

LIGHTING+*SOUND*

International



SCREEN CLOSE-UP ON WINJIN POM

- Rimini Reviewed, ABTT Previewed
- Winjin Pom: Puppetry under the Spotlight
- The DMX Debate Continues
- USITT: a Forum for Theatre Technology
- Special Report: Athens Concert Hall
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MAY 1991



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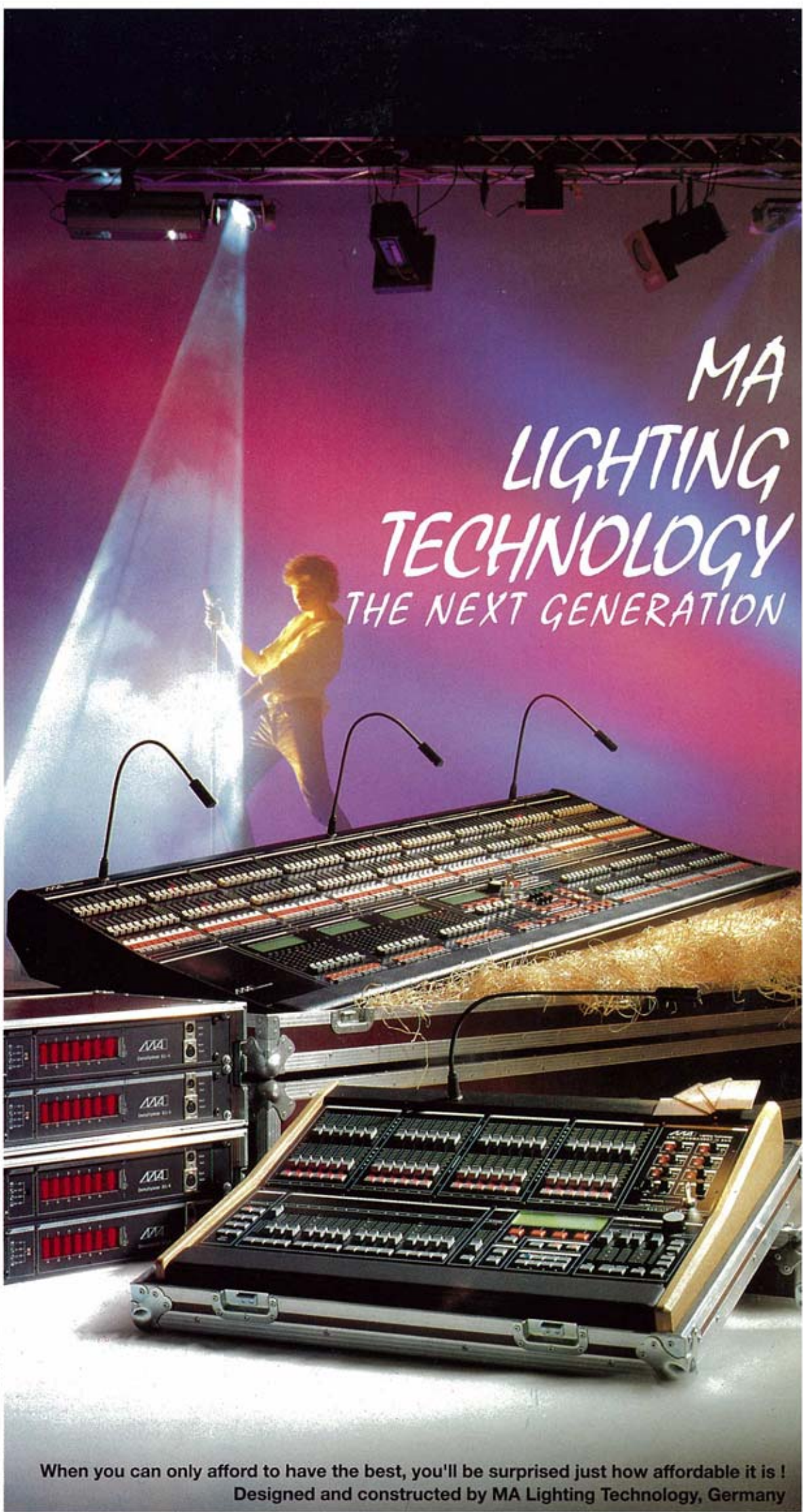
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MAY 1991

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PLASA

... and it's all Good News This Month! Glantre and Jem win Queens Award for Export



Reading-based Glantre Engineering and smoke machine manufacturer Jem have both achieved the rare feat of gaining the Queen's Award for Export Achievement for the second time. The award is made to those organisations who have shown a substantial and sustained increase in export earnings to a level which is outstanding for the products or services concerned and the size of the organisation.

Glantre, who received their first Award in 1983, offer a total package of design, supply and installation of lighting, sound and rigging for theatres, studios, conference centres, theme parks and other leisure attractions. The company was judged on its performance over the three year period 1987-1989, during which time they dramatically increased their international turnover. Now more than 80% of the company's turnover is in exports to Europe, the Middle and Far East, Africa and the Americas.

Nigel Morris of JEM said, "The JEM Group is pleased to have been awarded the Queen's Award for Export for its export performance for their extensive range of smoke and Heavy-Fog machines." JEM believes that they are the world's leading manufacturer of this equipment which is exported to over 40 countries world-wide. From theatres in Japan and television studios in New York to nightclubs in Mexico and film sets in Spain. In the 10 years since formation by directors Nigel and June Morris, the company has grown from nothing to a multi-million pound company employing over 40 staff.

Derek Gilbert, managing director of Glantre told L+SI: "Over the years Glantre has built up a capable and dedicated team of management, engineering and support staff. It is their hard work which has earned our Award, one which was achieved largely from the competitive markets of Europe."

Odeum Joins Eurolight

From 1st May 1991 Odeum Light and Sound Ltd are joining the Eurolight Group of Companies. Odeum has been successful in supplying equipment to theatres, schools and other entertainment venues in the South of England for a number of years.

Joining the Eurolight Group will bring many benefits to Odeum including professional mechanical and electrical installation support, the full Group range of products from Eurolight, Teatro, Green Ginger and Lytemode and other significant resources a large group can bring.

Odeum will continue to be based in Alford near Guildford in Surrey and will deal specifically with sales in the South of England. In addition a regional office will be opened to cover Somerset and parts of the West Country.

Clive Cartey will continue as managing director and will have specific responsibility for sales and marketing.

MBO Puts Avolites Back in Private Ownership

On Tuesday 7th May, a group of former managers of Avolites Ltd, purchased the company from its previous owners Carlton Communications Plc.

The management buy-out team consists of Richard Salzedo, Steve Warren and Meena Varatharajan, with investment from a number of Avolites' European distributors. Steve Warren told L+SI: "We will all be continuing with the total commitment to quality and service that has been the hallmark of Avolites' service in the past. Avolites can still be contacted at 184 Park Avenue, London. Telephone 081-965 8522. High Wycombe-based AC Lighting have purchased the hire equipment of Avolites to complement their existing sub-hire business.

CCT Lighting's Future Confirmed

Following seven weeks in Administrative Receivership, Don Hindle and David Manners, joined by a new chairman, have completed the purchase and refinancing of the assets of CCT Theatre Lighting Limited. A more streamlined approach is planned to restore profitability, with the product range being rationalised to more accurately meet the market needs.

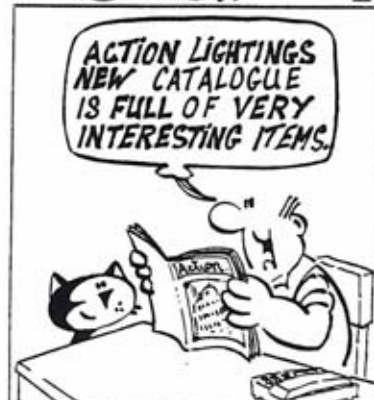
Trading as 'CCT Lighting', the new company is based in the established Nottingham premises, with a sales office to be opened in the London area. The operation retains interests both in the American joint venture, CCT Inc, and CCT Sarl in Paris. Furse Theatre Products which was originally acquired in 1988 has now been totally absorbed and the name will no longer be used.

"Obviously we are delighted that the recent chapter is finally closed," said joint managing director Don Hindle, "the future looks very positive, a feeling endorsed by our customers' reactions to this good news."

More PLASA Members to the Fore

Canford Audio, the Tyne & Wear audio equipment distributor famous for their comprehensive catalogues came 43rd in the Independent on Sunday's 'Top 50 best performing independent companies' survey, below new PLASA members Simon-Jersey, suppliers of uniforms to the leisure industry, who rated 28th.

Action News



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PanCommand's ColorFader has fast become the most sought after "electronic palette" amongst top Lighting Directors throughout Europe. With recent appearances in various productions such as the B.B.C. Sir Laurence Olivier Awards, Paul Simon's World Tour, "Freudiana" at the Theatre an der Wien (Vienna) and Holland's Countdown Television Studios, the ColorFader has proved itself to be an indispensable lighting "tool". In fact, no other "scroller" even remotely fits the bill!



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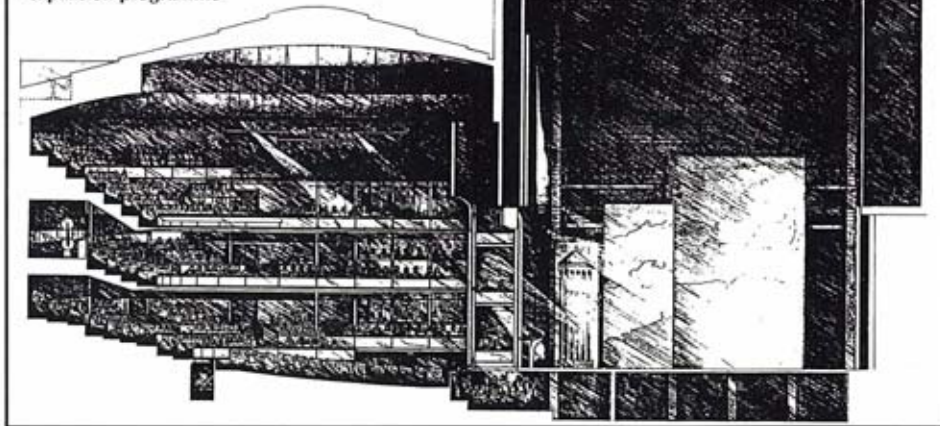
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Part of the plan for the expansion programme



33 million refit for Glyndebourne

It was announced on May 7th that the Glyndebourne Festival Opera is to start a major building and expansion programme due to be completed for the 1994 season.

At a projected cost of 33m of which 75% is already in place, the number of seats are to be expanded to 1150 and backstage facilities are to be improved with a new flytower. This will involve the construction of a larger building at 180 degrees to the existing structure but without losing the intimacy for which the existing country house is famous. None of the funding will come from the public purse, but rather from Glyndebourne's friends and supporters.

Sir George Christie, chairman of Glyndebourne Productions Limited told L+SI: "This project started as a gleam in my eye, which has developed into a vision of increasing practical potential — and now into an actuality. A feasibility study showed that the new Opera House could be built on the same footprint as the existing one, albeit a larger footprint. It was agreed that an auditorium 39% bigger than the existing capacity could be constructed whilst retaining the intimacy necessary for the repertoire that we would continue to aim for."

Theatre Projects Consultants, who among other things are advising on the performance technology in the development and are working closely with Sir George Christie's special advisor John Bury, plan to provide for permanent control rooms for sound, lighting and projection and adjustable lighting bridges will also be installed. John Bury was previously head of design at the National Theatre and has designed no less than ten productions for Glyndebourne in the past.

Arup will be responsible for ensuring that the original warm acoustical qualities are retained. Architects are Michael Hopkins of London who are famous for the Mound Strand at Lords Cricket ground.

Discoscene North

Following the announcement at the beginning of the year that there would be three exhibitions under the Discoscene name this year, a successful show was held in Wales in March and Discoscene North is now planned.

The date for the exhibition is Sunday 9th June, 1991, and it will be held at Quaffers Cabaret Nightclub, Bredbury, Stockport. The venue is situated just off Junction 15 of the M63 for people travelling from the North Midlands/North Wales/Yorkshire and the North West. The show will be open from 12 noon until 5pm with bar and catering facilities provided. Parking at the venue is free, and for anyone travelling by train, Stockport B.R. main line station is only two and a half miles away. Admission is £1.50. Further details from Discoscene Exhibitions in Acocks Green. Telephone 021-707 1925.

Useful Theatre?

Andrew Lloyd Webber's Really Useful Theatre Group who already own the Palace Theatre in London, base of the long running 'Les Miserables', have announced that they are negotiating to acquire a lease on the New London Theatre in Drury Lane. The 'New' is the home of 'Cats'.

GE Thorn Lamps Formed

GE (USA) and Thorn EMI have formed a joint company to take over the operation of Harold Thorn Lighting light services division.

GE Thorn Lamps Limited claims to be the UK's largest manufacturer of lamps. Emphasis will be placed on new product development and a heavy investment program is planned. The company will be based at Miles Road, Mitcham in Surrey.

TGI, Audix Profits Rumpus

Amid allegations that historical profits for Audix prior to their acquisition by TGI, the Tannoy to Goodmans PA group, were overstated by in excess of £1m, the firms' auditors have agreed to resign.

The subsidiary, chaired until his recent departure by founder's son John Billett, was acquired by TGI in a share and cash deal in 1989. Part of the consideration was a future-profits-related payment of £1m which the parent company are now withholding citing these financial inaccuracies as justification.

Recently, Audix were awarded the lions share of the overall budget for performance equipment installations at the ICC in Birmingham which opened on April 15th, winning the £2.3m sound and PA contract (see L+SI, April 1991). However, the installation ran into some time problems as a statement issued to shareholders at the end of March, when the contract was still incomplete, shows: "As the result of a number of factors including, in particular, delays in being given access to site, the time available for completion of Audix's part of the project has become compressed. The need to allocate additional resources to complete the ICC contract within the relevant timescale has resulted in a substantial cost over-run. The Board is endeavouring to obtain payment from relevant parties of unrecovered costs in this contract together with any other sums which may be recoverable."

As evidenced by a PR photograph received this week, Audix have just recently raised the main central cluster of speakers at the National Indoor Arena, part of the same complex, and are progressing the installation of sound, PA and voice alarm systems there. The Indoor Arena will now open officially in October.

Meanwhile, elsewhere in the TGI Group, Alex Munroe, who some years ago was at the helm of Beam Electronics, a Juliana's Group subsidiary, and more recently at KEF, was appointed managing director of Tannoy and Mordaunt-Short another member of the TGI group. (See also Tannoy feature, pages 39-42).

Euro Leisure Slims

The UK's second largest discotheques operator European Leisure Plc is reducing its estate to reduce gearing following last year's major acquisition of Midsummer Leisure.

Among well-known names on the 'for sale' list are Mr B's in Southend, and Tuxedo Princess, originally the group's flagship floating venue.

Celco Move

With effect from Tuesday 7th May 1991, the new address for Celco, The Live Entertainment Division of Electrosonic Limited, will be: Celco Division, Electrosonic Limited, Hawley Mill, Hawley Road, Dartford, Kent DA2 7SY. Telephone (0322) 222211.

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... And More Good News

"Following a quiet start to the year, partly due to the impact of the Gulf War on US bands touring in the UK, the lighting and sound division of Samuelson Group plc are now seeing an upturn in business which has surprised even the most optimistic of pundits," reports Daryl Vaughan, group marketing manager. "Suddenly things have turned round, and it suggests that in addition to securing a number of major projects in all our areas of operation, the division is now reaping the rewards of the integration of the three companies last year."

Business secured in recent weeks includes the Bee Gees (Samuelson Concert Productions and Vari-Lite), Pet Shop Boys (SCP and VL), the Barcelona Motor Fair (Theatre Projects Lighting and Sound), the Red Cross Gala in Geneva, Matador in the West End (TP Sound), Paul Simon and Sting (both VL).

Similarly Geoff Benson of Meteorlites told L+SI that they have seen an improvement in activity through April, May and June and that their autumn schedule looks very good.

He admitted to being 'stunned' by the downturn, and how deep it actually went. "The Gulf War had an effect," he said, "but the recession has been the primary reason."

An interesting factor is that the rental houses had no money to re-equip and as a result the manufacturers all suffered too. I believe that the industry is now 'seamless'. In the past, different sectors, such as television, might be in good shape while another part of the industry was in difficulty. Nowadays, if bad times come, everyone gets hit."

ABTT Show Moves East

After six years at the Riverside Studios, Hammersmith, the ABTT's London trade show is moving on, but the venue is still a theatre, and it still overlooks the Thames.

The Association have announced that the 13th ABTT Trade show for the theatre, entertainment and presentation industries will take place on 23rd and 24th May 1991 at the Mermaid Theatre, Puddle Dock, Blackfriars, London.

Situated next door to Blackfriars station, the Mermaid offers visitors easy access by rail, underground and bus.

Among the products and services on display at this exhibition of backstage equipment and supplies will be lighting equipment and accessories, sound and communications equipment, scenic paints and fabrics, scenery fittings and hardware, special effects, tracks and trussing, stage flooring and much much more, according to the organisers.

Further details and free admission tickets are available from The Association of British Theatre Technicians, 4 Great Pulteney Street, London W1R 3DF. Telephone 071-434 3901.

Wharfedale Consolidates

The Wharfedale Group has announced half year results that show a pre-tax profit of £106,000 compared with a previous loss by the group under the Audio Fidelity management of £319,000 in 1989.

The continuing return to profitability has allowed Wharfedale to treble its asset base with a placement of new shares with institutional and other investors which will raise approximately £2.5 million. This will be combined with a share consolidation of five existing shares at 6p into one new share of 30p. These moves will provide the company with a much stronger economic base and the increased working capital required to more effectively exploit the potential of the Group's brand portfolio.

New product ranges in the power and professional loudspeaker brands are planned with manufacture of Fane and McKenzie now reorganised into modern and efficient new premises in Leeds which will produce both improvements in quality and reduction in costs.

Scorpions in Walsall

Total Audio Concepts have supplied three Scorpion II consoles for a new arts and media centre in Walsall. The centre, due to open in September, will provide a wide range of entertainment and leisure opportunities and assistance in developing skills in various areas including making demo tapes, publishing videos etc.

UK audio dealer, Thatched Cottage, were successful in gaining a contract to supply equipment for the new complex which includes a theatre, conference rooms, recording studios and video studios. The contract includes three Scorpion II consoles for use in live set-up and sound studio environments.

Sound Advice

Simon Campbell, former sales and contracting manager for Wigwam Acoustics Ltd, is offering a new service to the sound and audio industry.

Now operating on a freelance basis Campbell, who was with Manchester-based Wigwam for three-and-a-half years, built up a reputation for his creative skills in system design. Amongst his projects for Wigwam was the designing of sound systems at The Hacienda, Manchester and at The Frontier Club, Batley.

He can be contacted on (0706) 821634.

Music Show Selling Well

The 1991 International Music Show is selling well with almost 100 companies confirmed. Space booked by these companies represents 80% of the sales target for the show. Further details on the IMS, which runs from 10-14 July at Olympia, London, can be obtained from organisers Westland Associates, 23a Kings Road, London SW3 4RP. Telephone 071-730 7852.

Martin Go It Alone

Danish manufacturer of lighting products with the Robo prefix, Martin Professional A/S of Risskov, have announced the establishment of their own independent sales office in the UK.

Originally handled by Lamba, who also distribute Stanton cartridges and Numark CD players in this country, it was decided that the continued expansion of sales of the Martin product range required a dedicated marketing set-up. The result is the formation of Martin Professional UK, who are establishing offices and a showroom at Staplehurst in Kent, and in which company both Lamba and Martin are shareholders.

Peter Johansen, managing director of the parent company, told L+SI that the move had been made with the full cooperation of Lamba and that Ian Kirby, who was lighting product manager and had set up the existing dealer network, would be the responsible director. "Lamba prefer to concentrate on their sound products and we have to put all our efforts into lighting, so the move will be mutually beneficial," Johansen stated.

Intended to be operational from the beginning of April, no telephone number for the new company was available as the L+SI May issue closed for press. See also Rimini review pages.

S.A.V New Director

S.A.V. Limited recently announced the appointment of a new director, Dave Clarke, who will be directly responsible for sales and support.

Clarke joins S.A.V. from his previous employer, Bass Leisure, where he held the position of design and installation manager for Tobysound and was responsible for all audio, video, and lighting installations.

German PALS

Strand Lighting's PALS system has recently been installed at the national theatre in Mannheim and at a leading TV studio in Erlangen.

At the Mannheim Nationaltheater Strand provided 13 low-voltage 'contre jour' ramps, six low-voltage Beamlite 1000W spots and two HMI 2,5000W Sirio fresnel spots were equipped with PALS remote control yokes. In addition to these were three PALS Pollux 5kW spots and two PALS zoom profile Cadenza 12/22 spots all of which were supplied and installed by Strand Lighting, Germany.

At the Erlangen studios of the Dr Straube media group, hoists for set lighting support, a Polaris fresnel spot, with a 1kW lamp, a Castor fresnel spot with a 2kW lamp and an Arturo soft light with 2 x 1250W lamps were also added. All spotlights are motor-operated for angle and rotation. In addition, fresnel spots have motor-operated focusing. The lighting intensity control is a Strand Gemini 2 system linked to specific motion control software on a personal computer.

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...TO CONCERTS



Take-off for Juliana's Tokyo club install

The much vaunted Juliana's 'British' club, under development in the Shibaura district of Tokyo, moved into top gear this month with the delivery by air to Japan of over 50 tons of lighting, sound, and video equipment from five countries across the globe.

"While there was a substantial shipment from the UK, actually two plane loads which included considerable equipment from PLASA members and others, we sourced our equipment from wherever was most convenient," project manager and high flyer, Colin Mitchell told L+SI. "We ordered gear from Singapore and Hong Kong and the Renkus-Heinz sound system and Lightwave Research Intellabeams were shipped directly from the US."

Anticipating problems with notoriously obstructive Japanese customs officials, Mitchell had made arrangements via his shipping agent for a representative of a Japanese lighting company to check the goods and certify them good for installation, to avoid any notion that they might be intended for resale. "He was a bit nonplussed by the fact that the Altman Lekos came from the US without lamps which were supplied separately from the UK, thinking that this might infer resale intentions. He was equally shocked when I explained that the reason for this was that we were using 240 volts throughout the installation whereas Japan, of course, is 100 volts everywhere." This seemed to convince the gentleman concerned that it might be unwise to dig too deeply, and he hurriedly signed the necessary approval and took his leave.

This enabled Colin and his team of British technicians, including one on loan from Malcolm Robertson's Effects Lighting there to ensure electrical compliance, to get started on the six week installation programme leading to a planned May opening.

Juliana's Tokyo is a development of Malibu Grand Prix, a Mitsubishi associate, located in an ex warehouse space of approximately 1200 sq metres designed by sister company Imagimax design. The multi-storey building also houses a bowling alley. Juliana's who have provided US\$1.9m of entertainment equipment, within the total project cost of US\$8m, will have total management responsibility for the operation and are lease-servicing the package over an eight year period.

Chief Executive of Juliana's and Imagimax, Michael Wilkings, told L+SI that they are actively working on two other projects in Japan. The first is a sophisticated rooftop nightclub operation in which both companies are involved and the other, in an even bigger space than the initial Tokyo project, is a restaurant and pub being entirely designed by Imagimax.

Hi-Tec, high debt?

It was announced on the 22nd of April that Leonard Curtis Accountants had been appointed administrative receivers to Hi-Tec Electrical Services of Liverpool.

Hi-Tec had been one of the most prolific installers of discotheque lighting schemes in recent years, under their founder Wayne Winstanley, and it is likely that a number of PLASA members will suffer losses if a liquidation ensues. They were also closely associated with Level Acoustics, the sound installation company, but at the time of going to press this company was continuing to operate.

No figures for the losses were immediately available although the directors have been asked to prepare a statement of affairs. No date has yet been set for a creditor's meeting.

Meanwhile, Winstanley has set up a new company called Quilight, which is trading under the old Hi-Tec banner from new premises in Oriol Road, Bootle, as is Level Acoustics, and using the original telephone number.

A spokesperson for the company told L+SI, "The problem was caused by bad debts and an unpaid account for £300,000 for an installation carried out last winter. Because that business is struggling due to the recession but is continuing to trade, and we are hopeful of a full recovery eventually, the Customs and Excise insisted that the VAT, amounting to £42,000, was paid. We were forced to request National Westminster Bank, under the terms of their charge over the company's assets, to appoint an administrative receiver."

The receivers, while unable to comment on the circumstances, confirmed that they will be seeking realisation of the company's book debts, which included the large amount mentioned and that the success, or otherwise, of this would determine the eventual scale of any indebtedness.

There is no connection between Hi-Tec Electrical Services Ltd and the display lighting manufacturers Hitech Lighting PLC of London.

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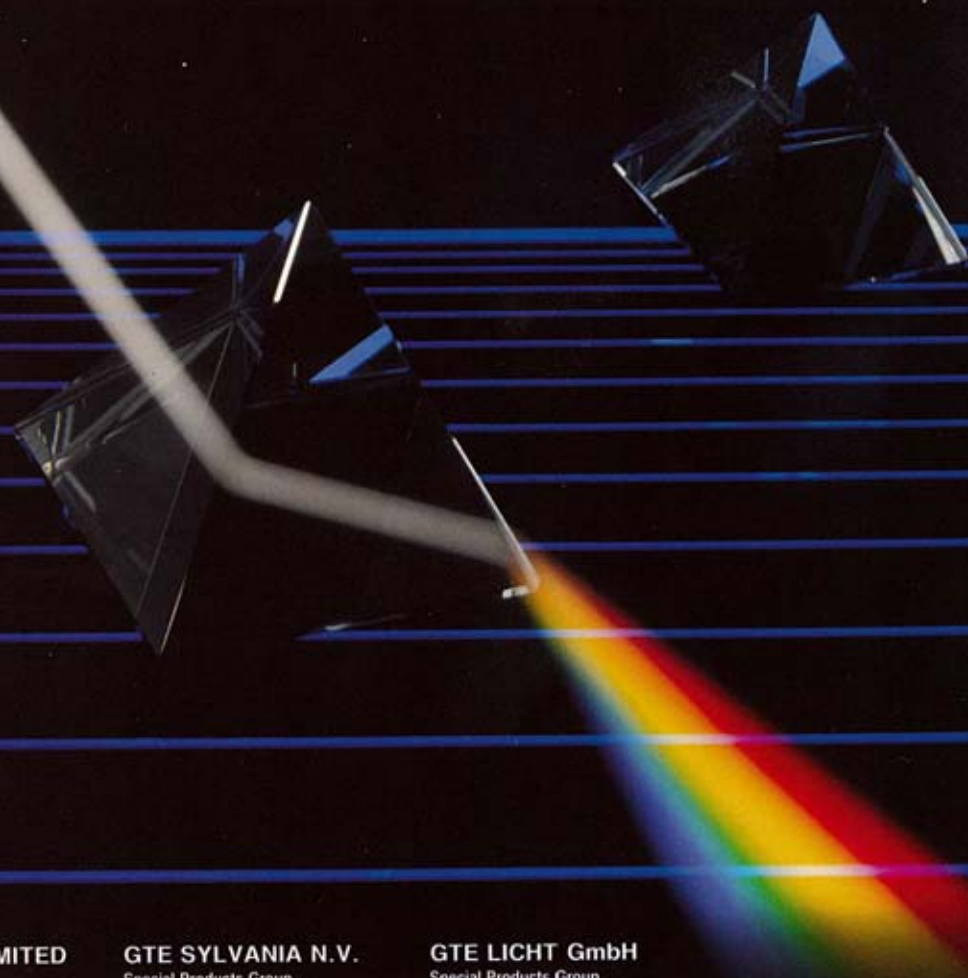
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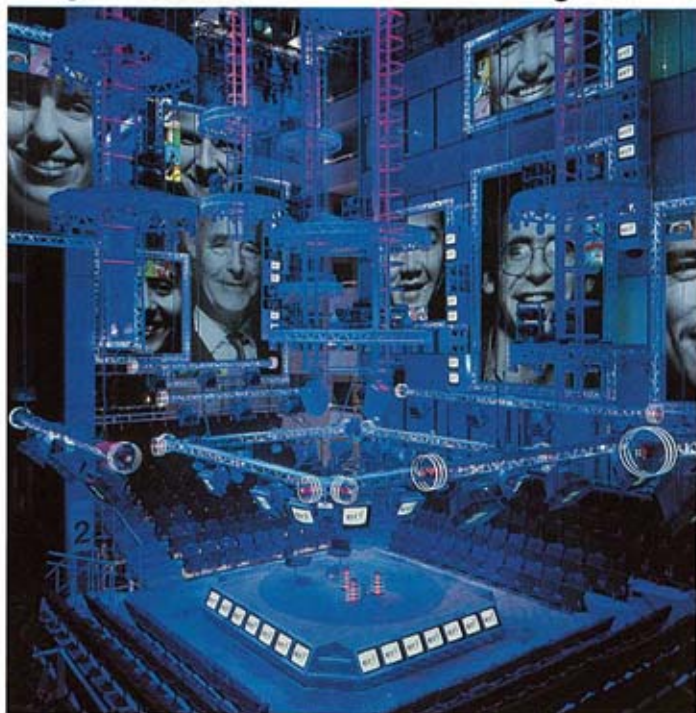
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Nexo in Singapore

Nexo distributor in Singapore, Electro-Systems, has recently announced a number of major sales, which have further increased Nexo's presence in the Far Eastern market. Contracts include the design and installation of sound and lighting systems for the further two levels at Singapore discotheque Fire.

Electro-Systems was also recently selected to provide a large Nexo sound system for the Ministry of defence in Singapore. This is being used as a touring system for national and military events. The company has also installed Nexo sound systems in other discotheques including Fame in Singapore, Fire in Jakarta, and is about to complete contracts in Mandarin Hotel, Kuala Lumpur and the Park Royal Ballroom in Penang. Nexo has recently opened an office in Singapore and Nexo Far East can be contacted on (65) 742 5660.

Safe-T 91

The organisers of Safe-T 91, the first international conference to be held on safety in live entertainment have reported an enthusiastic response to date. 25 experts from the UK and USA will be presenting papers on a wide range of theatre safety issues on the 18th and 19th June at the Cavendish Conference Centre in central London. The speakers will be drawn from such diverse areas as the Home Office, the Health & Safety Executive and Local Government, as well as live theatre, the RSC and Royal Opera House. Architects theatre consultants, insurance experts, equipment manufacturers and theatre technicians will discuss design, operation and enforcement of safety in live entertainment both in the theatre and in major outdoor entertainment complexes.

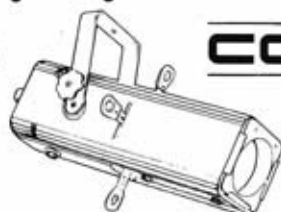
The conference is presented by The Association of British Theatre Technicians, and The Society of Theatre Consultants. It is sponsored by PLASA, The Society of West End Theatre, The Theatrical Management Association, British Actors Equity, The Musicians Union and the Broadcasting, Entertainment and Cinema Technicians Union. The event is organised by the Chartered Institution of Building Services Engineers. The cost for the full two day conference is £190 + VAT with a reduced rate for ABTT members. For further details and booking information contact the Member Services Department at CIBSE, 222 Balham High Road, London SW12 9BS. Telephone 081-675 5211.

Rolight Theatre Technics on the Move

Rolight, producers of the Masterlite multi-directional beam unit and also exclusive dealers of MA Lighting control desks and Arena dimmer-units for Holland, have moved to the Sciences and Business park of Enschede in the east of Holland. Their new address is Rolight Theatertechniek, Instituteweg 35, 7521 PH Enschede, Holland, telephone (31) 53 320644.

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THE ITALIAN JOB

or Rimini Revisited

L+SI SIB/MAGIS Review (by Tony Gottelier)

I knew the omens weren't that good when the editor and I arrived at Heathrow, at some unearthly hour on a Saturday morning, to be confronted by horrendous queues at the check-ins. All the luggage belts, barring one security conveyor, had simultaneously ground to a halt minutes prior to our arrival. Maybe the Ides of March had not been exercised earlier in the month and were still with us?

Clambering aboard the aircraft, with that well worn phrase 'Passenger in Bologna, luggage in Bangkok' ringing in our ears, we faced the inevitability of yet another schlepp to Rimini. To add insult to injury, on arrival at Bologna (International Airport!) it is Kevin Hopcroft, PLASA chairman whose bags are missing and he didn't even come via London, except in transit.

The real drag of all this is, because Bologna is so far from Rimini, that your bags, if recovered, are not delivered to your hotel by a friendly Italian cab driver. Rather, with a Latin shrug of the shoulders, it is suggested that you bring your own cab back to pick them up and, no, they don't provide funding for new kit.

Naturally, if you are there to represent the cream of the producers of British entertainment technology, you feel the pressure to be smart and to shave occasionally. And tomorrow was Sunday, so forget it! Naturally, other old friends were seen in the same queue for the lost baggage, but more of them later for I must finish my trio of misfortunes before my luck actually does run out. I was subsequently invited to a press conference hosted by Martin Professional, the waggly mirror people from Denmark and manufacturer of the Robo range of products, the

purpose of which was to announce their independence from Lamba (see news pages). No sooner had I sat down, than a framed DI award came crashing to the floor, passing so close to my face on its descent that I felt the heat of its exhaust on my cheek. Those of you who know me well, will realise what an irony, and final ignominy, it would have been to be interred in Italy with someone else's DI award embedded in my skull. "Here lies RoboGot, from a life with lights, look what he got." Journalism was obviously going to be at least as dangerous as lighting design.

Back to the airport, where ahead of us in the line stood a deeply unimpressed Harvey Plotnic (**Laser Media**) looking, shall we say, slightly less than his normal sartorial self. Harvey had arrived in Florence, or was it Milan, from the States sans baggage and had been offered Bologna as his nearest point of recovery. He was seen subsequently back in Rimini still without his gear and with beard advancing by the day. (Mind you all of this was as of nothing compared to the plight of **High End Systems**, whose entire booth remained in Italian customs for the duration. They were only able to construct their stand, subsequently, courtesy of **Coemar** who lent them a **TAS** truss system. Good to see such generosity amongst competitors.)

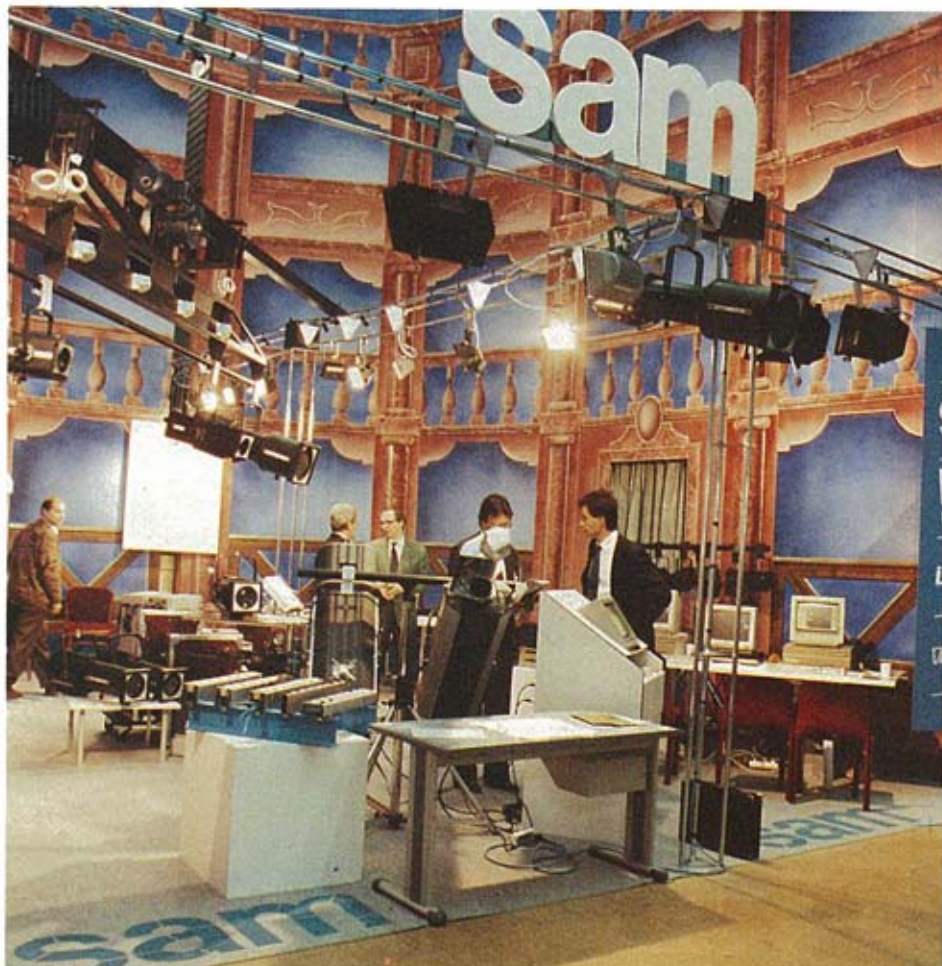
Anyway, the Harvey Plotnic debacle reminds me that the first hard news of the show came from that camp. **Laser Media** and **Tarm**, were very publicly divorced at last year's show, so much so that my ear had been seriously bent by Rudiger Muller and bitten off by Harvey 'tell him to talk to my lawyers'. Now, a resolution

has been found to their squabble and all seems sweetness and light, aside from the fact that each has their own separate distributor in various European countries, which could lead to some interesting situations. Nevertheless, it will be fascinating to see what a dove-tailing of their two technologies can achieve. Potentially, a devastatingly powerful combination.

Lasers provided news elsewhere also. **ACR**, finally saw the light, or rather the lack of one, and cancelled their entire range of non-laser products which proved such a trial to them for some years. (This must have left certain installers, such as Scanlight who had carried out work with this product in Europe for Whitegate Leisure among others, in some difficulty to fill the vacuum.) However, the products, famous for their appearance, were equally infamous for their lack of functionality. Basically they didn't work, or not for long anyway. So sensibly are going back to concentrate on their core business of lasers in which they continue to excel.

As if to distract from the bad news, the good news from **ACR**, at least for everyone other than their competitors, was the announcement of their 1 Watt Coherent Purelight full colour laser system at the radically low price of £18,500. This had their competitors running around in small circles trying to find out how it was possible. Though by the end of the show, **Laser Grafix** were saying that they would offer a competitive product with added high graphics capability.

On the lighting front, as opposed to light amplification, I suppose the 'newey' most likely to make the biggest impact on the market, at



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least if judged solely by potential sales volume, is the **Clay Paky** Miniscan. The little brother of the Golden offers Pan/Tilt, seven colours plus open white, split shades, a five gobo wheel which incorporates mechanical dimming, blackout and up to 7 flashes per second stroboscopic effect. The 150 Watt HTI lamp has a colour temperature of 5600 deg. Kelvin and, in combination with the double condenser lens and parabolic reflector, gives a surprisingly potent beam. Packaged in a sleek, charcoal grey, diecast aluminium case, the Miniscan delivers all this for a retail price, inclusive of lamp, from **Pulsar** in the UK of £1595.00.

Clay Paky also unveiled their competitor for the **Light Wave Research** ColorPro, to be known as Polycolor (John Cleese could have some fun with that one!). Unlike the ColorPro which uses three lamps and three filters and mixes by levels to achieve various hues, a technique, incidentally, first attempted by ACR, Polycolor uses a single 575 Watt HMI lamp (or 36V, 400W Halogen) and mixes the colours mechanically. An interesting refinement is the addition of graduated frost, which enables the change from hard-edged to soft beam, so from profile to fresnel. Mechanical fading and strobe effect are also built-in.

And so to Clay Paky's arch rival, Coemar, for whom this show is the pinnacle of their year's development efforts and therefore there's always something to write home about. Amongst some 14 new products this year, I was especially impressed with Polo which, if racked in groups, could give new meaning to 'audience blinder'. This lantern, based on the MSR200 short arc discharge lamp, contains a controllable butterfly shutter which turns it into a spectacular dazzler.

Coemar have also developed an interesting front-end gel changer, I can't call it a scroller for it uses a new technique to achieve its end and I am sworn to secrecy for the time being. Whilst this requires a little more refinement before going fully commercial, I am certain that it will prove a successful product in the near future. I must say that I was delighted to see that Coemar



Friendly competitors, Bob Sachacherl (left) of High End Systems with Coemar's Ivano Burato.

have succeeded in persuading **Strand** to allow them to sell the MX range of boards as an own-brand product. As far as I know this is the first time that Strand have allowed such an arrangement anywhere in the world and the product now appears with the Coemar brand as Karif, across the whole range from 12 to 48 channels. As is well known, of course, Coemar also sell the **Zero 88** Sirius range of desks under their own banner.

Talking of Zero 88 and own-brands, Coemar and sister company TAS launched their Samurai (Symbol) product with electronics by Zero, in a repeat of the Clay Paky/Pulsar story. This is the 700W MSR product, featured on our front page news story in the March issue which is also available for OEM badging. With 12 colours and gobos, strobe/blackout, iris and PFC built-in, plus a target UK price below £2.5K this product is set to stir up the Intellabeam/Golden Scan market. A dedicated 16 head DMX512 controller, with joystick programming, is available.

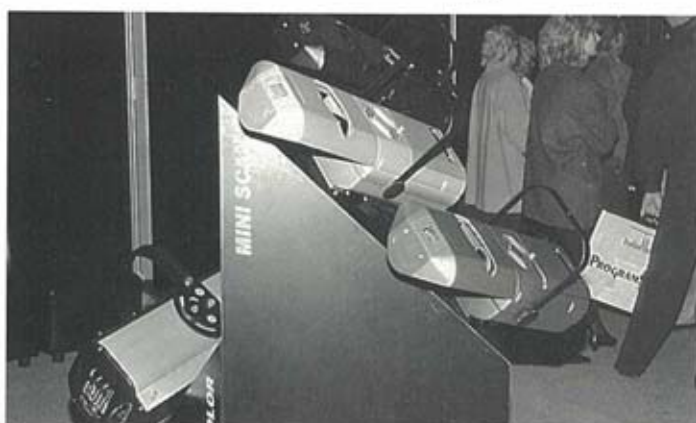
Now that TAS have been fully absorbed into the Coemar family, their product range has started to take on a coherent look with cover versions of the **Griven** Can Can and the ubiquitous Moonflower, which TAS call Nova Ray and Delirio respectively. The Star Ray has a segmented mirror which compresses and enlarges a starburst. TAS also carries some of the Coemar theatrical luminaires, a Halogen PC spot and a fresnel, plus Parcans and two follows. I asked Mike Lowe director of **Teatro**, Coemar's theatrical lighting associate, to explain this policy of selling the same product under different names: "I know it seems strange to us Brits, as it is so transparent," Mike told me, "However, I think it's assumed that each firm has a different set of outlets and probably aim at different market sectors. All I can say is that it seems to work in Europe and we don't get distributor pressure as the result."

To round up the review on the effects front, the products which captured the most interest from British distributors, who were queuing at their gate at one point, were the Italian **Novalight** company. With a whole range of sparkling new effects with wonderfully evocative names, such as Spring, Yo-Yo, Discovery, Asterisk and Flutter. All of which beg description, so if you are interested you'd better send for the video.

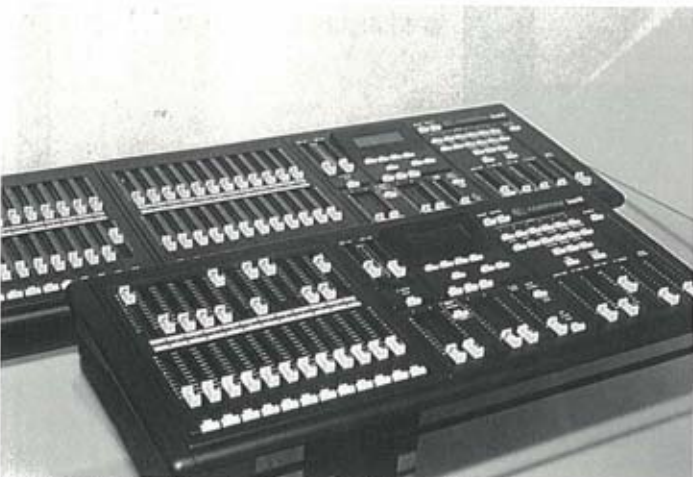
FAL, distributed in the UK by **Avitec**, impressed with Cleverscan, a sound scanner with colour and gobos, the Twinstar double expanding mirror number and their Albatross (yet another unfortunate name, it's only a matter of time before someone gives us elefanta blanca) centre piece. FAL also revealed a six colour dichroic colour changer, based on the T11, or the A1 239 400W quartz lamp, while **Martin** offered RoboColor, four colours and white with a 250W 120V ENH Halogen lamp but with added shutter and focus. Martin, who bravely parked themselves next to the Clay Paky extravaganza, also launched the RoboZap, which uses a rotating mirror drum to spray two beams with colour change into the ether. There



Luciano Salvati (left) across the road at Coemar with client.



Clay Paky Mini Scan — in a slick diecast aluminium case.



Strand MX goes native, with Coemar Karif nameplate.



Il Presidente, Bruno Dedoro (left) with your very own correspondent.

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Easy access to Lightfactor's new 6 channel digital powerpack with Q24 board in background.

was also much interest in ProgramSystem's fading neon displays.

Italy may seem a strange place to find a British lighting manufacturer previously unknown to your correspondent, but you'd be wrong. For on the Adlite stand, Innovative Product Design of Leicester were showing their range of Moonflower derivatives and the Raider which is like two fans of multicoloured light joined in the centre. Other than that the Spanish have finally got in on the robotics act, although not waggly mirrors this time as Satel's Swivel, based on the MSR400, made its debut.

Both are DMX512 compatible and provide both PC-based and dedicated controllers. Fly's new Fos range is, however, based on the waggly mirror principle and the same damned Aly extrusion seemingly used by all Italian effects lighting manufacturers.

Confusion, confusion. The top of the range Fos 4 (phosphor?), based on the MSR 1200 offers programmable colour, 15 rotatable and mixable gobos, a 7-37 deg. autofocus system

which claims to transmit all available light, so not a typical iris, hard or soft edge beam and integrated effects generator. Obviously aimed at the same market as the Superscan and I am sure, in Italy at least, will give them a run for the money. Texas-based Lightwave Research were proudly proclaiming and demonstrating the improved light delivery from the 700MSR lamp on their Intellabeam, which they claim outshines the 1200W Golden Scan. They also revealed that Richard Belliveau's declared intention of making the F100, the world's first truly reliable smoke machine, had been achieved with a failure rate to date below 0.5 percent.

Other special effects which caught my eye, were the Ampilux portable snow generator, and the same firm's bubble reservoir, which uses no less than four paddles to generate masses of fun. I am sure future bubbles are due for a comeback.

And talking of Optikinetics, which we weren't, their partnership with Image Pro in Europe saw them at Rimini demonstrating the new Scene Changer product forecast at PLASA in

September. This very American-looking piece of kit, enables remote selection of up to four 108mm square transparencies. The f5.1/216mm three element lens, or optional f.9/175mm five element objective, gives a large format image from the 1200W 120V Thorn NSP Par64 800 hour lamp and fades between changes which are microprocessor controlled via DMX512.

In controllers, I was struck by the number of piano-style keyboards around this year, Ampilux, ACR and ASM of Germany all had them. Also the plethora of PC-based waggly mirror control systems attempting to match the performance of Pulsar's Oska; Studio Due and Digital Art System from France, among others had those. I also liked the look of the range of small channel controllers, with membrane panels, and power packs made by Sysma. But, of course, if I had to guess who would be most likely to knock the top item off my personal wish list, it would have been Mode Electronics.

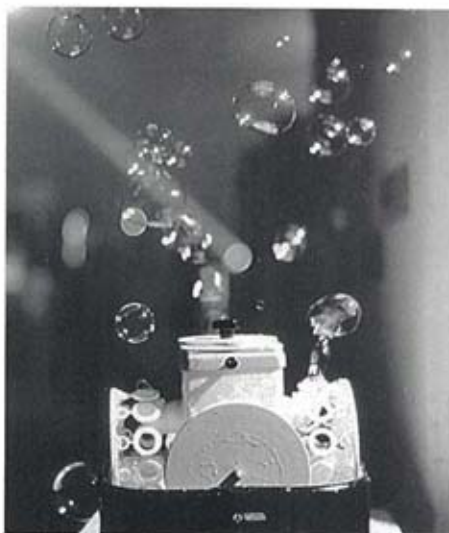
Hard on the heels of their DMX compatible, 16 channel, wall mounting, dimmer pack with



WB's Roman Walenta (left) gets instruction from Mike Lowe of Teatro.



Satel's new Swivel, not a waggly mirror.



Loads 'a bubbles from Ampilux.



Very American-looking, the new Scen setter from ImagePro.



Fly by light. Daniele Canuti and Chiodi Massimo of Fly with their UK agent Debbie Clayton and Fos 4 projector overhead.



Clay Paky in force at their Biai Imperiale bash.



Hill Light and Sound demonstrated Laser Production's range of Variscan laser simulators, by setting up a comparison with one of their Coherent Purelights with optical bench.

on-board programmability in the event of control failure, Mode have announced the Scenestore. For use with this new pack, the Scenestore automatically takes over in the event of a catastrophic failure in the DMX controller. The system simultaneously memorises the dimming levels of all channels on the system, taking 256 'snapshots'. When the power packs detect a control failure, the last transmitted setting is retained for five seconds, followed by sequential transmission of the first 128 snapshots (preset scene A), which can be grabbed and manually stepped. Scene B, of up to a further 128 snaps, is accessed by remote push button. While this cannot be described as full tracking back-up, it is more than adequate for most purposes for which these packs are likely to be used and at a mere £60.00 list . . .

So to the more hallowed halls of MAGIS, where I was keen to finish my conversation with Tim Burnham of Arri, started at the ICC in Birmingham a month previously, when he had



Arri GB's new portable Mirage board with 'marble' digi wheel.



Dick Steward of Mode Electronics shows how it's done. His Scenestore came top of Gottelier's wish list.

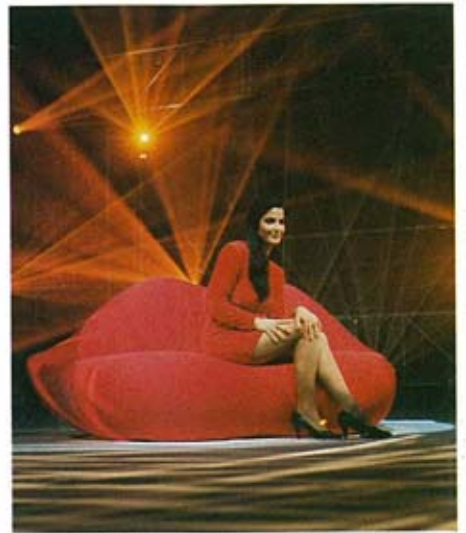
promised to demonstrate his digitising tablet programming moving lights in real-time. And very impressive it was too, with the lights moving to station at the click of a pen. I can't help thinking that this may be one way forward in the art and tedium of programming robotic luminaires. As I have found from my own experiences with CAD, designers who could never cope with a QWERTY, will happily work away with a tablet and lightpen. Can't you see yourself sitting in the stalls and doing it now, Andrew?

I have to say I was more than a little distracted during this demo by Arri's new mini-sized portable Mirage board, aimed to be competitive at the Strand MX and Zero Sirius level i.e. below £3000 basic price. With 75, or 125 channels of DMX out, 2 scene playback, mono or colour monitor options, six sub-masters and five pages of memory. Backup is provided by 3.5" disk drive, there are two infra-red remotes and MIDI provides the option to link one or more boards together. Needless to say, the feature I liked best was the master digital fader wheel in faceted marble-look-alike Corilan and with tactile graduations achieved via a stepper drive.

It is not often that you get to hear of on-the-spot success at a trade fair, other than when it is prearranged as at the Motorshow, so I am pleased to report that Arri took an order on their stand, from Italian TV channel Five, for an undisclosed quantity of those Mirage boards, an Imagine 500 and an Impulse. Not bad eh! I was also intrigued by the Arri Italia motorised studio 5K, which provides silent chain-driven manoeuvrability through 400 degs. of pan and 200 degs. of tilt, plus focus and colour scrolling



Space Cannon make an unlikely rotating kinetic sculpture from their Xenon products.



Light and beauty — Coemar pay lip service to glamour.

to come later. All controlled to 8+8 bit resolution by the Pentagono software and graphic display on a PC.

Celco are using the same course/fine positioning technique with the Summa HTI moving light system and have adapted one of their boards, re-named Panorama, accordingly with some channels dedicated to moving lights to enable easier programming. However, watch this space around PLASA time for a more specific approach to the problem from this company.

I also came across smiling Ralph Wezorke demonstrating MA Lighting Technology's new Lightcommander II, 24 and 48 channel desks, distributed by Lightpower in Germany and Cerebrum Lighting in the UK. First shown at Frankfurt, these desks offer individual channels on two presets with flash buttons and master fader. Direct access to 24 memories, quick modification facilities and dynamic storage handling of up to 4000 real-level steps. Dipless crossfades, manual or timed autofade between two presets, individual fade times assignable per step in sequences from a single 'Go' button start. Analogue, or DMX512 out to 128 dimming channels via a softpatch. A large liquid crystal display keeps the LD in touch throughout. Two other features are MIDI, in, out, & thru' and they, like Celco, have also set aside six additional analogue channels controlled by pots, which the manufacturers suggest are suitable for colour changers? They also offer 30 and 60 channel multiplexers, 12, 30 and 60 channel demultiplexers, and have added SMPTE facilities to their larger LCD desks. In the sound department, the Swedish company, JBN, also in



Tim Burnham of Arri GB with digitising tablet and Wayne Ritchie of John Barry Group, Arri's Australian distributor.

the MAGIS hall, were demonstrating their ceiling panel speaker system. This consists of 60 x 60cm modules which are only 6.5cm thick, yet each incorporates nine 15" full range speakers together with the necessary insulation and a decorative front. The manufacturer states that lights can be incorporated, although some care would be required over this in my view, and a height of 3M is recommended with the concentration in a central 6 sq.m area over the dance floor. While, in concept, it is a pragmatic solution to the problem of the new sound regulations, as it certainly focuses the level where it is required with minimal overspill, and is ideal for restricted spaces, it's a pity that it doesn't sound a whole lot better. Mind you, judging sound quality at an exhibition on an open-sided stand is notoriously difficult. Anyway, maybe they will come up with an answer to this, in which case they will be on to a winner. Meanwhile, for the purpose for which originally intended, tented beach parties for which they provide the complete bedouin package, it is perfect I am sure.

Anytronics, well known for their lighting control products, announced a new range of well-made stereo power amps, the series 192. In the range, which will be expanded, the A16 delivers 140 Watts rms per channel and the A16, 200 Watts and slightly less than double these ratings in bridge mode. All models have the option of a bargraph on the front panel, but otherwise all critical controls have been placed at the rear for tamper-proof protection. **RCF** also announced a new active power amplifier, the AS 6001, offering 450 Watts/channel, or 800W bridged. The output stage is capable of handling transients of 100A and phase angles of more than 45 degs. and several units may be daisy-chained. They also introduced two new speakers, the L18/851K a low frequency, high power (1000W AES) unit and the L8CX8 a full range low power coaxial.

Another Italian company, **FBT Elettronica**, who manufacture a range of mixing desks and amplifiers, celebrated their 25th anniversary by launching two new series of products all cased in high-density polystyrene enclosures. The Personal Basic Line incorporates balanced XLR inputs, with the new 40 program Digital Stereo Multi-effect Echo-Reverb processor in all powered models. Two stereo channels, medium parametric control, 3 monitor lines, 3 effect lines, phantom power supply, 128 program digital effect processor and remote master control are some of the features of the Personal Top Line selection.

British contender, **LMC Audio Systems** launched the EAW range of speakers in Rimini for the first time. Among them, the UB22 utilises a multi-faceted baffle design for which high output, consistent wide coverage, and good definition are claimed. The UB42, on the other



Celco selling. Colin Whitaker (right) with inscrutable smile.



Sound in a tent. The JBN ceiling system from Sweden.



Bob Hall, Anytronics, taking the weight off on his new amplifier, and below the new Series 192 amplifier.



Tim Chapman, reflecting on the demise of Mrs Thatcher?



hand, has been designed to solve theatrical under-balcony problems, offering wide horizontal coverage of 170 degs. From a compact box the product achieves full bandwidth capability and an output of 120db. The company also showed the **Radio Station** Ear monitoring system for which they are sole European distributors, **Rockustics** and **Best** ceiling speaker systems.

Paul MacCallum, of the **Wembley Loudspeaker Company**, solved the problem of the high cost of exhibiting abroad, by driving down in a smart new Renault 5 with a boot full of his Pro Plus Bassliner, two channel speaker system and parking it straight onto his allotted stand space. No shell scheme required, no parking

charges, and a hell of a way to attract attention. So successful was it, that I was never able to squeeze onto the front seat for a listen, so I cannot comment, but for those who put sound before luggage, just the ticket I imagine. The question remains would you buy a used speaker from this man?

All in all the Rimini show was pretty successful, considering the difficult commercial circumstances.

Suggestions that it might revert to a two-yearly show, which would certainly relieve pressure on exhibitors, seem to have faded with the compromise that MAGIS will go that way while SIB stays as it is. This will probably remain the status quo unless PLASA agree to alternate,

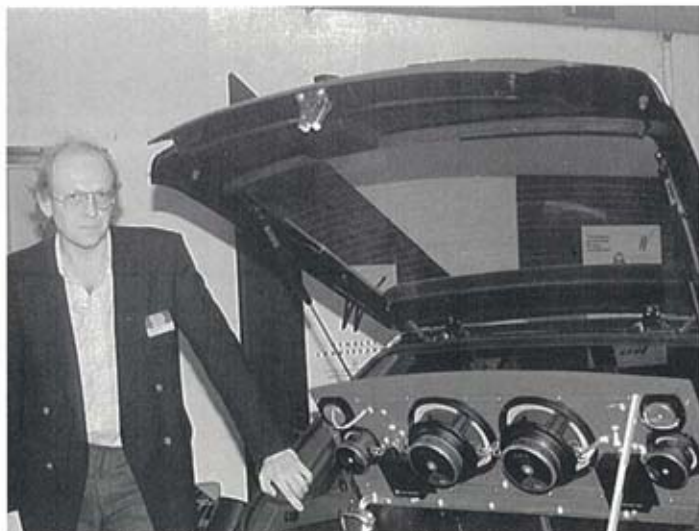
which is not on the cards at present, although APIAD's withdrawal this year was probably intended to provide pressure in that direction. Despite this, as we go to press, bookings for Light and Sound Show '91 are looking healthy. What was missing this year, was the usual British contingent from the leisure multiples with attendant installers and suppliers. The Rose and Crown must have been deserted!

Certainly, the main bar in the concourse, usually the main focus for this crowd and the posse of English journalists, making out for all the world like foreign correspondents in a war zone and bemoaning the lack of anything new, weren't in session whenever I passed through.

Yep, these is hard times.



Kent Flood, AVAB MD with Ralph Dahlberg their marketing manager and the new Mini Expert lighting board.



Paul MacCallum of Wembley loudspeakers with a boot full of goodies.

MEANWHILE AT EXPO MUSICA

John Jeffcoat Reports

Held for the last time at Campo de Campo, Expo Musica this year seemed a shadow of its former self. Owing to disputes between some Spanish companies and the organisers, attendance by exhibitors was down by 30%.

Expo Musica dates back to 1985 at its traditional site but we were informed by Adrian Piers, the Executive Committee chairman, that the venue is to be moved to the new Juan Carlos Exhibition Centre next year. This complex boasts eight pavilions, some of which are specifically designed to host concerts and recitals.

With the Olympic Games and Expo to be held in Spain next year there is, of course, a flurry of activity to obtain significant business for these events. Indeed, as previously reported a PLASA contingent visited Spain earlier this year for that purpose.

Although much of the work, both at Barcelona and Seville, seems to be behind

schedule it is encouraging to note that the 'topping out' ceremony for the British Pavilion will be held on the 21st of May, which is exactly one year, to the day, prior to the Queen's visit in 1992.

Many of the Spanish design and construction companies are tied into major Spanish banks. One such company is Sevilla Service Productions, which is jointly owned by the Banco Central and the Banesto Bank. This company is responsible for the Spanish Pavilion which has a budget of 60m. They also have 19 other Pavilions under construction, including those of Saudi Arabia, Korea, and a vast pavilion containing 17 South American countries called Plaza D'America.

Expo Musica itself was certainly a domestic exhibition. It would appear that the international 'majors' went to Rimini and gave Madrid a miss. Certainly there was little that was new. Coperlux did, however, have their new ESA Quad 400 which is a series of sound scanners in a single housing — not exactly futuristic but most effective. JBN speakers from Sweden were

exhibiting the ceiling speaker system which they unveiled at Rimini. These were causing much interest. The system is sold in modular panels and delivers 250 watts per square metre.

Within the British contingent there was certainly good news. Rob Peck gained significant orders from his new distributor — Adagio S.A. of Barcelona. Vestax have only just appointed Adagio and confidently predict sales in the nature of six figures this year. Freddie Lloyd of Zero 88 is very happy with Eurolux and figures are climbing after a poor 1990. Cerebrum's Rod Bartholomeusz claimed that their spanish sales were 25% up on sales this year and very pleased with their agents Max Lighting. Lawrie Taylor-Duncan was causing havoc and generating sales with the JEM Roadie which can obliterate the bottom floor of the Casa de Campo in under three minutes!!

Show Trading, the Clay Paky distributor stole the show. Carl Dodds and John Lindsell were as brilliant and innovative as ever with constantly changing shows playing to packed houses. This Clay Paky extravaganza was superbly enabled by an Oska controller which performed with all the excellence which has made it an industry byword.

With official opening hours of 10am until 7pm it is a long day in Madrid, especially with so few exhibitors and visitors. Although, to me, the show had lost its original sparkle — significant business was written during Expo Musica and that's really the name of the game, after all.



Lama Tia representing JBN.



Left, Ralf Lotting and right, Georg Brandschadel of the German laser company, Tarm, who will be exhibiting for the first time at PLASA this year.

For details of PLASA's
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TAKING CENTRE STAGE

Ruth Rossington profiles the
United States Institute of Theatre Technology

The United States Institute of Theatre Technology is probably singular among the organisations of its type. This year it has notched up its 30th anniversary, and looks all set to survive until its centenary, at least. In those 30 years the Institute has achieved great things, but perhaps the most significant factor is that its diversity has proved to be its strength and not its weakness. Designed to represent the entire spectrum of theatre technology and activity, I believe USITT is unique in having equally strong membership from the scenographic areas as well as technologists and craftspeople. Producers, managers, architects, stage engineers and theatre consultants also have devoted constituencies within USITT and the organisation has managed to combine strong membership segments from the educational, regional and commercial theatres along with system suppliers and theatrical dealers and manufacturing groups as well. To fully comprehend the survival instinct of this great factory of the arts, the best place to start is its history. Throughout each year of its lifespan one can trace a growing confidence from its tentative beginnings, its faltering steps along the way, and most importantly its growth into a major force within arts provision and management in the United States; a one-time truly amateur association that is now well along the road towards professionalism.

The Institute's foundations actually lay in the American Centre of the 'Association Internationale des Techniciens de Theatre' (AITT). The word 'techniciens' as in the Institute's original use of 'technology' was an umbrella term under which sheltered all those who dealt with theatre art and techniques.

AITT was formed at a conference at the Institute of Art and Archaeology in Paris. Approximately 150 delegates representing 30 nations attended. An American centre of the AITT was formed soon afterwards by soliciting the interest of the theatrical unions, and was offered support from the American National Theater and Academy (ANTA). Shortly afterwards it was agreed to set up an independent American organisation as well as maintain an American Centre of AITT housed within ANTA. USITT, the name and the organisation, were only a matter of formality thereafter. At its first conference in February 1961, USITT was officially constituted as a membership organisation. Approximately 150 attended, and the first cash into the Institute coffers consisted of \$10 registration fees, supplemented by a \$25 annual payment. The preparatory work which saw the formation of USITT had an almost exact parallel in Great Britain with the formation of ABTT and its first conference. In both countries this was to be an intensive period for the building and reconstruction of theatres. The proscenium theatres in the West End and on Broadway no longer seemed serviceable as models. Stage directors made changes in the actor/audience relationship by penetrating the proscenium arch. Almost simultaneously a period of experimental staging took place in non-traditional theatre forms. In each country there was a need to 'organise' the pool of expertise as a wave of theatre building hit. Fortunately, in each country there were a small group of people who were willing to do it.

USITT had not been long in the making before the Advisory Committee appointed the first chairs of provisional working commissions, starting with those for Architecture, Engineering



Don Shulman, USITT president above, and Joel Rubin, a former president, deliver their addresses to the USITT Conference in Boston.



and Construction. By mid 1961 the members list noted 120 names, by 1963 this has doubled to 250, and three years later was pushing 720. By 1970, the Institute membership was well on its way to 1,000.

Four years after its first tentative steps the association felt sufficiently strong to undertake work on the first issue of their own journal, Theatre Design & Technology. Hand in hand with the publication went the appointment of the Institute's first full-time administrative secretary.

The seventies proved to be a decade of uncertainty. The early promise of the sixties was extended upon in some areas but put to severe test in others. It was a decade of expansion and change, a time of growth in membership and activities, and the period when the Institute became a truly national organisation. It took the seventies to eliminate the abiding perception of provincialism, and with each year of the decade, the literal and metaphorical boundaries perceptibly shifted. This expansion was given added impetus by the revision of the USITT By-Laws. These laws reduced the size of the Board of Directors and gave increased responsibilities to the officers and standing committees. It

encouraged geographic and interest-area diversity on the Board and committee memberships. Research and project activities were formed into commissions, separate from the regular committee structure of the Institute.

By 1971, there were six project committees: Architecture, Administration, Codes, Engineering, Presentation and Performing Arts Training and Education. The formation of the Costume Commission in 1972 did much to stimulate interest of practising designers and technicians in all fields and soon a Scenography Commission was formed. This was later replaced with separate commissions for Scenic Design, Lighting and Sound. A commission on Technical Information was also founded, quickly followed by the Health and Safety Commission.

The Dallas conference in 1971 was the lowest point in the financial history of the Institute. At that meeting the Board of Directors learned that the Institute was in debt. However, this was not to be the end of the story. Century Strand stepped in as the first contributing member of the Institute, and other pledges soon followed. Realising this was a time to go forward and not be content with mere survival, the Institute launched a membership drive, and an ad hoc

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An der Talle 26, 4790 Paderborn
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Advertising Revenue Committee was formed to increase journal advertising. The impact of the debt served only to make the members more determined that it succeed. Whereas hitherto financial needs had not been tended to, they now assumed priority status and the Finance Committee began to take firm measures to control income and expenditures, and an Endowment Fund was established in 1974 as a future source for special project funding. I spoke with Don Shulman, current President of USITT, over a working breakfast at 8am in the morning. He was half way through his working day, mine had only just begun. "It took a long time for the Institute to accept that there was nothing wrong with either itself or its members having commercial interests. Rather than turn a blind eye to the business ethos, USITT began to assist it."

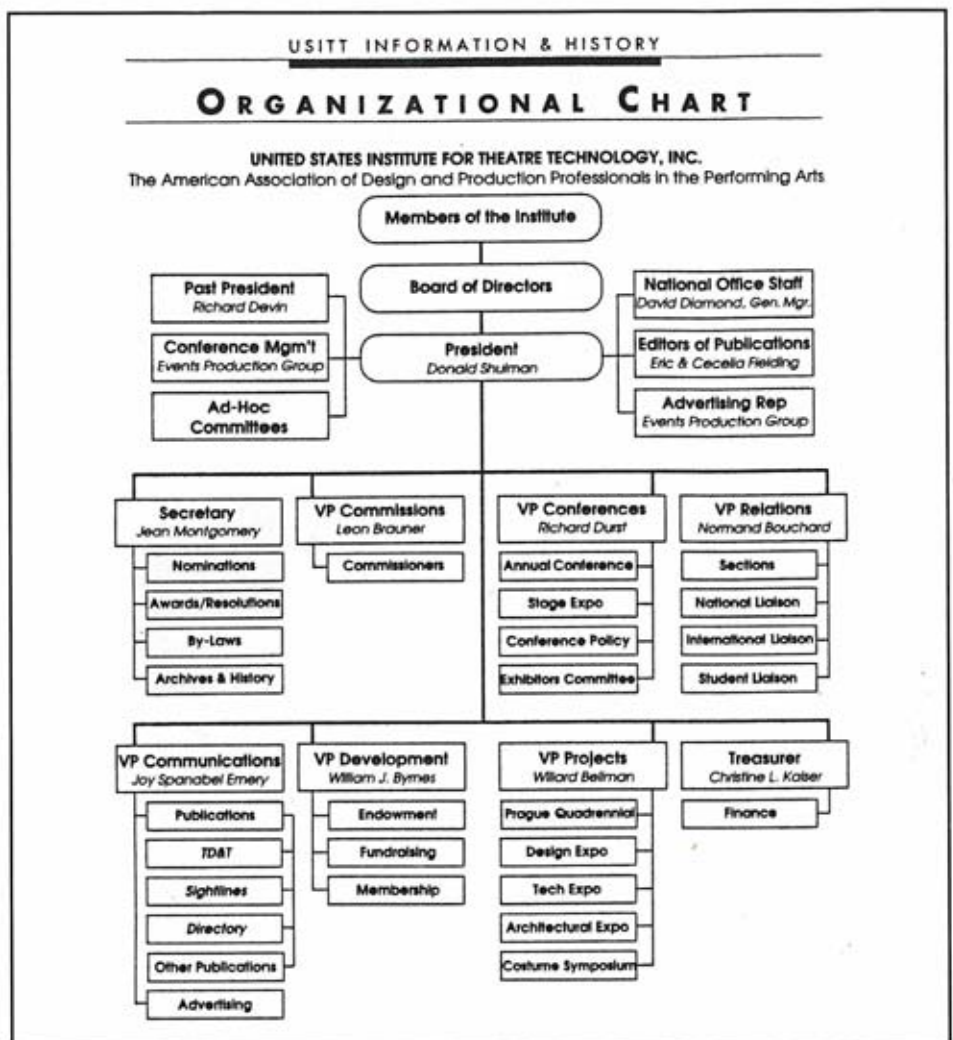
The San Francisco conference of 1972 caused an about turn in the organisation's fortunes. The attendance exceeded 300; far more than the conference committee had hoped to attract. It also marked a significant change in attitude for the Institute — it was the first time they realised that a conference could make money.

The eighties were a decade of hard work and dynamic growth. Between annual conferences, Institute activities were on the rise. The number and activity of the regional sections expanded; the National Office staff moved from a single individual to full-time staff including arts management professionals; and the Institute's publications went through an unprecedented period of development. Annual conference attendance grew from 500 in Seattle in 1979, to more than 4000 in Anaheim in 1988. It was only natural that professional conference management should be in place by the end of the decade.

USITT, will of course be known to many as the organisation behind the DMX protocol. The research and development behind their published guidelines, and recommended practices covers arguably some of the most important standards regulations to be circulated within the industry. It's come a long way from its backroom beginnings of 30 years ago. Aside from the protocol debate, USITT has maintained and improved upon its missions; collecting and disseminating information; sponsoring programmes and projects that advance the knowledge and skills of its members; improving its publications and the quality of regional and national conferences. The old challenges once raised in the design of newer theatre forms seem as well codified as any Brussels directive. USITT is only too aware that the rapid changes and advancements in electronics make obsolete old technologies overnight and the capacities of the computer age appear sometimes to outdistance artistic demand.

Unless driven by their vocation, craftspeople learn to shun the theatre and perform the same professional work outside where they can command a better wage.

But these are only minor problems for the Institute. The major problem is now squarely before USITT: In almost every country, the governmental corporate and private priorities that were once given to cultural projects are now increasingly directed toward pressing social needs, and the gravy train has all but dried up. I spoke with Joel Rubin, a fellow of USITT and former President, about the problems this engendered. "How are we to sustain and support our cultural institutions and initiate and develop new products? In existing institutions, once accustomed to some priority, we see changes in infrastructure, staff turnover, day to day operations, and the perceived need for more 'commercial' material. Meantime, there are increasing delays or the failure to start on the planning, building and equipping of new theatres and the reconstruction and re-equipping of old theatres."



In the United States there is little dependence on governmental subsidies. Instead, there is a kind of expertise in promoting private and corporate funds. Arts management is one of the fastest growing disciplines, and a similar path is being forged in this country. In both countries, those involved in the arts are less sanguine about keeping up the necessary financial growth and they face increasing professional competition from causes that after all do have some parity.

Joel Rubin again: "What is different now is that national theatre organisations like USITT must recognise that the threats to cultural support represent a common challenge in which we must seek allies not only in our own country but throughout the world. Nor is it that difficult anymore. The culture industry and its support systems are increasingly international whether they be an international play, musical or rock concert, or the international spotlight, colour changer or theatrical computer control. The world has less and less discreet and closed markets and there is more need to tune a theatre, a project, an attraction, a device and even a challenge, to an international audience.

"USITT is therefore trying harder than ever to find the means to relate its constituencies to their international colleagues. USITT has had an ongoing programme in this area for over 30 years, but in the last few years has taken more consistent steps to fund the programme more adequately.

"We have actively sought grants and fellowships to provide proper and substantial American representation at important international meetings. We like to tell others what we are doing, and we need to learn what others are doing and apply what is useful back here at home."

Meantime, within the framework of the annual USITT conference, the organisation has developed an ongoing system as host of

international meetings to facilitate exchanges of information. The OISTAT publication and information exchange executive, programme, technology and publications commissions have all met in the United States, and Canada will shortly co-host a meeting of the OISTAT Scenography Commission. "We see the international role of USITT," explained Rubin, "as an opportunity to unite with all the other organisations and constituencies who believe as we do that there is a world-wide challenge to the total cultural community that we can best answer by working together."

The way forward for USITT could be fraught with problems. It is too large to be a small organisation and too small to be a large one. Whilst the Institute should continue to expand in all directions, it should not do so at the expense of its identity. Fortunately, there's a refreshing attitude amongst members that change is not always a bad thing. A process of criticism and restructure which started in the late eighties still continues. In a recent newsletter to members, the rallying call was 'if you don't like what we're doing, don't leave us, change us'. It's the sort of attitude that guarantees forward momentum.

USITT's major task now is to define its future role. As Don Shulman explained, there are multiple philosophies as to the direction of the Institute. But there is one thing that USITT will never lose sight of. "The members are the lifeblood of the organisation. We don't want to do anything that cuts us off from that support network."

The backbone of USITT is its people, those who supported it when there was little more tangible than an idea that lay rooted in the future, and a budget to match. Many of those people are still around, and they have been joined by others equally dedicated to the cause. The strength of the Institute is embedded in the loyalty factor. And there's no substitute for that.

SHOWTEC OF COLOGNE

John Offord visits Showtec's headquarters for the inside story of one of Germany's leading production companies

Now a major force on the international concert touring scene with a very professionally run operation, Showtec sprang from small beginnings. In 1978 computer student and musician Wilfried Schiefer and his friend Ralf Richrath, a graduate in energy technology, started to build custom designed speaker cabinets, and the income from sales and hire was a welcome supplement to help finance their studies.

The experience also set them on course for a successful future, because they were soon working on tour with local bands, as mixers and technicians. A few years on, and they took the opportunity to buy a second-hand lighting system, complete with dimmers and control. And that was the start of Showtec proper. From 1983 they were on their way, and talented young technicians joined the company as it grew.

"When we started Showtec we had to go forward in a different way," explained Wilfried Schiefer. "The rock and roll business was handled by roadies and it was an exotic scene, with little business sense pervading. We decided we needed real engineers to look after the equipment and real business people to handle the financial side. This was a key factor in our successful start in the business.

"We also worked out that we needed to be better, and different to other companies and began training people," continued Schiefer. "Cologne TV rented a complete studio installation — lighting and sound — and we worked with them so that all our young technicians who didn't have experience were able to go to this studio for training. This was one of the key differences in the way Showtec progressed."

Today, Showtec can handle any type of production and is equally at home in drama touring, industrial theatre production and design, concert touring and rock and roll, major outdoor events, and television. Their equipment stock can meet all but the most obscure of requirements, and is based on standard international product. A major concert lighting rig specification for an international tour will pose no difficulties.

"Companies can lose out if they try to substitute different equipment," said Wilfried Schiefer. "This is never our goal. When we have a technical spec, however complex, we deliver the whole package as specified. What we give people is exactly what they want."

Schiefer and Hans Probst, one of Showtec's customer operations managers, both commented on an instance when lighting designer Ian Cameron noticed one Leko was missing when he checked out the rig for a Chris Rea tour in 1989. Everything was exactly right, except for this one Leko. "When we checked the plot, which had been faxed to us, it had been on the edge of the original plan and missed off the sheet when it came through!" explained Probst.

Showtec's wide range of skills comes from solid background experience, and the example of their early introduction to industrial theatre is typical. Their touring work had attracted the attention of a well-known producer of industrial presentations, and co-operation soon followed when the VW Golf was launched in the summer of 1983.

"The concept of the show was a huge open sphere," explained Thomas Ickenroth, the director of Showtec who looks after marketing and finance, and who gets involved with the 'industrial' business. "The outside of the sphere was used as a projection screen, while the inside carried a huge massive mirror to provide a view of the new car from every position in the auditorium. The lighting system we provided included 350 luminaires: Pars, ellipsoidals, fresnels and cyc lights.

"For Volkswagen it was a successful launch, but for Showtec it was the important first step in the field of industrial presentation. It opened the door for many major industrial clients," continued Ickenroth. "Nowadays



Wilfried Schiefer.



Part of Showtec's extensive warehouse and production area in Cologne, Germany.



Ralf Richrath.



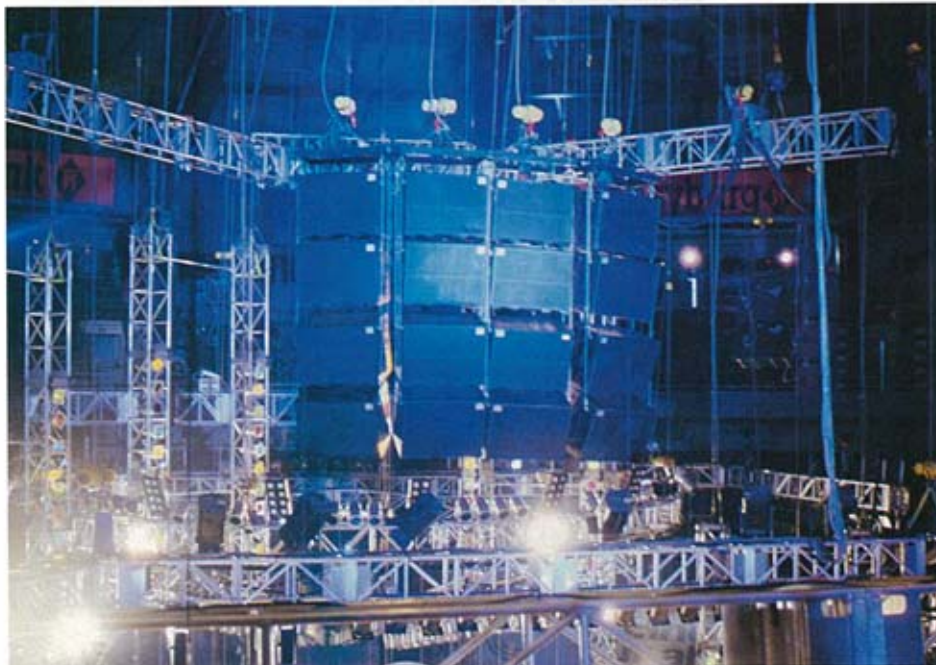
Thomas Ickenroth.



Hans Probst.



Getting Showtec on the road: the 1983 launch of the VW Golf.



TV sound: the central cluster for a German television pop show.



Drama on tour: Andre Heller's 'Body and Soul', 1988.

Volkswagen and Audi launch their new cars exclusively through Showtec for both lighting and sound. Daimler Benz's most recent car launch was also produced with our equipment and crew."

In a similar way, Showtec's experience in the touring of major drama productions never looked back after the 1985 tour of Andre Heller's 'Begnadete Koerper'. Major tours that followed included Antonio Gades 'Carmen' in 1986, 'Bloodwedding' in 1987, Andre Heller's 'Body and Soul' in 1988, and 'Tango Argentino' in 1989.

Obviously the area of rock and roll and concert touring was growing all the time. In 1989 alone, Showtec supplied the lighting and sound equipment for Womack & Womack, Tracy Chapman, Bob Dylan, The Silencers, The Ramones, and Joe Cocker Europe – which had around 50 gigs on the tour sheet. The biggest German spring tour in 1990 was for Howard Cependale, which involved three trailers of lighting and sound equipment. The tour ran for five months and included over 80 gigs.

Any production company involved in international concert touring inevitably has to become expert at major outdoor events, and Showtec is no exception. In 1988 the biggest open-air festival in Germany – at the Nuerburgring – was rigged and lit by Showtec, with artistes such as Fleetwood Mac and Chris Rea. The company has also regularly provided equipment for various Loreley festivals, the Reichstag Festival in West Berlin, and last year's East Berlin Weinensee Festival.

In 1988 the sound department was given the interesting and demanding task of providing a 5 km long sound system for Frankfurt's river front and bridges. "This was a major classical music and firework event," explained Thomas Ickenroth. "As a result of its success we have received many new contracts and enquiries for various open air classical festivals."

Showtec's latest base in Cologne, the third change of premises as the company has steadily expanded, has over 2,500 sq.m. of storage and rehearsal space, and the growing pre-eminence of the operation on the concert scene recently attracted the attention of Vari-Lite Europe Ltd.

In February 1989 the management of VLE, together with Vari-Lite Inc's president Rusty Brutsche from Dallas, visited Cologne to commence the negotiations which eventually resulted in a sub-distribution agreement being signed in September last year.

In fact, Vari-Lite Germany is a French-German co-operation. Paris-based VCF, the French sub-distributor for Vari-Lite, joined with Showtec GmbH to establish VLD Germany in Cologne to provide Vari*Lite products and services throughout the German speaking region. Continuing from there, and also in 1990 – an epic year for the company – Showtec was appointed German distributor for Skytracker products.

So, with the traditional USA-UK hold on the origination of the majority of international



1990 launch of the VW mini-van.



Rock am Ring 1988: the biggest open air festival in Germany.



Rock am Ring, 1988

The two headline shows at the Nuerburgring in 1988 were Fleetwood Mac and Chris Rea, and the lighting, rigging and crew were supplied by Showtec. Fleetwood Mac's rig consisted of 72m of trussing with 296 Par 64 1000W units with CP-60 lamps, 72 Par 46 ACLs, 2 6x16" Lekos and 8 Pani HMV 1200 truss spots (with seats). For Chris Rea, an 82m truss system carried 168 Par 64s, 90 Raylights, 72 ACLs, 24 Lekos, 6 Molefay 8-light units with colour frames, and 4 Pani HMV 1200 truss spots. Shared equipment included 4 Xenon Super Troupers, Avolites dimming, Avolites and Celco control, and a Clear-Com communications system.



Howard Carpendale 1990 European Tour

One of Germany's superstar acts, the Howard Carpendale 1990 tour had comprehensive input from Showtec, from lighting and sound design through to provision of equipment and crew. It played to a total of 200,000 people.

The show is seen in action (above), and the plot of 'Plüsch' Wolf's lighting design is shown right. The sound equipment list is given below:

Front of House:

- 1 x Yamaha PM-3000 40/8/2; 1 x Soundcraft 200 24/4/2
- 4 x Yamaha Z1027 equaliser; 1 x Klark-Teknik DN60 analyser; 3 x Klark-Teknik DN-716 DDLs; 1 x Valley People 610 compressor/exp; 1 x Teac-Tascam tape deck; 1 x Yamaha KS-15; 1 x Clear-Com intercom system
- 1 x Akai S900 sampler; 2 x DBX 160-X; 3 x DBX 166; 1 x DBX 120-X sub-harmonic synthesiser; 3 x Brooke-Siren DPR-402; 2 Drawmer dual gates DS-201
- 1 x MIDI remote control; 2 x Aphex C; 1 x SPX-90; 2 x Lexicon PCM-70; 2 x Yamaha Rev-5; 1 x Yamaha Rev-1.

PA System:

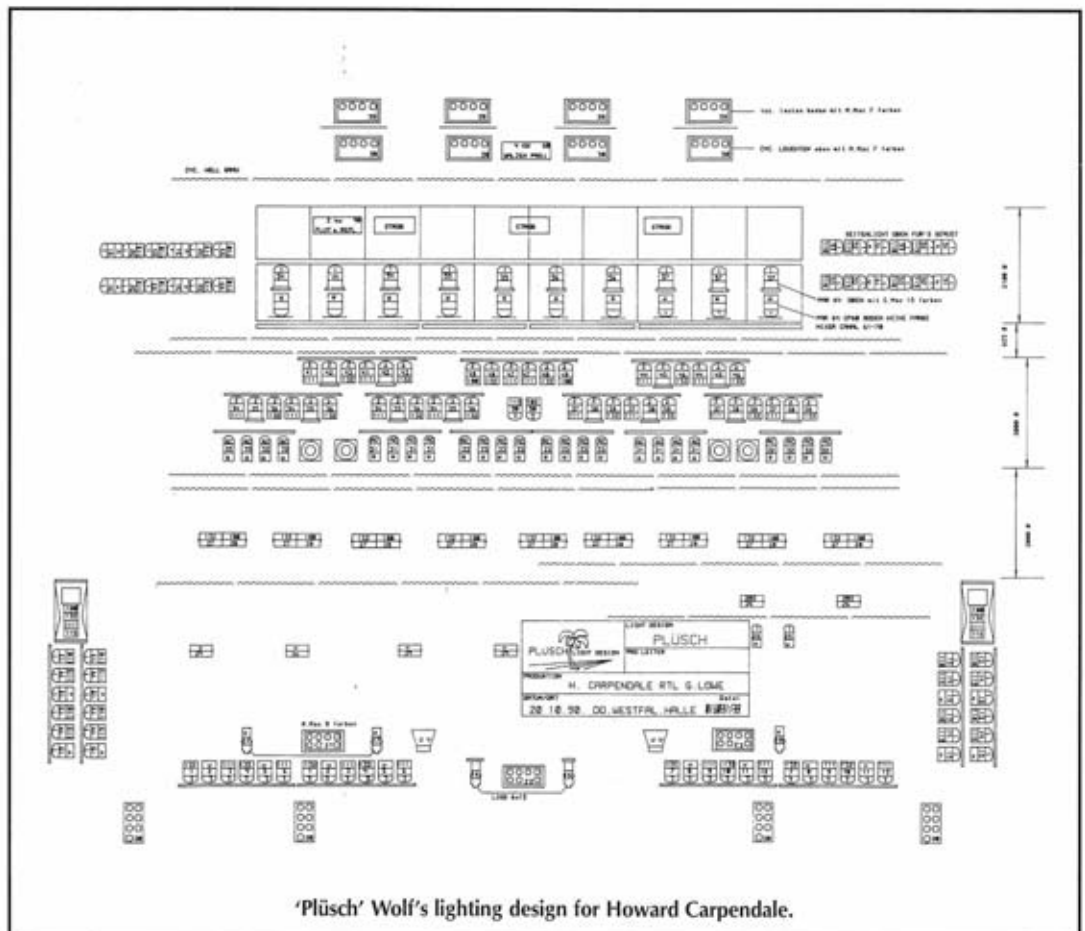
- 20 x Meyer MSL-3 systems inc amping and M3 controller
- 10 x Meyer 650R2 sub-bass inc amping and B2 controller
- 8 Martin Audio CX-2 inc amping and controller
- 4 x Verlinde 1t chain hoists; 3 Meyer cradles

Monitoring

- 1 x Ramsa 40/18 S-840
- 4 x Yamaha TERZ equaliser; 8 Klark-Teknik DN-27 EQ-S
- 2 x Yamaha SPX-90
- 2 x bi-amped wedges; 8 EV Deltamax/15" + 2"; 6 x Martin Audio LE200; 2 x Martin-Audio VRS-800 sidefills/3-way; 7 x X-over 2-Weg; 12 Daub D-600 amps

Microphones:

- 20 mixes Shure, Beyer, AKG, Sennheiser;
- 10 DIs; 6 Beyer diversity sender; 10 Samson diversity sender



'Plüsch' Wolf's lighting design for Howard Carpendale.



Horst Siefen, technical operations manager for Vari-Lite Germany.



Thomas Backhausen, Showtec's technical manager for Sky-Tracker.

tours, where does Showtec sit in the master plan?

"We work for the artistes and the producers," said Wilfried Schiefer, "and we hope to get their work again and again. People in the States aren't worried as to whether the equipment comes from the UK or Germany or wherever. They are looking for quality and price, and want good crews. Over the past three years or so, more and more people from the States have asked us for quotations. In fact, for many tours it makes sense to hire from a company on mainland Europe."

And two facts that should be remembered about the German touring scene is that it is big — at least 12-15 major cities, and that there are experienced companies about ready to service it. "Germany is the second biggest country in the world for record sales," explained Hans Probst. "The home-based touring market is enormous, and we are in a very strong position in this area."

In addition to the obvious cross-fertilisation of skills across the various industry sub-sectors that has given Showtec an in-built strength, Wilfried Schiefer came back to the importance of having the right kind of personnel using finely maintained standard international equipment. "You have to have the commitment and experience of staff and crew and a customer-orientated organisational structure," he emphasised. "And for Showtec's customers, they benefit from the versatility of our work in TV, theatre, rock and roll, and industrial presentations."

The future? "We stay as a production company," said Schiefer. "We will stay with our roots. If you try to take on too much, you can have problems, so we will stay one hundred per cent as a production company. The only object in our future plans is to expand in this area, and at every point to be on top of all the latest innovations and to have all the latest equipment available."



International link: a British truck prepares to unload into Showtec's warehouse in Cologne.

SHOWTEC EQUIPMENT

Showtec's lighting equipment is based on recognised international equipment. Par lamps include 1000W, Raylites and ACLs, Par 46 ACLs, Par 36 ACLs and Par 36 pinspots. The Vari*Lite inventory includes VL 2B spot luminaires and VL 4 wash luminaires, with Artisan and Mini Artisan control. Fresnels include Strand Minim, Prelude and Harmony units, plus Ianiro Polaris and Castors. 5000W fresnels are either Ianiro or ADB. Profiles are Strand Minims, Harmonys, Cantatas and Cadenzas plus various Lekos.

Cycs and floods include various Ianiro units, Kobold, Sylvania and Mini Strips, plus 4, 8 and 24-lite Molefays. Followspots are Strand, Pani, Niethammer and Strong Super Trooper. Truss spots are Pani HMV 1200 with truss seats.

Control equipment includes numerous small units plus Pulsar, Multiform, Celco and Avolites desks. For theatrical work, Showtec employ a Strand Gemini board.

There is a massive list of dimming, communications, rigging, hoists, stand and lifts, and the 'specials' include everything from confetti machines to strobes and scanners. HMIs, Skytrackers and projectors complete the inventory.

Sound equipment is based on Meyer and Martin Audio systems, and an idea of the inventory can be seen from the list on page 31 with the Howard Carpendale story.



The HQ of Showtec and VLD Germany.



Lighting designer M. 'Plüsch' Wolf.



Winfried Lohmann, sound department customer operations manager.



Lighting designer Ralf Penkert (left) with lighting department customer operations manager, Michael Schmidt.

POSITIVELY THE LAST WORD ON DMX

Tony Gottelier introduces Charlie Paton
David Bertenshaw and Marco Van Beek

Even amongst vested interests, the response to my earlier plea for people to respond to the call for opinion on the way forward for monitoring, or establishing, standards for industry protocols has been positively deafening.

Never mind, I am sure this means that as usual everyone expects that somebody else will do it for them. But as Steve Terry pointed out so eloquently in the last issue L+SI, this will not happen again in the way it did with DMX. Time is money, DMX cost the industry nothing but has generated lots of revenue for many firms. This time around there will be owt for nowt, but if we are to avoid chaos, something has to be organised.

USITT have finally, and probably on balance wisely, slammed the door on future expansion of the 512 protocol, in view of the risk of diminishing its inter-connectability. They are leaving it to individuals to work out their own salvation. This, in itself, presents an opportunity, for if there is a latent demand for enhancement somebody, somewhere, should at least be over-seeing the situation before anarchy breaks out.

USITT also decided to take a structured and much more aggressive attitude to the matter of standards and, in particular, the advanced standard that everyone (with the possible exception of Pulsar's Paul Mardon) agrees is required. This will include serious evaluation of Strand's SMX contender.

All of this convinces me beyond all doubt that PLASA should urgently set up their own protocols committee, which I advocated after LDI, to act as the watchdog on behalf of UK manufacturers, if nothing else. In fact, of course, I would like to see it going a great deal further than that.

They should recommend a delegate to monitor USITT committee deliberations. They should carry out their own evaluations of both existing and future protocols, including consideration of the pressures for expansions and formulate consensus solutions. As with safety, they should publish regular bulletins to those interested members and, as important, to all outside interests abroad. They might also delegate an ambassador to make the necessary representations both here and overseas. The latter may well turn out to be a head-banging role on occasions.

All of this may well cost money but I believe it could, and should, be funded. After all as Steve Terry said, "... there must be new corporate awareness that participation in a standards effort is both prestigious and commercially intelligent. By supporting standards work ..., a company establishes itself as an industry leader and a meaningful contributor to a project which will eventually have good commercial fallout."

I would suggest that this committee's work could be funded in several ways. Accepting that it would be unfair that non-lighting control manufacturers should be expected to participate, a voluntary surcharge could be applied to the membership fees of those who are taking part. The protocols could subsequently be licensed with one rate for the participants and another, higher rate for non-participants. Special fees could enable overseas companies to participate also, as their input will prove essential to the universal acceptance of any proposals, and they should have subsequent access to the protocols through the higher rate license fee. Reciprocal arrangements could be made over these fees with other bodies abroad such as

USITT. Alternatively, or as well, sponsorship for specific projects, or borrowed engineer's time, could be sought by the committee.

If we don't act now in a positive fashion, and we don't get the standards we want in the future, we will only have ourselves to blame. There have been plenty of groans about DMX, it was always intended as an expedient because the dedicated people who put it together were working without any funding whatsoever. That is not to say that it hasn't been hugely successful, it has, but if you don't want the next set of protocols wished on you in a similar fashion, now is the time to stand up and say so.

To help with your deliberations, L+SI has gathered together a few relevant pieces received over the past few weeks. These include a background briefing on SMX from Charlie Paton of Light Works, the designers of the PALS system for Strand and instigators of their new protocol; an explanation and vindication of SMX version 2 by Strand's R&D director, Dave Bertenshaw; and a controversial extended argument against integration, and by implication therefore, against standardisation at all, from Marco Van Beek, technical operations manager for Vari-Lite Europe. (Do I hear you saying, "He would say that wouldn't he?" One wonders if there's any hope that Vari-Lite might one day offer their advanced protocol to the industry, via the USITT committee, as an alternative contender to SMX. I hope so, because I cannot believe that this would not solve problems for them and their clients also.)

SMX: A GUIDE FOR THE PERPLEXED

Charlie Paton, director of Light Works Limited argues that what is good for the manufacturers is not always good for the market

Imagine a lighting installation of the not too distant future. Let's keep it simple, say a lecture theatre or small club. It might have the following equipment:

- house lights
- motorised curtain/screen
- six motorised lights and colour changers
- 12 static lights and colour changers
- six slide projectors
- three video projectors
- 24 dimmer channels
- six relays for effects etc.

To control this modest arrangement would at present require at least six separate, incompatible systems and the installed cost of the controls would certainly exceed that of the equipment it was controlling. In addition the operator, assuming there was only one, would need very long arms.

If a specifier wanted to future-proof the installation, with provision for more equipment to be added at a later date, he would have to make some expensive compromises by over-specifying potentially redundant facilities.

If we scale up our hypothetical installation to the size of, say, an opera house or TV studio, then the problems of incompatibility grow in direct proportion to the quantity of equipment controlled.

So what is the problem? Could it have something to do with protocols? Well, yes it could.

Now for the background. When Light Works first started the development of the PALS (Precision Automated Lighting System) back in 1986, we concluded, both from our earlier developments and looking around at available

systems that a 'building block' approach was required, such that any light, from a humble pinspot to a 5kW fresnel, could be assembled from the same kit of hardware and software components. In addition, the system should be expandable without incurring a cost penalty. This required that the control should be capable of cueing from two to several hundred lights simultaneously.

"MIDI, an early contender, and valuable, would have made the job equivalent to printing a Sunday paper on bus tickets. DMX512, another contender, would have made the task like trying to print a Sunday paper on Monday with half the alphabet missing"

This is a demanding task. A PALS unit has four functions; pan, tilt, focus and colour. A single cue command comprises: address, positions, time and check. Positions are resolved to one part in a thousand. This necessitates sending considerably more data than that required by a dimmer, which at most, is resolved to one part in 256.

An investigation into available protocols was depressing. MIDI, an early contender, and valuable, would have made the job equivalent to printing a Sunday paper on bus tickets. DMX512, another contender, would have made the task like trying to print a Sunday paper on Monday with half the alphabet missing. Commercial networks were, and still are, too expensive to consider. Light Works decided to analyse the problem and develop a protocol from scratch.

The solution worked, and still works, but has its limitations. When we licensed the PALS system to Strand Lighting in 1988, they discovered to their dismay that they had absorbed yet another, to add to their growing stock of incompatible protocols. To their credit, they confronted the problem head-on and commissioned us to write a demonstration SMX. The working version was demonstrated to the USITT in 1989. After a period of further refinement and testing, SMX was published last year and is licensed free to interested parties.

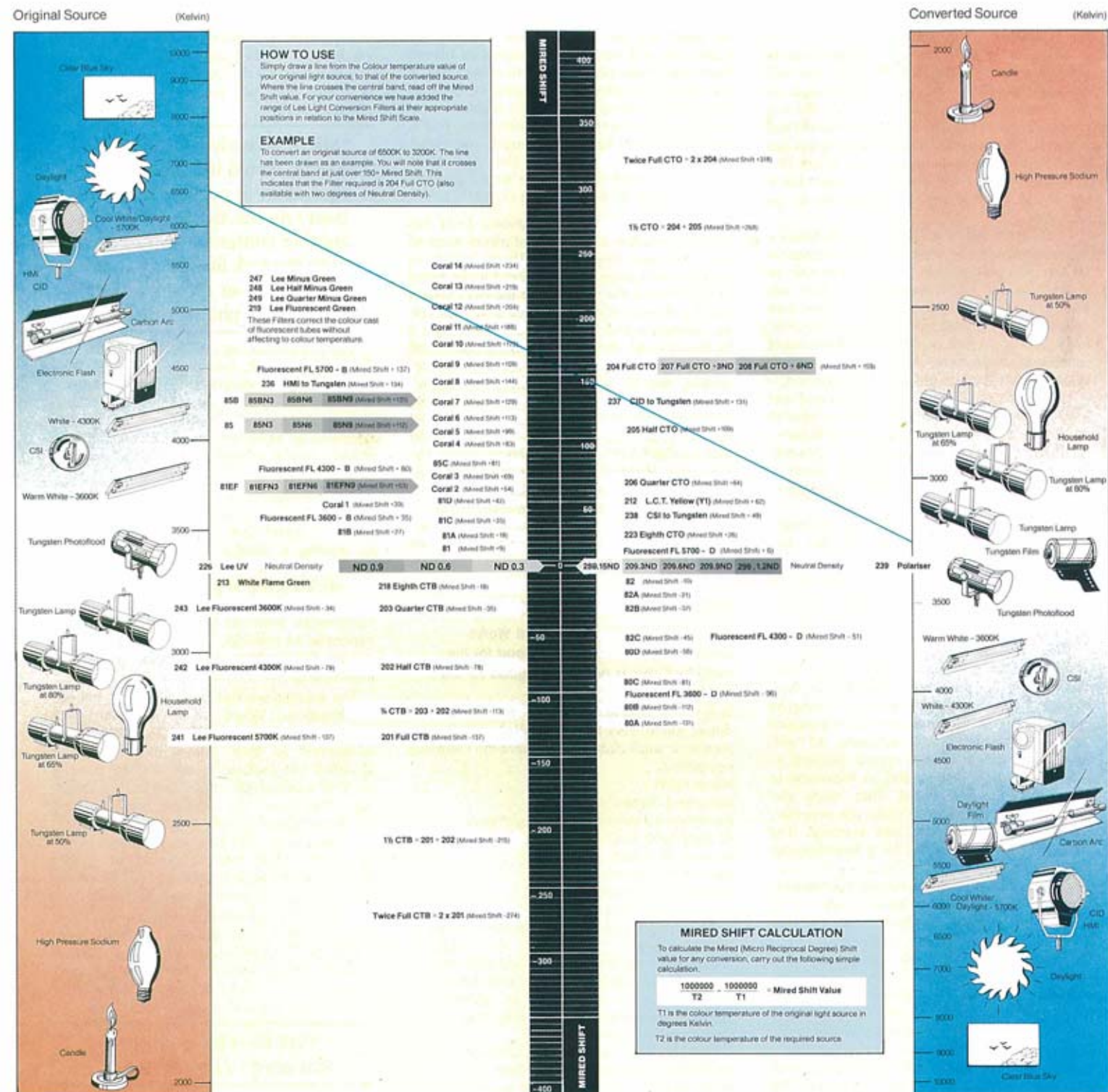
Just as we are all grateful to the manufacturers of fax machines for agreeing to make them compatible and not based on telex, so I believe we should thank Strand Lighting for developing and publishing a workable protocol that enables compatibility and almost infinite expansion.

"SMX does have shortfalls that need to be addressed"

SMX does have shortfalls that need to be addressed. The protocol is almost entirely software driven. This requires a significant commitment in time to implement. There are gaps: no implementation for the control of audio visual equipment, or special effects, has yet been written (watch this space).

If manufacturers of competing systems feel unhappy at the thought of changing control software to SMX, they can demonstrate and publish their alternatives. In the absence of other viable 'future proof' options, what about providing the solutions required by the market with the devil we know?

Light Source Conversion Calculator



The Art of Light

revealed

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WHY SMX VERSION 2?

David Bertenshaw, head of R&D at Strand explains

The honest answer lies in having to implement it in a production version and develop test-software to exercise and prove the protocol. Certainly when SMX was launched at USITT in 1989, it was demonstrated working in a first prototype version. However, that was only experimental and as we progressed into developing the formal software specifications (such as state tables etc) it became clear that there remained several problems, such as possibilities for deadlocks between stations. Thus some changes to the basic structure became inevitable.

Simultaneously, there was some industry input in terms of suggestions for change and improvement. This was considered and married with internal (to Strand) comments and ideas, which were adopted where these seemed to be of real benefit, being mainly simplifications.

The changes started with the realisation that in version 1, RNR message which replaced data could lead to blockages, and perhaps a deadlock between stations. Thus we changed it to a control bit, allowing flow control simultaneous with data. The previous complexity of the addressing was simplified to a fixed two octet address and slave-slave functionality removed (we expect to provide for it later as a 'tandem' function in the master station) eliminating the second address.

"The issue of SMX was then raised, and whilst there remained nervousness over its complexity, no one really had alternatives to offer"

Since the network layer really only provided group address manipulation, this was deleted, and group addresses plus various other administrative functions put into a new management layer together with a comprehensive error coding system. It should be noted that ISO has also adopted the concept of a vertical management layer for OSI to resolve the problem of co-ordinating the whole structure.

The presentation layer was renamed 'Application Layer' since it doesn't change the data, only defining the application format of the data which the SMX transport system handles transparently. Finally, the maximum frame length was increased to a more useful 255 octets and the checksum changed to a 16 bit system. The latter was because, after the study, we realised that a simple 8 bit checksum was insufficiently robust, especially against false 9th bits (the framing bit). An error here means that the checksum is a random data octet, having a 1 in 256 chance of being right, which we felt was too risky. Thus we changed to the 16 bit FCS checksum used by the ISO for file record checking. We had considered using a proper CRC, but software calculation of these can be quite time consuming, especially on 8 bit processors, and the chosen FCS has a high degree of convolution and is thus almost as immune as a CRC to systematic errors.

We kept an eye on the USITT-IES/TTFL committee movements, however, the lack of any initiative there seemed to indicate that the only industry feedback was going to be the ad hoc input already received. Since there was no coherent body to consult with, we felt we might just as well announce version 2, once we had got the bugs out of it and proven it in product, which was achieved by LDI 90. The current documents (part 1) cover the layers up

to transport. We have dimmer level and supervisory applications working, but not published yet and we have to complete the automated luminaire application layer.

At the USITT 91 conference in Boston, there were two relevant sessions. The first was an attempt to propose an advanced DMX protocol, particularly to provide 16 bit accuracy to eliminate dimmer stepping on digital dimmers. A practical demonstration was given of the effect on a dimmer using 8 bit values incrementing and decrementing. Whilst there was concern that the visible steps were a real problem, no one wanted any greater level accuracy than 8 bit. It was then pointed out that stepping can be caused both by slow console cycle times (medium speed fades can still have 2 or 3 bit fade steps) and dimmers responding fast enough to show the 1 bit changes. It was explained that with analogue multiplex dimmers this tendency is eliminated by the simple filtering of sample-and-hold capacitors thus, on modern digital dimmers a simple digital filter algorithm can smooth out small changes yet respond rapidly to large ones. Therefore, stepping on DMX512 input digital dimmers driven by a competent console, should be considered as a fault in the dimmer, not the protocol. This view was adopted.

The issue of SMX was then raised, and whilst there remained nervousness over its complexity, no one really had alternatives to offer (except for Show Control via MIDI) over the current use of DMX for uni-directional 8 bit control. At a later session which was supposed to be a report by the IES/TTFL committee on its deliberations on SMX it was reported that, in fact, they had not considered it (I'm not sure the committee ever met). Thus, a motion was moved and accepted that the issue be taken back to USITT again. Although it was accepted that a normal USITT committee stands no real chance of finding the resources to invent an SMX-like protocol. Nevertheless, there remained a majority who considered such a protocol desirable, though to be honest, the session at 8.30am was not very heavily attended (maybe 40-50 people). It was also pointed out that really only a major manufacturer was in a position to maintain a complex protocol such as this and, whilst a USITT body could certainly expect to oversee change and development, detailed maintenance and development would be beyond the usual ad hoc committee structure.

Therefore, it was proposed and agreed that USITT should study, and if thought fit, adopt SMX to be maintained by Strand. Steve Terry of Production Arts would manage the study, and it would consist of a mail shot review of all those who contributed to the DMX512 1990 update, plus any others who express an interest. Ian Ibbitson at Strand L.A. would provide administration and mailing services.

The goal is to complete a review and present a position paper, and perhaps even a motion to adopt, by LDI 91 in Reno. I can vouch for the fact that the review is starting, since I have recently received an invitation circular to join in from Steve Terry.

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THE VARI-LITE VIEW

Marco Van Beek, technical operations manager for Vari-Lite Europe argues against downward compatibility

In our industry, just like any other industry, we are heavily pressurised by the market we serve. The people who pay the bills want more value for less money. This is basic business.

The companies who are good at it look at the long term effects of having a varied stock and decide on certain paths to follow which determine whether to buy or sub-hire, based on the feasibility of maintaining such equipment on shows and are, in effect, 'customers' themselves. They often offer better facilities to the client in order to keep a standard stock.

'Buy off the shelf' to suit the customer is a very short term view and in the end affects a company's ability to buy better equipment, which is what they need to be able to stay abreast of the competition.

Companies who serve the 'unique product' market have costs in different areas. A lot of money has to be put up-front in R&D and in this way, no restrictions of downward compatibility are necessary. So why limit one's design to an existing protocol which may be totally unsuitable and already out of date?

Every time new equipment comes out it offers more facilities. Why?, because designers also want more for your money. The only really innovative controllers come from these markets, because they are able to break out of the mould that downward compatibility otherwise pushes them into.

In terms of integration there are existing standards at both ends of the market range. Analogue works very well and is a very good building block. MIDI is also a long standing control system and can be adapted for lighting use at minimal cost. The 'in the middle' protocols, mainly DMX512, are multiplexing

systems and should not be taken as anything else. Too much importance has been placed on a digital multiplexing system which is actually outdated.

DMX512's limitations are painfully visible in terms of speed and refresh rates and the lighting companies who base their designs around it have had to sacrifice flexibility to do so. A prime example of this is the Summa HTI unit. The internal resolution of the pan and tilt movements are far higher than anything DMX512 could drive; but that was the market they were aiming at, to comply with some companies urging to standardise on DMX512. And one can only control a limited number of them per desk. This is downward compatibility at its worst. (Editor's Note: The Summa HTI uses approximately 190,000 step resolution internally to control the motor. By co-opting a channel on DMX to set a speed for the movement, it is possible to send a position with an accuracy of 256 steps but to have the head move in steps of 0.0019 degrees, thus smoothing out the visible travel. Subsequently, by assigning two channels to each of Pan and Tilt, one for 'course' position and the other for 'fine' accuracy, Summa are able to claim 65,536 step resolution in practice.)

"DMX512's limitations are painfully visible"

The existence of 'proprietary' protocols for colour changers and automated lights should be, purely, to give designers what they have asked for and not to protect the 'short term' market.

As for connecting to other systems, the single controller for a lot of units approach is a very irresponsible method. The complexity of systems today is such that inevitably they will sometimes fail, whether due to a power failure or a can of beer! The objective must be

damage limitation, and this can be best achieved by linking controllers, rather than slaving them totally. The use of MIDI between desks is a prime example of a good solution as each console is still operable in an emergency.

The idea of systems integration is at the forefront of the design strategy at Vari-Lite. We have seen the Vari*Lite system progress from a DMX512 style comms to a far more complex bi-directional link based on an existing military standard. We can link, via MIDI, to SMPTE time-code or sequencer and via 0-10vdc to conventional dimmers and scrollers. If this protocol capability were translated in conventional terms it would control over 15000

"Why should manufacturers and equipment designers be limited by dated technology in the name of 'integration'?"

channels with a 50ms (micro second) refresh rate. Vari-Lite is not trying to protect its market but pushing way past the limitations of existing 'standards' into the 1990s. Why should manufacturers and equipment designers be limited by dated technology in the name of 'integration'?

Certainly some research and development teams would benefit from better standardisation but, in an industry where the only real cable connector protocol is the 15A plug, no integrated system will be reached unless it is created by a single manufacturer and adopted world-wide. DMX512 is not the long term answer. It is limited, inflexible, slow and almost out of date. System integration exists already within the framework of a number of existing automated lighting manufacturers and it is likely that designers and operators will push conventional lighting companies towards these systems.

The single button approach allows operators and programmers to use the complexities of the console to the maximum and still see the show. That is why this will be the path forward and why, on the majority of large shows, there are several operators, because one person would not be able to address the concept of the show, design it and programme it, fully integrated or not. More and more designers rely heavily on operators to 'translate' their concepts into reality. This way the LD can stay objective and the operator can maximise the flexibility of the system.

The following companies have confirmed their participation in the 1991 PLASA Light & Sound Show:

Abracadabra
Abstract International
Adda Super Cases Ltd
Allemuir Contract Furniture
Anytronics Ltd
Arri (GB) Ltd
Avitec Electronics Ltd
Avolites Production Company Ltd
AC Lighting Ltd
ADB-Stage and Studio Lighting
AKG Acoustics
Batmink Ltd
Celco Ltd
Celestion International Ltd
Cerebrum Lighting Ltd
Citronic Ltd
Cloud Electronics Ltd
Cyberdescence Lighting Ltd
CLASS
D & B Audiotechnik
DC Lighting Ltd
DeSisti Lighting (UK) Ltd
Disco International
Disco Mirror and Licensed Design
Doughty Engineering Ltd
Dutch A & A Trading BV
DHA Lighting Ltd
Electronic Lighting & Music
Eurolight Group

Fabtronic Lighting
Formula Sound Ltd
FBT Electronica SpA
Giant Jingles
Glanre Engineering Ltd
GSM Design
Hardware for Xenon Ltd
Harman Audio
Harrison Electronics Ltd
Howard Eaton Lighting Ltd
HW International
I-Laser Sound and Vision Ltd
Infinity International
Jem Theatrical & Special Effects Ltd
Lamba PLC
Laser Systems Ltd
Le Mark TVS
Lee Filters Ltd
Light Engineering
Light Processor
Lighting Technology
Lighting Dimensions International
LightFactor Sales Ltd
London Acoustical Developments Ltd
Lumo Lighting
LMC Audio Systems Ltd
M & M Lighting Ltd
Marquee Audio Ltd
Martin Audio Ltd
Mico Lighting Ltd
Multiform Electronics Ltd

MSL Pro Light and Sound
Night Owls
Northern Lights
NJD Electronics
Orpheus Publications Ltd
Oxtron Digital Systems
OCLI Optical Coatings Ltd
OHM Industries Ltd
OSRAM Ltd
Par Opti Projects
Peavey Electronics (UK) Ltd
Penn Fabrications Ltd
Protek Sound Systems
Pulsar Light of Cambridge
PA Installations
Regent Carpets Ltd
Roscolab Ltd
RCF Electronics (UK) Ltd
RCF SpA
Shuttlesound Ltd
Simon Jersey Ltd

Squire Sound & Light Ltd/AED
Strand Lighting Ltd
Sylvania GTE
Tarm SLL Technik GmbH
Teatro Srl
The Sound Department
Theatre Sound & Lighting (Services) Ltd
Tirfor Ltd
Trifibre Containers International Ltd
TOA Electronics Ltd
United Kingdom Distributors
UL Universal Lasers Ltd
Vestax (Europe) Ltd
Wembley Loudspeaker Ltd
Wharfedale Loudspeakers Ltd
Whitelight
Xylo Ltd
Yamaha Kemble Music (UK) Ltd
Zero 88 Lighting Ltd



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A PLASA Member

ABTT TRADE SHOW 1991

The ABTT moves to the Mermaid Theatre, Blackfriars on May 23rd-24th.

Alison Hunt provides a summary of exhibitors and their wares

AC Lighting — (0494) 446000

Featuring the Jands 'Event' lighting console and the Vision range of luminaires, together with a comprehensive range of followspots.

Action Lighting — 081-993 9993

The usual range of theatre lanterns including Teatro, Thomas and ADB, along with ancillary items including a new upgraded electronic candle and flickering flame effect. On the stand will be Jack Excell, Robert Peach and David Morgan.

ADB (UK) Ltd — (0932) 752994

A full range of control systems and theatre luminaires. Displayed for the first time in the UK will be a new portable dimmer pack and the recently introduced 48-channel Cantor.

Ark Light — (0533) 478336

Examples of restored lanterns and spare parts.

Book Bazaar — 071-352 6810

The chance to make up the gaps in your theatre book collection.

British Harlequin Plc — (0322) 865288

A selection of specialist flooring for theatre, catwalks and rock concerts. Also on display a specially sprung floor suitable for aerobics etc.

Cerebrum Lighting Ltd — 081-949 3171

For the first time at the ABTT the company will be showing the full range of MA microprocessor lighting desks. Being launched is the LightCommander II range, with various models available for hands-on demonstration. Other items include Powerdrive lighting stands, Amptown Posi-Spots and Light and Sound Design Colormags.

C.F.P.T.S. (Centre de Formation Professionnelle des Techniciens du Spectacle) — 33 1 48972516

The French training school for lighting designers and sound engineers will be showing a video of their facilities and hoping to make contacts in the UK.

DHA Lighting — 071-582 3600

The new Digital Light Curtain, as used for the first time in the production of Miss Saigon. Together with a new range of small-scale gobo rotators for 500/650W profile units.

Donmar Ltd — 071-790 9937

The UK launch of the Arri Mirage control desk. They will also have their extended range of lighting designers' stencils and all 12 will be on sale from the stand. Personnel including Nick Weeks, Bruce Tomsett, John Waugh and Jill Waggot will be on hand to discuss other Donmar products.

Howard Eaton Lighting Ltd — (0273) 400670

The range of Bytecraft digital dimming products will be on display. The Bytesize dimmer can accept DMX and AVAB multiplex, or analogue inputs. It can also be controlled by a PC using RS485 protocol. Also on display will be radio-controlled lighting together with a range of standard effects and specialist equipment. Howard Eaton will be on the stand to discuss his design and consultancy services.

Elliott Bros & Novak Electromusic/Meridien Communications Industries Ltd — (0865) 798000 and 081-293 0909

Displaying the RTS Intercom equipment for use in theatre and broadcast environments. Also the Pastega range of switchable radio microphones.

Peter Evans Studios Ltd — (0582) 25730

Props, scenic embellishment and costume armour. Exhibited will be examples of armour, urns, pedestals, brickwork, windows and most importantly 'Foamould' — a flexible moulding to replace timber.

David Fitch Services — (0322) 339013

The stand, manned by David Fitch, will have examples of his refurbished lanterns together with other types of stage lanterns.

Hall Stage Products & Harkness Screens — 081-953 9371

A comprehensive range of curtain tracking equipment, festoons etc.

Lee Filters — (0264) 66245

Lee Filters will be exhibiting both its traditional range of Polyester Filters and its recently extended range of High Temperature Polycarbonate filters, a feature of which is a much higher temperature resistance to meet the demands of the modern theatre lantern.

M & M Lighting Ltd — 071-722 4147

M & M will be showing the range of Selecon Luminaires from New Zealand. This range includes the Zoomspot, which has recently been chosen by the Sydney Opera House. M & M will also show the Rainbow Colour Changer.

Marquee Audio Ltd — (0932) 566777

The company are showing a range of pro audio products — DDA and Soundcraft desks, signal processing equipment and accessories from EMO, BSS, Yamaha and Denon. Marquee personnel will be on hand to discuss sales, design and installation.

Northern Light — 031-553 2383

Other stands will show their lighting controls and lanterns, their own stand will have all the other bits needed in a properly equipped performance space: Socket boxes, lighting bars, Aurora Multipin Connectors, working light control systems, facilities panels and SM desks.

Novalight — (0594) 23197

Novalight will be showing a full range of lanterns and dimmer controls. The company will be launching the Junior 6 and the Senior lighting control and dimmer in one case. Greg Moger and Jeff Payne will be on the stand.

P L Parsons & Co Ltd — 071-833 2031

On display will be the Steeldeck range of staging systems.

Professional Lighting and Sound Association

(0323) 410335

Come and see us on stand 12 to hear all about the Light and Sound Show 91 at Olympia 2 from the 8th-11th September and collect your free copy of the PLASA Yearbook.

RAT (Manufacturing) Ltd — 081-847 3331

RAT will have their Opera music stand and the new Concert stand which has recently been supplied to the Birmingham Symphony Hall.

RB Lighting Ltd

081-977 9665

Richard Broadhurst will be on the stand together with a wide range of consumables, lamps and spare parts for many types of equipment, Powerdrive stands, Rosco, DHA and Doughty products. There will also be the range of RB stencils. RB Lighting are the main London agents for CCT and carry large stocks of lanterns and spares, many of which will be on the stand.

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Roscolab Ltd — 081-659 2300

Among the wide range of products that will be shown at this year's exhibition are three new Supersaturated paint colours, an updated range of Fluorescent paints and three new colours in the Supergel range of filters.

Stage Management Association — 071-587 1514

Information on the Association and their publications.

Strand Lighting — 081-560 3171

Richard Harris will be stand manager together with Brian Myers and David Wilkins. Other members of Strand's UK trading sales team and marketing personnel will be in attendance to discuss Strand Lighting products.

Teatro — (376) 780702

The company will be working with Action Lighting, who have taken extra space to accommodate Teatro. The star of the line-up will be the new Talento 2500W MSR followspot.

Triple E Ltd — 071-237 6354

The company are located only 10 minutes from the Mermaid Theatre. They are therefore taking a small exhibition area from which they will run a shuttle bus to their Tower Bridge Business Square showroom. Equipment on demonstration will include the Showtrak(TM) computer scenery control system and other new products.

Varia Textile Ltd — 081-549 8590

Displaying a comprehensive range of flooring and textiles, Lena Johanson and Karl Leuthenmayr will be on the stand.

White Light (Electrics) Ltd and Modelbox — 071-731 3291

White Light will be distributing their new hire and sales catalogues and demonstrating the VSFx, the successor to the Patt 252 effect system. Modelbox will be showing AutoLIGHT, the AutoCAD-based lighting software, and also demonstrating the range of software now available through the bureau service for the design and construction of theatre and trade show sets.

XTBA — 071-700 0996

The ABTT show marks the launch of XTBA's Dimmersafe protection system. Dimmersafe prevents the misuse of equipment intended for the mains (240/220V) when it is accidentally plugged in elsewhere. In addition, the company will be launching the LSC DMX512 Softpatch system, which can be used as a softpatch, a lighting desk, a back-up system or all three simultaneously. Other products include Linklight DMX512 encoder/decoder, Minimux and MiniDemux.

Other companies attending the show include Suffolk Scenery and the Arts & Entertainment Technical Training Initiative.



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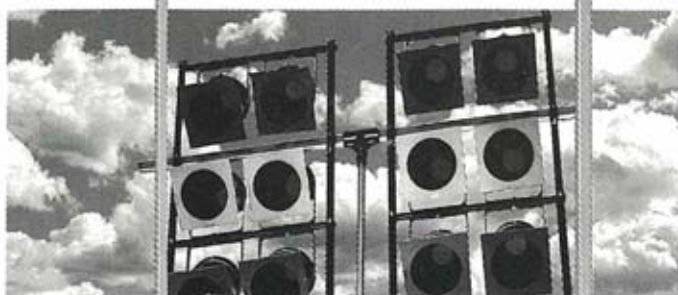
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TANNOY

"Distinguished Past and a Big Future"

John Offord takes a look at the company's manufacturing facility at Coatbridge in Scotland

Is it a unique situation when an individual coins a name that is so appropriate to a product's purpose that within the space of a few decades it has entered most dictionaries as a generic term? Guy Fountain, an engineer who owned a garage in London, pulled 'Tannoy' out of a hat 60 years ago, and the name (and the company) has been with us ever since.

The history of Tannoy goes back to the beginning of broadcasting in London, and in common with many commercial garages at the time, recharging batteries for new radio sets became a profitable sideline. Guy Fountain took matters a stage further and perfected an electrolytic rectifier which was simple and reliable enough for home use, and not long after the Tannoy factory was established he began experiments with moving coil loudspeakers using DC energised magnets.

Early in 1930 the company won a contract to supply the Bertram Mills Circus with a sound reinforcement system, and the company never looked back.

However, there is one potential problem when you have a long-established name around your neck: if you're not careful it can sometimes weigh you down with the dubious appeal of 'old-fashioned-ness'. I went to Scotland and Tannoy's manufacturing base at Coatbridge to discover current action behind the old name.

Firstly, and for the record, there's nothin' quaint or the least bit old-fashioned about Tannoy in 1991. The Coatbridge facility covers 80,000 sq.ft. and houses a staff of 150 and is, and looks, well-organised. They employ the latest machinery, and where there isn't a piece of equipment appropriate to a task, they tool it up themselves in their own engineering shop.

I was taken round by Tommy Bruin, customer services manager, and in the nicest possible way a right little stickler for making sure everything comes out just perfect. Only 30, Tommy has come up through Tannoy's ranks, and knows every inch of the factory, its processes, and its people. To say the least, I was very impressed by the degree of quality control activity throughout the manufacture and assembly processes.

A management buy-out of Tannoy had taken place in the mid-eighties, and this had proved to be a turning point in the company's fortunes, according to Bruin.

"In my opinion, the management buy-out brought new life to the company and people began to look at it as more of a family concern," he said. "This led to better quality, and much improved inter-departmental communication, and following on from these changes, one of the major improvements within the company was that of quality control. We now feel we have quality control integrated in such a manner that from its initiation and design, any product is tightly controlled within the system through to its finished state."

Tannoy use automated computer in-house testing stations to compare, evaluate, monitor and report on production deficiencies against set engineering standards, and in the manufacturing processes use ultrasonic and RF bonding of adhesives and fabric which, according to Tommy Bruin, "means we won't come unstuck in such a competitive industry!"

Pro Audio and Hi-Fi products are manufactured at Coatbridge, roughly in equal proportion, and a total of 40 products is involved. Appropriately, the starting point for any new product is the design and development



Tannoy's chief acoustician Mark Dodd with new Contractor Series units at the 1990 PLASA Show. Pictured below is an early Tannoy 'Sound Reproducer'.



TANNOY'S LATEST

The new Tannoy CPA 5 unit has been designed to offer the user a versatile and compact loudspeaker system, being suitable for applications ranging from background music to musical instrument monitoring, say the company.

For sonic quality a new point source drive unit has been developed, and so revolutionary is this ICT drive unit Tannoy report world-wide patents have been offered.

The 5" inductively coupled transducer used in the CPA 5 has a frequency response of 80Hz-22kHz and yet uses no tweeter voice coil, and eliminates the need for a crossover. The two most common failures in background music, sound reinforcement and high transient musical instrument systems are primarily the tweeter, and secondly the crossover. However, the design of the CPA 5 ICT drive unit, should assure years of trouble-free use, say Tannoy.

The ICT transducer is magnetically shielded and placement next to video monitors or TVs is therefore possible, without the normal interaction caused when using conventional loudspeaker systems.

The stylish CPA 5 enclosure has been moulded from non-resonant foam and the removable mesh grille gives added protection to the drive unit. Moulded into the foam enclosure are a variety of mounting adaptors which will 'marry up' with most industry standard brackets (or Tannoy's own) for wall or ceiling installation.





Customer services manager Tommy Bruin admires the quality of workmanship on a System 215 front panel.



Mark Dodd awaits the results of an anechoically measured loudspeaker response test.



So this is who I work for! Phillip Neighbour presents a machined panel with the Tannoy logo.



Operator Bill Watson carefully assembles magnet to frame parts.

department, headed by Andrew Sherriff. Aided by the latest CAD design systems and the involvement within the team of a full-time industrial designer in Graham Rennie, Tannoy products should come out looking good, and be designed in such a way that they can be manufactured in an economic but quality controlled fashion, with potential problems dealt with early on in the development process.

Mark Dodd is Tannoy's chief acoustician, and has his own hideaway within the Coatbridge complex. I asked him what he thought was special about the company. "I would start with the history," he said. "It's very important because Tannoy has forged its own path with

dual concentric drivers and along the way has developed its own forms of loudspeaker engineering to suit that particular technology.

"To a designer, Tannoy has tremendous pull, because one is in a position to do things which really are different, and I think every designer likes to be able to work in an area where the rules are a bit different and a bit unusual," he continued. "I find Tannoy has a stimulating environment and I'm certainly given the headroom to actually go ahead and develop new ideas.

"For a loudspeaker designer dual concentrics represent a unique challenge. Because of their fundamental advantages they encourage high expectations, while the dependence of HF and

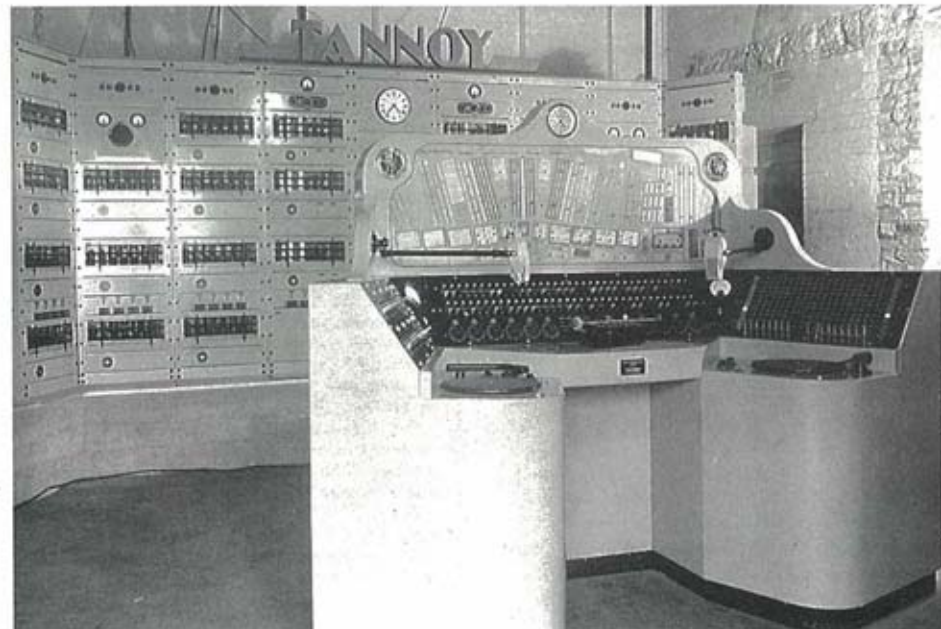
LF driver design introduces a whole new dimension to the challenge of designing a loudspeaker system.

"Fortunately Tannoy's engineering and product design teams provide the backup necessary to turn a designer's dream into reality, and the icing on the cake must be the family atmosphere and skills of the people who assemble the products."

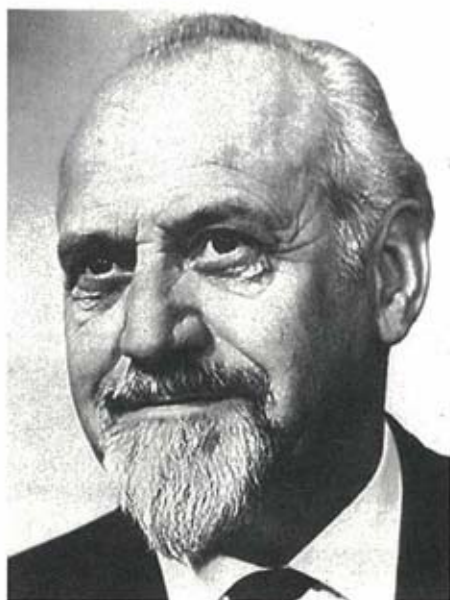
Like Tommy Bruin, I couldn't keep Mark Dodd away from the quality control bit. "The acoustic tests we use in production have had a considerable effect on the design of our new range," said Dodd. "The system not only ensures the acoustic performance of our



Head of design and development Andrew Sherriff (left) with industrial designer Graham Rennie.



Tannoy PA control set-up at Butlins Skegness, circa 1948.



Guy R. Fountain (above), the man who came up with the Tannoy name, and (right) Alex Munro, managing director of Tannoy today.



products, but records and documents reject rates. The effect of this system has been to help us gain a much better understanding of the parameters which must be controlled to produce consistent acoustic performance, and the application of this understanding in the design stage has led to a level of consistency in our new products which has allowed us to make our tolerances even tighter."

Tannoy is part of TGI plc, a group of seven companies including several names familiar to our readers including Martin Audio Ltd, Xylo Ltd and Goodman, and exports around 70% of its Pro-sector products. While I was there one of the regular containers destined for Japan was being loaded at the despatch bay.

Professional products manager is Phillip Neighbour. "What I find most useful is that with so much emphasis on quality control we have very small product failure in the field," he said. "Compared to many of our competitors this is a very big marketing point. Also, as a relative newcomer to the organisation I've discovered we are Europe's largest manufacturer of professional loudspeaker systems and yet Tannoy gives the impression that it's just a small company, and more like the cottage industry we are so familiar with. We have seen tremendous product growth over the past 18 months across the PA and studio market sector, and I think this is causing some concern to a few of our American competitors."

Tannoy now has two product series in the Pro-Audio sector. The Monitor Series of loudspeakers took over from the four-year-old LGM Series and includes six basic variants,



Smart looks: System 10DMT in the Tannoy Monitor Series.

AN INTRODUCTION TO DUAL CONCENTRICS FROM TANNOY'S MARK DODD

Dual Concentric loudspeakers are ones in which an axially mounted HF driver uses the cone of the LF driver as a horn flare. This arrangement results in some very useful characteristics.

Firstly, the LF and HF drivers are positioned so that they are time aligned; in other words the sound at low and high frequencies arrives at the ear simultaneously. Secondly, because both drivers are on the same axis, the time alignment is maintained off axis. Although these seem obvious requirements for high quality reproduction (particularly for arrays of loudspeakers), only Dual Concentric systems can produce these point source characteristics without the shadowing and diffraction problems associated with coaxial systems using a separate HF flare.

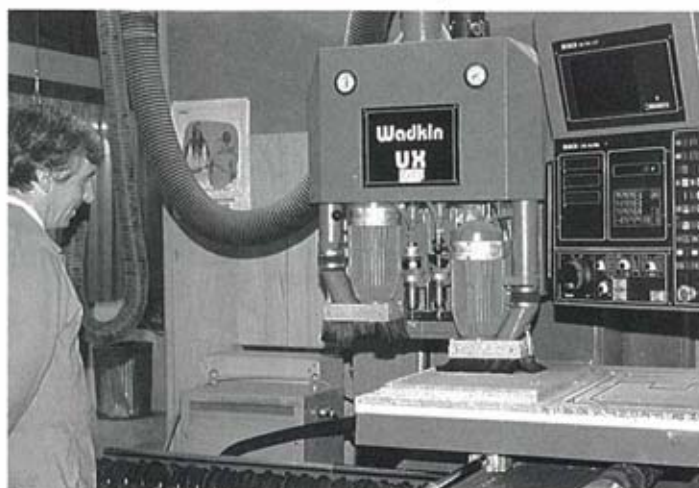
The drive units in Tannoy's new Contractor Series are the result of the first fundamental reappraisal of Dual Concentric design philosophy for 30 years. The starting point was the HF unit. Historically, pressure drive units were originally designed for maximum efficiency to produce high sound pressure levels from low power valve amplifiers (i.e. 15W). This approach, based on high compression ratios (i.e. 14:1), is still used by the majority of manufacturers. Tannoy's approach has taken into account the increase in power output of amplifiers, the lowering of distortion levels and increase in dynamic range throughout the audio reproduction chain.

The New Range

This approach leads to an HF driver with a dome shaped to behave as a rigid piston over the audio range. The dome is coupled to a low compression ratio wave guide which provides the correct delay to time align the LF and HF drivers as well as producing the correct wave front shape to match into the horn flare. The 4:1 compression ratio minimises distortion due to air non linearity and while this sacrifices some efficiency, the elastomer surround combined with a ferrofluid cooled voice coil allows a high maximum SPL with low distortion and excellent dynamics.

Both 15" and 12" drivers have a very open chassis to reduce rear reflections. The drivers also have rubber surrounds and are vented behind the suspension to improve linearity. A copper sleeve is used outside the coil to reduce magnetic distortion and improve heat transfer from the coil to magnet assembly.

The crossovers use aircored inductors and polypropylene capacitors which together with the Neutik Speakon connectors ensures optimum sound quality and reliability.



Operator John Selfridge keeps a careful eye on a System 12 front panel being machined on a CNC Wadkin router.



Operator Ann Linsey applies adhesive to loudspeaker chassis prior to inserting and centralising the HF voice coil assembly.



The end of the line . . .



. . . and off to Japan.

having been introduced late last year. The slightly later Contractor Series, introduced earlier this year and previewed at the PLASA Light & Sound Show, has the CPA 12 and CPA 15, which are designed to be versatile and compact full range systems. They are based around compact trapezoidal enclosures, allowing for a variety of configurations from stand alone applications to comprehensive arrays. The latest addition to the Contractor range is the CPA 5, and this is due to hit the streets next month. (Full technical information is given within this feature.)

For the final word I spoke to managing director of Tannoy, Alex Munro. "With its breadth of technical expertise spanning so many different areas of loudspeaker engineering and a very strong team of people, it's a company with a distinguished past and a big future," he said.

Avitec UK are the distributor of Tannoy Contractor products in the UK.



Part of the carpentry shop.



A section of the main production area.

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ATHENS CONCERT HALL

L+SI Special Report



Athens Concert Hall: Powered movable structures allow the main hall to perform a multitude of functions.

35 years have elapsed from the go-ahead decision in 1956 to the recent opening performance at the Athens Concert Hall. Happily, L+SI can report that the results were well worth waiting for. The Hall is one of the most important world-wide projects this year. It should fill a significant vacuum in the array of cultural facilities available in Greece and will host a wide range of musical and cultural events. Additionally, it is planned that the Hall will be used for conferences and commercial presentations.

The inspiration and drive to create a cultural centre in Greece, was provided many years ago by the great singer Alexandra Triandi, First President of the Friends of Music. The site for a Hall was donated by the state in 1956. On the advice of the conductor, Herbert von Karajan, the Friends of Music entrusted the architectural and acoustic study for the Hall to the consulting office of Professor Heinrich Keilholz in 1968. A notable benefactor of the Arts, Mr. Lambros Eftaxias gave his support to the funding of the project, primarily from his private sources. Once planning was complete, construction works proceeded with the concrete structure being completed in the early seventies.

In 1981, following a period during which work had been suspended through shortage of funds, a new administrative body, The Athens Concert Hall Organisation, was created this time with the Greek state as the principle contributor.

A new German-based design team was appointed to revive and develop the project. Principal consultants were Mueller BBM with Professor Ulrich Opitz as acoustician and Harald Frisch handling electro-acoustic systems. Stage machinery and lighting consultancy was

awarded to the Peter Isandoro practice. Their brief was more extensive than that of their predecessors and called for major changes to permit the 2,000 seat Main Hall (the Friends of Music Hall) to be adaptable between a classical concert venue of the highest quality and a well-equipped proscenium theatre. The 500 seat Demetris Demetracopoulos Hall was to handle chamber concerts as well as conference applications.

Work on the site restarted in 1988 with the major modification and outfitting contract being placed with local joint venture company GEK-Psiktiki Ellados. Interior reconstruction commenced while doric facades of white Dionysos marble began to appear on the building's exterior. Construction, however, is not L+SI's field and the reader may have detected traces of a press handout in the previous sentence! Reference to our Oxford English Dictionary however, reveals the interesting connection that Dionysos is the Greek God of Wine.

To return to our chronology of events, 1989 saw the placement of the two major technical equipment contracts. The extensive Germanic style stage rigging and machinery contract was awarded to local company Pyramis working in partnership with BBB — Bayerische Buehnen Bau. These companies bravely tackled the formidable task of providing the power-operated moveable structures to permit adaption between concert and theatrical formats in the Main Hall. Stage and auditorium ceiling sections clad in heavy timber panelling and with complex geometry can be moved vertically, and in some cases horizontally, to achieve the transition. Lighting bridges and loudspeaker clusters blend into the

overhead configuration.

Around the stage, audience side balconies extend and retract while elaborate stage lifts are also provided. Unfortunately, offstage space and flying height are both seriously restricted. One of Peter Isandoro's bolder design decisions must be the side towers which retract into deep understage pits in concert format, but rise up out of these to provide proscenium side elements which may then be extended onstage when a reduced width opening is preferred. The towers, therefore, had to be capped with stage flooring! A matching proscenium lighting bridge of traditional German design can be lowered to link up with the towers.

Of greater relevance to L+SI is the contract for the supply and installation of the package of stage lighting and electro-acoustic systems and infrastructure. This work was placed with the contractor already on-site, GEK-Psiktiki Ellados in partnership with PLASA member Glantre Engineering Ltd of Reading. For Glantre, this contract made a significant contribution to their 1991 Queen's Award for Export Achievement.

Glantre's technical director, Vic Dobbs undertook project management and got stuck into detailed design with the help of project engineer Mark Davenport. Working drawings got underway, by some months later they had totalled up to around 120. The client was rather surprised, to say the least, when Glantre's site manager took up his post and proved to have a London University MSc in electronics, a full understanding of electrical contracting and complete fluency in Greek. It must be added, however, that Philios Phylactis is one of two Cypriots at Glantre. Later on Mark Davenport transferred to Athens as site engineer while

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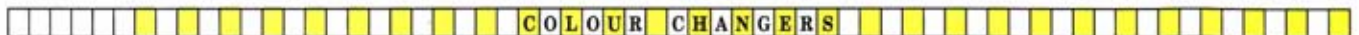
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The impressive exterior of the concert hall.



The sound control room with Soundcraft desk and Revox tape machine.

Matthew Tonks took over the UK end of project support.

Vic Dobbs described for L+SI the sound system in the Main Hall. "A 32 channel Soundcraft 8000 series mixer, located in a control room at the rear of the auditorium together with four racks of patch panels, signal processing and sound reproduction equipment. Three further racks of amplifiers, loudspeaker patching and power distribution are squeezed into a small equipment room adjacent to the control room. Yet another amplifier rack is located in the auditorium roof void and is dedicated to the central loudspeaker array. For aesthetic reasons the central array had actually to be split into two semi-arrays. These lower through flaps in one of the acoustic canopies.

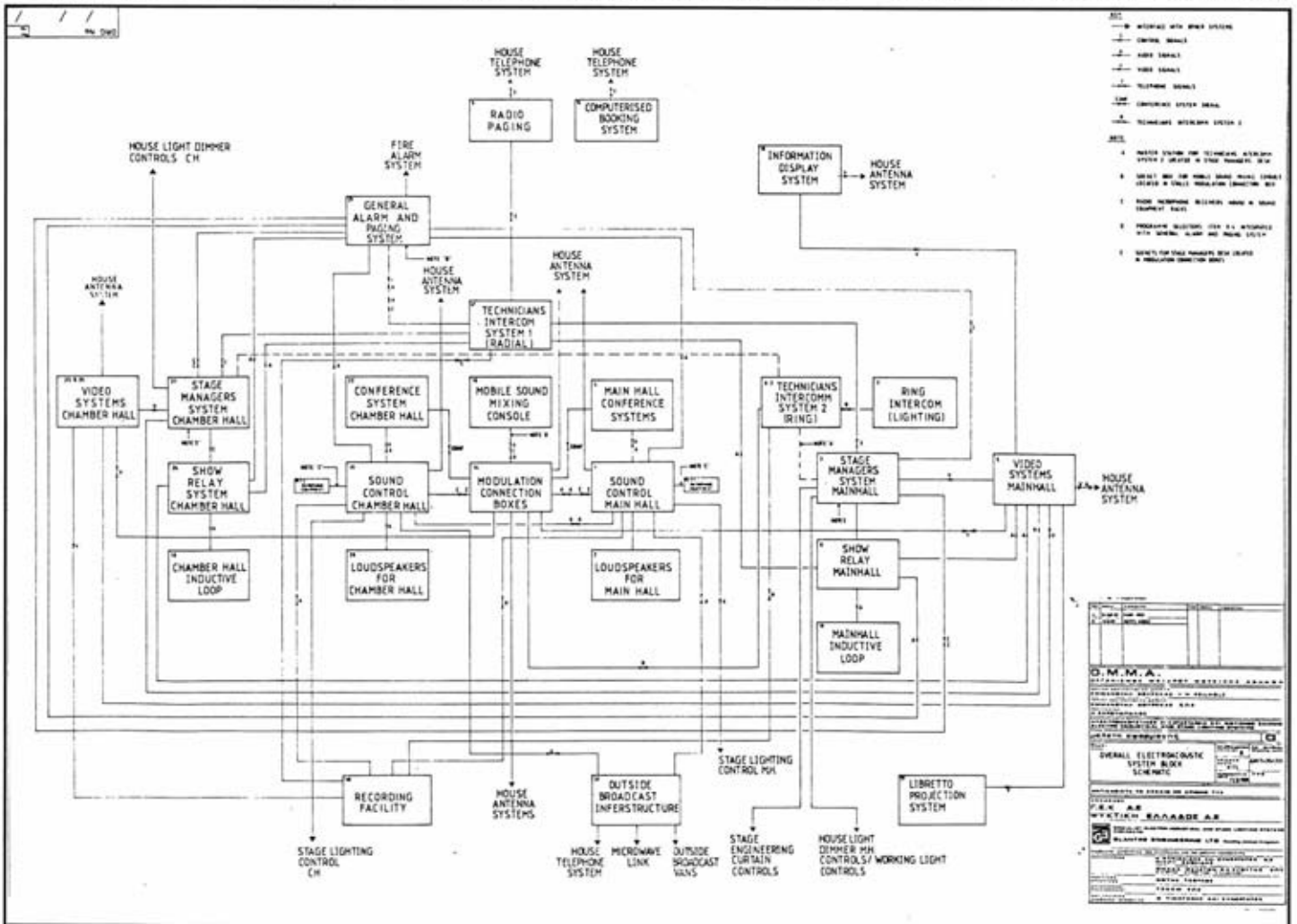
Two supplementary arrays to cover the rear balcony drop through smaller flaps at the rear of the auditorium.

"The heart of the communications system," continues Vic Dobbs, "was an Ericsson Direct, office-type, intercom system. Flush wall-mounting or desk-top intercom stations are installed in all backstage and technical rooms. In addition to providing general communications for technical and administrative staff, the system interfaces with various other technical systems. A four channel 'music-when-free' facility allows any station to dial up show relay from either hall, or two music channels. Any of the stations may be programmed to allow access to the Philips paging system and will simultaneously 'all-call' to stations in the same area as the

conventional paging system. The Ericsson Direct also links with the radio-voice paging system." Larger backstage rooms have conventional show relay/paging loudspeakers.

For production communication a comprehensive Clear-Com ring intercom system copes with the multiplicity of communications paths for the two halls. A total of nine rings have been installed. "Who should have access to which ring has been the cause of much debate and profanity in Greek, German and English," says Mark Davenport.

Vic Dobbs continues his description "Video show relay is generated from a CCD colour camera located at the front of the balcony. Two additional monochrome cameras are also available to allow, for example, video relay of





The stage manager's room complete with Clear-Com intercom facilities.

the conductor to an off-stage chorus. Audio and video show relay is fed to the house MATV system allowing viewing of the performances in administrative offices, foyers and other areas of the building.

"To permit semi-professional recordings there are two 3-chip CCD cameras, a video mixer and U-matic, VHS and Betamax recorders (the latter format is still popular in Greece). For recordings for broadcast, a complete O.B. infrastructure is provided. At 52 points throughout the auditoria and other key areas in the building, outlets for cameras, video and microphones are installed. These are tied to a central apparatus room from where signals can be patched to an O.B. connection rack at the rear of the building or a microwave link rack."

To find out about stage lighting installations in the Large Hall, L+SI talked to Glantre's managing director, Derek Gilbert. "Production lighting is basically straightforward with a 360 channel Strand Gemini 2 Plus. Despite the Gemini having its own integral back-up system, a separate 240 channel manual fader wing was specified. Similar 'belt and braces' engineering is to be found in the large geographical mimic panel which also incorporates non-dim switching but may often provide less useful information than the Gemini's VDU display. The microprocessor control system for house and concert lighting is a Glantre custom-build. This incorporates both manual faders and memory controls with several pushbutton remote stations. These are similar to those provided by Glantre for all Halls of the Birmingham International Convention Centre and which were fully described in the April issue of L+SI.

"The dimmer is based on Strand's PIP, Plug-in Professional type. Eight racks accommodate 200 plug-in dimmer modules and 40 non-dim contactors. A separate cabinet provides for dimmer overheat and earth leakage detection not dissimilar to that installed in most of the BBC's production studios. Luminaires are all fitted with mounting ironmongery to German DIN standards and include more than 170 2kW units from Strand's Cadenza range along with 80 odd 1.2kW Cantatas, Iris cyclorama units and a handful of 5kW fresnels. These are complemented by Pani products which include three HMV 1202/35 1.2kW HMI followspots. To date, there is not a Parcan in sight!"

A late addition to Glantre's contract, and one



Above, the flexible 2,000 seat main hall, and below the lighting control room with geographic mimic to the right.



which they were asked to research and design, was the provision of an operatic libretto translation system projected above the proscenium arch. The system which was adopted employs a General Electric Talaria large screen video projector, Courtyard Electronics character generator and custom-built control panel for text advance on-cue during performances. Says Derek Gilbert, "The mind boggles at the complications of a Wagnerian opera being sung in German by an Italian with the libretto displayed in Greek."

The Demetris Demetropoulos Hall, whose completion date is set six months behind that of the Main Hall, is similarly well provided in sound and lighting systems that include a further Soundcraft 8000 series mixer and a 72 channel Strand M24 control. The system principles in this Chamber Hall generally follow those of the Main Hall.

To widen and maximise the use of the complex, it is intended that the Main Hall, Chamber Hall and other smaller rooms should all be available for lettings for conferences and commercial presentations. To this end there are extensive provisions of Auditel conference microphone and infra-red simultaneous translation equipment. The Large Hall conference system comprises 221 delegates microphones, chair arm mounted, a CPM300 microprocessor control system and nine language interpretation facilities. The Chamber Hall has a similar system with 256 microphones and two language interpretation. In addition, large screen video, 16/35mm film and slide projection are to be provided. A wide range of portable conference equipment can be configured for use in up to six further rooms.

The formal description of Glantre's contract as

covering 'stage lighting and electro-acoustic systems' proved to be something of an understatement, as quite apart from extensive video installation, the scope of works included information display and the box office computer system. Both proved to be areas that demanded processing, displays and printouts that could handle Greek as well as Roman characters. Says Vic Dobbs, "one of the challenges of this project was the degree of interfacing between the different systems. Of the 27 systems supplied by Glantre, each one interfaces with one or more of the other systems. Even the box office computer system had an interface with the public telephone network for remote sales terminals."

An in-house recording facility is to be implemented shortly. This will allow multi-track live recording of musical events from either Hall, as well as an independent mix-down capability. The sound mixing console will be fitted with flying faders for fully automated operation. Digital multi-track recorders will permit production of compact discs to the highest quality standards.

The complex will also house a Music Museum, a Music Library, as well as Music Research and Visitor Information Centres. Students, teachers and researchers will have access to reference material covering music and the performing arts. There will also be special courses for the professional education of musicians and teachers. There can be few musical institutions world-wide that encompass such an extensive range of performance spaces and supporting facilities.

In the later stages of the project, the Athens Concert Hall Board wisely decided that they

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required expert advice, on the operation and management of the Hall. Here too, they turned to the United Kingdom with this important assignment being entrusted to Theatre Projects Consultants, for whom the project was handled by David Staples, Alex Scott and Anthony Field.

As well as advising on constitution policies, staffing structures and assisting in the appointment and training of staff, Theatre Projects Consultants prepared detailed budgets and a Business Plan for submission to the Greek Government. Subsequent work has involved advice and assistance with programming, administration, financial operations, marketing and publicity and contracting.

TPC also advised on the furnishings and fittings required for the Hall, and the complete signage and numbering system. Although recruited too late to input on major planning and technical issues, Theatre Projects Consultants were able to suggest last-minute improvements and building modifications necessary to bring the Hall up to current safety standards and to improve access.

Glantre's on-going contribution includes the secondment of technician Philip Hills to participate in systems operation during productions, together with providing operation and maintenance training for the Hall's own local technical and operational staff.

Widespread acclaim has been paid to the Hall's acoustics, technical installations and even to the air conditioning. The Main Hall's air conditioning system was specially designed by Psiktiki Ellados to cater for and achieve a 25dBA ambient noise level in the auditorium, a figure that many engineers would dismiss as being unattainable especially in hotter climes.

The Athens Concert Hall can now take its place amongst Europe's leading cultural venues. It is certainly one whose acoustics and general facilities are unrivalled in the Eastern Mediterranean region.

THE TOTAL PACKAGE, ATHENS CONCERT HALL



Sound Control Room with Soundcraft 8000 mixing console.



From left to right: Glantre's site engineer Mark Davenport, site technician Philip Hills and site manager Philios Phylactis.

CONSULTANTS

BBM-Mueller
Acoustician: Prof Ulrich Optiz
Electro Acoustics: Harald Frisch
Peter Isandoro
Stage Lighting: Peter Isandoro

CONTRACTORS

GEK-Psiktiki Ellados
Director, Electro acoustic system and stage lighting: Costas Alexopoulos
Director, Mechanical and electrical: Dimitri Katsibokis
Glantre Engineering Ltd
Director-in-Charge: Vic Dobbs
Site Manager: Philios Phylactis
Project Engineer: Matthew Tonks
Site Engineer: Mark Davenport
Site Technicians: Philip Hills, Hezron Green

LIGHTING AND SOUND CREDITS

Contract value, stage lighting and electro-acoustics, around £3 million

MANUFACTURERS

Microphones: Sennheiser, Neumann, AKG
Sound Reproduction: Studer, Revox
Sound Mixers: Soundcraft
Signal Processing: Audio Digital, Symetrix, Altec, Lexicon
Patch Panels: Ghilmetti
Amplifiers: Altec
Loudspeakers: Altec
General Facilities Panels: Glantre Engineering
Custom Metalwork: Comtec
Video: Sony, Panasonic
Communications: Glantre Engineering, Clear-Com, Ericsson
Radio Paging: Ericsson

Conference and Interpretation: Auditel
Box Office Computer: Abbey Data
Libretto Projection: General Electric, Courtyard Electronics, Glantre Engineering
General Paging: Philips
Bits and Bobs: Canford Audio
Production Lighting Control: Strand Lighting
Houselight Control: Glantre Engineering
Stage Lighting Luminaires: Strand Lighting, Pani
Houselight Luminaires: Erco
Lighting Socket Boxes: Glantre Engineering
Film Projection: Zeiss Erneman
Slide Projection: Eiki
Video Projection: General Electric, Sony

■ For the Athens Concert Hall, Glantre and their local partners GEK Psiktiki Ellados supplied and installed the complete electro-acoustics and stage lighting systems under a contract valued at £3 million. Scope included sound, communications, lighting, conference, projection and box office computer systems.

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The Car Crusher model set. Left to right: camera operator Simon Margetts; assistant animator Roger Jones; director Steve Bendelack; animator Steve Archer. Mitchell with periscope and Canon 18mm. Note the DedoLights, which were used extensively for lighting and animation and model shots.



Director of photography John Henshall with director Steve Bendelack posing in front of the 'Winjin' Pom' itself.

transparency of video and the pure noise-free colour of the latest cameras and component videotape recorders. Shooting was very fast and the Winjin' Pom had to have a photographic continuity and integrity which you don't have to have on Spitting Image itself. In fact, Spitting Image is planned to be like a news or magazine programme with as many different looks as possible. This would not have worked on Pom.

I used Dinos frequently. Dinos usually have 24 individual 1kW Par64 bulbs tightly packed together in six rows of four and emit a phenomenal amount of light and heat. I used to shine these through white opal perspex to wonderful effect, often using them as kickers coming from windows. I really liked the effect of strong soft kickers on the puppets: it gave them glorious modelling which looked superb. Softlight goes everywhere, though, and the problem of controlling the light from it is an intriguing study. One Dino and a sheet of opal perspex needed three heavy-duty stands, however, and the perspex very quickly buckled in the intense heat. The combined set-up was

also difficult to move around.

To get around this I had some 16kW Dinos made up by Ballancroft. I also had outrigger frames made for these Dinos and experimented with various diffusers. White Diffusion 216 was found to be the best diffuser for this purpose. It diffuses well yet does not stop much light. It has good heat resistance; being three feet away from 24kW all day it gets quite hot, but does not burn or go yellow. The relatively low weight of the whole assembly was light enough for a single stand.

I always judge a softlight by looking at it with a ND3.0 viewing glass. If it is a true softlight the whole lamp radiates light equally. The quality of light from a 24kW Dino through opal perspex was marginally better in this respect than the 16kW through 216 but the difference certainly could not be seen on screen and the ease of handling for the many and varied sets-ups is greatly improved.

An excellent small softlight which stands up very well to this test is the 5kW ArriSoft. This is the best small softlight I have come across and it

has quite good control by virtue of the 'egg crate' on the front of it.

A 4kW Xenon from Michael Samuelson lit the Pom in Jay Gee Chicago's skyscraper-top hanger. This lamp gave an unbelievably bright full-flooded shaft of light: 5,000 feet candles from 45 feet up in the grid! The beam angle was variably remote and we used this feature together with large black shutters which were flown in to cut off the beam as the rooftop doors of the helicopter hangar closed.

Quartzcolor Iris 4 cyclorama lights were used to light the cyclorama and Ultimatte cloth. These are very well designed television lights which beat the old film studio Skypans for even top-to-bottom illumination. Their special reflectors made them excellent for lighting the Ultimatte cloth, which has to be evenly lit.

Another immensely useful light which I used a great deal was the Dedolight. These 100W lamps are brighter and more even across the field than a 300W Mizar. They also beat many other small luminaires for quality of light produced by their precision optical system.



The Winjin' Pom — a scene from the production.



Two 16kW Dinos customised with outrigger frames holding White Diffusion (216) gel.



Animator Gordon Tait finds another use for a dolly and Moy head: flying Jay Gee Chicago's aeroplane!

They are easy to fix into awkward spaces because of their small size and the fact that they emit much less heat than many less efficient lamps. They were useful not only for the model shots, but also for relatively large areas. They well deserve the technical Oscar which they won recently.

The director of photography working in television has the opportunity to check, modify and improve his pictures instantly. I prefer to work on the studio floor in the midst of the production and on shoots like Pom this is essential. There is no way I could light a production such as this from a distant control room.

Shooting video is like shooting reversal film. Exposure has to be spot on and the television pictures are 'processed' instantly. If you burn out highlights or crush the blacks they are lost forever. Unlike film, there is no latitude, the video equivalent of the lab work must run concurrently with the shooting, for it is difficult to 'grade' shots in video post-production where photographic skills rarely exist. It is essential to have some form of accurate exposure meter and the camera, together with top quality picture and waveform monitors, are just that.

I have my own deliberately non-adjustable Barco CVS37 grade one reference monitor and take it with me whenever I light for video. It cost £3,500 but is an essential investment. Together with a Tektronik waveform monitor/vectorscope it is my standard and translates the engineer's volt into pictures I can relate and respond to. I rely on these instruments for qualitative judgement of my pictures.

Lighting continuity was a potential nightmare because of the way we shot the production out of script order. I also have a Sony Mavigraph colour video stills printer which produces excellent A5 sized colour prints in little over a



Shooting in progress. Note the two 16kW Dinos on the right of the shot.



Shooting model shots on the rolling road rig. Left foreground to right: Animation co-ordinator Peter Thornton; director of photography John Henshall; assistant animator Roger Jones; camera operator Simon Margetts; animator Gordon Tait. Arriflex 11C with periscope and Canon 18mm.

minute straight from a video signal brought into it by wire. It is invaluable for continuity reference and frankly I do not think that I could have managed without it on Winjin' Pom.

Roger Law described the Winjin' Pom as a 'kid's show that mums and dads will also get a lot out of'. Doubt was expressed about whether younger viewers would be able to keep up with the pace of the show and its barbed jokes. They did.

The humour is in many ways reminiscent of that found in pantomime, with jokes having two meanings: one for children, the other for adults. It is quite vulgar in parts and children certainly do like that. My secretary reports that her three

year old son is constantly asking to watch the 'talking car' programme. My own children are aged from four to ten and they frequently ask to see our 'omnibus' edition of the series on VHS when they get up at the crack of dawn.

My children are fussy. They do not watch the show because their papa photographed it, they watch Winjin' Pom because they love it. And that is precisely why Spitting Image Productions made the series with such loving care.

Cover shot: Shooting the Winjin' Pom in Stage B at Limehouse Wembley Studios. The big backlight is a 225 Ampere 'Brute'. All photography including front cover by John Henshall, except picture of John Henshall and Steve Bendelack on page 50 by Chris Ridley.

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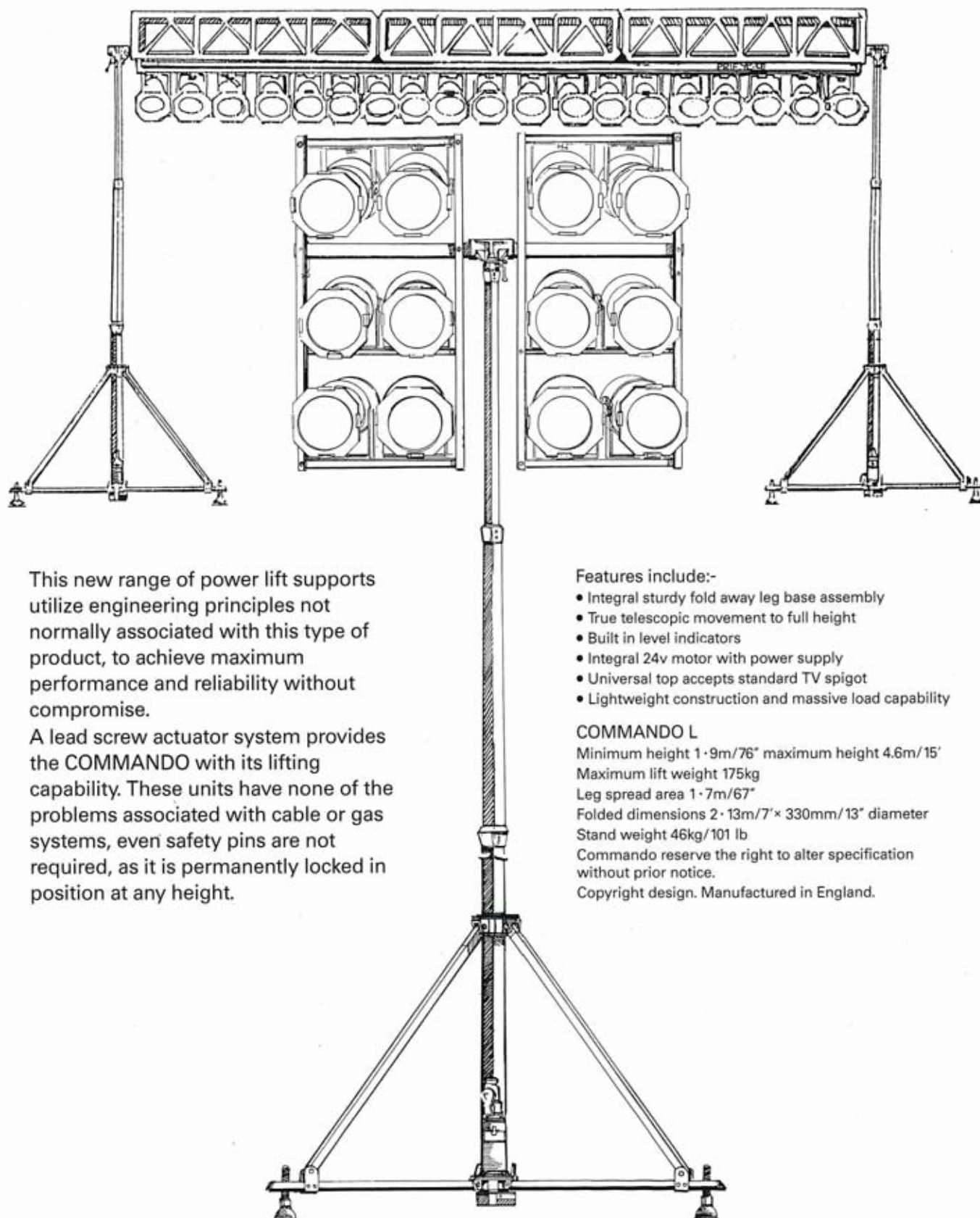
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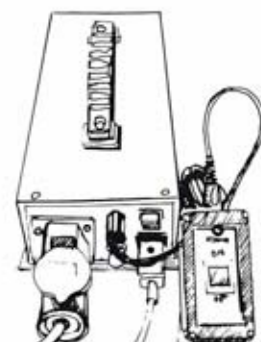
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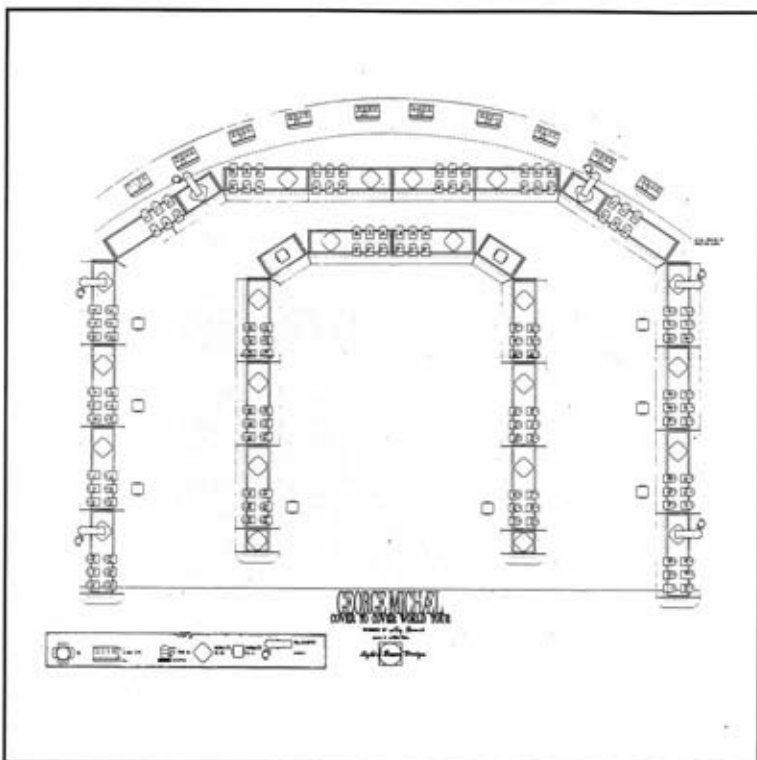
ON TOUR

Catriona Forcer

George Michael Wembley Arena LD: Roy Bennett

The Prince 'Nude' tour finished in Japan on September 10th of last year. Its lighting designer Roy Bennett then headed 'down under' to start pre-rehearsal shows with INXS. These consisted of a few scattered shows, throughout the state of Queensland, with a very small rig. "It was fun but it brought me down to earth a bit," Roy admitted. "I had to work a little harder but it was worth it!" Technical rehearsals followed at the NEC, Birmingham, where Roy had just over a week to programme the show for the 'X Tour 90/91' which will last for a year. A six week tour of Europe culminated in the Wembley Arena shows just before Christmas last year.

"With INXS, I tried to present a few of the band's ideas on imagery," explained Roy. "They wanted some very symbolic stuff including eyeball gobos and the set painted with ethnic images that could only actually be seen if you were seated at the side of the arena. I used some ideas that I had previously used on The Cure 'Prayer' tour and expanded on them. I designed the lighting system, using similar principles to the design of my last few shows. I hope I've achieved something different, by not only trying to get layers of lighting as far up and down stage as possible, but also actually coming up from the floor to create an unusual effect. With INXS I had a stretch scrim between the three chevron shaped trusses, with 5ks above, and large, circular cut-outs in the fabric giving the impression of giant gobos. When we got to the States I added more Vari*Lite to the main grid which is above the chevron-style light system. I also added VL4s which shone through the cut-outs in the scrim giving the age-old 'Blade Runner' effect. Having two



Roy Bennett's lighting design for George Michael's Cover to Cover world tour.

systems on top of each other gives quite a high trim height which was a problem in a couple of the European venues.

"John Featherstone took over when the band went to Rio. He came out for the last week of shows in Europe where he took notes, watched me at the desk, videoed the show and recorded my spot cues. Between the last show in Europe and the Rio shows there were four weeks for him to get his information together. John is very thorough and extremely good. Mac Moser has a big part in the show as far as the Vari*Lite operators that I've ever worked with, with the exception of Gary Westcott.

"In Rio, I was looking after the headlining acts on five of the nine nights so there were a lot of long nights spent programming. Everyone down in Rio was amazing. All the Samuelson and Vari-Lite people were

extremely helpful and the production was fantastic. Gary, John, Mac and I did INXS, George Michael and Prince so it was quite a busy time. It was fun although it was strange working with Patrick Woodroffe's design, good though it was. You had to search out all its limitations, all the positive sides of it and push it as far as you could. I think that the Vari*Lites on the PA wings were probably the most impressive part of the whole visual effect. It created a huge focus for everyone in the audience, especially those at the back. I added 24 extra Vari*Lites for George Michael and we were the only people to do so, although a lot of acts brought in extra set material, including George Michael and Prince."

Roy Bennett's January Schedule:

- Day 1 - George Michael, Birmingham
- Day 2 - George Michael, Birmingham
- Day 3 - Travel to Rio

- Day 4 - Prince, Rio
- Day 5 - INXS, Rio
- Day 6 - Prince, Argentina
- Day 7 - Prince, Rio
- Day 8 - George Michael, Rio
- Day 9 - Day off!
- Day 10 - George Michael, Rio

To quote Roy: "It was quite busy."

After that he took a well deserved break before flying to Tokyo for four more George Michael shows followed by the final four shows in London.

"Every time we did a different city the whole lighting system was somehow changed!" said Roy. "The original design and intention of the tour was completely different to how it turned out. Part of the tour will go into theatres so the system is not really that big. It's a very simple and basic show.

"They were going to use 35mm projection for the whole show but that all changed at the



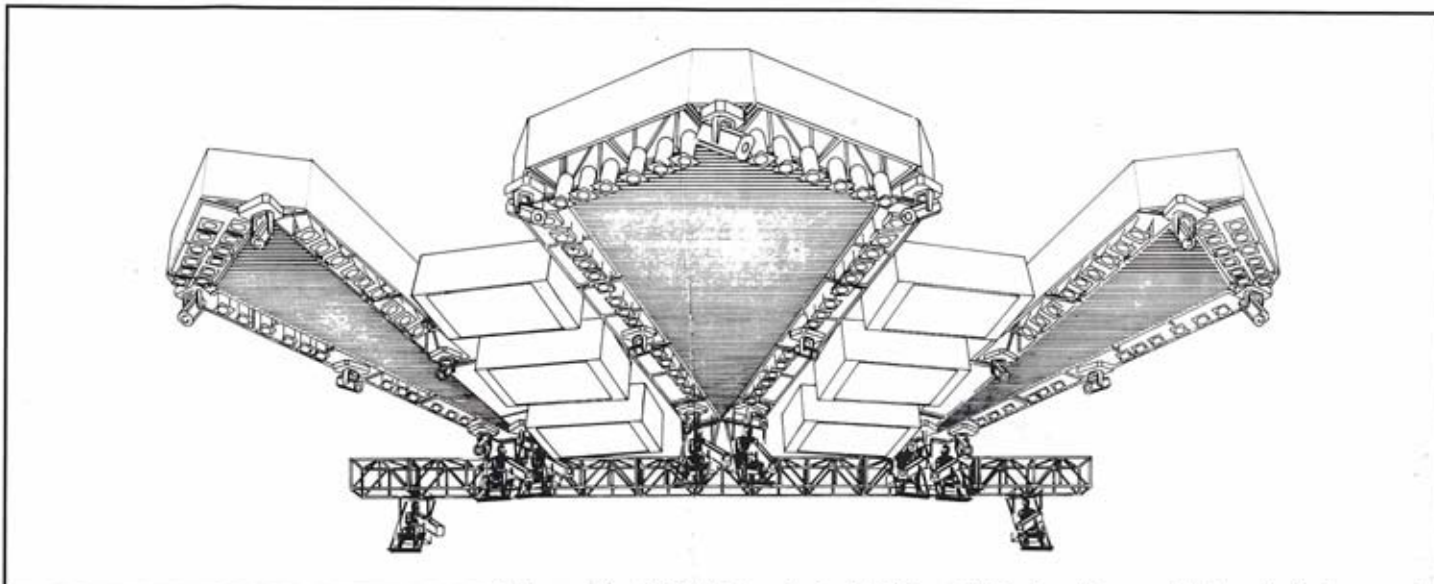
Lighting designer Roy Bennett.



Sound engineer Benji Lefevre.



Vari*Lite operator Gary Westcott.



Above Milan Rakic's Schematic for Rod Stewart's Vagabond Tour, and below the design turned into reality.

programmed the lighting in rehearsals quite tightly, when we moved to the arena it was totally different. So the next day we did 24 hours of re-programming. We also had a problem with the kabuki trap on the front downstage. We couldn't lift it out of the way of the front truss because one of the monitors had gone and couldn't be fixed until the following day. There is talk of this tour lasting 18 months but at the moment, it's pencilled for three and a half months in Europe and four in America.

"In June we're playing Wembley Stadium and I hope to add extra lights for that. Rod's audiences are very active and he really gets close to them so we're going to try something new at the outdoor gigs. We're planning to run the lights and sound from either side, or the back of the stage. Then the audience will be able to see everything and nobody's view will be interrupted by a sound and light tower. People used to do it years ago but that was only because they didn't have long enough cables to reach out to the front! It'll look good when you can just see a sea of people instead of lighting towers. When you've got a pretty set, like we have, it's a pity to mar the view with all that steel. I'll be able to keep it all neat, clean and tidy.

"It's great to be working as the LD again but then I've surrounded myself with the best crew. They've all worked with me before so they know what type of temperament I have! They understand me and have stood behind me all the way. To have a supportive crew makes the whole show better. They have a bit of a problem with me because I know all about everyone's job having been a crew chief for some years. I know what things can and can't be fixed so they can't pull the wool over

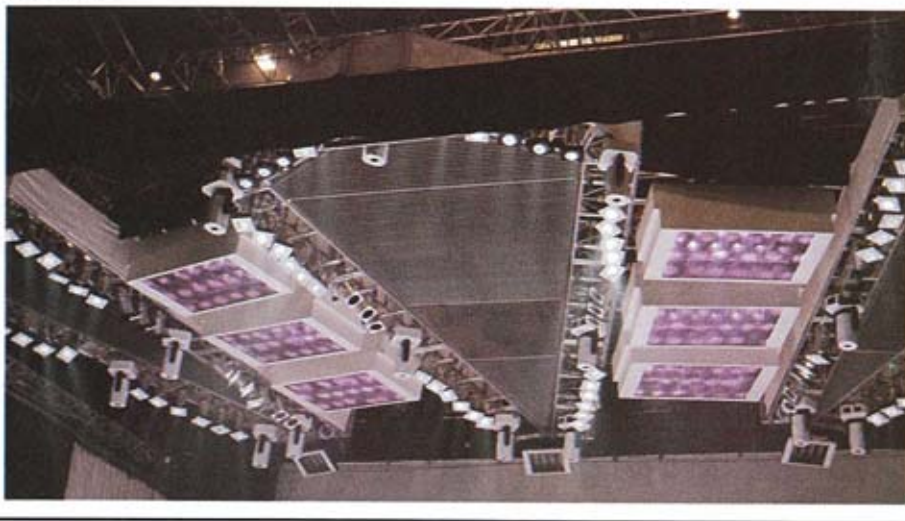
my eyes! But if they haven't got time to do it I just get in there and do it myself. I'm still inclined to get involved even though I don't have to. If after this tour I went back to being a crew chief I wouldn't feel it was a step backwards. I'd like to do something with Roy, possibly operating his design, as you can't go wrong with any of his material. We have sound company Electratech with us, producing good quality sound, in fact the best I've heard in a long time. The operator Lars Brogaard, is one of the top sound engineers in the world.

"I have a problem with nerves at the moment, but that's the only thing. It's difficult being away from home, especially as I have a 17 month old son. This tour isn't too heavy as Rod Stewart only does three shows then a few

days off and at the end of each month there are extra days off when I get to go home.

"I've been in this business a long time and many years ago the sound was the major thing of the show. These days set designs and lighting designs are the thing. I wouldn't like to mention the names of the groups, but if it hadn't been for some designer doing a brilliant light show, there wouldn't have been a show. I did one not so long ago and, to me, the group were pretty boring and even people outside the business were saying that the lights saved the show.

"I'd like to have a go at Guns'n'Roses especially with someone like Roy. I think Roy needs to do some good, heavy rock'n'roll tours for a change. Something loud and frightening!"



"I've been in this business a long time and many years ago the sound was the major thing of the show. These days set designs and lighting designs are the thing."



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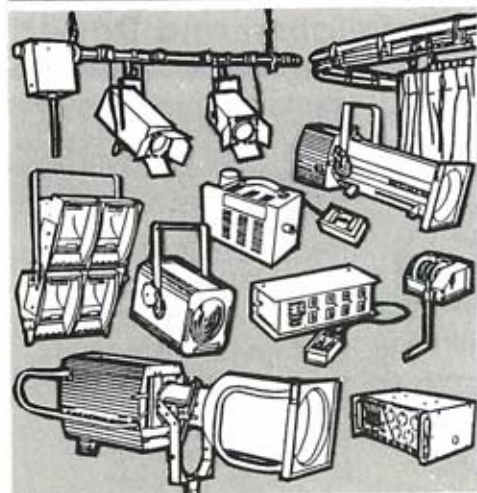
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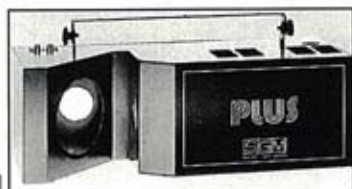
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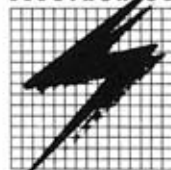
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VIEWPOINT

Mark Brown on Sour Grapes and other Laser Topics

'There is hardly anything in this world that some man cannot make a little worse and sell a little more cheaply, and the people who only consider price are this man's lawful prey' *Ruskin*

As I walked onto the stage to the applause of my peers and colleagues, I felt that I was getting the recognition for which I had long strived. The occasion was the presentation of the Disco International awards which took place last year at the Hippodrome. The following day my pride was shattered when some cynic asked me how much advertising was needed to secure such a prize. The awards, as I understand it, are intended to recognise the work of pioneers throughout the club sector for their achievements. Having only advertised twice previously in the magazine, I found this comment most distasteful.

It may be naive, but I believe that outstanding and worthwhile work from any company, or individual, deserves approbation. The awards themselves should boost and enhance a professional image for the industry as a whole and should be taken seriously by all concerned, including the harpies.

It is perhaps unfortunate that the industry's official body, PLASA, wasn't around at the time when the DI awards were formulated, although it's a moot point, with all the attendant politics, as to whether they would really want to involve themselves. Nevertheless, if these Oscars were presented by a truly independent organisation they would surely be less open to suspicion and criticism.

On the other hand, maybe this incident is just another example of typically British sour grapes; you know the one, "there's nothing as distasteful as success." When Coherent, the laser tube manufacturers and our major supplier, won an award last year's LDI in Orlando for most innovative new product for the Purelight, I didn't hear anybody carping.

Question: How many times have you heard the following?

"My laser, yuk. I bought it from this guy who said it was cheap, an ex demo unit. It cost me £20,000 and when I checked around I was told that it was a bargain price. But I'd never buy another. It worked for three months and when I asked how much it would cost to fix it, the guy said six grand, or more. Well, I didn't bother and it's been in my club for a year or so now, so I thought I might as well flog it."

Answer: Well, I wish I had a DI award for each occasion!

I do hope one day that clients will be able to see further than the price tag when purchasing such complex equipment. The customer needs a good product, reliable in performance and in service, with extended warranty supported by the tube manufacturer themselves. Most current laser manufacturers' products are so solid that they are offering five year guarantees on both parts and labour on a back-to-back basis.

It is a short step from there for the supplier of the system to collect and arrange the repair, or fix it themselves if appropriate, and return to re-install the unit in the venue. Training of operating staff in



Mark Brown has been in the laser display business for some 12 years and has pioneered the introduction of high quality graphics in the UK. As chief executive of Laser Grafix (Sales and Hire), he received the 1990 DI award for their Prisma controller. Until then, his proudest moment was dining with the Queen and the Princes Charles and Edward at Windsor Castle. He is currently involved in the application of fibre optic technology with lasers to provide remote laser heads, such as the Starlaser product developed jointly with rock hire outfit Tasco, which integrates both robotic light and laser.

maintenance and operation should also be given consideration. This is a serious problem and one that needs addressing by the leisure multiples who, with better trained staff, could achieve high performance, both in reliability and the quality of displays.

A good laser show should out-perform all other lighting effects and it grieves me when I see a poor display. So please do not cut corners when purchasing this type of equipment and research your supply company carefully. Find out about the reliability of its equipment, training and service and, most importantly, speak to their customers. It will pay dividends in the long term. Beware, if a company's price drops drastically; it is the end user who will suffer through poor service or equipment.

The most talked about white light laser currently available is the mixed gas 4W Purelight manufactured by the aforementioned Coherent Inc. For the first time, a laser has been designed especially for the lightshow market and, on delivery, we are seeing typically six to seven watts. (Coherent will only guarantee 3.5W but promise an initial 4.5W) This laser has a strong ceramic tube and the manufacturer offers a five year warranty. Better yet, and with future promise for full colour, is the Skylight which provides accessible maintenance for all, where previously only a trained engineer could cope.

All of this is good news for the business, as fixed budgets can be allocated for the lifetime of a system, where the manufacturer and the supplier of the laser are willing and able to offer a high degree of service.

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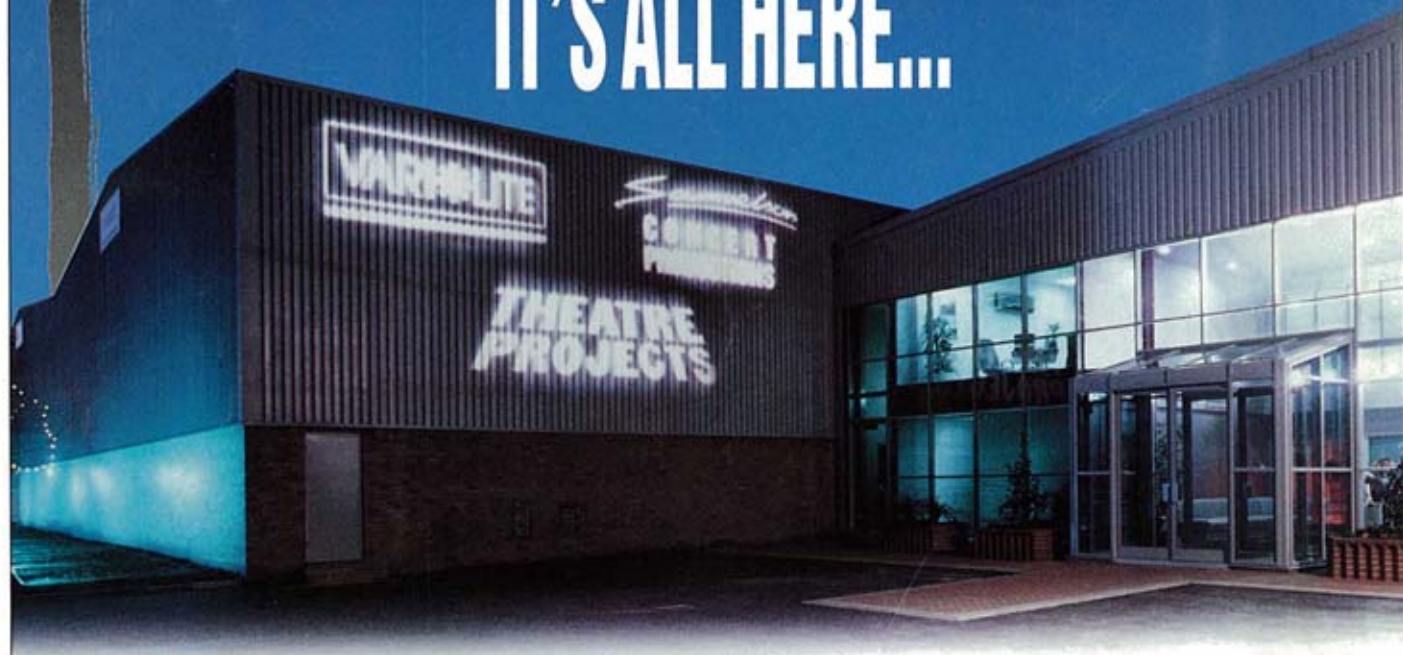
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