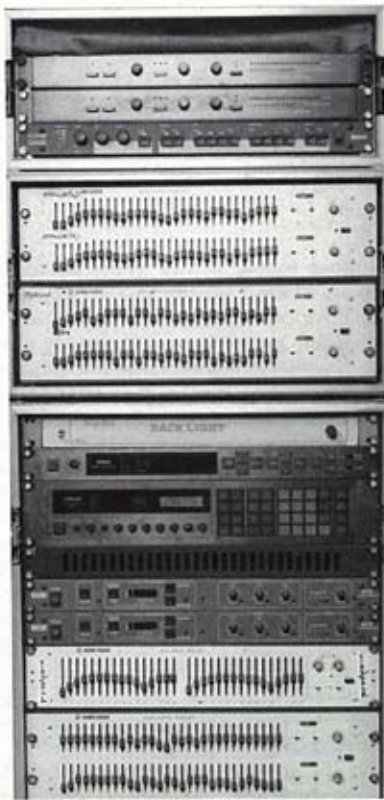


The mixing console, effects rack and diversity micron radio microphones for *Hello Dolly* in Manchester.



Clem Rawlings, MAC's MD.





Effects rack for Cannon and Ball Christmas 88/89.

sound must have been just 5% of the budget."

One of the regular features of the MAC year is 20 or so pantomimes around the Christmas period. This year the total is 23, 17 of those for EMB. The systems vary in size from a few radio mics to full systems and the MAC team have developed a set of systems that are specifically designed to cope with the slightly out-of-the-ordinary demands of this particularly British entertainment.

"The problem with pantomime," explained Clement, "is the screaming kids and crisp packets. Sound people don't allow for it. The first year we did them, we didn't see that problem coming and had to turn things up quite a lot. You have to EQ differently, if the baddie can't cut through the noise, the show tends to fall apart. We enjoy doing the pantomimes, the fun of doing something so big, making it all happen, and of course 99% of the stock going out of the door."

The current range of systems that MAC carry include DDA desks; HH amplifiers from a long relationship with the company, "even when we just started they went out of their way to help us"; Meyer; Bose; Martin and Renkus-Heinz. The move is to consolidate to a slightly narrower range of speakers to increase compatibility and the overall quality of the systems offered. MAC are fairly committed to Renkus-Heinz as a quality product that is liked by many customers, although a brand that has had several distributors over the years always has some doubts about continuity of supply in the UK. The hope is that the new distributor will be able to give the brand the long term support it needs.

The company has dropped installations in general to concentrate on hire. It was a conscious move to work in the fields they are best at without diluting the effort. With in-

stallation work coming up at busy times, it was a straight choice - do it properly and create a separate installations division, or get out entirely and put the resources into the hire side.

Customer support and enthusiasm are things that the company take very seriously. The new logo, a much sharper business-like image is being stamped on every part of the operation. The change was made partially to present a more professional profile to the outside world and help fire up everyone within the very tight organisation.

"We have had a lot of conversations about maintaining the immediacy of a new company," expanded Clement, "there is a great danger of becoming complacent. We did the brochure which is the starting point, and we are putting the new logo on the vehicles and even the flight cases. Not only has it been a new image for the customers but for us as well."

Customer support has been extended to the use of a BT 0800 telephone service to deal with out-of-hours contact. MAC believe that they are the only company in the hire industry to offer this service.

Instead of using portable phones, all a client has to do is phone the 0800 number and an operator trained to a surprising level in all things to do with MAC and their equipment, will contact the right person within MAC who then contacts the client back, hopefully with a solution. The whole system is quite expensive in both money terms and the amount of effort involved in setting it up. It is also by far the best way of dealing with problems, according to Clement.

"We have been through bleepers, car two-way radios and Vodaphones. If there was a problem, clients would phone here and get



Behind the scenes preparations for the complete mixing area for Singin' in the Rain.





Mixing console and effects rack for Cannon and Ball at the Palace Theatre.

the answering machine, then they would phone the mobile, then as Sods Law dictates, it diverts and then the mobile is in an area that it won't pick up in. The customer has phoned three numbers and still not got anyone - and that was unacceptable.

"With the 0800 number you get a trained human being who knows exactly what to ask and how to proceed. The customer is then happy that someone is actually onto the problem - that way the problem is also instantly smaller."

With just seven staff, a portfolio of freelancers and no stock system computer ("we tried them out and found the manual system always faster"), MAC exist on openness and everyone working together. "We run in a very open way, there is very little closed information, we make sure information is very free-flowing so anyone can deal with the problem or activity."

The central focus of this contact is not a board-room but the rest/kitchen area with its pool table. Everyone lunches together and Clement's experience is that problems get aired and sorted over lunch in a way that never seems to happen in a formal meeting.

The whole set-up is designed to give MAC an edge in the market place over basic price considerations. Customers are increasingly aware when looking for hire equipment. As well as a good price, they need everything to happen on time and problems, should they arise, they want to see sorted out quickly. Instead of trying to compete hard on price against basic hire companies MAC is supplying confidence.

Clement puts it simply: "We are trying to say that this is a Service."



MAC Sound with the Hallé Orchestra at G-Mex in 1989.



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# DEBATING DMX

## Ian Ibbitson discusses the applications of the DMX and SMX protocols

Many have commented on various issues associated with lighting system communications. Unfortunately, many have not grasped the real issues involved. This short commentary is an attempt to get to the bottom of the DMX debate and point to a way forward.

### What is DMX512?

The DMX standard describes a basic digital protocol designed to communicate dimmer level data between control and dimmer equipment. A task which the protocol achieves in an efficient and succinct manner.

Great play is often made about the maximum DMX update rate of 44Hz for 512 dimmers at 250kb. However, this is not usually a problem in practice because many controllers can't maintain update rates of 44Hz for even a nominal set of lighting states. Additionally, a.c. thyristor dimmers are limited to a 1/2 cycle update rate i.e. 100/120Hz, though the rate of change capacity associated with many luminaires is much slower. Notwithstanding the technological reasons, human physiology and perception capabilities naturally limit the ability to appreciate changes above these frequencies. Where specific jobs require better performance, for whatever reason, it can often be achieved by dedicating general purpose facilities or by producing specialised systems to do the job. For example, by running DMX at a reduced dimmer capacity to achieve a greater update rate. A 200 dimmer level capacity would give an update rate greater than 100Hz.

DMX is uni-directional! Yes, the standard does allow the possibility of a return path. Commentators who advocate the use of this facility must be prepared to fully specify the protocol improvements to facilitate bi-directional communications and at the same time convince everybody of the real benefits, in context of dimmer level processing. It must be borne in mind that the lighting industry is having difficulty in agreeing several minor modifications to the current protocol.

### Why a new protocol?

The virtues of DMX are simplicity and efficiency through focusing on one task. It was designed to transfer dimmer level data between control desks and dimmers. It was not designed to allow control of dimmer supervisory links, automated luminaires, remote studio equipment, show computers, backup systems etc . . .

To understand why DMX is not a suitable protocol to take the lighting industry into the 1990's it is necessary to partition the protocol into two areas of functionality; application information and the transfer mechanism. Unfortunately, many commentators concentrate on the issues associated with the transfer mechanism i.e. speed of information transfer, error checking etc . . . However, a detailed understanding of the application information and how it is used throughout a system is a prerequisite to developing sophisticated lighting systems. Indeed, anybody who doesn't recognise the fact that components of lighting systems are glued together by communication networks which essentially transfer information bet-

ween databases, fails to understand the main technical issue driving the evolution of lighting systems.

DMX caters for only one application information type, dimmer level data. Although there is provision for additional start codes, no mechanism is defined to allow start code allocation. Additionally, no bi-directional protocol facilities are defined (ignoring the optional second data link), which allow for unique equipment addressing, error checking and recovery, and message synchronisation. Clearly, any attempt to provide a more sophisticated communications protocol will complicate DMX such that a new protocol will inevitably emerge.

Given that DMX is not a suitable protocol for the evolutionary development of lighting systems, what is? The only offering of which I am aware that makes a serious attempt to address the issues outlined above is SMX.

SMX is intended to act as a vehicle to progress the development of lighting system communications, and as such the proposed standard was placed in the public domain last year. It represents a clear opportunity for all sections of the lighting industry to benefit from the open systems approach it implicitly embodies.

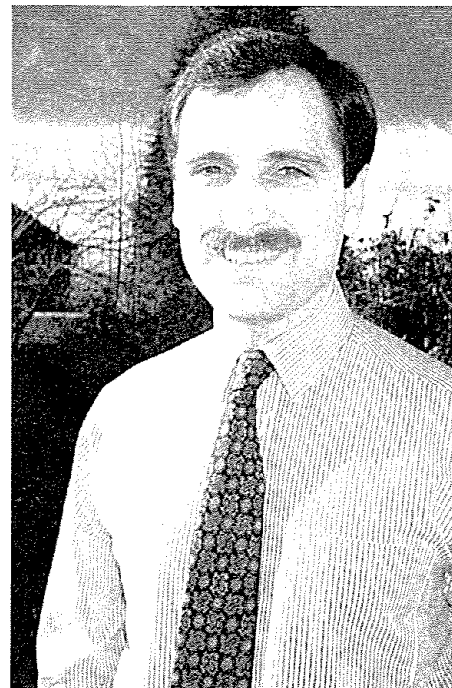
SMX can be considered a natural progression from DMX. Indeed, the specified Data Type 9 (Explicit Sequentially Numbered Dimmers) provides for DMX-like functionality, with the added benefits of a selectable dimmer number range of up to 65535, error detection, and the ability to specify uni/bi-directional communications. Additionally SMX is not limited to 250kb, and it allows for other media to be defined in the future.

### The Major Driving Force

A fundamental issue associated with all communications protocols is the cost (processing, memory, transmission, media, software, etc . . .) associated with the rate at which information can be successfully transferred between devices. Two basic approaches can be taken to increase the rate and/or quantity of information flow, but both result in increased cost.

The first approach is to reduce the amount of information flowing over the communications link e.g. reduce the number of controllable dimmers. If more dimmers need controlling then the only options are to add additional communications links or suffer reduced performance. Note, it is likely that the cost of the additional link will more than double the cost associated with a single link, due to the increased processing requirements the controller will need to service the two links.

The second approach is to use more sophisticated communications technology, operating at much faster frequencies. Unfortunately the cost of adopting such an approach is often prohibitive, both technologically and due to the backward compatibility issues created by large installed field populations. The major advantage of SMX is a cost-effective solution, allowing backwards physical compatibility with current DMX systems.



Ian Ibbitson is an R&D manager with lighting system manufacturer Strand Lighting Limited. Although he has only been involved in the lighting industry for just over a year, he has already managed several projects, involving the Galaxy control desk, PALS units and various other equipment that configure sophisticated lighting systems.

### Yes It Isn't Simple!

SMX has been accused of being too complicated. I make no apologies, yes it is complex compared to DMX, but it matches the complexity of current lighting systems, and it starts to get to grips with many of the issues of the future. In my opinion the lighting industry needs the unifying open system benefits associated with Unix in the computer industry, but probably only achieved on a practical side with MS-DOS. From the customer viewpoint any attempt to reduce market fragmentation must be good as a wider choice of compatible equipment should be available. There are benefits for the manufacturers too, extensible interfaces, standards, re-usable software across products, system compatibility etc . . .

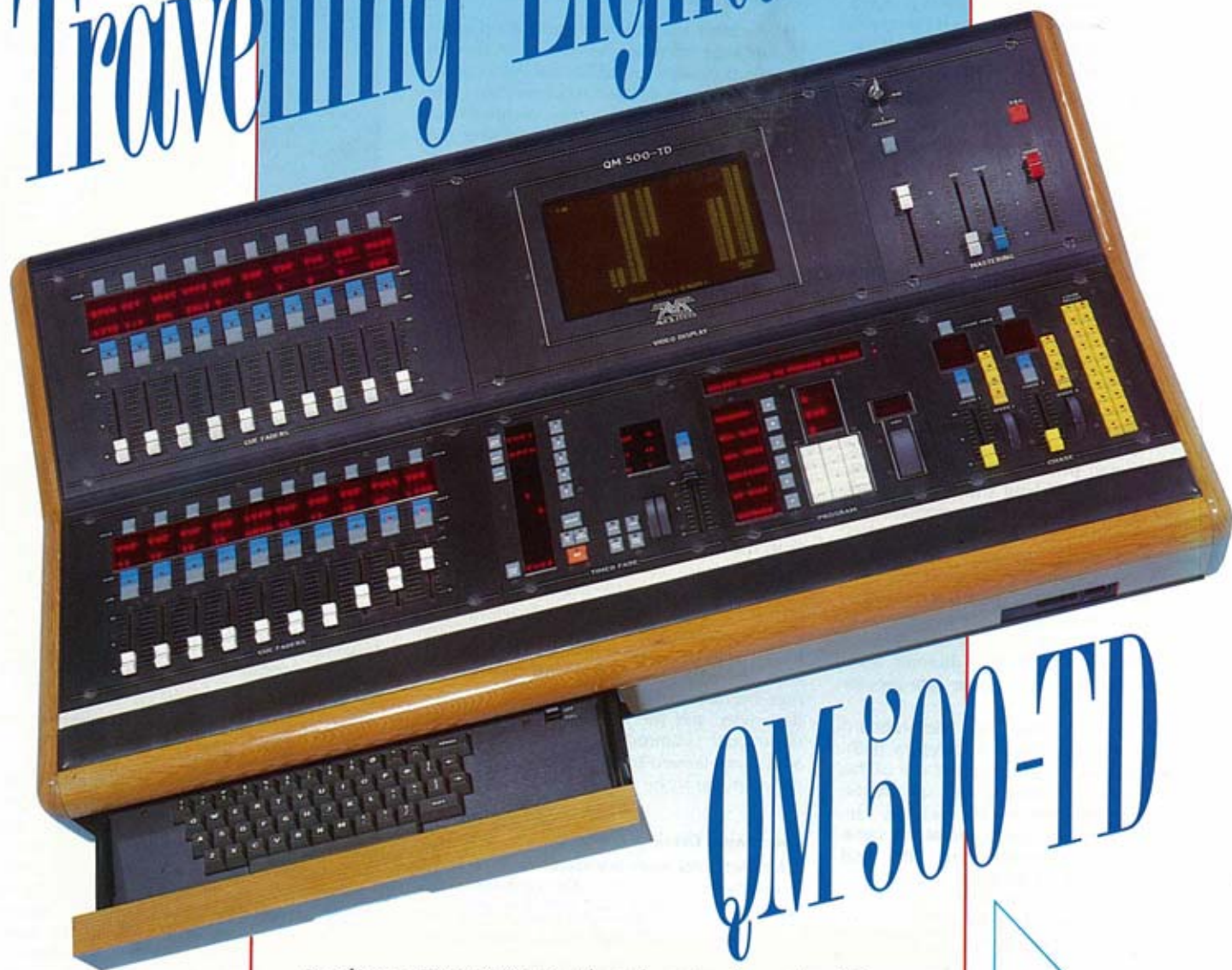
### Let's Work Together

In conclusion, the lighting industry needs to develop a more co-ordinated approach to connecting to, and talking between, different lighting equipments, such that the individual parts can work as an integrated system. SMX is a vehicle which must be used to promote debate and in the fullness of time, planned migration to new generations of lighting product.

Strand Lighting is dedicated to developing the concepts embodied in SMX, and has shown by publication of the specification, willing to work with the rest of the industry in developing it. For further information on SMX or if you have any interesting ideas that might improve the specification then don't hesitate to communicate.



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# CADAC: IN PERFORMANCE

Mike Lethby

In the increasingly hard-fought world of theatre sound, few names today have the cachet of Cadac. With installations in countless big-league theatres and studios and numerous major show runs including *Aspects of Love*, *Phantom of the Opera*, *Cats*, *Les Miserables*, *Chess* and *Little Shop of Horrors*, they're virtually synonymous with theatre sound mixing.

Cadac is manufactured in Luton, England by Clive Green & Company, formed in 1978, and Clive himself has been involved in producing Cadac hardware since the late '60s.

The company's interest in technological progress is reflected by a £100,000 R&D investment in the past year alone, including a brand new CAD system to automate their circuit board design and production procedures - instigated by production director Chris Hall and technical manager Tony Waldron. Further expansion of their premises (opened in 1988) is already planned.

The current product line-up is headed by

the flagship E Type console, a sophisticated desk which is frequently supplied in customised configurations to suit clients' particular requirements. *Starlight Express* and the National Theatre are two such recent customers.

The newest Cadac E Type installation is at the Barbican Theatre, London home of the Royal Shakespeare Company - for whose latest production (*A Clockwork Orange*) the desk is being put through its paces with a vengeance.

I talked to the Barbican Theatre's house sound engineer Steff Langley about the development of sound production there, and how the Cadac is being used.

## Sound At The Barbican

Steff Langley started his career at fine art school as a part-time lighting technician, followed by a spell of theatre work which convinced him that a technician's lot was "a damn sight better than being on stage!"

Moving on to become a jack-of-all-trades in

provincial theatres, working with miniscule budgets and equally basic equipment, he decided to specialise in sound and (to cut a long story short) arrived at London's Barbican Theatre.

Steff explains how productions are created at the Barbican. "There are two types of tours. One is the regional tour, called the 'small scale tour', why, I don't know, because it uses three 40-foot artics! We take seating, a truss and our own sound system with a DDA 16 into 4, HH B500 amps, eight Tannoy Reds, 40 Pro-AC Tablets and cart machines which run off clicks from the Revoxes.

"For the main tours, the 'Royal Insurance Tours', which can go to the large venues, we hire a rig from Autograph. It can involve almost anything depending on the scale of the production: 4-tracks, amp racks, and normally Meyer and Tannoy Red speakers.

"Both tours go out together; and they change their nature every year. Although I'm not into touring myself I do feel responsible for them in a way, so when they're out I try



The Cadac console in situ at the Barbican.





Steff Langley, head of sound at the RSC based at the Barbican Theatre.

to go and see them, and say hello to the British Forces posted abroad! It's more civilised than rock and roll touring, you have a good time but there's no one night stands.

"In rehearsals we usually get a three hour band call to balance all the cues, but you can bet your bottom dollar that as soon as the band plays someone will start up a power saw on stage. The band are expensive, so you can't have them in for lengthy sound checks. So I need very simple, high quality equipment which I can just set up and turn on - there's no time to fiddle around.

"Each level is plotted for each cue, and on the night the operator changes those levels from the cue sheet. The cue sheets are just shorthand, you can't write everything down for the entire play. And after press night it's all locked in place.

"Tape levels have to be spot on every time, but the band can change dramatically each night because of this wonderful 'depping' system where a French horn player has a night off and another one comes in - and no two French horns are the same level or quality. So we're continually mixing the band.

"We get a standby on one side of 'phones from the DSM; the other ear has PFL and TV sound if you want it. We use infra-red cameras to monitor the stage and the conductor, even in pitch black.

"For *Clockwork Orange*, which is pretty complex, we have four days technical rehearsals and a fortnight's previews, and after each show we analyse what needs to change, different cues and sound levels here and there.

"Recorded music is out, due to union rules - if the script calls for a gramophone record, the band plays it and we EQ them to sound like a '78 or whatever.

"For recordings or broadcasts, we have a

separate dubbing room which overlooks the band area. It's only got a Revox B77 and a TEAC 8 into 4 mixer, and we hire in a multitrack for big productions."

#### Today's System

Steff runs through the story of how the present sound system was specified, and why.

"It's come after five years of hassle with the management, saying the desk we had was inadequate, unreliable, and was causing a lot of grief on shows - for which the operators were getting blamed. Cues didn't happen and they were spending more time during shows fixing the desk than doing the job they were paid for.

"The jackfields had been very badly put in years and years ago, wired by electricians, not audio engineers; it was appalling. The control gear had only been added to in very small amounts over the years, so we wanted to reconsolidate the whole thing.

"The minimum requirement was 40 channels because Stratford had 40 channels - most shows are produced there before transferring here, often via Newcastle.

"In theory we get the same size production; but after Stratford the director might decide to change it and there's often a few cast changes. Plus our auditorium, stage and band area are so different that the set and production usually have to be modified.

"As regards equipment, the artistic director is the ultimate boss, if he says 'no' we don't get it. I'm not sure if an artistic director should decide those areas - he's not a technical guy, he's a theatre director. I advise him on these things, but the way the RSC works is long and ponderous and it's very difficult to get decisions made.

"The biggest problem is getting money, because funding decisions go right down the

line. I'm always arguing that the sound department doesn't get a fair slice of the money; we're the poorest section of the RSC, partly because we're the youngest technical department in theatre, whereas there's been lighting since the '20s.

"For example, a costume can cost £2,000 - and it might end up in the bin. That would buy four amplifiers for five years! I don't want to build an empire of fantastic equipment, I just want the stuff to do my job - to entertain, and to fulfil the director's wishes. If you think about the cables alone, which always get a hammering, replacing the entire cable stock every three years isn't cheap with 20m of Belden costing £25.

"We did persuade them to buy a store of equipment for the regional tours, to improve reliability. The touring manager realised that if somebody rings up saying 'help!' from a little town in Yorkshire how can you help them? So every year we've upgraded something and retired the old stuff to the rehearsal rooms.

"When the RSC were negotiating a new lease from the Barbican Centre, they included a sum to replace the desk. They asked for £30,000, which I said was just not enough. It was hard to explain to an artistic director why we wanted a particular desk when all he's interested in is quality of sound come the green light; not how it's achieved.

"They couldn't give me a precise budget so I called Clive Green at Cadac and told him exactly what we wanted - a copy of the National Theatre's desk with our own modifications. He came back with a realistic quote which the RSC just laughed at; but at least it got the ball rolling.

"They came back and said: 'You've got £100,000', which had to include £5,000 to put the desk in - new jack fields, new wiring



and control gear.

"So by Clive Green's goodwill and a lot of negotiation we trimmed our cloth accordingly. Clive came in with an excellent price; that's a lot to do with his wanting to help, he gave us an extremely good package in every respect.

"We didn't look at other desks because there's nothing comparable around. We could have bought a Tascam flagship or an enormous Soundcraft for much less, but they wouldn't have done what we wanted.

"The only drawback is that the Cadac's so quiet, we're now listening to noisy microphones - you can't win! It's a constant process."

#### Cadac In Action

The new desk is based on the standard Cadac E Type with some special customisation - most obviously, its L-shaped layout to fit the small control room. It provides the standard 40 inputs and 16 subgroups (nine with VCA control) into a 24-way output matrix, each output driving an individual speaker send.

Langley continued: "We saved money by modifying an E Type input channel instead of starting from scratch. The rest is basically standard E Type, which is very comprehensive: the same superb sweepable equalisation as the A series, which you can't better."

The onboard computer controls automated subgroup-to-matrix routing and the aforementioned nine VCA subgroups. "We can assign any input to those groups, so we can group parts of the band. Often they start under the text at the end of a scene and we bring them up during the scene change, then down again under the text and out.

"The computer handles the VCAs, you simply dial up a number alongside the fader and it remembers that group level for each

cue. It also stores all the matrix settings and triggers tape machines and MIDI outboard like our REV-5 programs. And we've got two sets of output mutes - computer and manual mutes - which are essential because as soon as the band's finished they've got to be out. Everything else is still live so we can interrogate the desk, PFL it and listen to it.

"To re-route the desk you just press a button for a different cue number and the title will come up and say wind, interval, scene change, desk muted or whatever."

Customisation also includes a Tape Control panel, running an adjacent bank of Revoxes in soundproofed racks. And Langley enthuses over the desk's modular construction:

"That's the beauty of it, you can pull a channel out by undoing one screw. It's beautifully constructed. Essentially, it gives us much higher quality and far less worry. We can handle bigger bands, and it's much more reliable."

#### Speakers

The Cadac's matrix outputs drive a speaker system that dates back a good while, though Langley is generally satisfied with it. "We have large left and right proscenium units with Tannoy 12" and 15" drivers, using their internal crossovers to split the bass and mid/highs. The centre cluster is split left and right, and there are four speakers round the stage on individual sends for effects like dogs barking, cannons etc.

"There's also a 'fly floor' which runs round the back of the auditorium with four more speakers - Tannoys and old Lockwoods - for quad effects. They're driven from a pair of quad panpots on the desk so we're not adverse to flying helicopters around and landing them!

"But the width of our auditorium means we

have to cross the speakers to get an even coverage, so there's a hot spot in the middle. One of us sits there when we're in production and liaises with the director in plotting the show. Basically, a balance has to be maintained between the band's volume, effects and the level of a trained actors voice.

"The system sounds very clean and normally we don't drive it hard. But for Clockwork Orange (featuring music written by The Edge, U2's guitarist) we've built two compression horns with JBL components to boost the low sub bass. 'Monk' - a Barbican chap with rock PA experience - designed them and the London School of Furniture Design built them to fit our proscenium rig."

Effects and signal processing are fairly basic. The band are generally close-mic'ed, with a Yamaha REV-5 on hand for digital reverb and delay enhancements; a Drawmer noise gate counters spillage from click tracks and tapes.

#### Changing Times

In conclusion I asked Steff Langley for his views on changing attitudes to theatre sound production.

"It IS evolving. A lot of directors realise what's possible with new technology. For example, our sound effect library is now on CD which speeds the process of making up a sound tape and finding the right sounds tremendously. We've got four hours of wind in three-minute sections, and the director can be very specific - 'I want South Africa, the wind coming off the veldt'; she's been there, she LIVES it, and she wants it in her show.

"Mind you, although we don't have a pair of coconut shells anymore! We still try to use live sounds wherever possible. There's always a real door slammer with a variety of door knockers, bolts and hammers and we end up mic'ing it live!"

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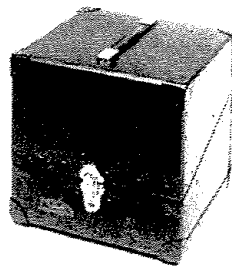
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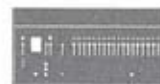
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# MADE IN YORKSHIRE

Ben Duncan visits the commercial division of Wharfedale plc, Britain's longest established loudspeaker manufacturer

Today, Wharfedale is a highly successful manufacturer of both raw drive units and complete loudspeakers. Leaving aside sales to domestic Hi-Fi, Wharfedale's commercial speakers (notably their models Programme 2180 and Programme 30) are widely specified by installers for pubs, winebars and restaurants as well as for CD jukeboxes, supermarkets, DIY superstores and factories.

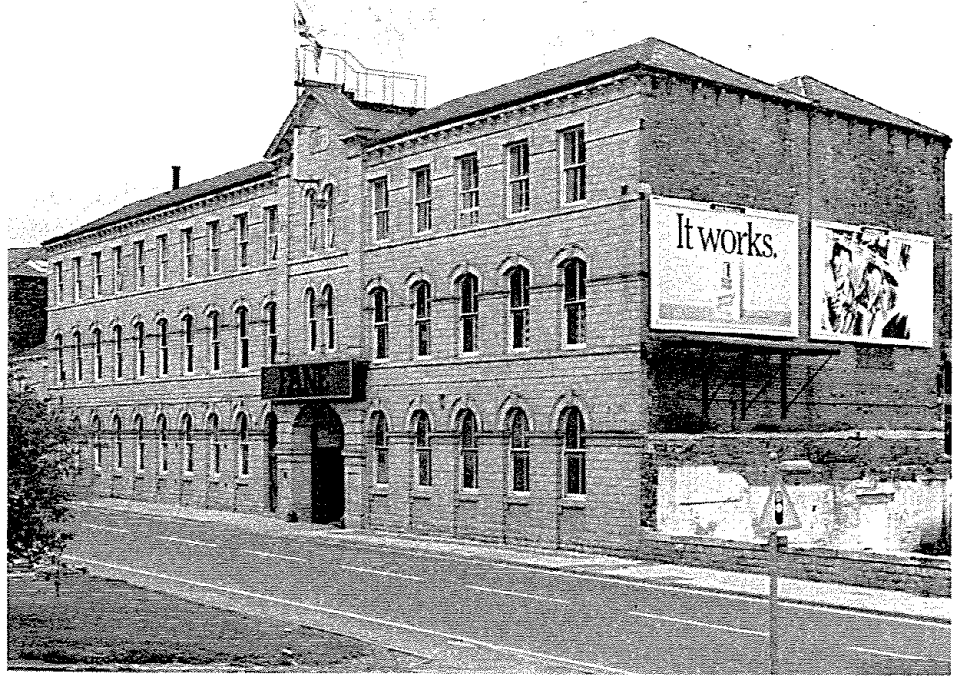
Wharfedale's history goes back to 1932, when Gilbert Briggs built his first loudspeaker, at his home in Ilkley. In 1933, he established the Wharfedale Wireless Works, which produced 4,600 speakers in its first year. After the war, production resumed in Bradford. Briggs then became increasingly involved with high fidelity sound reproduction, which was about to experience its first period of phenomenal growth, an era in which Wharfedale was to play a major part. Briggs was both perfectionist and pragmatist; he realised that sound reproduction must combine art with science. He wrote numerous books on loudspeakers, carried out spectacular live vs. recorded demonstrations (notably in Carnegie Hall) and designed speakers which could convey both the reality and the emotion in music.

By 1956, Wharfedale had even formed their own company in the USA. Two years later, Briggs, then aged 68, sold his Wireless Works to the Rank Organisation.

## The Rank years

Wharfedale benefitted from Rank's investment in R&D for the next 20 years. Notable developments now taken for granted by speaker makers the world over included the 'roll surround' (1959) and ceramic magnets (1962). In 1969, Rank bought H.J. Leak, another famous Yorkshire name involved in domestic Hi-Fi. The combined Leak and Wharfedale factory was by now employing 1100. A record 800,000 drive units were made in 1977, but acute competition from the Far East forced a re-evaluation. By 1980, Leak ceased production and Wharfedale's own workforce was reduced to 500. Still, the innovation continued with laser interferometry, and new cone materials.

In 1982, Rank sold Wharfedale. It was then bought and sold by a number of corporate owners, including Vallances. In the mean-



Wharfedale have recently acquired Fane Acoustics through a reverse-takeover of Fane's parent company Audio Fidelity. In the process Wharfedale has become a plc.

while, in 1985, Wharfedale's factory had moved to a single, purpose-built outfit next to Vickers, on the outskirts of Leeds.

## Consolidation

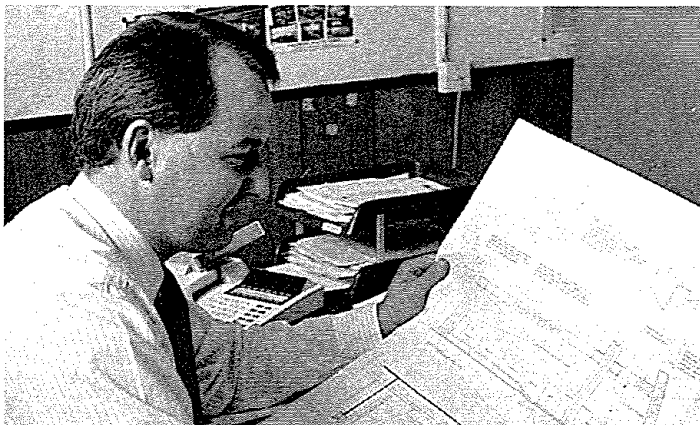
Recognising the skills and loyalty of their workers with homes in Bradford, the company wisely made a decision to operate a bussing service, so retaining the majority of the workforce. Then in 1987, Ashley Ward, Keith Mellors and Brian Drysdale 'bought in' and joined with the existing management to buy Wharfedale. In turn, they've speedily turned the company around into profitability, with a 32% upturn in sales in 1988/89.

In January this year, Wharfedale announced that it had succeeded in bringing the company to the stock exchange as well as acquiring Fane and Mackenzie Acoustics, through a reverse takeover of Audio Fidelity, who had been trying to sell Fane to make

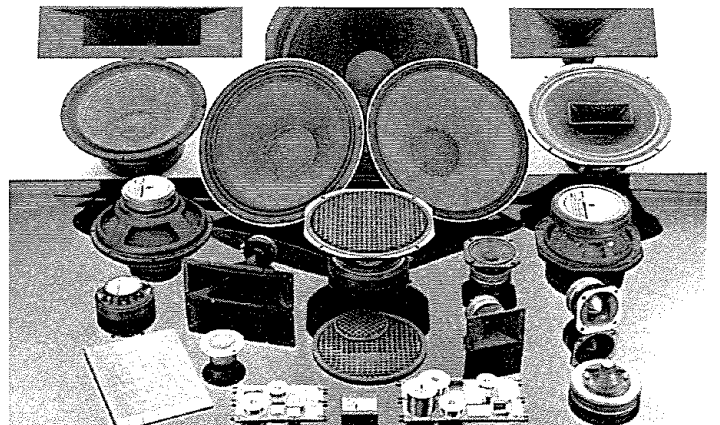
good losses in its other companies.

## Production Standards

Wharfedale's loudspeaker factory is more organised than most in this business. The factory layout comprises four large 'bays', with the raw materials arriving at one end, and finished goods being shipped from the other. Production occurs along a series of conveyor belts. Even the magnets are charged automatically! The jobs may be repetitive, but they require skill, and employees are able to move from one job to another, so work experience is varied. The company are justifiably proud of their BS.5750 'ticket', which is a 'self-auditing' quality-assurance (QA) process. It's taken two years to get the certificate. The process involves Wharfedale's own QA manager making random, detailed spot checks on quality of materials as they come in, and on com-

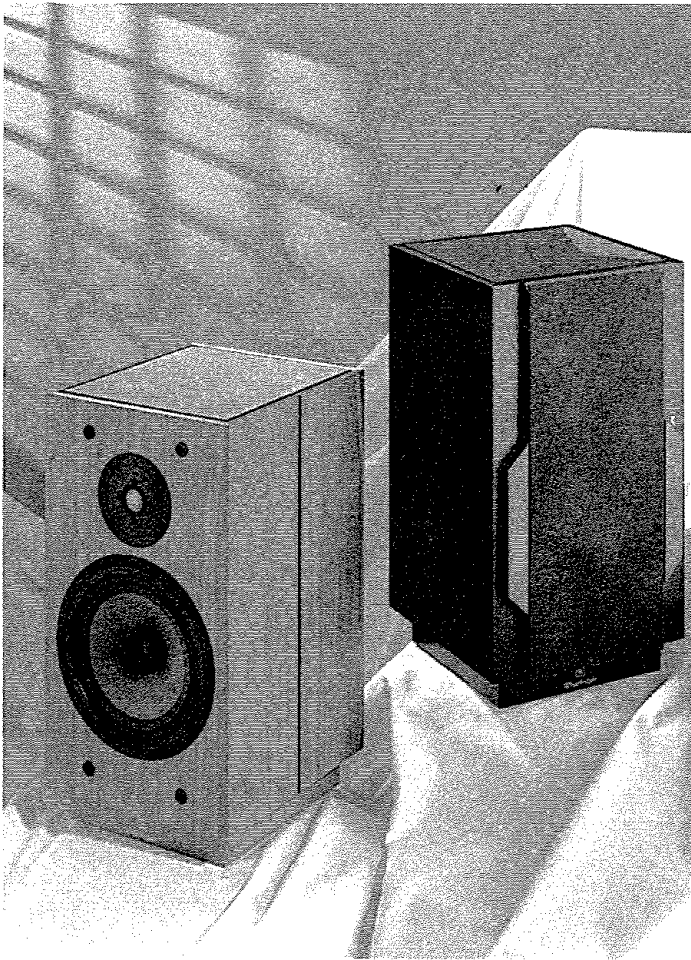


Michael Wood is a director of Fane and Mackenzie.



The Fane range.





The Wharfedale range all carry the BS.5750 quality assurance tag which, says Michael Wood, gives the manufacturing a high degree of consistency.

ponents at every stage of assembly. Detailed records of, for example, the frequency response of every hf drive unit are stored on floppy disc. The British Standards assessors can arrive and demand to check these records at any time!

"It means," says Michael Wood, "that our speakers are especially consistent, as well as it being virtually impossible for a defective item to escape. For example, the failure rate of tweeters being tested after production has fallen to less than one in every 1000, or 0.1%"

Wharfedale's quality and productivity took a big leap when they pioneered the 'build ring'. It's a precision moulded plastic jig, used to ensure alignment of every single cone and voice-coil along the production line. It ends up being incorporated in each drive-unit. The ultimate accolade comes from the Japanese: Yamaha were so impressed by Wharfedale's manufacturing standards and consistency that they now sub-contract the

manufacturing of one of their top-selling loudspeaker models to Wharfedale's factory!

#### Market Design

The company's approach to designing new speakers is thoroughly pragmatic, in the Yorkshire tradition. Gary Orrell, who is Wharfedale's commercial products manager insists: "The only way to sell you a speaker is to let you listen to one." In fact, the procedure is refreshingly open. Commercial customers are invited to listen to new speakers **before** they go into production. Blind listening tests are carried out, with the new speaker included in a group of established cabinets hidden behind a curtain. Tests may include some models from foreign manufacturers that the new design aims to compete with! Wharfedale goes on to encourage its commercial customers to take the prototype speaker away and try it on their own premises. "Our customers feel involved, so they're more likely to contribute useful feedback and may see things we've

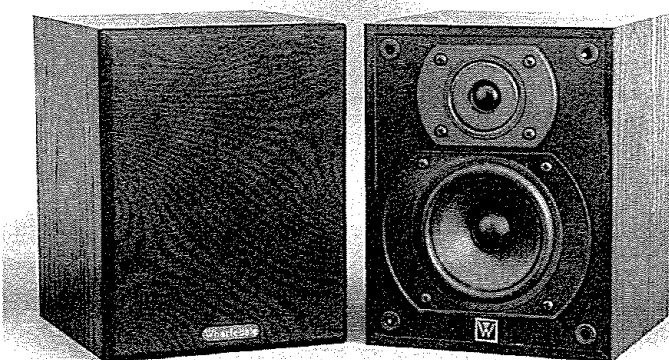
overlooked," says Michael Wood. The next stage is the trial production run, where the manufacturing technique's ability to meet BS.5750 is tested.

Wharfedale's R&D labs have the use of **laser interferometry**, which is used to measure and record the behaviour of all the moving parts under dynamic conditions, from the loudspeaker cone to the cabinet side-walls. It's done by analysing the interference patterns when a coherent light beam is reflected off vibrating surfaces.

#### Fane in perspective

The town of Batley (Bat'leh') has three claims to fame: as the birthplace of virtuoso guitarist Robert Palmer, and the place where Fox's biscuits and Fane loudspeakers are made.

After Fox's, Fane is the second largest employer in a town that has been harder hit than most by unemployment. The company was founded in 1958 by A. E. Falkus and Dennis Newbold; the name 'Fa-Ne' comes



Pressed steel baskets at Fane's Hick Lane premises.

The Diamond range of loudspeakers from Wharfedale.



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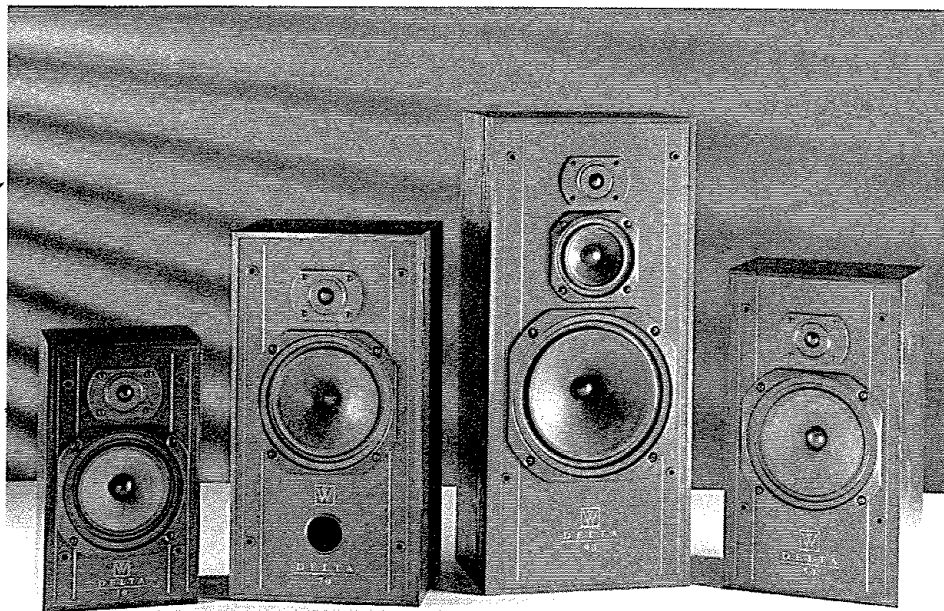


from the first two letters of their surnames. Falkus had been in the Royal signal corps during WWII. Between 1946 and 1958, he worked at Plessey, as chief engineer of 'reproducers and amplifiers' and latterly as the manager of their loudspeaker division.

In the early days, Fane manufactured huge volumes of tiny loudspeakers for TV sets, in the days when TV sets were manufactured in England by UK companies! Fane's long-standing expertise with high power drive units has its roots in supplying guitar amplifier manufacturers, notably A.C. Jennings, whose famous VOX AC 30 (as used by the Beatles and the other Merseybeat bands from 1961 onwards) eventually used Fane's original 12" drivers.

At the time, loudspeaker power ratings were laughable by today's standards; a 12" or 15" speaker could handle 25 or maybe 50 watts at most before burning out. With the widespread arrival of 'high power' (100 watt+) amplifiers in the second half of the sixties, both Valve (Marshall) and transistor (WEM) ordinary speakers were being destroyed left, right and centre by musicians. By the late sixties, Fane had pioneered a new class of high power voice coils using glass-fibre formers and new epoxy adhesives. These pushed power handling up to 150 watts and beyond, and, for a time, Fane had stolen a lead on the big stateside drive-unit manufacturers who had yet to fulfil the requirement for high power handling. Always good value for money, Fane speakers quickly became a legend amongst guitarists for their survivability.

In more recent years, Fane has seen increasing competition in the specialist field of high power guitar/PA/disco drive units from Mackenzie, another Yorkshire-based manufacturer founded by Brian Mackenzie,



The Delta line-up from Wharfedale. Part of the range is popular with pubs, clubs and bars.

who was a member of Fane's technical department for some years. In 1987, Fane were acquired by Audio Fidelity plc, along with Mackenzie. In turn, Mackenzie's factory was moved to Batley, to be amalgamated with Fane. "Today," says Michael Wood, who's looking after the Fane operation, "Fane still supply the cream of UK instrument amplifier makers." Fane's exports to sound equipment manufacturers range across 30 countries, including Eastern Europe, Japan and the USA, while its OEM range (numbering some 600 models) is easily the most ex-

tensive of any UK maker.

Even before he joined Wharfedale, Michael Wood managed sales at Fane's factory. Before then, he worked for Bostik, heading export sales worldwide. Loudspeaker manufacturing may seem far removed, but it largely revolves around adhesives and exporting. In the future, Fane are looking forward to new investment and R&D which will vastly improve the consistency of their drive units, as well as introducing new, improved designs which will compete with the very best foreign makes.

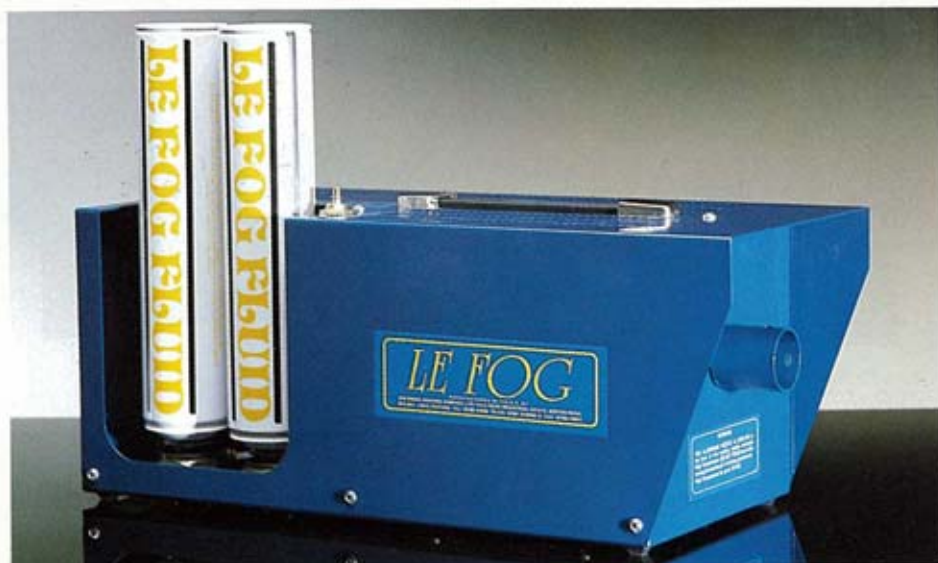


The comprehensive Wharfedale range is given an airing at an industry exhibition.



# SMOKE WITHOUT FIRE

Graham Walne takes a closer look at the latest fog and smoke machines



Le Fog from Jem Smoke Machine Company Ltd.

Since the very first batch of candle footlights began to obscure the stage with a curtain of fumes, visibility has improved on stage as each new form of illumination produced more light and less smoke. In early candle-lit theatres, acting styles relied on bold

gestures, easier to see through the fog, and because each gesture formed part of a generally understood language (at least by the better educated), the actors could improve their communication with their audience by supporting their words with ac-

tions. During the nineteenth century heat rather than smoke was the problem and by 1914 the improving clarity (and rapidly increasing power) of the new electric light had made the magically painted scenery appear too false and the earlier acting styles too florid. The new designers and visionaries thus began experiments producing pictures which were clear, simple, real and under total control. Fog was out.

Since then theatre has passed through a series of phases wherein technology and visual style have been inextricably linked, recently theatre seems to be passing through a phase reminiscent of one through which television passed some years ago when despite all the efforts of engineers to produce clearer pictures, a separate set of engineers laboured simultaneously to overlay the picture with softer focusses and distorting effects. It is true that most stage pictures do look better through gauze but perhaps that is too old-fashioned a device for today's set designers, hence good-old smoke can always be relied upon to blur the edges and hide the places where the budget didn't quite reach. Unfortunately smoke diffuses light beams and so too much smoke destroys its own effect.

Today the use of smoke to reveal light beams has become a design cliché. But

# STAFFEX

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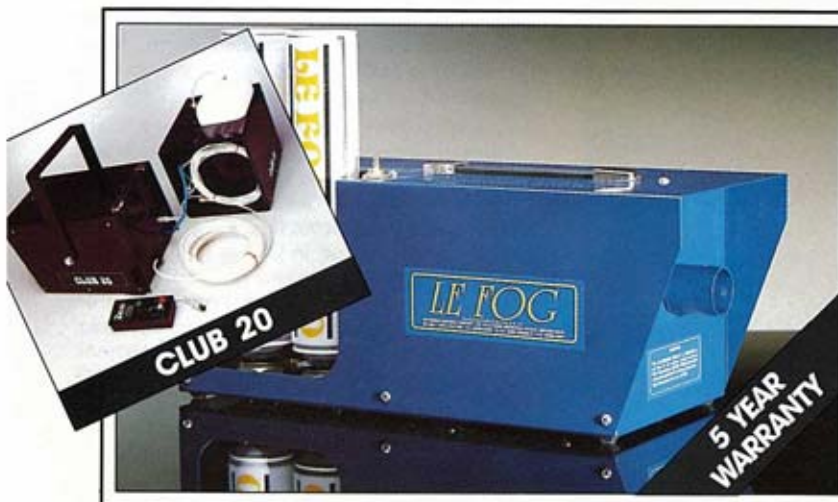
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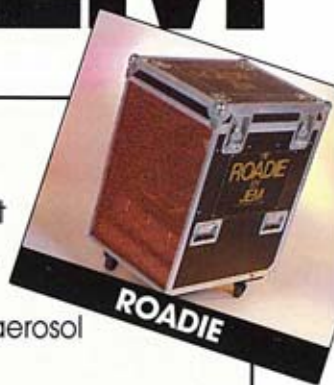


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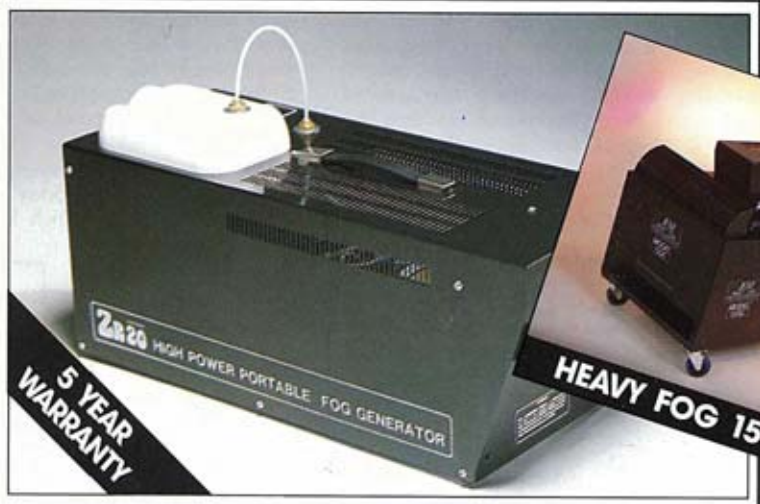
## Le Fog

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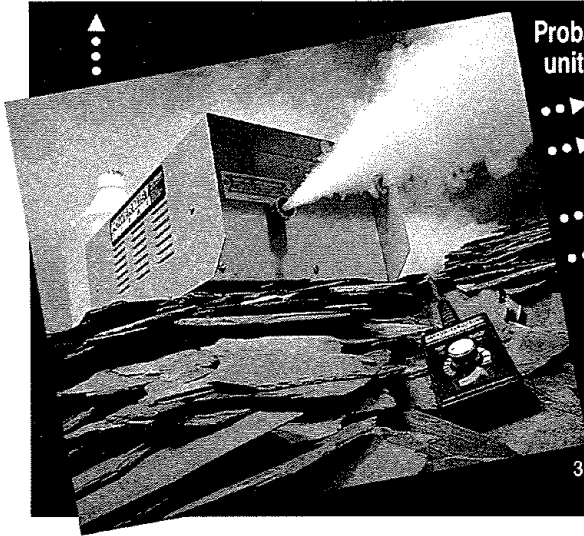
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perhaps a plateau has been reached, because rock lighting relies less on the device than it did say ten years ago, now preferring more visibility and sophistication. Will this eventually influence the use of smoke in the disco? Pouring smoke into the lights is a cheap (albeit effective) trick, and perhaps that is why it is still very much a part of theatre, and few spectacular stage productions are complete without the omnipre-

sent bursts of smoke. (It has always been the case. In 1868 one critic observed of a fire effect that it had been accompanied by so much smoke that the critics "expressed their belief that the intention was to burn down the house and get rid of them all at one blow").

I wonder what the designer of that effect would have made of today's smoke and fog machines, a range which has increased in

sophistication exponentially in a very short time; many machines now come with battery back-up, computer circuitry and even radio technology. We have the rock and disco industry largely to thank for that.

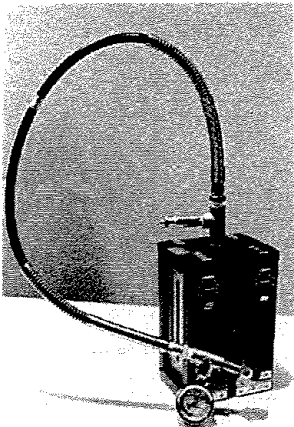
Early smoke machines worked by heating petroleum-based fluids which left a very slippery residue where the smoke had been directed, and there were other concerns about the after effects of the fumes on the health of those who inhaled them. Some fluids were said to cause cancer, others were highly inflammable.

Then in 1985 Gunther Schaidt and Rosco Laboratories produced a machine which was water-based and used safer fluids. The invention won an Oscar 'for the development of an improved non-toxic fluid', a fact I've often seen pressed home in Opera Houses by effects designers to nervous prima donnas. All the machines in our survey now use water-based fluids and the manufacturers of smoke machines have joined the green movement. **Jem** for example has 'canisters (that) are filled with nitrogen so they do not affect the ozone layer'. Scented smoke is also possible... do you fancy Apple, Rose, Mint or Lemon (from **Lamba - Martin**) or Tropical, Apple Blossom, Strawberry and Mint (from **Rosco**). They even make Pina Colada!

The function of heat in the generation of smoke has caused many a designer dismay as his beautiful mist-laden picture clears by virtue of the laws of nature. Historically the need for low lying mist has been served by dry-ice, a messy, dangerous and expensive process (albeit one that has now been made easier by **A&B's** dry-ice making machine - see L+SI November '88). Rosco have produced a variation with their Chiller Module which accepts a smoke input from either their 1300

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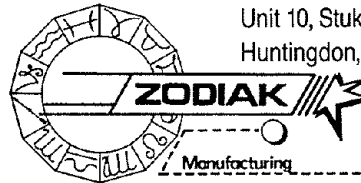
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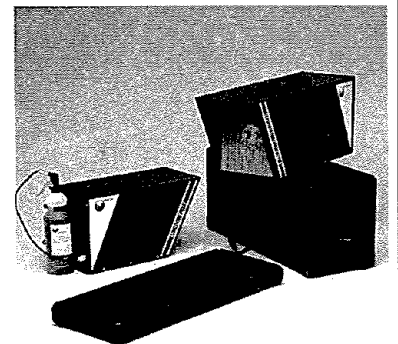
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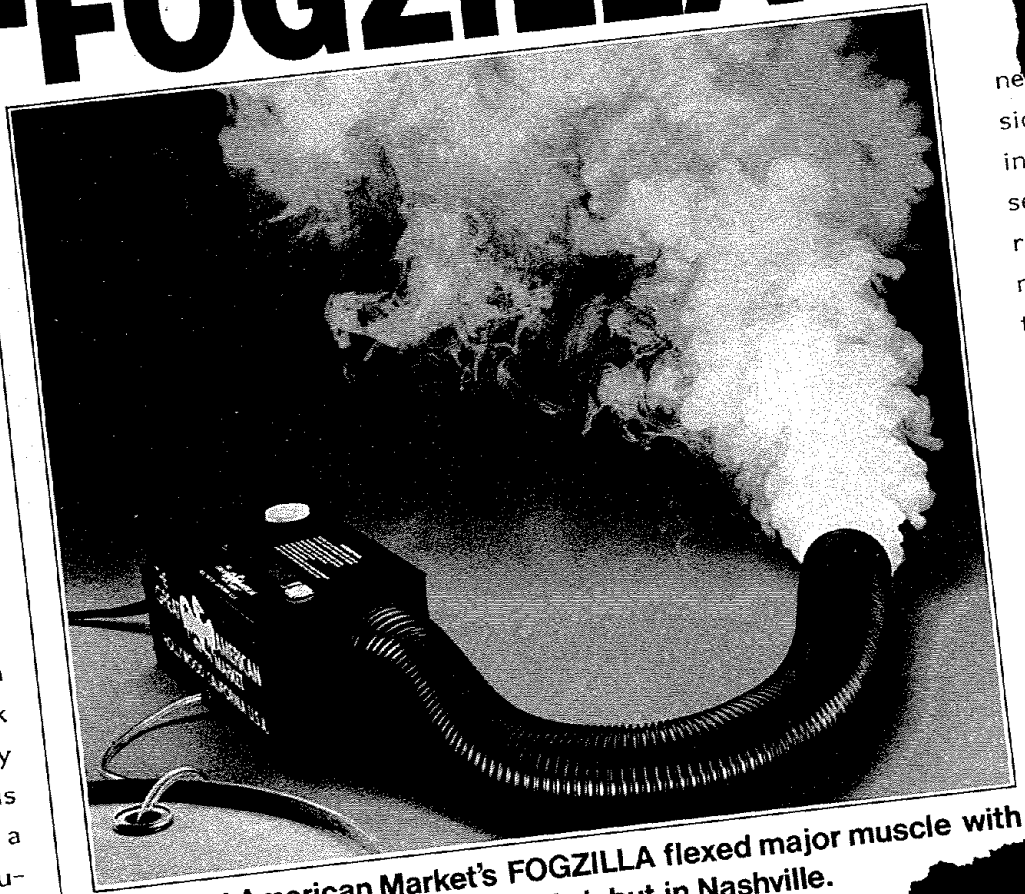


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Le Maitre's Mini Mist Turbo.

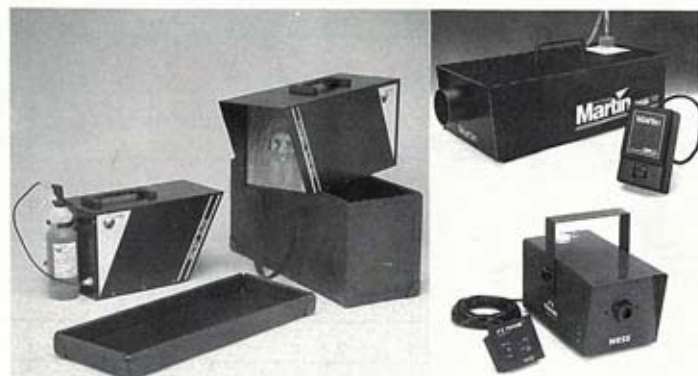
or 1500 machine and passes it across a block of dry ice. (The Chiller Module comes complete with 25' power cable, and speed control - the fan has a capacity of between 0 and 95 cubic feet per minute so a wide variety of fog effects is possible).

However, Jem and Le Maitre have now produced fluids and machines which create special low-lying smoke and these must be taking over from dry ice. The Le Maitre LSX Low Smoke Converter needs the input from either the company's Power Mist or Smoke Processor; the Jem Heavy Fog machine stands alone (note that some heavy duty machines for both low and normal smoke take considerable power).

Of course all these effects depend on the influence that the building's natural ventilation has on the air circulation. I have fond memories of a 60-piece opera orchestra sinking into the mist in Boston as the dry-ice ran off the edge of the stage and into the orchestra pit below (until an air-dam was fitted along the edge of the stage). It is always a wise move to try your smoke out in a new venue as soon as possible but first make sure that all the relevant air-handling plants are switched on and that all doors backstage are in their 'performance' mode.

Of course wherever there is a problem then somewhere there's a bunch of technicians trying to solve it, and perhaps the new generation of smoke machines is heralded by the Cirrus from Samuelsons (featured in L+SI April and August '89). This device doesn't really produce smoke at all but a thin white mist of airborne oil, almost invisible until hit by the light beams. The difference is that since the mist is not produced by heat it will stay around for a considerable time (another by-product is that the particle size can be greater too). Of course it is usually a condition of a licence that a building enjoys a specified number of air changes per hour and the impact that an air handling plant can have on disco smoke is considerable. Hence Jem have produced a Smoke Detector which continually monitors the smoke density level and feeds more smoke into the venue as required throughout the evening.

What interests me about this is the consideration that a licensing authority should make to the density of the smoke for safety reasons. I'm sure that all the manufacturers would use their products sensibly but should there be a maximum density level for public places? And when does 'smoke' become 'fog'? The problem is that no one has identified an agreed method of measuring the output of smoke



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NB1. originals introduced 1973

NB2. depends on smoke machine used

NB3. no internal tank

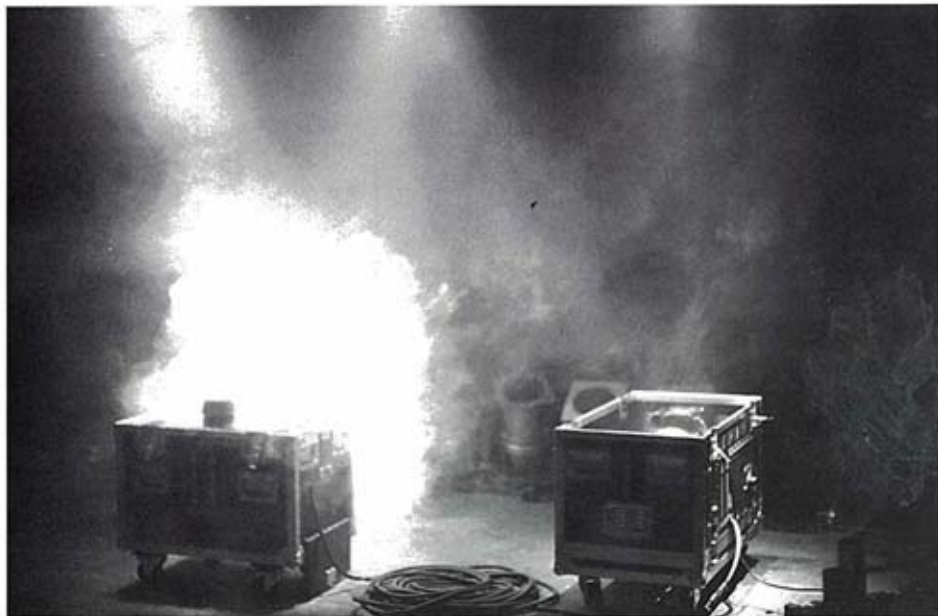
NB4. remote tank available on Martin  
(ALL) – Safex (SOME)

NB5. can be used with any JEM  
machine except Le Fog.

	1. manufacturer/agent M/A	2. date introduced	3. hire available direct or through dealer	4. fluid base if other than water – W	5. tank capacity	6. tank drain available?	7. warm up time/minutes	8. duration of output (assumed maximum rate)	9. output in cu ft	10. particle size in microns
<b>JEM SMOKE MACHINE CO</b>										
Fogger	M	'90	No	W	2X LTR	–	rapid	N/A	15000 3 MIN	–
Le Fog/remote	M	'87	Yes	W	2X 1/2 LTR	–	8/10	45s/3M	20000 3 MIN	–
ZR20	M	'85	Yes	W	5 LTR	–	8/10	45s	40000 3 MIN	–
Club20	M	'88	No	W	5 LTR	–	8/10	45s	40000 3 MIN	–
Smoke Detector	M	'87	No	W	5 LTR	–	8/10	45s	40000 3 MIN	–
428 Modular	M	–	No	W	50 LTR	–	8/10	45s	ea. 40000 3 MIN	–
ZR41d Fog Generator	M	'88	Yes	W	5 LTR	–	8/10	continuous	140000 3 MIN	–
Heavy Fog 2500	M	'90	No	W	2X 5 LTR	–	10	continuous	140000 3 MIN	–
Heavy Fog 6500	M	'90	Yes	W	2X 5 LTR	–	10	continuous	165000 3 MIN	–
Heavy Fog 1500	M	'90	Yes	W	NB2	–	10	NB2	NB2	–
<b>JEM THEATRICAL SUPPLIES AND EFFECTS</b>										
Roadie	A	'90	Yes	W	15 LTR	–	10	continuous	420000 3 MIN	–
Habana	A	'90	No	W	2X 1/2 or 2 1/2 LTR	–	10	45s	20000	–
Heavy Fog 500	A	'90	No	W	5 LTR	–	10	45s	N/A	–
<b>LAMBA</b>										
Martin Junior 700	A	'89	Yes	W	1 LTR	–	1.5	continuous	–	N/A
Martin Magnum 1200	A	'89	Yes	W	1 LTR	–	2	continuous	–	N/A
Martin Magnum 1600	A	'88	Yes	W	5 LTR NB4	–	2	continuous	–	N/A
<b>LE MAITRE</b>										
L.S.X. (low smoke converter)	M	'88	Yes	molecular	–	Yes	1	infinite	N/A	5
Pea Souper dry ice machine	M	'75	Yes	dry ice	8.5Kg BASKET	N/A	15	20 min	N/A	N/A
Mini/Opti Mist	M	'80	Yes	W	1 LTR	N/A	6	45s	N/A	5
Smoke Processor	M	–	Yes	W	5 LTR	N/A	7	45s	N/A	5
Power Mist	M	–	Yes	W	N/A	N/A	7	30s	N/A	5
<b>LIGHTING TECHNOLOGY</b>										
Hell dry ice system	M	'86	yes	dry ice	100 LTR	Yes	40	20 min	500 1 min	N/A
<b>LIGHTPOWER SHOWTECHNIK</b>										
Safex F2	M	– NB1	Yes	W	NB2	N/A	5	2/4	325/ 350	0.5/5
Safex 195C	M	– NB1	Yes	W	NB2	N/A	9	2/4	500	0.5/5
Safex SNG	M	– NB1	Yes	W	NB2	N/A	5/9	2/4	750/ 1000	0.5/5
Safex 9000/Victory	M	– NB1	Yes	W	NB2 NB4	N/A	5/9	2/4 MIN	3000 (ALL CUM)	0.5/5
<b>NESS IMPORTS INC</b>										
E-Z Fogger	M	'89	–	W	1/2 GAL	–	5	70s	2000 1 MIN	–
<b>ROSCOLAB</b>										
Rosco 1300	M	'89	Yes	W/ GLYCOL	NB3	N/A	10	–	1300 1 MIN	5/60
Rosco 1500	M	'88	Yes	W/ GLYCOL	NB3	N/A	10	–	1500 1 MIN	5/60
Rosco 4500	M	'89	Yes	W/ GLYCOL	1.3 LTR	No	10	–	4500 1 MIN	5/60
<b>SAMUELSON CONCERT PROMOTIONS</b>										
Cirrus 5 & 15	M	'89	Yes	mineral	25 LTR	Yes	none	as required	as required	1
<b>ZODIAK MANUFACTURING</b>										
Manhattan Micro Elite	M	'88	–	W	1 LTR	–	–	–	–	–
Manhattan Fogger Elite	M	'88	–	W	1 LTR	–	–	–	–	–



11. pump type	12. compressor/delivery separate	13. fluid consumption rate	14. length of main cable	15. mains plug usually supplied	16. current needed	17. remote, on/off	18. remote volume/rate	19. 'ready' indicator	20. length usual hose	21. extensions available	22. noise level 1m away	23. weight in Kg	24. dimensions in mm unless stated	25. other attachments	26. price — list ex VAT £
-	-	-	1.5M	-	4	Yes	-	Yes	optional	Yes	-	8	350×160×110	-	217
-	-	-	1.5M	-	4	timer	-	Yes	5M	Yes	-	14	479×200×180	-	-
-	-	-	1.5M	-	4	timer	-	Yes	5M	Yes	-	14	23×10×9 inch	-	-
-	Yes	-	1.5M	-	4	timer	-	Yes	5M	Yes	-	14	635×225×225	-	-
-	Yes	-	1.5M	-	4	timer sensor	-	Yes	5M	Yes	-	14	635×225×225	-	-
-	-	-	1.5M	-	16	Full program	-	Yes	5M	Yes	-	55	360×225×225	extra heads	-
-	-	-	1.5M	-	20	timer	-	Yes	5M	Yes	-	18	650×250×225	XLR remote	-
-	-	-	1.5M	-	40	timer	-	Yes	5M	Yes	-	160	830×665×490	ducts	-
-	-	-	1.5M	-	60	full effect	-	Yes	5M	Yes	-	210	1165×760×715	ducts	-
-	-	-	1.5M	-	10	timer	-	Yes	5M	Yes	-	100	830×665×470	NB5	-
-	-	-	1.5M	-	60	timer	-	Yes	5M	N/A	-	60	N/A	-	-
-	-	-	1.5M	-	4	timer	-	Yes	5M	Yes	-	9	479×200×180	infra red sensing	-
-	-	-	1.5M	-	7	timer	-	Yes	5M	N/A	-	43	605×335×390	-	-
tooth head	-	0.041 LT/MIN	1M	No	4	Yes	option	No	nil	No	-	7	460×190×170	-	229
variable speed	-	0.21 LT/MIN	1M	No	5	Yes	Yes	Yes	nil	No	-	8	460×190×170	-	305
reversible	-	0.21 LT/MIN	1M	No	7	Yes	Yes	Yes	nil	No	-	11	599×222×365	-	391
N/A	No	infinite	2M	No	6	Yes	Yes	Yes	optional	Yes	silent	80	690×690×840	-	1499
N/A	N/A	N/A	2M	Yes	12	N/A	N/A	N/A	optional	Yes	silent	8.7	570×475×510	-	175
cannister CFC free	Yes	2.5CC per sec	optional	No	5	Yes	No	Yes	optional	Yes	quiet	4	420×426×360	-	315
piston	No	6CC per sec	2M	No	10	Yes	Yes	Yes	optional	Yes	quiet	14	432×180×320	timers	540
piston	Yes	5CC per sec	2M	No	5	Yes	Yes	Yes	optional	Yes	quiet	6	370×200×265	timers	355
centrifugal	N/A	N/A	2M	32A C Form	32	Yes	Yes	No	nil	Yes	-	50	800×800×1100	Yes	1399.65
piston	N/A	55/65 ML/MIN	2M	Yes	6	cable radio	Yes	Yes	5M	-	-	5/6	340×170×170	ducts	NB2.DM 1450/6900
piston	N/A	105 ML/MIN	2M	Yes	10	Yes radio	Yes	Yes	5M	-	-	10	404×203×203	ducts	NB2.DB 1450/6900
piston	N/A	105/145 ML/M	3M	Yes	10/15	Yes radio	Yes	Yes	5M	-	-	11.75	405×225×205	ducts	NB2.DM 1450/6900
piston	N/A	450 ML MIN	2M	Yes	32	Yes radio	Yes	Yes	5M	-	-	25.3	625×225×205	ducts	NB2.DM 1450/6900
piston	-	-	-	-	8	Yes	-	-	-	-	-	5.3	8.5" 8.5"×15"	-	US \$ 416
peras tatic	No	1.75 LT/HR	2M	No	5	Yes	No	Yes	optional	Yes	N/A	8.4	363×165×162	ducts	350
peras tatic	No	1.75 LT/HR	2M	No	5	full remote	Yes	Yes	optional	Yes	N/A	8.4	395×150×162	super + remotes	475
peras tatic	No	5.25 LT/HR	2M	No	15	Yes	Yes	Yes	optional	Yes	N/A	17.7	623×228×417	super + remote ext	975
N/A	Yes	-	as required	16/32 A. C Form	16/20	yes	No	N/A	not advised	-	60 aBA (comp)	5/15	-	100' air hose	180 p.w. hire only
manual available	manual available	-	2	-	5	manual available	-	Yes	-	-	-	8	500×200×250	manual remote	-
-	-	-	2	-	5	-	-	Yes	-	-	-	10	610×200×250	manual remote	-



Samuelson's Cracked Oil smoke machine.

machines. For example **Lightpower-Showtechnik's** manual refers to density settings such as 'hazy, extremely hazy, dense, extremely dense' and again particle durability such as 'short life, long life, extremely long life'. Le Maitre in particular commented that our survey's question about output in cubic feet was 'nonsense'. This they said must be coupled with an indication of density to make sense. Since they make machines for the US and Royal Navy I asked what method of measurement was possible. They suggested that the input consumption (in cc's per second) was more viable: "You tend to get out what you put in". And our survey

does include a question on fluid consumption rate.

Nevertheless it seems to me that as this market grows in size and sophistication, and since its products often involve public sensory deprivation, that PLASA might do well to consider negotiating both a measuring formula and a density code of practice for various applications. Perhaps L+SI should actually test these machines side by side. I'm particularly interested to know just how 'silent' they are since many can clearly be heard in use in straight plays. All these matters will be controversial but then there's no smoke without etc etc!

### The Survey

The table on pages 42 and 43 covers those manufacturers whom we know are making or selling smoke and fog machines. As always, if there are any we've missed (and some didn't return numerous questionnaires) then please get in touch with L+SI and we'll print your data in an update later in the year. We also know that several manufacturers are planning new machines but they have asked us not to say anything for the moment so we'll keep you posted when we get the information. The survey is hopefully self explanatory but I should clarify that the answers are those actually given (albeit edited to save space) and not my interpretation.



Left is Rosco's new 4500 Smoke Machine, a robust machine to withstand the trials of location work. Top right is the new 1300, a low-cost version of, bottom right, the existing 1500 Smoke Machine.

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Lighting Designer

## JEFF RAVITZ

**CONCERT TOURS:** Ringo Starr & his All Starr Band, 1989; AMNESTY CONCERT FOR HUMAN RIGHTS NOW, 1988 World Tour; Bruce Springsteen TUNNEL OF LOVE (1988) & BORN IN THE U.S.A. (1984-5) World Tours; John Cougar Mellencamp World Tours, 1987-8 & 1985-6; Styx, six World Tours, 1976-83; many others.

**FILM/VIDEO (SELECTED):** FARM AID III; Bruce Springsteen, various; Styx, various.

**SPECIAL PROJECTS (SELECTED):** The China Club, L.A., permanent installation; MASTERS OF THE UNIVERSE, touring spectacular, 1987; Walt Disney World, DIAMOND HORSESHOE JAMBOREE, permanent.

**THEATRE:** SANSEI, Mark Taper Forum, L.A., 1989.

**AWARDS:** Lighting Designer of the Year, Performance Magazine Readers' Poll, 1986.

**PROFESSIONAL AFFILIATIONS:** United Scenic Artists of America; I.A.T.S.E. Associated Crafts & Technicians; USITT; ASLD.

**JEFF RAVITZ at the console: RINGO STARR & HIS ALL STARR BAND, Greek Theatre, L.A., 1989.**

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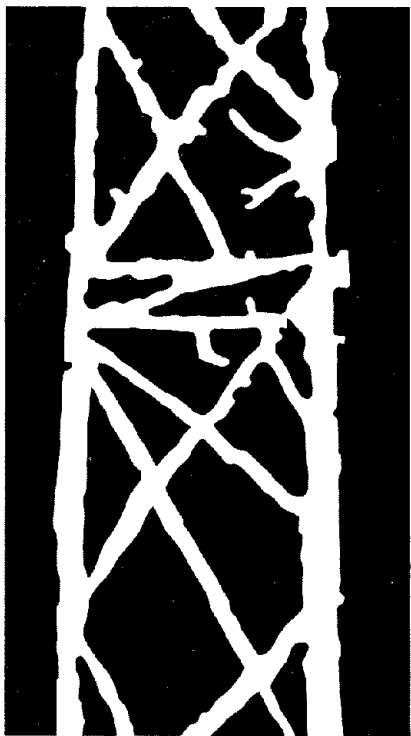
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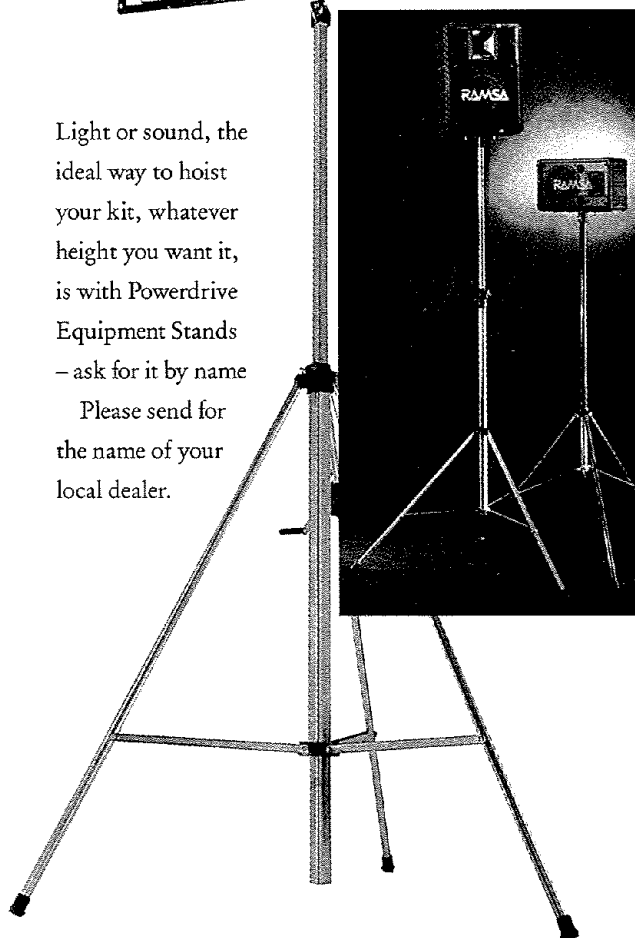
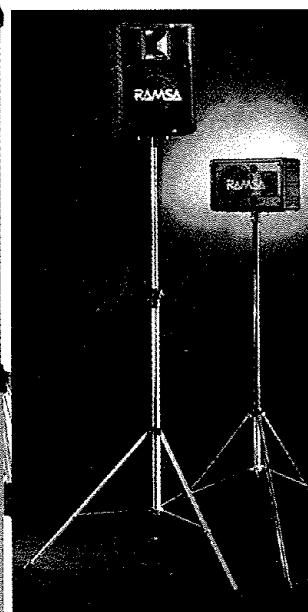
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# McCARTNEY ON A MAGICAL MYSTERY TOUR

Paul McCartney last toured in the seventies. Julian Williams (lighting) and Catriona Forcer (set) uncover the technicalities on his current World Tour

"I eat pizza," the innovative lighting designer Marc Brickman replied when I asked him what influenced his concept for the Paul McCartney World Tour. The show was in its second week at Wembley in London, and we were amidst the strictest security.

This is a rock show with a difference. All Par Cans are out, and everything moves, including the band! The moving lights are Vari\*Lites and are mounted into cradles which are referred to simply as 'pods'. These move the Vari\*Lites laterally, vertically, and tilt them from end to end or side to side. But this time they don't just point the beam round corners - they actually go round themselves!

The pods can move from down stage left along a track and traverse round a bend somewhere in the centre, moving on to up stage right. "This is an extension of what I did with the Pink Floyd lighting rig three years ago but with some curves added in the track," Brickman explained.

Judging by the variety of patterns created by the positioning of the Vari\*Lites and their 'infinite' coloured beams, Brickman appears to be inspired by the 'several Italian dishes of many patterns' as he suggests, or could it be quite simply that he really does need them for sustenance to do the months of work it takes to transfer an idea to a real live concept? We may never know.

McCartney casually walks on in a solo white follow spot to start his non-stop two hour 30 minute performance. In spite of contradictory reports in the national press, he actually does sing Beatles songs to 'a standing audience of all ages', and steers them through the highs and lows of the act. Brickman, whose policy is 'non-repeatable' light states, not only achieves this, but paces his lighting very carefully with the subtlety of Paul McCartney's repertoire, in this his first world tour in 13 years.

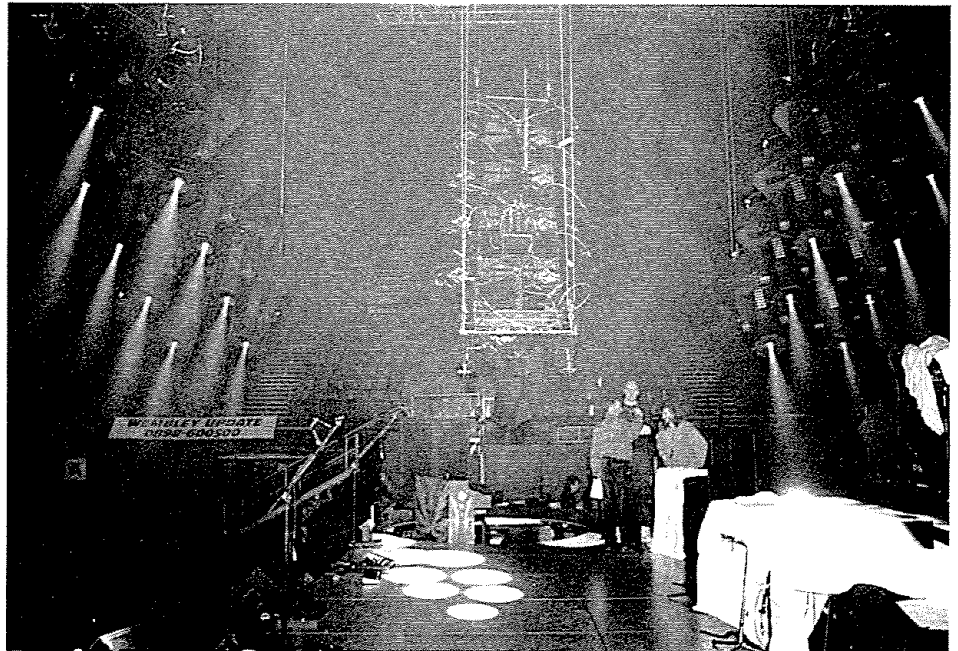
For the 'Sergeant Pepper' number there seemed to be a 'hundred' coloured beams from the 'side booms' position, stage left. In the up-tempo 'Live and Let Die', the lighting becomes an integral part of the performance, by almost 'dancing' in front of McCartney while he is playing at the piano, and ultimately ending with blue beams 'tumbling' away above to finish the scene. When he stands beside the keyboard in his casual way, complete with elbow on the lid of his grand, looking up into the darkness in a sudden fade to black-out - the audience go wild.

There were no pulsing light states. Marc Brickman's lighting utilises the careful filling of the ambient stage space with controlled fog. He takes up the narrative.

"The other thing that makes this lighting happen is the 'cracked oil' which creates a haze in the air, making the Vari\*Lites look a lot better. Without it they would look totally flat, and without depth."

In an intriguing use of the Vari\*Lite he creates an atmosphere of a mirage of coloured shapes in mid-air with each variation virtually 'taking its position' from cues in the dark, in and out of the songs.

When McCartney started out with the Beatles they were playing around the Odeons and Granadas when these houses



Three of the pods are lowered to stage level during set-up. The centre pod shows its frame tilted to point the Vari\*Lites in the opposite direction.

had only three colour batten washes flashing up and down, with the odd pyro flash box in the floats at pantomime time. One can imagine the temperature when, on each rendition of 'Live and Let Die', they let off 20 of these flash boxes strapped together!

One 'brilliant' idea they 'got away with' was for 'Can't Buy Me Love' when a lot of bright white light was put on at the climax, the house lights included, and all this in a rock show! In 'Hey Jude' Brickman did it again, but with all 60 VL3 Vari\*Lites mounted around the main roller drape in the shape of a proscenium, spaced equally along its length. He pointed them all open-white as blinders onto the audience, along with everything else it seemed, leaving the stage in darkness.

"It's a different tracking system to that which I used on Floyd," said Brickman. "The actual design of it is simple and straightforward. It's just that each song is individual as each has a personality of its own, so you don't get the same tired old rock and roll looks. There are not that many lights - something in the region of 100 plus up there. It's just the way we use them. There are only Vari\*Lites and Telescans, which are my favourite instruments."

Brickman hopes to light an opera later in the year and also a Broadway play . . .

Brian Croft, Samuelson Concert Productions' head of production and project manager for Vari\*Lites on the show, explained: "Our involvement is with the trusses, motors, rigging, intercom, follow spots, and the mains system. We are the main contractor for the show. It's getting terribly complicated now because in Japan we're going into a dome and afterwards in the US we are going outdoors to play in larger stadiums, where it's going to be a bigger show with lots of changes. We're adding another 120 Vari\*Lites," he said.

"We've been going since August and we

have settled down to a routine - but now of course lots of changes are coming about - which is very exciting."

The McCartney set (designed by Brian Clarke) is backed by an 80ft wide, 35mm movie screen which incorporates a scenic truss with roller drapes for blacks or painted scenery designs, and a red Austrian drape which forms a theatrical backing. There is also a hydraulic monolift, with four changes of 40ft scenery backings.

Croft described their effect: "They come up during the show and move the whole band from stage left to stage right for one effect. They are down for the opening movie and come up during the show. When they move from left to right the whole accent of the show changes from centre to stage right and the whole of the back line is on scissor lifts." (There are three lifts for keyboards, drums and Linda McCartney's keyboards respectively, which are mounted onto rail tracks on the deck.) Linda's keyboard actually rises during the spectacular 'Coming Up', where the lights and just about everything is on the move somewhere. She travels over the top of the drummer, while McCartney is playing a piano stage right at the top of a mini revolving lift!

Croft went on: "The whole thing is very wide. Normally a show sits on a 60ft by 40ft stage, but this one moves, though some people don't notice it! What I like about the show is that the scale of it keeps changing. Sometimes it's a very tight little show lit in the middle and the next thing you know, it's 80ft wide and all these lights are on a proscenium-like structure.

"Brickman's use of stage mist is the Arc Fogger, from California, which emits this very fine haze by compressing a mineral oil which is pressurised through a patented head - it's not smoke caused by a heat process - apparently they have been used in Hollywood

for the past 30 years. The interesting thing about it is that the smoke doesn't disappear but hangs in the air.

"It's a designer thing, rather than going straight across the stage they create an interesting shape. During one of the songs, the pods start down stage left at deck level, and come up over the stage to amazing effect.

"Everything has been built around these pods," Croft continued. "It's very expensive and labour intensive to put up - it takes us about six hours from get-in to trim. The whole fit-up is an orchestrated thing. The show has to go in at the very latest at 2am to be ready for show time. There are about 45 motor points in the rigging and the building of the grid takes time. Once this is done everything happens very quickly.

"Basically this Robo Track system is the track, the trolleys, the drive units, and the pods. This is suspended from a grid built from two 'dog-legs' with a hinged joint made of Samuelsons TTR folding truss, and then having seven 'fingers' which run down stage with one tying them together forming the main grid. It all folds up and goes into dollies taking up small truck space.

"There are four pods (a frame with 9 Vari\* Lites on it), which move vertically, whilst the trolley moves laterally. Each trolley runs on four motors so it can tilt the pod from vertical through horizontal, to nearly vertical the other way. A large flat drum takes up the control cable slack to allow for 40ft of travel as each pod drops down to stage level.

"Programming this tracking and the vertical movements is complex," said Croft, "as the positioning has to be repeated to the millimetre. They are controlled from a PC-based system, which makes allowances to compensate for the 'swing' of the pods as

they are moving and stopping throughout the show. Occasionally a component goes down but we've never lost one in an embarrassing position, and we've only ever lost one pod completely during a performance."

Samuelsons also have the Stones tour and the shows will come together in Japan, when these two major world tours are played back to back consecutively. The company is presently working with Cliff Richard on his new World Tour for which they have supplied a rig which includes 50 Vari\* Lites. This show, which has just started in New Zealand, will eventually return to play a major season in the West End of London.

**Julian Williams**

"Let's face it, the man's a genius. All McCartney really needs is a single spotlight and a microphone."

Chris Lamb, tour manager of Paul McCartney's global concert expedition, says this in front of more than two million dollars' worth of state-of-the-art computerised sound systems, electronic circuitry, hydraulics, robotics and split screen projection designed to back the McCartney repertoire of old and new songs in performance across the world.

The touring set, partly from the United States and partly supplied by Kimpton Walker of London, is a vibrant construction planned for fast assembly at venues where nothing is laid on except seating and power - even power being disposable since the show travels with its own generator. Chris Lamb, like many of the 50 strong support crew, is an American. John McGraw, the show's designer, is also from the United States, so why the participation of Kimpton Walker, a British firm?

John McGraw's answer is simple: "It would probably have suited me better, since I work

out of LA, to set the whole thing up in the States but Paul wanted British input. I brought in Kimpton Walker because I've used them before - on shows like Queen and Prince for instance - and I guess that gives me confidence.

"Producers come to see me because I conceptualise as a designer and detail as an engineer. Kimpton Walker, with their combination of scenic flair and technical skills, are in tune with my way of working and respond to the heavy demands I make on my contractors for pin sharp precision while meeting tough time schedules. Mass audiences for rock and other music today want to see the set perform for them as well as the guy making the sounds. So the set has to be a performance vehicle. It has to give messages, change shape and point climaxes. At the same time it has to adapt itself to freedom of movement. With computer control it can take its cue from the performer, not vice versa."

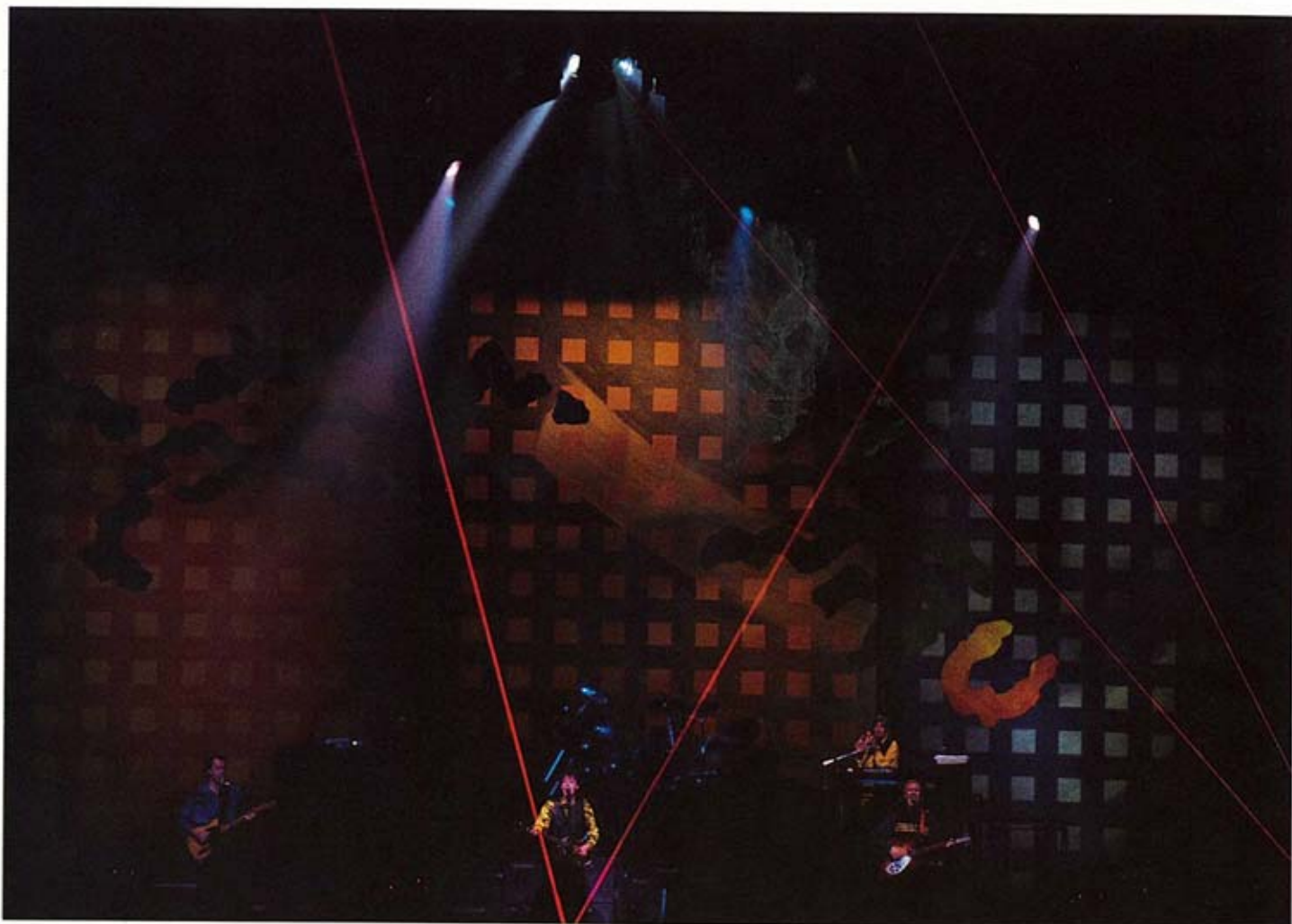
This being said, the McCartney set which John McGraw has designed, though complex is far from flamboyant. As the show develops it becomes clear that its role is to enhance the songs and to underscore the McCartney performance rather than to create virtuoso effects in its own right. Except for the 80 feet wide back projection screen and the 40 feet high painted panels, Kimpton Walker's work is largely unseen by the audience. Lifts, rollers, curtain mechanisms, lifting risers, the aerial platform that carries Linda McCartney high across the stage - these constitute the engine room that drives the show through its patterns of sight and sound and represent the technology behind its creative brilliance.

John McGraw explains further: "The



The 40 feet high rolling backdrops were designed by Brian Clarke and painted by the scenic studios of Kimpton Walker.





Knife edge graphic accuracy and eight processes of scenic painting were devised to achieve the final 'stained glass' backdrop for McCartney.

essence of the design is to allow Paul McCartney a considerable degree of spontaneous action. You can appreciate that this means raising and lowering tons of stuff at the flick of a switch. To make the concept of untrammelled movement possible - and McCartney demands this - you have to have a lot of gear in place; a robotic system, racks of computerised components and motorised trolleys with winches that move in all directions with servo-digital control."

The show is introduced by a short film made by Richard Lester which combines 25 years of Paul's music with 25 of world events - in 11 minutes. The film is projected on to an 80 feet by 20 feet screen and, as the TV screen ratio is 3 to 4, the screen is broken into three separate images with three projectors linked by computer. With the proportions for the film footage correct, there is then the opportunity to play with a triple screen and controlled disorganisation of time. By splitting the screen into three images Richard Lester can produce an enormous amount of material for the audience, 33 minutes compressed into 11 in fact.

As the Paul McCartney World Tour has progressed, the 40 feet high backdrop in

four panels, moving on rollers, has become one of the show's star items. Designs for the backdrop are by Brian Clarke whose work is featured in many famous buildings and museums across the world. It was the task of Kimpton Walker's scenic artists to realise these designs at many times their original size as a field for spontaneous and sophisticated lighting effects. Brian Clarke comments: "The stage design for the McCartney World Tour is a first for me and Paul and Linda conceived the whole thing not just as a stage but as a real art event - in fact the marriage of a huge work of art and music.

"The basis of my design is an interlocking grid with free elements introduced in counterpoint to the repetitive formality. Kimpton Walker needed to control all the disparate elements while maintaining sensitive colour balances as magnification took shape. The design had then to work in performance under Marc Brickman's inventive lighting effects."

Marc Brickman, the show's lighting designer, has worked extensively in concert, theatre and film lighting but he is particularly noted for his work with Pink Floyd. The plot has only 120 lighting instruments but due to

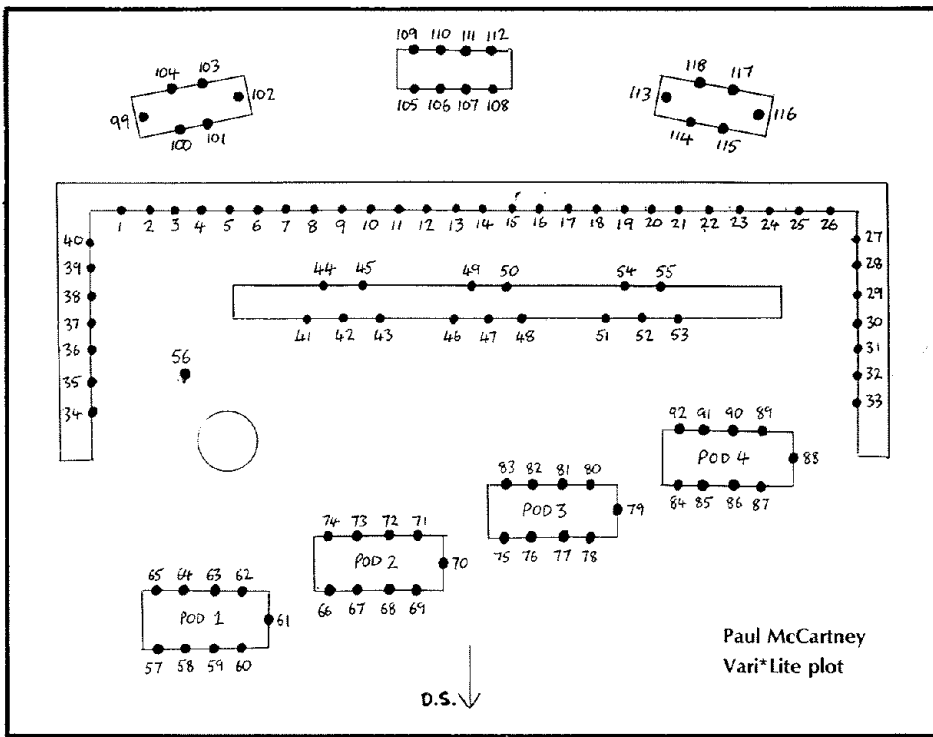
the high trim height it looks deceptively higher. Equipment includes lasers, telescans, pyro's Vari\*Lites and the moving tracking system (highlighted by Julian Williams on page 47) which enables the show to take on a multitude of different looks with a small amount of instruments.

"This show doesn't need an amazing light show," explains Marc Brickman. "This show is to enhance Paul. Audiences are more sophisticated these days because of television and the movies and so there has to be good visual happening along with the music especially when you are in a 60,000 capacity stadium for 2½ hours. The music definitely stands on its own but you need to enhance it so it's a complete package. I use all the same elements here that I used on Pink Floyd, as far as lighting instruments are concerned. The basic philosophy is the same but everyone agrees it doesn't look like the Pink Floyd show because it's used to highlight Paul.

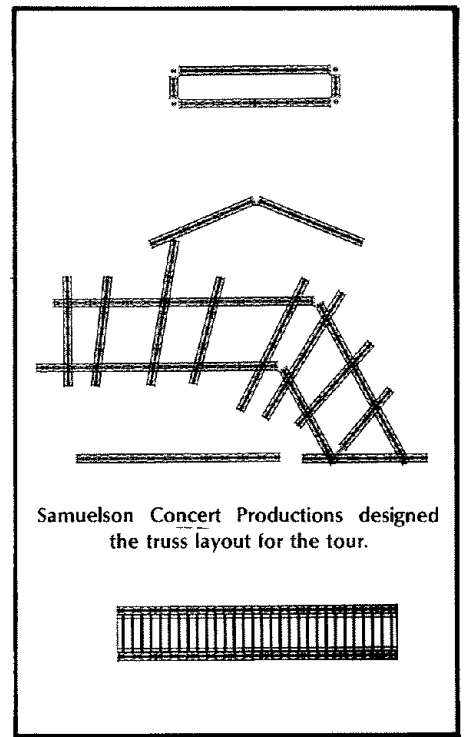
"There's nothing here that hasn't been done before, it's just the way it's used. I take technology and twist it around. Trusses have been moving up and down for years and the tracking system is just the next step. Paul is



The four pod frames, each carrying 9 Vari\*Lites, provide effects lighting to 'underscore the McCartney performance.'



Paul McCartney  
Vari\*Lite plot



Samuelson Concert Productions designed  
the truss layout for the tour.

the special effect and he is the number one thing that you see."

Catriona Forcer

## The Set-Up

### Vari\*Lites

60 VL3 Vari\*Lites around roller drape to form a proscenium shape (24 uplighting from underneath the band)

15 VL4 Vari\*Lites on back truss (in 3 groups of 5)

1 solo VL4 on floor

9 VL2B on each of 4 moving pods = 36

Total 112.

### The Robo Track

Designed by John J. McGraw III, Plainview Inc, Ca, USA.

Four Industrial conveyor tracks (av length 85'), each with 60 deg bend. Four horizontal transports (traction drives) push/pull four suspension tubes, each with two vertical transports (double output wire rope winches) and one trunk cable reel (which operates w/o a slip ring or commutator). Each motor has an optical encoder which counts

the revolutions for positioning. A computer uses counts to execute cues via motor drive devices. Power, control and Vari-Lite cables festoon behind suspension tubes.

### Crew List

Marc Brickman (lighting designer)

Michael Keller (lighting director)

Lighting Crew: James McCarthy, Barry Branford, Gareth Williams.

Vari\*lites: Loren Geilenkirchen, Mike Owen, Mark Risk

Lasers: Joe Androff, Mark Grega, Kenny Schmidt

Telescans: Christopher Ducret, Martial Zerger.

### Automated Lighting

Vari-Lite:

36 x Active VL2B spot luminaires plus 3 spares

60 x Active VL3 wash luminaires plus 6 spares

16 x Active VL4 wash luminaires plus 2 spares

1 x VLD dimmer interface

1 x Artisan console

1 x Mini Artisan console (back-up)

Telescan:

24 x Telescans MKII series 2 and control

### Trussing and motors

744ft of folding truss

16ft of conference truss

3 x hinged truss corners

1 x extended gallows brackets

12 x 2 ton CM Lodestars chain hoists

31 x 1 ton CM Lodestars chain hoists

1 x 30 way Lodestar hoist controller

1 x 12 way Lodestar hoist controller

2 x 6 way Lodestar hoist controller

41 x points of rigging materials

4 x 20m 1600kg tirlors

2 x 20m 700kg tirlors

1 x 3m 3000kg "Bee Bee"

1 x 3m 1500kg "Bee Bee"

### Miscellaneous

1 x 48 way dimmer rack and mains cable (for set lights)

6 x 400 watt HTJ long-throw Lycian follow spots

14 x stage multicores

100 metres mains cable assorted

1 x Jem smoke machine

4 x fans

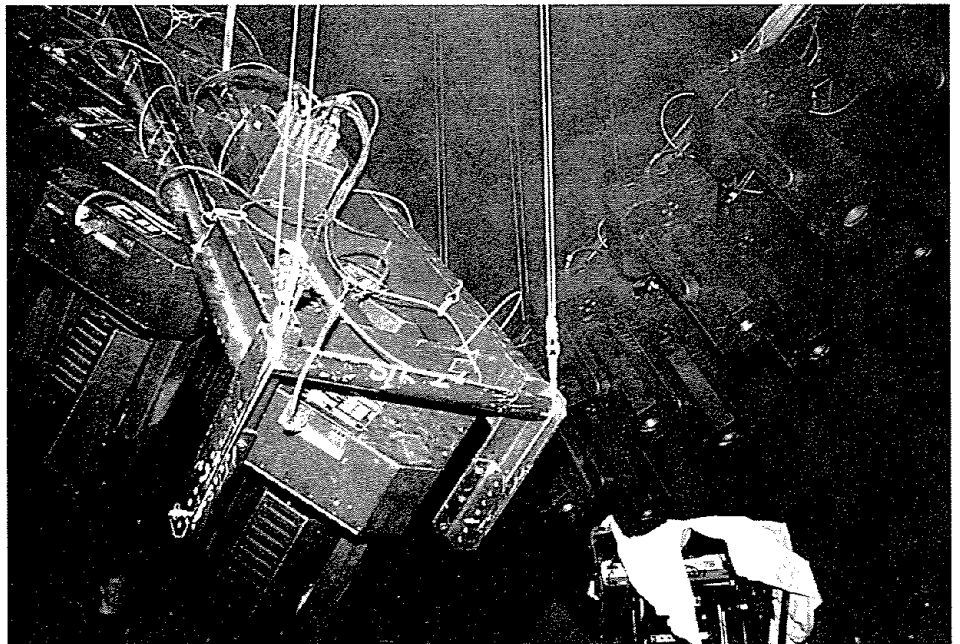
1 x 29 channel intercom system

1 x 2 channel intercom system (movie projection)

2 x cracked oil machines.



Mark Brickman (left) with Brian Croft.



Close-up on two of the pod frames with the Vari\*Lites mounted underneath.



# BETTER THAN NATURE'S OWN LIGHT SHOW?

## FAL ITALY BLOWSTAR



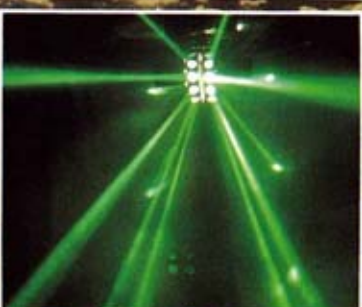
"Flower" effect with the added dimension of sound activated mirror scanning and revolving.

## FAL ITALY VENTAGLIO



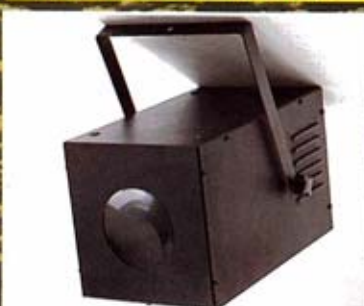
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# PLASA News

## Sub-Committees

PLASA now has nine sub-committees commencing their 1990 operations, and each will be backed up by a member of staff at the Eastbourne headquarters as necessary.

Each sub-committee chairman has the right to co-opt additional representatives from the membership in general if so desired. It is hoped that a more structured operation will result in a sharper response to problems and projects as they arise.

The Association is also advanced in its deliberations over the appointment of a part time Standards Officer to work closely with Tony Akers, chairman of the relevant sub-committee.

## Dusseldorf and Orlando

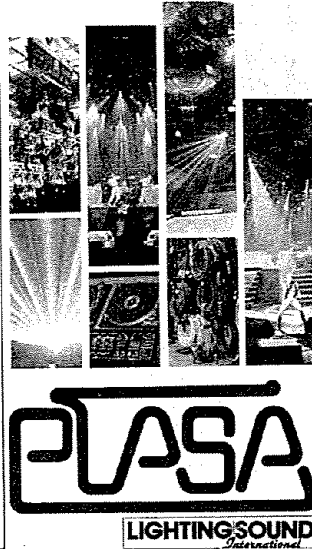
Other DTI/PLASA group schemes for 1990 have been approved for Discotec in *Dusseldorf* (November 5-9) and Lighting Dimensions International in *Orlando* (November 17-19).

Please contact Chris Sogno or John Offord in the PLASA office if you want your company placed on the list for details when available.

## PLASA at SIEL and Frankfurt and SIB

PLASA and Lighting + Sound International will have a stand at SIEL in Paris, the Frankfurt Music Fair, and at SIB in Rimini. Representatives from PLASA (and an interpreter) will be on hand at all three events and look forward to seeing visiting members.

Industry Yearbook 1990



## New Yearbook

PLASA's latest Industry Yearbook is now available. Two major articles are included in the 1990 edition. Graham Walne takes an industry-wide look at 1989 and gives a hint or two for the nineties, and Ken Dibble says 'Noise Annoys' - and that's official. All members will receive one at about the same time as you're reading this. If you want more copies, a coupon is on page 53.

## Urgent for Madrid

Any PLASA members and other UK companies interested in exhibiting at *Expo Musica* in Madrid in May (16-20) must contact the PLASA office immediately. Cut off date for the DTI supported scheme is February 28th and we are still short of the minimum 10 companies needed to set up the group - which shows a huge saving compared with costs if you had to book direct.

Please contact Chris Sogno in the PLASA office on (0323) 410335 as soon as possible if you are interested.

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## Exhibition Diary

### SIEL

February 17-20, 1990.  
Porte de Versailles, Paris.  
Enquiries: Bernard Becker Communications, 22/24 rue de President Wilson - 92300 Levallois-Perret, Paris. Tel 33 (1) 47 56 50 00.

### SOUND NINETY

February 20-21, 1990.  
Heathrow Penta Hotel, London.  
Enquiries: SCIF, 4b High Street, Burnham, Slough, Bucks SL1 7JH.  
Telephone: (06286) 67633.

### FRANKFURT MUSIC FAIR

March 21-26, 1990.  
Frankfurt Fair Centre, Frankfurt, West Germany.  
UK Representatives: Collins and Endres, 18 Golden Square, London W1R 3AG.  
Telephone: 01-734 0543.

### 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.

### USIT

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.

### 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

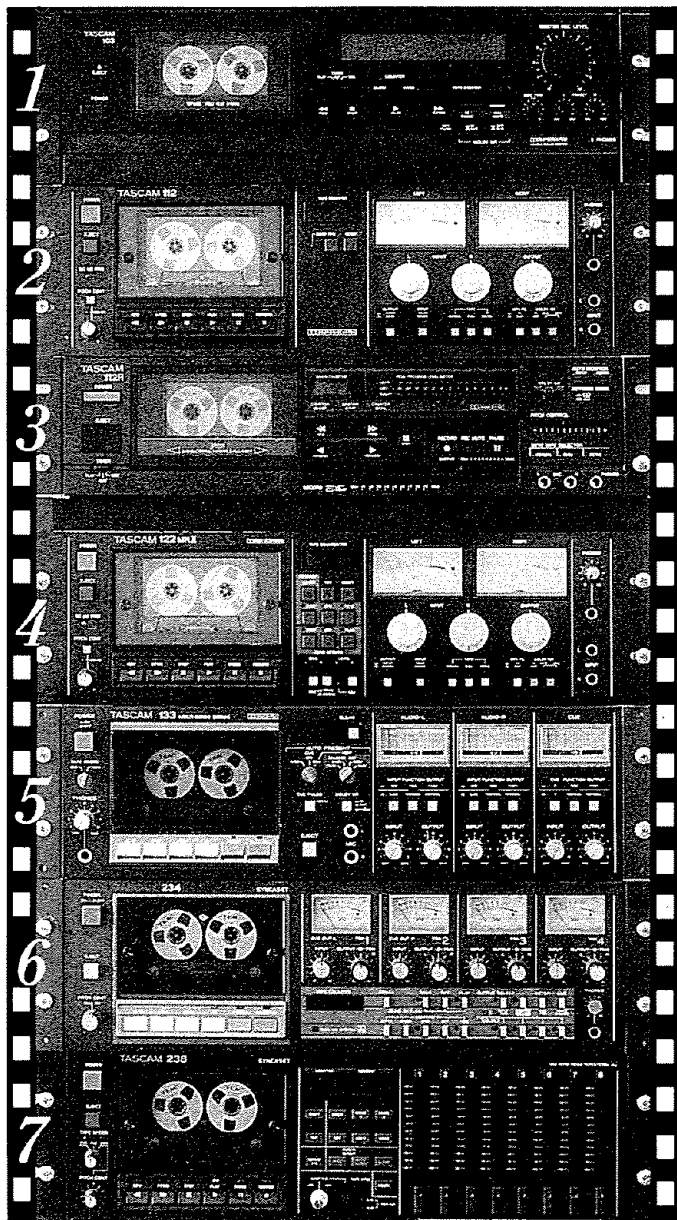
November 5-9, 1990.  
Messe Dusseldorf, Dusseldorf.  
Enquiries: Dusseldorfer Messgesellschaft GmbH, NOWEA, Postfach 32 02 03 D-4000 Dusseldorf 30, West Germany.  
Telephone: 0211 45 60 01.

### LIGHTING DIMENSIONS INTERNATIONAL

November 17-19, 1990.  
Orlando, Florida.  
Enquiries: Pat Mackay or Jackie Tien, Lighting Dimensions, 135 Fifth Avenue, New York, NY 10010, USA.  
Telephone: (212) 677 5997.



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| 3: | 112R    | Auto reverse; 4 Heads; Dolby B/C<br>Multi operation   | Heavy Duty  |
| 4: | 122     | 3 Heads; Dolby B/C and HXPro<br>XLR in-out  | Heavy Duty  |
| 5: | 133     | A/V Standard; 4 Track/3 ch; Dolby B   | Heavy Duty  |
| 6: | 234     | Cassette version of 34B; 4 Track; Built-in 4/2 mixer; DBX<br>Optional remote foot switch      |             |
| 7: | 238     | 8 Track; Shuttle control; DBX Type II; Auto punch in-out<br>RS232 Interface ; Optional remote |             |

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# PAINTING WITH COLOURS

## Simply Red and Morpheus - An L+SI Special Report

With many successful hit records behind them, Simply Red are currently riding high on a wave of popular acclaim from both public and media alike. Their current World tour, already playing to sell-out audiences, will undoubtedly further strengthen the appeal of this blues/jazz-orientated band. L+SI talked to lighting designer Ian Buxton, Avolites' Steve Warren and Bob Doyle of SSE Hire about their involvement in the tour.

"Imagine being used to painting by numbers and then being given a blank canvas. That's the difference between the 'Morpheus' system and a generic system. The only restraints are where you initially decide to put the units. Beyond that you can select beam type, i.e. A/C, V.N., N.M., and Flood; focus position and colour with a choice of 12 on PC beams and can change the instructions as many times as you like.

"I would estimate that on Simply Red at the moment we have the equivalent of about 3,000 par cans achieved with only 100 PC beams. In addition, we have Morpheus's equivalent of Vari\*Lites. Having never worked with Vari\*Lites, I'm not in a position to compare the two, but with the Morpheus having all the facilities of the Vari\*Lite, and an impressive reliability record, I'm satisfied.

"The truss spots are Pana spots, which are manually directed and allow control of colour, iris, size and on/off. With a modest system of, say, a 100 lamps you are well-equipped to do even the largest shows without repeating a formula already used. With only two crew persons, and the whole lot fitting in one truck, who says it's expensive?

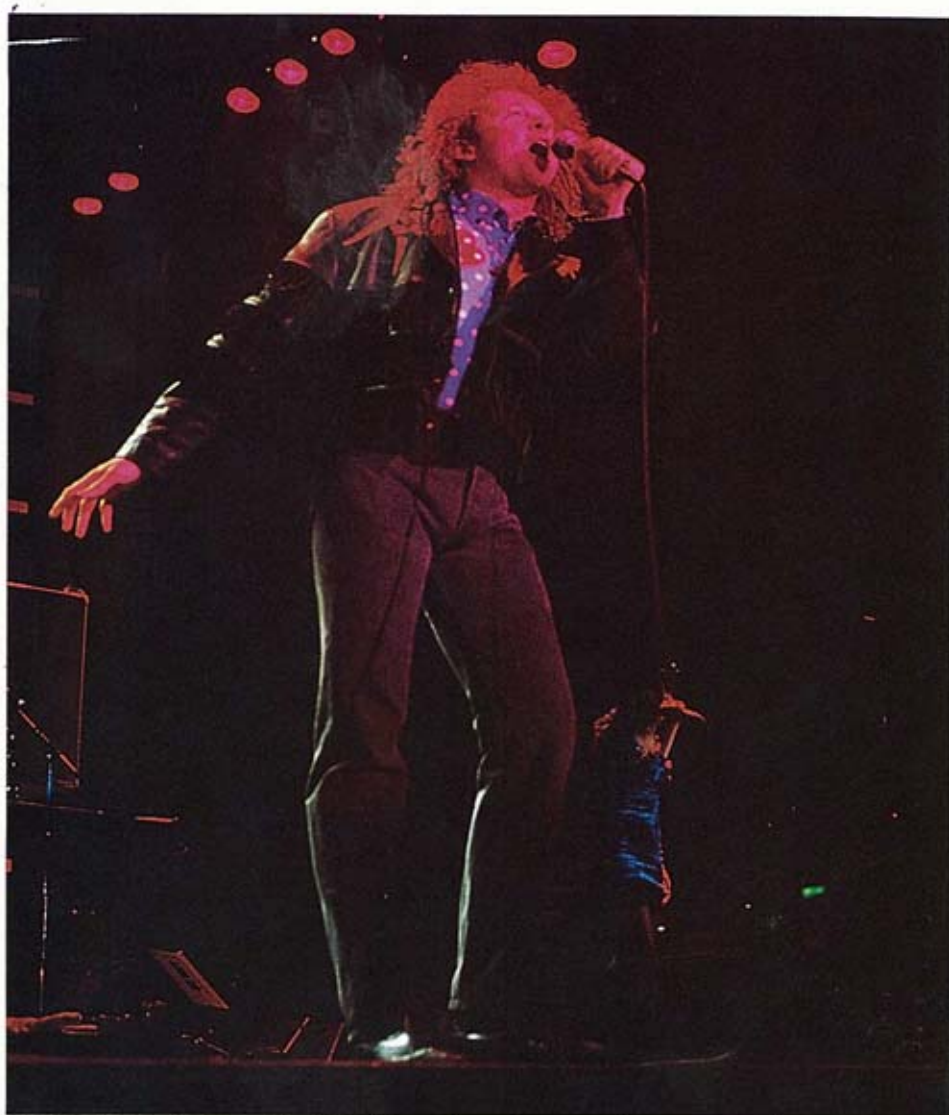
"Imagine how such a system would be applied in a festival situation with each LD having his own focus/colour design as required, and available at the touch of a button.

"For our purpose we route everything through an Avolites QM 90-way control board. This means the operation is still manually directed, but can be adaptable. Simply Red are the kind of group who change their show every night, and I find this to be the most effective way of coping with the changes.

"Eventually, every song they do will have at least two different looks, which allows for any eventuality."

Ian Buxton

Although on a two week break at the moment, Simply Red seem to be a band that



Mick Hucknall, lead singer of Simply Red, in performance - more pictures next month.

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just loves the road, touring constantly. In the last year their show has visited the UK, Europe (a number of times), Australia, the USA and Japan.

From a lighting point of view, the show was very interesting, utilising a 'fully remote' rig from Pan Command/Morpheus. Ian Buxton, the lighting designer, resisted the 'move everything all the time' temptation and ran the show with cues that were powerful in their own right. Above the stage hung large cloth-covered 'cubes' which, when internally lit, spelt out *Simply Red*; far from being a gimmick they gave the stage a strong three-dimensional effect.

The rig is made up of the custom Morpheus 'Flip-Top Pre-Rig Truss' which is rather a neat design consisting of a flat bed which the PC beam luminaires are bolted to, and hinged sides which may be swung through 180° and locked in the up or down position. The truss forms a catwalk with personnel walking on the flat bed with the locked sides becoming the safety rails. Alternatively, in the locked down position the luminaires are protected, and the rig runs on wheels and stacks three-high to become a 'meat rack', simplifying the set-up and truck pack.

Apart from a few floor cans fitted with scrollers all the luminaires were from Pan Command, the large majority being PC Beams supplemented with 20 or so PC Spots. Front of house stood the Avolites QM90 console and the Pan Command console incorporating an IBM PC and custom Kleigl Performer IV.

Avolites QM90 was controlling the intensity of the PC beams by taking the output of the Avolites console and feeding it into the Pan Command console which would, in turn, supply the colour X-Y position and beam size information. All the control information would then be sent to the PC beams via Digital Protocol. All PC spot information is supplied by the Pan Command console.

The PC Beam, a remote wash luminaire,

mechanism. Imagine an iris with the centre pulled back to form a parabolic reflector. Adjusting the distance the centre is moved which changes the beam angle from ACL to PAR. The unit is also fitted with a scrolling colour changer.

The PC Spot is a high specification, fully remote controlled spotlight (in the family of Vari-Lite VL2B type luminaires), offering control over beam size, edge, X-Y position, 360° pan/270° tilt, six gobos (three variable speed rotation), colour selection by dichroic filters (snap change or dissolve to any colour).

The current 'sell-out' tour started production rehearsals at 'The Point' Dublin on January 1st and will finish at 'The Ahoy', Rotterdam at the end of March. During this time they have sold out three nights at Wembley Arena and five at the London Docklands.

Along with the lighting and operation by Ian (Bucko) Buxton, rigging was by John (Happy) Bray, the Pan Command technician was Tom Mahoney, and Nick Levitt was production manager.

uses a 1kW incandescent source on a board dimmer, and an unusual adjustable reflector

**Steve Warren**

Birmingham-based hire company SSE have been involved with *Simply Red's* tours since 1986. Planning for this current tour started in 1988 when SSE were approached by tour manager Sophie Ridley to provide the sound specification. *Simply Red* hired £500,000 of sound equipment for the duration of the tour, which included the new ElectroVoice MT4 system.

As there will be no equipment changes during the tour, sound technician Robbie McGrath had the equipment customised to his own specification in order to cope with the varying shapes and sizes of venue around the world.

SSE have an impressive list of tours behind them including UB40, Wet Wet Wet's 'Holding Back The River Tour', Five Star,

Prince, Metallica, Deborah Harry and Hue and Cry.

**Bob Doyle**

#### Lighting Equipment:

(supplied by Morpheus Lights Inc)  
18 x PC spots  
103 x PC beams  
3 x Cue spots  
1 x PC desk  
1 x Avolites QM 500  
20 x Par 64 c/w ColorRanger IIs  
7 x 3-cell Far cycs?  
10 x CM chain hoists  
1 x flip box truss system

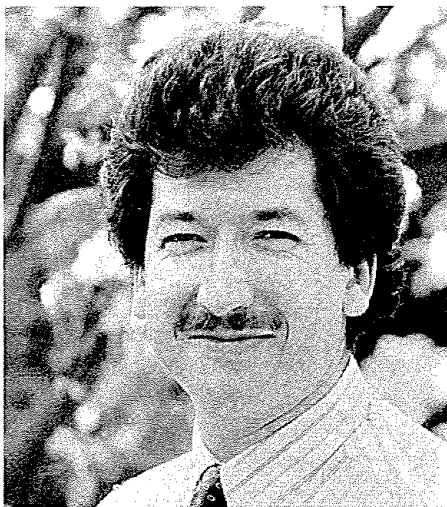
#### Sound Equipment:

(supplied by SSE Hire Ltd)  
20 x ElectroVoice MTL4 bass enclosures  
20 x ElectroVoice MT4 MH mid/high enclosure  
8 x ElectroVoice Deltamax enclosures  
Crown Macrotec 2400 amplifiers  
Carver PM1.5 amplifiers  
TAC SR9000 f.o.h. console  
BSS custom crossovers  
Klark Teknik graphics  
BSS DPR 402 compressors  
Drawmer and BSS noise gates  
2 x Aphex type C aural exciters  
2 x Lexicon PCM70 digital reverbs  
1 x AMS Rmx16 digital reverb  
1 x Lexicon 480L digital effects processor  
1 x TAC TX10 crossover  
Klark Teknik DN716 digital delays  
4 x SSE LB3 bass cabinets  
8 x SSE HB3 mid-high cabinets  
14 x SSE MB3 bi-amp wedge monitors  
4 x SSE MB2 bi-amp wedge monitors  
4 x SSE LB3 bass sidefill cabinets  
4 x SSE HB3 mid-high sidefill cabinets  
TAC Scorpion monitor console  
Klark Teknik parametric equalisers  
Drawmer compressors  
2 x Yamaha SPX90 reverb processor  
Carver PM100 and PM2.0T amplifiers

**Due to circumstances beyond our control, the photographs intended to accompany this article did not reach our offices in time for publication. We hope to include pictures of *Simply Red's* lighting rig in next month's issue.**

## PEOPLE

● Staging Post, a company providing a total technical management package, including sound, lighting, AV and video projection, to live event producers have recently announced the appointment of **Tom Brookes** to their technical department.



**Phil Pell.**

● Celestion International has appointed **Phil Pell** to create a UK dealer network for its SR Series. Pell, at 35 with 15 years experience in the MI business already tucked under his belt, has already almost doubled his target by appointing 60 SR Series dealers in less than six months.

● At the end of 1989 **Colin Mitchell** joined leading Videowall manufacturers, Memotech Computers as international marketing manager. Mitchell has an impressive track record having spearheaded the enormous success of Memotech manufactured Cameron Videowall particularly within the leisure industry.

Now in the process of setting up new effective distribution channels for Videowall products, he told L+S: "The market has changed considerably, and so have we. Memotech have taken this step to offer the very best in terms of after sales support and service. Analysing customer and dealer needs, Memotech will be offering a full range of products to the industry direct from the factory, enabling us to be more competitive and reactive to customer demand." And in the future "No one is better equipped to provide a total service than the people at source. I am pleased to be in control of the supply chain from original manufacture through to customer service and look forward to developing the business over the next year."

Another recent addition to the Memotech staff is **Christopher Vlassopoulos**. As UK Videowall sales executive Vlassopoulos, who has had several years experience in the leisure industry with Panorama, will be working alongside Colin Mitchell at the Oxfordshire based Videowall manufacturers.

● New company Jem Theatrical Supplies Ltd, which commenced trading recently have announced the acquisition of **Mike Snape**, stage technical manager of Alton Towers, Britain's largest theme park. He joined Jem earlier in the year.

Mike has a highly theatrically orientated background and has held a number of key posi-

tions in both technical and lighting design areas throughout the British Theatre. He was formerly responsible for the development of major theatrical presentations at Alton Towers including their new ice show.



**Linda Brame.**

● Celestion have appointed **Linda Brame** as sales and marketing co-ordinator for its pro audio division. Linda, who has been with the company for three years, was promoted from her previous position as secretary to Celestion's research and development department.



# LETTERS

Dear Editor,

I write in reply to Julian Rees' letter, published in the January edition, in which he states:

... a great many freelancers are former theatre daymen who were too immature or too unreliable to sustain a full time job in theatre ... they throw the equipment in with no regard for the I.E.E. regulations or the rules laid down by the Licensing Authorities.'

Also that:

'A freelancer goes where the work and money takes him ... where then is their commitment to the theatre?'

The first part of this is a libel and an insult to all the serious-minded, highly competent and thoroughly professional freelancers working throughout show business. The industry in general has become far more technically specialised in recent years, demanding higher levels of knowledge and skill from all who work in it. The days of the meat-headed 'roadie' types are now, it seems, thankfully over. There are incompetent freelancers, it is true, but equally there are some very competent people in full and part-time employment in all areas of the business. Useless freelancers don't last on the scene for very long because reputations travel very quickly. It is my own experience that failed freelancers often end up seeking regular employment as a means to pursue their bumbling careers. Incompetence is tolerated to a far higher degree in full-time employees and for longer periods of time ('... oh, I'm sorry, he's new here.').

Freelancers are often employed on big West End productions to make the big rigs and specialised machines work, while it is usually down to the in-house crews to handle the installation and decide how they will fit into, what are after all, their house systems. I therefore reject Mr Rees' 'throw-

ing' accusations and feel he must be confusing 'freelancers' for the less than able full-time labour provided by some sub-contracting companies.

We freelancers have to go where the work and money takes us, otherwise we don't make a living. Our commitment is not to one particular job, but to our craft as a whole. Successful freelancers get more work by being good at what they do, and by maintaining a good reputation through the quality of their work. Shoddy and untidy workmanship endangers not only our lives, but out livelihoods as well.

As a freelancer I do not limit myself to working in the theatre alone, but in the wider area of show business. I derive great job satisfaction from doing so. The variety of shows provides endless challenges to meet. Unfortunately, I often find myself subject to the petty political rivalries that exist between the various facets of the business (theatre, television etc.) and regard Mr Rees' comments on the whole sadly typical of the trivial and ignorant professional bigotry practised by so many, which ultimately only serves to damage relations within our trade.

The greater problem here is that the show business industry is an industry with a very low standard of training across the board; with experience gained on the job, often by trial and error, custom and practice. Indeed, the credit for the bulk of my own experience must go to the patient, long-suffering individuals who put up with me in my early days. Stage management and technical theatre courses, such as the one I took at L.A.M.D.A., go some way to meeting the need for trained staff; but they are too short at only two years and offer little in the way of specialised training in the many different areas of the subject that they deal with. I have no personal experience of the A.B.T.T. course, but have worked with many of their ex-students, some of whom can hardly be described as shining examples of their trade.

In other countries things are different. If a desk crashes in Japan, it is the job of the university-trained board operator to repair it. This board operator, incidentally, is practising a recognised trade with an annual salary of around £25,000. Germany is another example of a country with a higher level of

training. But in Britain there is not one course which teaches people to do what a freelance crew does, which is to go into an empty room containing only a three phase supply (sometimes) and (if it's our lucky day) hanging points and to install safe, fully functioning systems to the client's design and specification.

So will the Government and the show business industry get together to fund improved education? I cannot say that I am optimistic. We are all aware of H.M.G.'s attitude towards the Arts and I don't believe that managements (especially in the West End) are prepared to pay for skilled, apprenticed staff when the job can be done cheaper, mob-handed by untrained and unskilled labour. Even if it is at the expense of technical excellence and safety. One reason I left the West End for the 'industrial' theatre was because I felt I was worth more and could do far better than the near exploitation level of pay I was taking home as a showman from the London Palladium, one of the theatres under Mr. Rees' wing. And I was right.

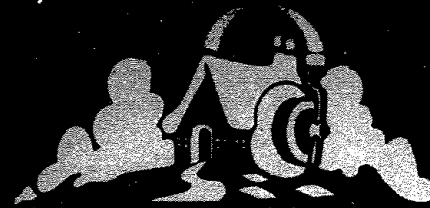
The other reason? I felt that I would never really learn anything by doing practically the same thing every day for years at a time while the rest of the business continued to advance.

Nick Cooke  
lighting designer and technician

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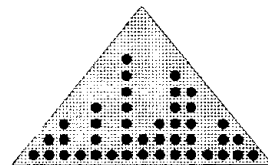


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# EQUIPMENT *News*

## Lumenyte Side Light Fibre

TBL Fibre Optics Limited, a company within Lonrho's engineering division - The Firststeel Group - has developed a totally new lighting system. The Lumenyte Lighting System is designed to enable the lighting designer to create special effects in almost any environment, and provides bright lighting without transmitting electricity or heat. The system consists of two components; the Projector which provides a powerful light source with rotating colour filters, and Lumenyte Optic the patented optical medium that transmits light.

Lumenyte Optic, unlike ordinary fibre optics, possesses the unique property of allowing light to escape evenly along its entire length through its side walls. It has the appearance of neon lighting, but is flexible, completely safe and without the electrical and mechanical complexities associated with conventional lighting. Constructed of a Teflon coated polymer core the Lumenyte Optic can operate over the range  $-40^{\circ}\text{C}$  to  $+200^{\circ}\text{C}$  and transmits all light wavelengths from 390 to 1600nm. It is available as standard lengths in 5, 7, 10 and 13mm diameters, individual lengths can also be spliced together.

The Rock Circus is utilising display fibre optic lighting from TBL. Devised by the Tussauds Group at a cost of £10 million, Rock Circus tells the story of rock and pop from the 1950s through to the present day, using a combination of wax and 'moving' bionic likenesses of all the big names in rock from the past four decades.

TBL fibre optics feature strongly, being used to create remarkable coloured lighting effects. An



The Lumenyte sidelight optic fibre from TBL.

ultra-violet reactive wall in which glowing coloured effects are created by covering walls with fluorescent plastic granules is supplemented by 'star bursts' produced by hundreds of fibre optic points of light which expand and change colour with 'hypnotic' effect.

The highlight of Rock Circus is a spectacular animatronic show in which the Beatles, Elvis, Madonna and others perform 'live'. This show takes place in a large revolving theatre, which is claimed to be the largest in Europe, and is narrated by a bionic Tim Rice. The Beatles bionic performance featured in the revolving theatre has a 'Lonely Hearts Club Band' drum studded with hundreds of TBL fibre optic points of light to produce a visual centre piece of exploding colour and movement.

The applications of Lumenyte are considerable, say TBL, they range from perimeter and landscape lighting through exhibition and architectural designs, to decorative interior lighting in places such as restaurants and bars.

For further information contact Alan Sutton at TBL Fibre Optics Limited, Leeds, on (0532) 440066.

## Power Card from Belgium

Light Beams is a leading Belgian company in the field of professional lighting equipment and has been active in this area for more than 10 years.

Silicon Controls is the research and manufacturing department of Light Beams and specialises in power electronics for the entertainment industry.

The department has recently developed a number of new technologies which improve existing dimmer systems. This has led to the design of a special Integrated Circuit produced exclusively for Silicon Controls. This chip is the central element in the new Power Card PC410DP featuring: 4 x 2kW inductive & resistive dimming; 8-bit digital technology; control LEDs per channel; control signal input fault detection; fully electronic fuse status control; 'real dim' test knobs; back-to-back thyristors 40A 800V, and much more say the company. Two PC410DP 'plug-in' modules fit in a 19" rack only 3 units high, and manufacturing and testing are done according to I.E.C. specifications.

Light Beams is looking for distributors to handle the new Silicon Control dimmers. For more information contact Light Beams in Belgium on 091 86 82 55.

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## Strand Launch Dimmer

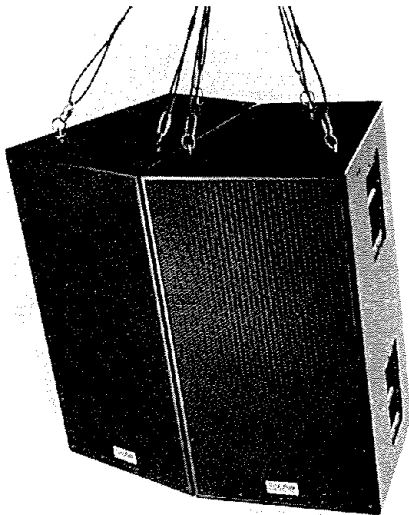
A purpose-designed wall switch dimmer for low voltage halogen lighting systems has been launched by Strand Lighting under the name 'Finesse' - the first designed specifically for control of transformer-fed loads. 'Finesse' is intended to meet the demand for a suitable professional-grade dimmer to give more flexibility to low voltage lamps, which are now established favourites in architectural lighting.

Strand already produces the successful 'Microdimmer' for the commercial market, and has developed 'Finesse' to meet the needs of specifiers and installers who have been seeking a straightforward substitute for a conventional wall switch. 'Finesse' is the first dimmer designed specifically for control of transformer-fed loads up to 1KVA. It does not require de-rating to combat high in-rush currents. It offers a 'soft start' capability to bring lamp filaments on gently to reduce thermal shock, and has a built-in detection circuit which monitors output waveform. In the event of any dangerous asymmetry, a bypass prevents damage to lamp transformers.

The 'Finesse' can be wired-up as simply as a conventional wall-box switch, making it ideal for refurbishment or new-build projects, or for lighting up-grading. Operation of 'Finesse' is simple. A switch selects on or off and the dimmed level is set by a smooth-acting rotary knob. 'Finesse' incorporates the latest Mosfet technology within a stylish casing. The fascia is retained magnetically, eliminating the need for exposed fixing screws.

For further information please contact Strand in Isleworth on 01-560 3171.

## EAW Launch KF600

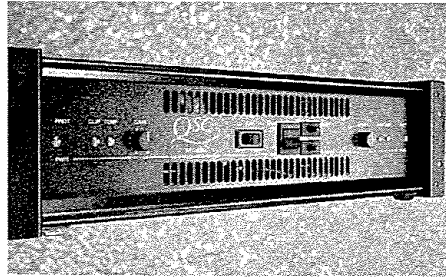


New from Eastern Acoustic Works Europe is a full-range compact 3-way loudspeaker system, the KF600, incorporating EAW's exclusive Virtual Array technology. The manufacturers claim Virtual Array technology allows their system to maintain constant horizontal coverage without lobing or hot spots and minimises interaction comb filtering.

The KF600 uses a truncated version of the compound flare mid bass horn developed by Kenton Forsythe for the KF850 system and a newly designed compound flare high frequency horn. The system's 15" low frequency driver is located transversely in a dual chamber, vented enclosure that provides controlled acoustic loading on both sides of the diaphragm.

The KF600 has been engineered for use with the MX800-6 CCEP electronic signal processing unit which provides asymmetrically sloped four way electronic crossovers, phase correction and multi-stage overload protection. All parameters are factory preset to match the performance characteristics of the KF600. Despite its small size, 33.25" high, 19.75" deep and 19.75" wide, the KF600 is capable of exceeding 130dB SPL when driven by a 250W per channel amplifier. Recessed handles, flying hardware and multi-pin connectors are included as standard. For more information contact: EAW Europe at Kingston Upon Thames on 01-549 5571.

## MX 2000 Arrives



Music Lab have taken delivery of the most recent addition to QSC's amplifier range, the MX 2000. The amp is QSC's most powerful to date, and is designed to cope with the high-power demands of large speaker systems.

The MX 2000 is capable of producing 1000 watts into 2 ohms through each channel of its dual mono configuration, particularly suitable for venues requiring high power sound. To ensure the smooth running of the amp at these levels, the high efficiency output circuitry is cooled by a two speed back to front forced air system.

Occupying three rack spaces, the MX 2000 has been designed with permanent installation in mind; the front panel control board includes LED indicators for thermal overload, output clipping greater than 0.1% and for power on/off.

For further information on the MX 2000, and the other amps in the QSC range, contact Music Lab in London on 01-388 5392.

## Advanced Technology

DOD Electronics is now utilising the advanced technology employed in its DigiTech range of rack mounting products, for its DOD range of effects pedals. The digital VLSI (Very Large Scale Integrated) circuits being fitted to these units, result in much higher sound quality from such a small package.

The first pedals in the range to benefit from this new technology are the DFX 9 digital delay and DFX 91 digital delay/sampling effects pedals. The DFX 9 offers infinite repeat and gives 3.5 to 1 second of delay, while the DFX 91 provides sampling, triggering, infinite repeat and 13.8 to 1 second of delay. Both units have four controls i.e. level, repeat, delay and range/mode, both are mains or battery operated.

For further information contact DOD Europe in Barnet on 01-449 5566.

## New Celestion Brochure

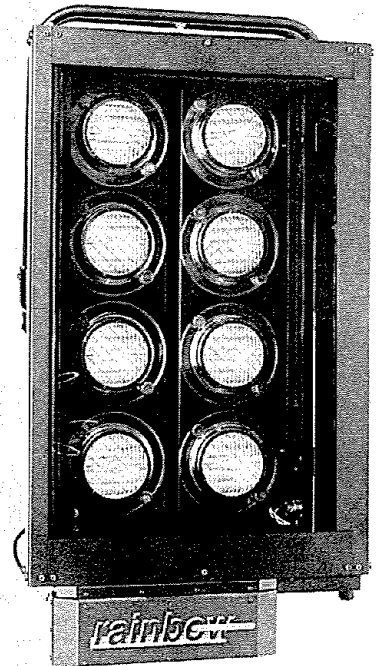
Celestion has produced a full colour brochure for its expanding pro-audio SR series. The brochure covers in some detail the SR1, SR2, SR3 and SR Compact loudspeaker systems, the SRC1 and SRC3 controllers, plus a full range of mounting poles, wall and ceiling brackets, aluminium tripods and assorted fittings. The brochure is available from the company, by post, or from numerous Celestion professional audio outlets. For further information contact: Celestion International Ltd, Ipswich, on (0473) 723131.

## Mosfet Get Smart

Pro-audio distributors Smart Acoustics have been appointed as UK distributors of the Australian Monitor range of Mosfet professional power amplifiers. Originally designed to take the rigours of the Australian 'diesel and dust' touring environment these amplifiers are also widely accepted for studio applications.

The range currently consists of three units; the AM1600, 2 x 900W @4 ohms; AM1000, 2 x 595W @ 4 ohms and AM1200-Quad a four channel amplifier offering 4 x 370W @4 ohms. The complete range of amplifiers will be exhibited at the Sound 90 show this month (20-21 Feb). The AM1200-Quad is ideally matched for the Renkus-Heinz or similar range of speakers where one amplifier can either run a stereo 2 way system or channels C+D can be bridged for a mono 3 way system offering 800W @ 4 ohms for the bass. These units are also used extensively for stage monitors. For further details of the Australian Monitor range of amplifiers contact Smart Acoustics in Newport on (0633) 252957.

## M & M Adapt Scroller



M & M Lighting, in response to demand from users of the Thomas Lite Unit, have developed the increasingly successful Rainbow Scroller to fit the Thomas 8 Lite Unit. The first units to come off the production line were supplied to Concert Light Systems of Bolton for the current Chris Rea European Tour.

The 8 Lite 'Scroller' has 11 colours in its detachable scroll and operates at a speed of 1 second end to end. The fan unit, which is completely silent in use, dramatically reduces the heat output from the 8 Lite Unit, giving the filters a much longer life span. The 8 Lite Rainbow Scroller can be supplied in Analog or DMX512. For further technical information contact M & M Lighting, in London, on 01-722 4147.

## C-Audio introduce EQ Series

C-Audio recently announced the development of a new range of graphic equalizers comprising the 15 band stereo EQ 152, the 31 band mono EQ 311 and the 31 band stereo EQ 312.

With sound quality being the most important consideration during development, all three equalizers employ sealed relays with gold plated connectors in place of more economically attractive switching fets while individually tuned filters ensure precise band spacing. High pass filters are made more effective by using a filter slope of 24dB per octave and peak indicators can be calibrated from -10dB to +20dB to reassure the engineer of available headroom.

For more information contact: Phil Hildrow at C-Audio Ltd, Cambridge, on (0223) 21133.

## Screen Up

Big Screen TV Projector have recently introduced a 'Double-Two' TV/Videoprojector producing over 1300 lumens from 350 watts power consumption. The system, used on New Year's Eve in a major London nightclub with over 2000 guests, showed video film and the full Club Model Bit-Bopper from Tecnation.

Newly available from the company is a new triple standard model with picture in picture, on-screen graphics and hard-wire remote control option to infra-red. The new model retains the external convergence controls with 16 extra corner adjustments with the maximum picture size increasing from 3.5 to 5 metres wide. Along with this the Seleco digital projector is available in PAL with the additional feature of compatibility with current interactive video systems as used by industry and commerce, and increasingly in education and progressive training establishments. The systems will be displayed at Vision & Audio '90, Stand 1429, Earl's Court, London 22-25 April, 1990. For more information contact Big Screen in Dorking, on (0306) 887772.



## S2 Series from Trantec

In addition to the well established S1 Series, Trantec System's latest offering is the S2 Series of radio microphones with diversity receivers. Exclusive to Trantec is the AUTODIVERSITY design which incorporates two separate receivers for maximum performance, and a NOISE BLANKER to eliminate interference from digital sources without adversely affecting the sensitivity.

Trantec say all their products are legally approved by the Department of Trade and Industry, and hold the type approval to specification MPT.1311 certificate No RTD 3407. For further information contact Trantec in London on 01-767 7195.

## Eurodim from ADB

Eurodim DDD digital dimmers have been introduced by ADB Lighting Systems of Belgium.

Eurodims are entirely digital plug-in dimmer drawers (DDD) which offer several standard dimmer laws. With precision and high speed, the microprocessor selects the addressing and chooses the dimmer law. A sophisticated filtering system eliminates any noise or electrical interference. The dimmer drawers are driven by signals multiplexed in accordance with the usitt DMX 512 standard. For further information contact ADB on 32 2 722 1711.

## Computer-Aided Lighting Design

Francis Reid, in the third edition of his Stage Lighting Handbook, gives Rosco software an encouraging mention and says: "It is essential that the lighting process is highly organised so that the available lighting time can be used creatively. . ."

Rosco claim to have the answer, with the launch in the UK and Europe of their revised version of Lightwright, the first of their series of successful software programmes dedicated to the requirements of the lighting designer and production electrician. This is a programme written specifically to manage lighting design paperwork. The programme has been written by John McKernon, an associate designer with Ken Billington in New York and self-confessed hater of paperwork. Lightwright is very user-friendly, using plain English lighting terminology instead of computer jargon and it understands what designers do with their paperwork.

More than just a database to be used for storing the information for each lighting instrument used in a show, Lightwright understands colour frames and colour scrollers and can work out how many frames will fit on a sheet of colour and that some

lights don't use colour at all. It knows that you might want to add top hats to every light front of house, or change all of the R-33 in the sidelights to R-37 and gives you easy-to-use tools to accomplish these tasks. It can count frames and sheets of colour as well as instruments, templates and stock equipment. It can find mistakes, compare two sets of paperwork, figure circuit and dimmer needs, renumber or rearrange your channel and dimmer assignments and assign dimmers automatically based on your channels.

Lightwright will never automate anything you'd rather do yourself unless you ask it to. While it is based firmly on standard professional practices, Lightwright has literally dozens of ways in which you can customise both the way it works and the way the print-out looks and you can also personalise the programme to use your own vocabulary.

Since its inception in the US in the mid 80's Lightwright has become a common standard, being used by designers and electricians who can now share information about shows quickly and easily by mail and modem.

It is currently being used by major opera houses, ballet companies, regional theatres, community centres, universities and drama colleges in Canada, Germany, Sweden, Spain, Australia, New Zealand and Japan.

Rosco is now marketing this programme, with stage lighting specialist Julian Williams providing full technical advisory service back-up. Following in the near future will be Rosco's proven Stagelights programme which is an Instrument calculator that computes in both Graphic display and provides Photometric data.

Full details of Lightwright are available from Roscolab Limited, Blanchard Works, Kangley Bridge Road, London SE26 5AQ. Tel: 01-659 2300.

## New Access Pro

Access Pro, a new, expanded version of the popular Access lighting console, is now available from The Great American Market. Access Pro features 24 overlapping pile-on Scenemasters with flash buttons. Four banks of Scenemaster memory, accesses by instant paging, provide 96 fully assignable Scenemaster memories. Each one can be labelled with a programmable alphanumeric text. Other new features include dedicated 'Go' and 'Halt/Back' buttons for the X and Y automatic timed cross faders.

The console controls up to 256 dimmers (depending on output format) patched to 96 control channels. Its storage capacity is 228 full-sized memories, extendable with Cue Card library storage. "Access Pro brings the straightforward

Access philosophy to a new level of power and flexibility," Joe Tawil, general manager of The Great American Market, told L+SL. The new console measures 19" x 10 1/4" x 3 1/2" and weighs seven pounds, and is designed and manufactured in the USA by Entertainment Technology. For more information, contact The Great American Market in Hollywood on 213 461 0200.

## Dramatic Turn For Architectural Lighting

A theatrical solution to the problems faced by architects and designers of lighting large enclosed public spaces, has come from Strand Lighting, with its new Hilite luminaire range. Based on Strand's successful Minim series, the Hilite gives lighting designers additional scope in situations where they need theatrical-style spotlights yet require energy efficient, long-life commercial lamps.

Strand's Hilite range has been developed for specialist lighting applications in shopping malls, atria, exhibition halls, hotel foyers and other large public circulation spaces. Hilite uses a compact, 150W single-ended metal halide lamp similar in size to an equivalent 500W 'T' class lamp but needing only a fraction of the power and with a useful life equivalent to two years in average commercial premises.

In common with all discharge lamps, it requires an electronic ignitor for starting, plus an impedance and power factor correction capacitor all of which is built-in within the luminaire body. Hilite F has a fresnel lens to give an adjustable soft-edge beam with optional rotating barndoors. Hilite 23 has a plano convex lens providing a soft or hard edged beam, with framing shutters for beam shaping and optional pattern holder for image projection.

For further information please contact Strand Lighting Limited, Grant Way, (off Syon Lane), Isleworth, Middlesex TW7 5QD. Tel: 01-560 3171.

## New CD Player

Sound specialists Planned Equipment Ltd have announced the world launch of a new compact disc player, the GD1006, suitable for use with stereo or mono systems.

Embodying state-of-the-art technology, the GD1006 extends still further the capabilities and versatility of PEL's service-proven Bouyer range. It is designed for long-play use in commercial environments and will hold up to six standard compact discs and play them in any chosen sequence.

The dimensions (mm) of the new unit are 425w x 370d x 92h. Weighing just seven kilograms, the GD1006 has 0dBm output (stereo or gain-controlled mono). It is 91-inch rack-mountable and ideal for use with a wide range of compatible amplifiers, including the new AR1150 half-width 150W model announced recently.

Details of the GD1006, the AR1150 and other new items of electro-equipment are contained in PEL's latest Bouyer catalogue. Copies are freely available on request to the company. Please contact: Peter Barnett at Planned Equipment Ltd, Belvue House, Belvue Road, Northolt, Middlesex UB5 5HP. Tel: 01-841 6251 ext 201.

## New Wila Recess Fittings

Wila Lighting has introduced a new Universal Recess Downlight fitting - typically for incorporating into suspended ceilings, and specifically designed to accommodate the new-generation Wotan EL integrated electronic lamps. The new lamps will both lower maintenance costs by offering up to 8000 hours illumination between lamp changes - and reduce energy costs by 80%

Wila's URD fitting has an adjustable sliding galvanised sub-frame enabling either the 11W (60w equivalent) or 15W (75w) versions of the lamp to be selected. An optional black anti-glare baffle can be fitted to further enhance lighting efficiency. The Wila Universal Recessed Downlight is one of a comprehensive range of over 200 energy saving fittings to suit a diverse range of interior lighting applications.

Further technical information can be obtained from Wila Lighting UK in Devizes. Telephone (0380) 5302

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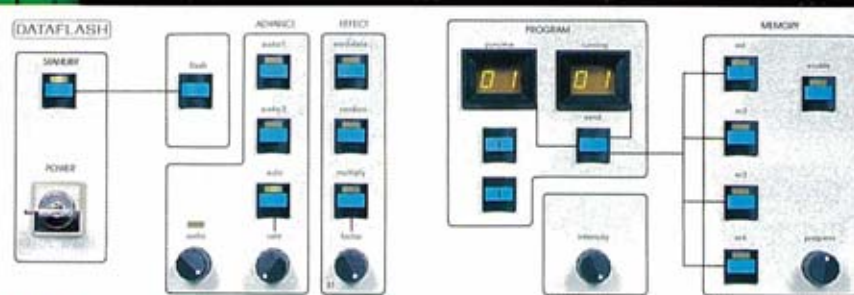
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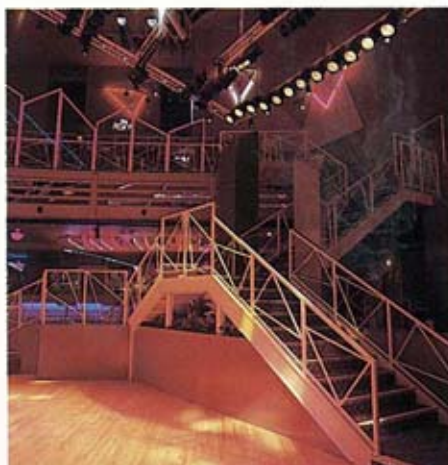


## Whitegate's Latest: The Roxy, Bury

Last month saw the opening of The Roxy in Bury on the very spot in Rochdale Road that has been a source of entertainment since 1936. It was then popular as the Odeon Cinema.

"Cinemas make ideal discotheques," commented John Ashton, general manager of the club. "The dance floors and main bars are in what was once the stalls area - while the circle provides a quiet, more intimate atmosphere."

Transformed at a cost of £2 million, The Roxy is typical of its kind, a mass-market discotheque designed to appeal to the 18-25 year old market, and as such features the



Interior designs at The Roxy.

latest in lighting and sound equipment. Owners Whitegate Leisure describe it as a 'discotheque of the future'.

Built to hold over 1,200 people, it is the first club that Whitegate have built from the ground up, so to speak. Their policy to date has been that of buying and refurbishing existing clubs. Inside The Roxy, the focus of the venue centres around the main stalls area where most of the activity takes place. The open layout of the club, combined with the pastel colour scheme, gives an overall sense of space. In direct contrast to this are the neon mountings, configured geometrically, and the video monitors used to relay graphics, which together sharpen the initial impression.

The whole is dominated by three giant pyramid-shaped lighting rigs situated in the large roof void. Finished in white, and



Above, Pier 39 in Scarborough and below, Mulhouse in France.



Above, Harrogate-based Josephines and below, GAS in Cheltenham.



Whitegate began 1989 with only eight operations. By the close of the year the number totalled 30. Above are pictured just four of those leisure venues.



underscored by neon lighting, the Trilite frames host a range of effects including six Fal Crocodiles, three Optikinetic Strobeflower Heaps, Syncro Flowers, Starlite Xenon strobes, Lampo Derbys and no less than 12 Clay Paky Golden Scans. In addition to these, a 5W argon twin colour single scan laser from Universal Lasers searchlights the room with piercing effect.

The control equipment includes Zero 88 Mercury, Touchlight 12 and Orion systems plus a dedicated Strobeflower controller. The £130,000 lighting scheme designed by consultant Michael Craig was installed by Andy Blackwell's Bradford-based Dial Design.

Sound provision at the venue, installed by Zenith, another Yorkshire-based company, is catered for by eight Deltamax 1152 loudspeakers, four Deltamax 2181 sub bass loudspeakers, and six Amcron amplifiers. A Formula Sound mixer, together with Deltamax controllers are also featured.

The venue is the latest of many in the Whitegate portfolio which spans various areas of the leisure industry. Lancashire-based Whitegate's first full year of operation has resulted in the company developing rapidly into a leisure group to be reckoned

with 1,500 shareholders hold funds amounting to £34.5 million.

"Our strategy is to develop a diversified property-based leisure group whose earnings are derived solely from mass market operations where we have proven management skills," said managing director Nigel Patterson. "During the past year substantial progress has been made in achieving our objectives. We view the year ahead with considerable confidence as we continue to expand our business both in the UK and in Europe."

Whitegate Leisure operate discotheques, superbows, restaurants, hotels and amusement parks throughout the country and also have discotheques in France. "We began 1989 with only eight operating businesses and by the end of the year we owned 30 including nine which were acquired or opened in the last quarter of the year, and a further six businesses at various stages of development which will open during 1990," continued Patterson.

Newly acquired operations include superbows in Wakefield and Burnley with more in the pipeline in Wigan and Mansfield. Recent discotheque projects include Gas in Cheltenham, The Village in Mansfield and Scarborough's Toffs, the latter two opening

in March, with Rochdale's Xanadu, opening this month, and a venue in Preston later in the year. A new restaurant in Hull's Waterfront Hotel opens shortly and Spanish City in Whitley Bay is to receive a £3 million redevelopment package.

"We would expect these 30 businesses, when operational for a full year, to generate turnover in excess of £25 million," he added. "We work in Preston, and most of our management team live locally. That, coupled with the reputation of existing businesses such as Herriot's in Manchester and developments like Spanish City Amusement Park give us credibility. We are an attractive investment proposition for local private investors who know us and have confidence in what we can achieve," concluded Patterson.

Back to the Roxy, L+SI asked Zenith's David Littleboy for his views on the venue: "This is the first time that the Deltamax sound system has been put in a discotheque environment by our company. Prior to The Roxy, we only used them in theatres. The results are amazing, and now we have orders from two different companies for identical systems to be installed in their venues, one being in Nice in the south of France.

## Lizard Lighting Designs

"It's so difficult to show what you do. All you can really do is take a few photographs and nail them on the wall. What I'm saying is 'this is the kind of thing I can do - but I don't want to do it again.' People don't want to see the same club duplicated, apart from some big groups who find a winning recipe and stick to it. All well and good if that's what they want. How do you sell a design? You're only as good as your last job - but then your next client doesn't want your last job!"

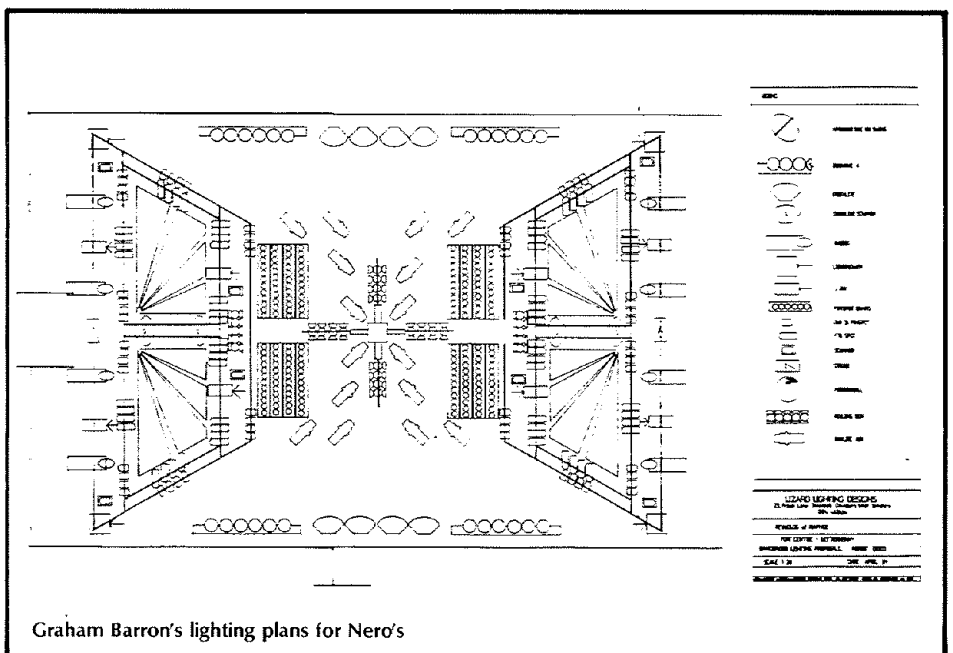
Lighting designer Graham Barron has some forthright opinions on today's lighting industry and spoke frankly about it from his base in Dewsbury, West Yorkshire, where Lizard Lighting Designs is based. Barron formed Lizard Lighting in 1987 after parting from Satel UK.

So where did it all begin then Graham? (I always favour the subtle approach). "I started off with Lighting Design Services in Leeds (which is part of I.T.T.). That's where I trained as a lighting designer."

It was at this time that Graham Barron made contact with Electrical Contractors, an association which he still keeps up today. "I was doing pubs and small clubs at the time. I then moved to work with Millhill Switch Gear." He then began his association with McCormacks and Satel UK.

In those days he was very much associated with the Liverpool 'mafia', but is that still the case? "At the time we had Satel supplying Hi-Tec, and as I was doing all their design work it was a natural association. People say that I'm tied up with Hi-Tec but that's purely because I do all their work." Nowadays Lizard's work is mainly for the trade. Some people will give them a scheme on graph paper and ask them to turn it into full scale presentation. "After doing that for some time now," said Barron, "it's got to the stage where people will ring me up and say 'you know the kind of thing I want, so go ahead and design it.'"

Barron is happiest when designing and readily admits it. "The reason I started, like everyone else, was that at the time I was



Graham Barron's lighting plans for Nero's

bound to Satel in so much as I was obliged to specify their products wherever possible, although I did specify other products when they were needed." He went on to enlarge on this theme. "It's always been my argument about different people in the industry who are tied up with various products. A lot of schemes are based on what's available in the stockroom at the time - it's got to be moved - that's their job. So I made the decision to go my own way and now I'm not tied up with any company."

Barron still finds time to keep up his contact with Electrical Contractors and breweries where his background in pub and club design is obviously invaluable. This leads to him being involved in a great deal of presentation work.

"Now that low voltage lighting is being specified by Electrical Contractors, and schemes are becoming more expensive, they feel it warrants putting a nice package together to show the client," he explained.

The advent of low voltage lighting, and a

greater interest in lighting in general, has meant that Lizard's services are called upon more and more. "You only have to look on any High Street today to see that lighting majors as an integral part of any contract," was his comment.

Lizard Lighting's current work load is dominated by the major refurbishment at Dukes, Cheltenham. Working with Lynx Lighting who are providing the moving rig, Dukes is a nine week contract for which Barron has produced the lighting scheme. The one that they are using is the fourth scheme, and Barron enthused: "It's grown out of the others. I'm not big on movement but the client wanted lots of movement." He wouldn't give much away but would admit to Dukes being a bit 'different'.

As a lighting designer Barron has worked with what is available and it is interesting to hear from him how he views the present crop of lighting with what has been available in the past. "The Italians seem to have just gone overboard on moving mirrors. In the



past pinspots were the only thing that was available, you put up as many pinspots as you could get your hands on then moved them in as many different directions as you could. But I think it is better now that we have the moving mirror, because you can have different beam types, shapes and definitions, it's much more interesting now that we have lanterns such as the Golden Scan or Jupiter." Although he does have some reservations. "I think gobos are a bit wasted on the dancefloor because you usually can't see them. With a dot gobo, where you do get a fragmented beam, it's visible in mid air, you can soften the edges of the beam and move it in a controllable way in a sequence with synchronicity between different lights."



Graham Barron.

Barron turned his attention away from the dancefloor. It's interesting to hear that he would like to be involved at the design stage away from dancefloor lighting. "Everytime I do a scheme I try to get involved as much as possible off the dancefloor, but more often than not the interior designer has already specified it. There is much more that can be done to create atmosphere with the likes of the small lanterns where you can introduce gobos, not just for projecting the club name, but a little bit of imagery such as little soft focus or clouds that do lend to the atmosphere. People tend not to think of it - there's still this attitude that the specialist lighting designer work should be confined to the dancefloor, that's not where it stops, the atmosphere has got to go right through the club.

Talking about clubs, Barron's taste is catholic. He will find something that he feels is noteworthy in clubs say in Manchester - The Hacienda, theatrical and stage lighting on and off the dancefloor. On the Palladium, New York, he says: "If you get that many Vari\* Lites in one room, it's going to look phenomenal - the movement in there is great. There's something good in every job you look at. There will be an element of it which I'm sure we all look at and think I'll have to use that. I always enjoy going to Rooftop Gardens, for its age it's great, quite majestic, and they haven't changed the lighting. Spending that amount of money has worked for them.

"I still like the Hippodrome, every time you go there you seem to see something new - whether it is new, or you've just been too drunk to see it before. I thought Xenon was a really well put together club - fantastic operation - when they had the German guys over.

"I think we all have ideas. I get on very well with Tony Gottelier and we'll talk about things - if only they'd actually let us do what we want to do."

I'm sure Michaelangelo said the same thing, after all, as Barron would have said, 'Who wants a second Sistine Chapel?'

## Berties Banqueting Rooms Sounded Out

It's Sunday afternoon, the sky is slate grey - the surrounding countryside does its best to reflect the day. But what, I hear you say, is our intrepid correspondent up to on a Sunday afternoon when most folk are sleeping lunch off. Well, the truth is, he's 'up north'. A short throw of the proverbial stone would find you in such places as Cleckheaton, Brighouse, Liversedge or even Heckmondwike (places to bring a tear to one of L+SL's editorial team).

My hosts for the sortie into whippet coun-



Richard Lockyer.

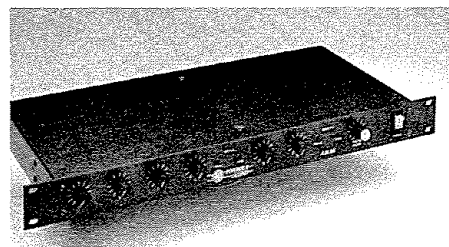
try are Sound Workshop's Richard Lockyer and consultant Walter Mirauer. What I've come to see is a converted (can you convert a church?) non-conformist chapel in Elland, which now goes under the name of Berties Banqueting Rooms.

The chapel was bought by a local entrepreneur Bret Woodward, who already runs successful operations in the form of a cafe bar in Halifax and a bistro in Elland itself.

The building has now been totally refurbished and has a Mackintosh feel to it; with an extra floor installed it's a surprisingly spacious venue. Sound Workshop designed and installed a sound system that would 'cater' exactly to the building's needs.

Richard Lockyer takes up the story: "Basically, you can view the concept of the sound system as being for one venue, despite the fact that it has two floors. If you require background music on one or both floors the system will provide it. The moment you plug in one of these mixers you can override the background music from that part of the venue. On the first floor there are six places where you can plug the unit in." The mixer they are using is a new product from Formula Sound - the AMX6.

Lockyer went on to explain that flexibility is the key word at Berties. With two floors in use at any one time, the sound requirements



The AMX 6 from Formula Sound.

may start off the same, but change as the function progresses. This is where Sound Workshop's box of tricks comes into play. Lockyer again: "Having plugged the unit in, it will stop the background music on that level, but continue to play it on the other floor. There is a volume control with which you can restore the background music, so instead of being a preset background music system you have the equipment to hand to make it foreground music. You've also got the facility for a microphone, and an alter-



Walter Mirauer.

native source of music in the form of a cassette deck."

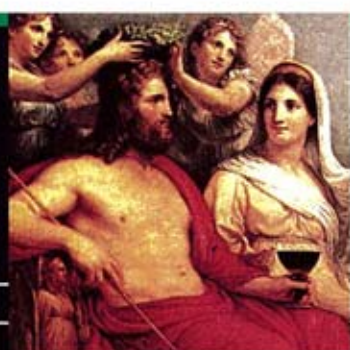
When the music is playing and the microphone is being used, it automatically reduces the levels. This is one of the reasons why the Formula Sound mixer was chosen. Lockyer explained the rest of the system: "If you take the story through to its conclusion, the second unit will remove background music from its floor and allow the facility of replacing it with anything up to foreground music, use of microphones etc. If you plug a mixer in on one floor then it has control over the whole venue. For example, you can have a microphone on the first floor which is set for a dinner function, and use it to reach people in the bar downstairs to announce dinner."

Walter Mirauer explained a further dimension of the system. "If you have entertainment such as a band or discotheque, you don't actually need the mobile disco guy to put his ugly black cabinets all over your beautiful banqueting room. You just plug it in as an auxiliary source. He takes the output from his deck and plugs into the mixer, which can be placed at any point in the room."

Next on the list was the rack at the back of the stage area, which included a Bose/Vuefax 5 slot CD player, twin cassette unit, and black box designed by Sound Workshop. This, together with a couple of amplifiers, is all neatly racked with a locking glass front. All you need to do is switch on, load the software and let it get on with it. The system offers many other features such as A.V. and conference facilities, but perhaps the most useful is simplicity of operation. With all the technology on hand it still has to be used by staff at the venue. The Sound Workshop have made sure that it can be.

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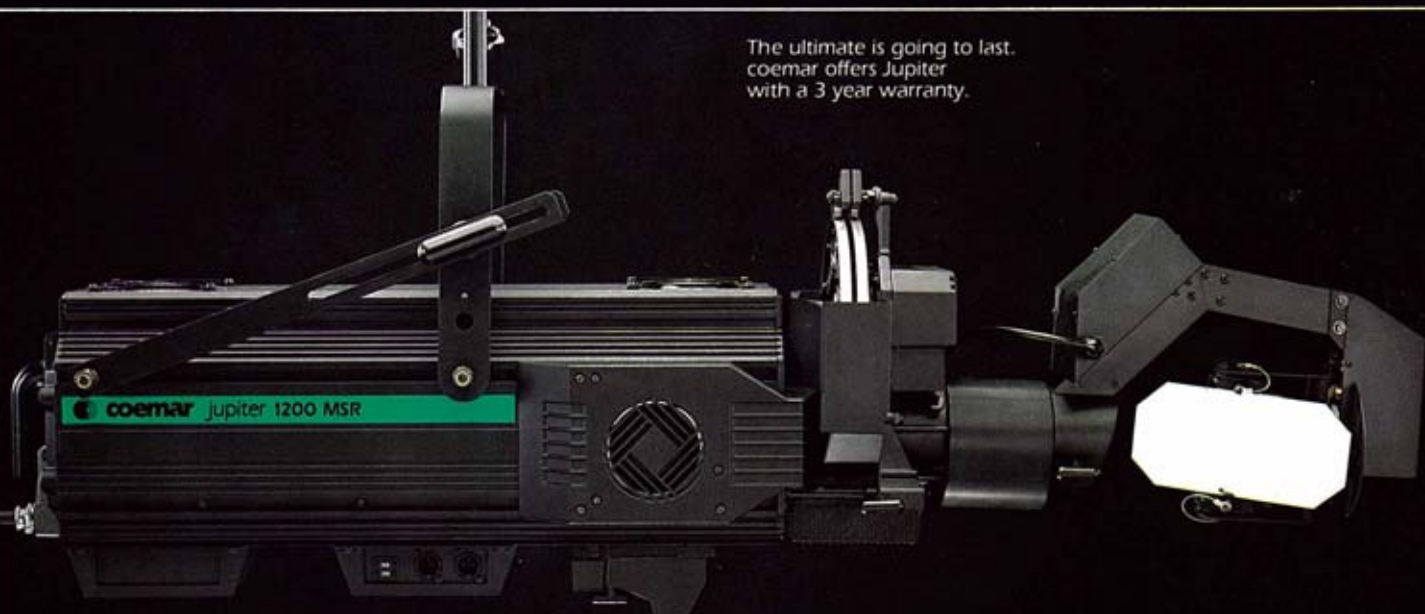
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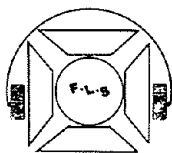
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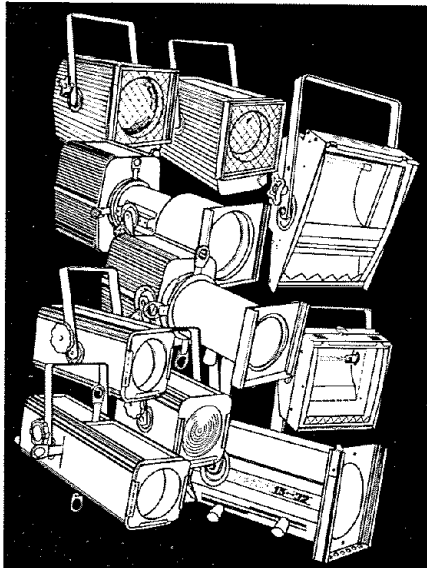
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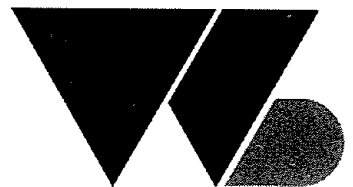
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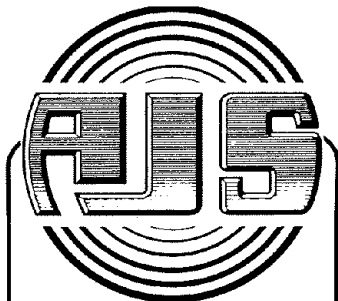


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# VIEWPOINT

## Getting the Message Across

Peter Lloyd

Ten years ago the business communicator, the communications professional and broadcast production specialist were all facing up to changes which affected their whole style of working.

Electric newsgathering (ENG) was just making an impression on the television business, raising the spectre of three man crews using high band U-matic. The days of 16mm news footage and the associated labs and cutting rooms were just about to end.

And colour video, then based on U-matic, was beginning to make an impression on industry. Big networks were being established, and corporate video was becoming an important part of business and leisure communications.

1980 saw the emergence of embryonic visual communications technologies which are now the growth points in the marketplace.

Apart from obvious changes in video, TV production was up and running, and computer graphics were about to make their commercial leap from America into Europe.

Even interactive video, which never quite realised its anticipated success, was being prefigured by RCA (about to launch its short-lived videodisc system) and a videodisc conference in London which, against all odds, spent its time discussing the potential for LaserVision as a home entertainment medium.

Some technologies have fulfilled their promise, while others have fallen by the wayside. Thanks to computer graphics origination and LCD displays, video and broadcast have moved together into the age of component and digital video; multi-image has become a commonplace element in the leisure industry.

But the hardware changes - mostly in the direction of solid state devices, advanced electronics and software, rather than hardware dependence - are only part of the equation. Relatively less expensive, more reliable and easier to use equipment has prompted a massive change in industry and commerce's use of visual communications.

At the beginning of the 1980s, visual communications were used little. Technology changes all that by making sophisticated pro-

duction techniques available to industry, commerce and the entertainment world through a cost-effective equipment base.

Just as the first Audio Visual exhibition of 1980 demonstrated the mix of technological options which more and more users decided to access during the next ten years, Vision and Audio '90, which will open at Earls Court on April 22, will prefigure the kind of visual communications mix we are likely to see in the 1990s. The staples of this year's show are undoubtedly presentation graphics, solid state television and audio production systems, interactive video and electronic presentations.

That, and the current level of interaction (at least on the equipment front) between the broadcasting and entertainment worlds and the business of corporate communications have changed the face of the industry.

The range of kit on view at Vision and Audio is wider than ever. Overhead projection systems, slide projectors, screens, boards and professional audio gear are all well represented.

A new dimension is there too, in the shape of the major television equipment suppliers, computer graphics systems engineers and electronic presentation specialists. There is a strong interactive video presence and a variety of companies who help carry out almost any kind of visual communications project, from setting up a studio to staging a car launch or installing a presentations room complete with computer-based presentations technology.

Effectively, the barriers are down and neither the equipment nor the suppliers can be put into neat pigeon holes any more. Today's companies operate across a range of markets which extend from education to leisure to independent television production, taking in corporate communications on the way.

In both technological and applicational terms, that's probably what the next decade in audio and visual communications will prove to be all about - the convergence of technologies and applications into a range of tools which can be picked up and used by organisations as diverse as the school, the nightclub, and the broadcasting company.

Computer technology and digital techniques will undoubtedly hasten that process. We are not far away from the day when most production or broadcast operations could be run from a standard computer hardware platform with a number of load in software options.

But the theme of Vision and Audio will be the opportunity that technological changes can bring to both industry and the worlds of broadcast entertainment and leisure.

In comparison with the 1980 exhibition we can now do more with a lesser investment in either capital or operating costs. And as the number of options widen out the broad band visual communications industry attracts more and more users happy to find a cost-effective way of maintaining their competitive edge.



Originally a business journalist, rather than a visual communications specialist, Peter Lloyd has been writing about the television and business communications market since 1976.

He is currently editor and publisher of the corporate communications magazine *Audio Visual*, editor/publisher of *Computer Images* and has until recently been involved with Emap Vision's launch of *Television Week*, of which he is managing editor.

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From colour mixing to spectrophotometric checking. From product development through to continuous accurate batch reproduction. Only one company has it all.

Lee Filters.

By now you must be tired of all the technical guff that manufacturers put into their ads. Well, as you probably already know that Lee manufactures the best range of filters in the World, we thought we'd give you this nice restful seascape to look at instead.

*We don't need to tell you we're the best*

Filters  
Filters  
Filters  
Filters  
**LEE Filters**

A DIVISION OF **LEE Colortran Ltd.**

Central Way, Walworth Industrial Estate, Andover, Hampshire SP10 5AN, England.  
Tel: (0264) 66245 Telex: 477259 Fax: (0264) 55058

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# THE DAWN OF A NEW AGE IN LASER CONTROL



Aquarius, the new generation of laser control desks:

- 8 channels, with over 500 high quality graphics on each.
- 12 parameters for pattern control: each one infinitely variable.
- Waterproof, illuminated keyboard.

• Standard model includes disk drive, MIDI, tape control and RS232 interface.

• Wide range of animation/effects programming, including flip, rotate, zoom, moving background and cross fade.

• Down range effects capability – also controls lighting dimmers and smoke machines.

Full details on Aquarius from:

**LASERPOINT**