- Sunrise technology in Sunset Boulevard
- Phoenix from the ashes: London’s Savoy Theatre re-opens
- Ken Dibble bench tests the new Carver amp
- Grease: a new production trend in the West End
- Pro Audio & Light, Singapore reviewed
- Technology on tour for Little Angels and Lenny Kravitz

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PLASA: The Big One Coming Up

The PLASA Light & Sound Show is now just over a month away, and the hugely successful 1992 format at the new Earls Court 2 venue is set to continue - but with added improvements and attractions. Exhibitors are currently putting final touches to their stand designs, and now that they're fully aware of the possibilities available to them as a result of the impressive height, "leaf" and facilities of the building itself, visitors should be prepared for a highly dramatic show.

And on stand, a huge number of exhibitors have either saved up or planned to make the PLASA Show the launch-pad for their 1993 international product debuts - so much so that much of the industry is new specifically gearing itself to an Earls Court 2 September timetable.

To come as a visitor, a 50% entrance cost saving registration card is enclosed with this issue of Lighting-Sound International. Send your's in today both to ensure you save money and the queues! To attend the seminars, full details of the programme are also included in this issue together with a booking form. And please note that if you attend, you get your entrance through the front doors free - provided you book in time! Space is limited at the seminars and some are bound to be heavily subscribed - so please act now to avoid disappointment.

To exhibit you'll have to be double quick - and lucky - if you still want space in a particular part of the hall. There are some small stands left, but there is also a waiting list for certain areas. Contact Caroline Clark or James Brooks Ward immediately at Pittech Events Ltd, PLASA's show organisers for the latest details on what might be left. The telephone number is 071-370 8215. More detail on the show will, as usual, be included in our big September issue.

Juliet Thru UK to US

The Los Angeles version of Sunset Boulevard will be using eight of the new 2500W SNC HMI profiles French manufacturer Robert Juliat are releasing at the coming PLASA Show. Through DMX512 the new profile has full digital control of lamp ignition and dimming.

"The West End production is using the 1200W version for gobos projection but with the larger venue LD Andrew Bridge wanted a lamp with greater punch," Tom Mannings, director of UK distributors Decoupe, told DJ-1. "It will be a 'first' for Robert Juliat products in America."

AC in America...

AC Lighting recently opened its doors for the first time in Agoura Hills, Los Angeles. The operation, which is headed locally by vice-president Bob Gordon (formerly of Gamm and Wybron), is modelled on the AC European office in High Wycombe in the UK where "service, value and availability" are the company's strong selling points.

President David Leggett told DJ-1: "Our plan is to make it slowly at first and make sure that what we do, we do well. We believe in supplying from stock and backing up products correctly, so although we still have the full range of equipment and consumables available, we will initially concentrate our main efforts towards the promotion of a few main product lines. "The success of our European operations has given us credibility with the major manufacturers, and we intend to live up to their expectations."

For the time being AC Lighting Inc.'s main product lines will be Rainbow colour changers (see story right), Jands lighting consoles, Precolor lighting filters, Le Maitre smoke machines and Scopex connectors. AC Lighting Inc.'s contact numbers are (818) 767 0934 (tel) and (818) 767 0512 (fax).

J-M J at Mt St M

L-SI went to great lengths to bring you the exclusive photographic of the Jean-Michel Jarre concert which took place at Mont St Michel in Normandy on July 28th. Intrepid associate editor Tony Cotterell battled with massed ranks of obstructive French Cendarmes, the world's paparazzi, inadequate instructions and strong security men to get the shot. His full report with more pictures of the performance, which he describes as both magical and humorous in its imagery, will appear in our September issue, to coincide also with Jarre's Wembley appearance.

...and Rainbow too

As noted last issue, M&M Camelot Ltd, the manufacturer of Rainbow colour changers, have appointed AC Lighting Inc. as its US and South American distributor, and as from August 1st, the company will handle all sales and marketing for Rainbow colour changers for both the US and South American markets.

Chris Parry, former manager of Rainbow US (M&M Camelot's US office), has decided to concentrate on his award-winning career as a lighting designer and in this capacity will continue to act as consultant to M&M Camelot and AC Lighting Inc.

Pictured above is Mike Goldberg of M&M Lighting (left) with Bob Gordon of AC Inc.

Mainstage Buys Blakes

After fighting off stiff competition (so they report), Mainstage of Manchester have just bought Blakes Fireworks out of liquidation.

Mainstage director Mike Sweetland told DJ-1: "Blakes is an excellent system of pyrotechnics, and it impressed a lot of people when it was first offered - particularly its quality and price. We are delighted to have acquired it. According to the release received from Mainstage, patent problems may mean Blakes Fireworks will be manufactured outside the UK and they are looking for a non-UK partner to further this strategy."

Broadway Design

Broadway Lighting Master Classes Inc are presenting their four-day "Broadway Lighting Design Seminar" in New York City from October 14-17 this year. It will feature Tony award winner Jules Fisher and a distinguished faculty of lighting designers and production professionals. For details telephone/fax (212) 645 4972.
Owners Wanted!

L1 GHT
L1 TES

L-1 SI wants the owners of the following registration plates to declare their interest.

The DVLA in Swanseas informs us that LIGHT was sold at auction in Nottingham for a mere £16,000. LTES went for the standard £740 fee.

Who's who then?
Kevin Hopcroft of NID in Nottingham confirmed that he hadn't invested too much in the office to attend the auction, and all other likely industry luminaries we called such as PLASA chairman Tony Kingsley, Zero 88's Freddy Lloyd, Pulsar's Derrick Saunders and the whole of Strand Lighting have reported in no uncertain terms that they have no connection with the numbers mentioned. The nearest who's who was leading lighting designer Andrew Bridge whose wife missed buying him L1 GHT as a birthday present by two minutes. However, Andy thought it was far too expensive anyway.

Action Lighting North Open Day

On 30th July Action Lighting North, the Manchester-based sales operation of the Lighting Technology Group, held its Open Day. Some 130 of their customers in the area attended what was an extremely successful event.

Representatives from some of Action Lighting's suppliers attended, most with a small exhibition stand or display, including CCT, Coe-Tech, Compuphone, Lowry Engineering, Lee Filters, Le Maitre, Light Structures, Litton Connectors, Osram, Phoenix, and Zero 88 - and PLASA.

During the day a number of events were held, including pyrotechnic displays by Le Maitre and performances of a play specially written by Action Replay, the resident drama group at the National Museum of Photography and Television at Bradford. All about the career of a lighting designer.

Lighting Technology Group had set-up a lighting and sound display which was available for demonstration throughout the day with pre-programmed light shows at regular intervals. Equipment on show included six High End Trackspots, two High End Intellabeams, four Coemar Mini-Litra Scans, two Coemar Micro3s, two Coemar Baby-Colors, two Vari-Lite VL5 and six Parscans with Compuphone Whisper Colour scramblers, all controlled from a Compuphone Animator 48 control desk. An impressive (albeit very loud) sound system was put together consisting of a pair of Ohm ER-30 full-range speaker cabinets driven by a Bell & Howell 1 kW per channel amplifier and fed with noisy stuff from a Sony DAT machine.

White Light (Halifax), Lightfactor, Coe-Tech, Osram Industries and Vari-Lite Europe loaned equipment for the day and Kerlight assisted with the set-up and take-out. To round off the day a prize draw was held with the first prize of a Sony Televison going to Chris Batstone of Action Replays, and a bottle of Champagne to David Gills of the Dorchester Club, Wolvehampton. Pictured below by PLASA's Anna Pillows are the assembled troops ready to do battle.

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PEOPLE NEWS

There are two new faces in Arri’s lighting control division in Heston. Plugging the gap left as Tim Burnham moves away from the lighting control business into marketing is Adam Bennett, who joins as product manager—lighting control products. Adam is a highly experienced designer of professional lighting consoles and dimming equipment, having spent some time at Avolites prior to developing the UAX Lab test device under his own trading name of AB Micro. His immediate involvement with Arri is with a new console to be launched at the coming PLASA Light & Sound Show.

Another new face on the Arri sales team is Mark Thompson. With a technical sales background in computing products, as well as industry experience with AC Lighting and a number of continental equipment suppliers, Mark has already been seen around the UK and Europe drumming up business for Arri lighting control.

Meyer at Montreux

Meyer Sound has been a regular sponsor of the Montreux Jazz Festival over recent years, regarding the event as a showcase for introducing new equipment to the European market. This year’s 27th Annual Festival was no exception, witnessing the unveiling of Meyer’s new MSL-5 cabinet in the all-new Congress Centre.

The main venue this year was the Stravinski Auditorium, a brand new hall primarily designed for classical music, with highly reverberant acoustics which presented major problems. The hall had to be extensively treated to reduce what was originally a six second delay, following the advice of consultant Jim Cousin, who used a SIM II acoustic analyser to evaluate the venue and suggest the most appropriate treatment.

In total, 28 Meyer units were used in the Auditorium, with further units in the New Caffé and off-Festival sites. The project comprised the MSL-5, plus DS-2, 630/12, 4 x MSL-2AS, UM-1 UltraMonitors and USM-1 High Power Stage Monitors, with their relevant control units. The Meyer SIM II acoustic analyser was used to set up each of the systems, and a dedicated SIM II System II was permanently in place to monitor the Main Hall acoustic characteristics for the duration of the Festival. The sound installation was handled by the German company, Jurgen Dudda Audio Service, with Audioassessor responsible for handling the FOH, mixer and effects side of the project.

TSD Opening

The official opening of TSD Ltd. “Sound Dept.” took place on 22nd July, 1993 at the new company’s sales, marketing and design offices in the centre of Oxford. An invited group of prospective clients including consultants, contractors, PA companies and audio dealers were met by the four directors, Rick Clarke, Steve Smith, David Whitehead and Paul Richardson. The latter two also representing Stage Electrics, the company which provides the warehousing, service and administration facilities to support this new enterprise.

Christine Howe from Community Professional Sound Systems, and Greene Harrison from Isma Systems, were also in attendance, providing manufacturers support. Sound Dept. is the UK distributor for Community Professional Sound Systems, Isma Systems, Ashly Audio, Galaxy Audio and Quam, and can be contacted at 33 Beaumont Street, Oxford OX1 2NP, tel: (0865) 316839.

SLD Dartford Launch

Set Lighting & Design officially launched their new showroom in Dartford with an evening for invited customers and press. The new premises will push the investment in the fledgling business beyond the £1/Am mark by the end of the year. The company, set up by partners Guy Heselden and Jeffrey Sprignone, is a main dealer for Abstract and Martin, but carries products from just about every major manufacturer in the industry. A comprehensive array of lighting and sound equipment is packed into the shopfront showroom, whilst in the rear, the showroom is one of the best equipped nightclubs in the UK for its size, complete with mini moving light rig installed by Danny Cross to whom Guy and Jeffrey owe a debt of thanks. Guests at the launch were treated to a professional lightshow of over 30 effects, followed by a spectacular fireworks display, which brought traffic to a halt, on the forecourt of the showroom.
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**White Light to Extend Seminars**

After a successful pilot series of educational stage lighting seminars, White Light realised that there were two distinct levels of expertise and that its general seminar was too wide ranging to keep both levels fully occupied at all times. They have now decided to extend the scope of the lectures by dividing them into two levels.

The first series of seminars, entitled ‘An Introduction to Basic Stage Lighting’, will include demonstrations of different types of lanterns, hands-on activity sessions to familiarise delegates with each item and in-depth discussions on basic design needs. This is primarily for teachers and for amateur drama designers who have had very little or no contact experience,' explained White Light’s general manager Bryan Raven. ‘School children who are interested in stage lighting as part of their theatre studies are also a target. The course explains the uses of each lantern, as well as giving an insight into basic design and use of colour and will be run separately at local venues.’

‘Stage Lighting - A Wider Focus’ is ideal for anyone with limited experience who wishes to widen their knowledge. These seminars will be held at White Light’s Fulham premises and will cover design in greater detail, as well as gobos, projection, pyrotechnics and other more specialised areas of stage lighting.

There are also a number of more customised seminars available to suit specific groups of people and further details on all available subjects is available by contacting John Timmins at White Light on 071-743 7775.

**Turbosound Link**

Turbosound, together with sister companies BSS Audio and Precision Devices, held its International Agent Convention in late June at the Science Museum in London. Martin Reid, Turbosound’s sales and marketing manager told L-SL: "The Convention is an excellent medium for communication, from which both Turbosound and our agents gain maximum benefit. We introduce new products, review strategy and give technical demonstrations in a relaxed and comfortable environment. The feedback we receive is invaluable." Agents were treated to dinner in the stunning flight gallery at the Museum, with historic machines such as the Wright Brothers plane as a backdrop.

**JBL For Two Midland Venues**

Stagecraft Systems, together with sister installation company Diamond Sound, have recently supplied and installed powerful sound systems in two Midlands venues.

The first purchased by Wolverhampton University Student’s Union for use in their on-campus lounge-bar/nightclub comprises two JBL 4752A, 3-way main-duty cabinets; two JBL 4512A bass cabinets and two JBL control 55s for fill. The system is powered by C-Audio SA and RA power amplifiers with processing equipment by Rane and BSS. Two Technics CD players, two SL210s and a Clarity S30 amplifier complete the sound system specification which is controlled by an ANN main switching unit. A small lighting system was also included, comprising a Vari-Lite VL1000 and a Tandem centre effect. Lighting is controlled by the club’s existing Powerhouse switching packs and touchpanels.

The second system was supplied to the NEC Aishom social club at Stafford. The system, to be used primarily for cabaret acts and a variety of high level vocal reinforcement applications, consists of two JBL 4751A, 2-way full range cabinets and four JBL Control 55s with the main system. Four diversity radio mics and a Sony CD player complete the installation which will be used in conjunction with the club’s existing Studiomaster mixing console.

Earlier in the year Stagecraft and Diamond Sound were also called in to re-vamp the club’s existing stage lighting. New equipment installed to this effect included a Pulse Racker desk and dimmer packs along with a selection of Vision theatre lighting to complement the existing Rank Strand units.

**Audix Broadcast**

Following the announcement at the recent APRS exhibition in London that Audix Broadcast has re-emerged as an independent operation headed by former manager Ian Jennings, the company is celebrating a number of new contracts. Since it began trading as an independent, it has secured business with Meridian TV, Capital Radio and British Telecom. Audix also stated that it now intends to build on these and other successes with the BBC, IRL and international studio contracts. Full service and support will continue to be offered to all existing broadcast customers.
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Mega ‘Watts’ Opportunity

For the second year, the crème-de-la-crème of the British music and record industry will gather in Manchester from September 11-15 for their ‘In the City’ convention. After day-time conferences and debates, the 800 delegates will spend their evenings at specially staged shows.

Sound and lighting companies are being given the chance to demonstrate their latest products at one such event.

British singer/songwriter Phil Watts is appearing with his four-piece band, three piece brass section and female backing vocals at First Leisure’s Disco Royale, adjoining the main conference hotel, the Holiday Inn.

Phil, who engineers and produces at his own commercial 16-track studio in Fordham, Cambridgeshire, asks anyone interested in taking up this opportunity to contact the production-makers, to contact his manager, Rod Harrod, on (0638) 721530.

Harman Relocate

Harman Audio have moved from Slough to Borehamwood, Hertfordshire. The new address is Unit 2, Borehamwood Industrial Park, Rowley Lane, Borehamwood, Hertfordshire WD6 1PZ. Tel: 081-207 5050 Fax: 081-207 4572.

HirePoint Success in UK

HirePoint Software of Australia have launched their long-established programme onto the UK market through their distributor Lighthouse Technical Services of London, with initial sales announced to Stage Lighting Services, Warehouse Sound, Theatre of Comedy Lighting Hire, MB Sound & Lighting, Montage and Mac Sound. The system is used by many Australian hire and production companies to track their inventory, take reservations and plot utilisation.

HirePoint was established in 1996 when a major Sydney-based hire company commissioned software to track their 7,000 item inventory through the system, from small daily hires to complete package touring productions. HirePoint runs on any PC, needing a 386 minimum with a hard disc. It is also on sale in the USA through Audra International, UK contact at Lighthouse is Mike Falconer on 081-802 2068.

Giant Videowall For Futuroscope

Electrosonic have been awarded a contract to install ‘the world’s biggest videowall’ at Futuroscope, the European Park of Moving Image near Poitiers.

At Expo ’92 in Seville, the Telecommunications Pavilion featured a show called ‘The Global Village’. This used a giant videowall with 850 video monitors, designed and built by Electrosonic. This display has now found a new home at Futuroscope, the theme park dedicated to showing all that is best in big image presentation. The videowall will be installed to exactly the same format as used in Seville, a centric array of 16 monitors wide and 25 monitors high, flanked by two ‘wings’ angled slightly inwards each 9 monitors wide, making an array of 34 wide by 25 high in all.

Georgia to Teesside

Production Services Europe Ltd have established themselves in Middlebrough to produce specialist sound systems for both the US and European markets. They have moved in from Georgia in the USA where the company was originally founded. Partners are Rocky Norton and Eric Handler, both former rock musicians. The company specialises in sound reinforcement and will design, manufacture and project manage the installation of sound systems in public places such as sports stadia, churches and night clubs.

Lock Up Granny!

A new BBC gameshow ‘Happy Families’, has begun shooting. The vast £1 million set, constructed at the Docklands Arena, will be let entirely by Entec Sound & Light, and the audiences will be kept in touch with the proceedings by 16 arrays of Entec’s JBL Concert Series loudspeaker systems.

The sets which will represent a medieval castle 40’ high and 150’ long, together with a 40’ high 130’ wide ‘ measurable’ mountain, take over three articulated trucks full of Entec lighting and trussing to illuminate. Lighting director is Mike Sutcliffe who has worked with Entec previously on the successful Crystal Maze series, whilst Derek Watson will co-ordinate the lighting.

In addition to the Persiani, Space Lights and HVMs used for the set, Entec will also supply the cosmetic and working lights for the show.

Pfaff Silverblue Move

To provide an even better service and increase stocks, Pfaff Silverblue Mechanical Handling Ltd have moved to Preston Way, North Cheshire Trading Estate, Preston, Wirral L43 3DU. The new premises are located adjacent to Junction 3 of the M53 motorway. New telephone numbers are 051-609 0099 (sales), 051-609 1900 (administration) and 051-609 0852 (fax).

Melville’s new Image

A new corporate image for presentation and staging company Melville Presentation Services, was recently introduced.

The new image will see the London-based company change its name to Presentation Services Limited. In the year since its merger with Gearhouse, the company has increased its turnover and is now 25% up on its projected sales. It has also made an investment in excess of £10 million in new equipment.

In addition the company has established a division dedicated to servicing the music industry and concert tours. To cope with this expansion, the company is currently negotiating for an additional 3,500 sq. ft. of warehouse space adjacent to its existing premises.

Cats on the Road

The hit London musical ‘Cats’ is about to tour the UK for the first time after runs at Liverpool and Bristol - using equipment from Theatre Projects Lighting. Howard Eaton, producer Cameron Macintosh and production manager Nick Harris have re-created David Hensley’s original design in a touring format.

"The show may be the same, but the technical specification is very different," Theatre Projects' Alan Thomson told L&L. "It has meant a major new equipment investment." The list is headed by 140 of Strand’s new 1k Leko units and TP’s rental manager Peter Marshall gave full credit to Philip Captick of AC Lighting for the "achieving the impossible by importing the gear on time from Strand in Los Angeles and making it available in the UK for the first time".

Other specifically purchased items include Strand Mini Light Palette 90 (controlling five Avo racks from Howard Eaton Lighting), 16 of Strand’s new Alto 2.5k packages, 48 of Cantata Optiques and Cadenzas, and 30 Rainbow colour scrollers from Camelot.
Tannoy Go SuperDual

Tannoy has chosen the PLASA Light & Sound Show as the official launch-point for its range of SuperDual high-power, compact dual concentric loudspeakers for high quality installations.

Earlier this year, after a long-term high investment programme, Tannoy used the Royal Shakespeare Company's Barbican Theatre as a final listening test site for its new speakers. As a result, Geoff Langley, the RSC's head of sound, was so impressed that the main house auditorium is now equipped with an entire SuperDual system. Tannoy designed the SuperDual as a high performance constant directivity point source system to maintain high intelligibility over any distance, on and off axis, and to prove that they've come up with something as good as their word, your author attended a specially arranged demo at the company's Coathbridge headquarters last month.

With the sound launched from the building's loading bay area, I kept walking back and back from the source until over the hedge and into the road... the clarity was amazing over a wide and distant field.

The loudspeakers incorporate unique drive unit designs with combined mid-range and high frequency units producing a spherical, phase coherent wave front. The range is designed for use wherever wide bandwidth, wide dispersion, high level sound reinforcement is required, such as concert halls, theatres, cinemas, music clubs, leisure venues and religious facilities.

Leading the charge at Tannoy, a TGI plc company (and with Goodmans in the group, the largest loudspeaker manufacturer in the UK), is managing director Alex Munro. Over the past two years, in fact since my previous visit to their Coathbridge site, the manufacturing facilities have been considerably reorganised, with a 'devolved' responsibility by product group philosophy now actioned. Exports account for between 25% and 80% of turnover.

Technical director Alex Garner, who has been with Tannoy for 17 years, told me that they plan to continue down the path of point source philosophy. "We want to take this into new areas and different markets and push out the boundaries," he said.

Derek West is the company's professional product manager, and it's his job to ensure the SuperDual system gets out and into the venues. "High power PA has grown up for most manufacturers over the last few years, but you still find that most systems are designed for pop and rock and roll," he said. "The requirement for high sound levels is much higher today. Any event involving medium to large audiences needs sound reinforcement, but at the same time the audience want to hear the performance with nothing added but sound level. They don't want to audibly discern the 'colouration' imposed by the PA which should also be as visually discreet as possible. The SuperDual fulfills these objectives and allows a member of the audience to hear the full frequency, in phase, at the sound pressure level desired and with the lowest colouration that can be achieved."

Lodestar Training Course

A free training course for users of Columbus McKinnon hoists/motors is being offered by UK distributors, Pfaff Silverblue Mechanical Handling Ltd. The two-day course will take place on 8th and 9th September at their HQ on the Wirral. The course offers participants information and hands-on experience in trouble shooting and repairs to Lodestar motors as used in the entertainment industry, with the presentation carried out by two engineers from Columbus McKinnon supported by Pfaff staff members.

Travel and overnight accommodation are not included but arrangements will be made on behalf of participants at a local hotel. For further details contact Pfaff on 0351 605 1900.
Yamaha at ENO

It's not often you get invited to the premiere of a new opera and be offered the opportunity of a discussion with the composer. In most cases they've been dead for a 100 years or so by the time I get to see the performance!

So it was with a certain amount of enthusiasm that I went to see an English National Opera commission at the Coliseum - Jonathan Harvey's 'Inquest of Love' - with the excuse that electronics, synths and the sound system played just as important a part in the production as the ENO's singers and the 73-piece orchestra.

The traditional view of 'modern' opera with electronics generates an image of the a-tonal plink-plonk and screech brigade, interspersed with interludes of electronic 'music concrete'.

Whilst having a hammer-and-tongue event, 'Inquest' could not have moved further from this, as Harvey used processing, samplers and synths in a completely integrated manner that pushed beyond the architecture of any of a mucky-back Lloyds-Woebber production.

The system centre around a Yamaha PM4000, loaned by Yamaha via Cane Green especially for the project. Apart from the orchestra, the musical force of that event was a Yamaha DX7, which was played from one of the boxes immediately to one side of the stage. There was no intention to separate the keyboards from the orchestra, but there was simply no room left in the orchestra pit for any more players.

As well as the synths, the score called for a ring modulator (about the only item that dates back to the 'good old days' of electronic music) and pre-recorded insets which were drawn either from an ST100 sampler for the short effects or from CD machines for the longer atmospheres.

The speakers, essentially ENO's Meyer UP1s, were placed eight around the proscenium and a pair set further back into the auditorium so that the atmospheric effects would fill the Coliseum from all sides. In this respect elements of the score were much more akin to a well-crafted film soundtrack than opera.

ENO have a long and honourable tradition of using body mics on their singers, not because they can't project unaided, but rather as subtle reinforcement to allow total freedom of movement - something that no longer has to stand centre stage and proclaim itself to the audience. In 'Inquest', singers were also mic'd up as were the clarinet and the trombone in the orchestra, but this was purely for special effects at certain points in the performance, with sounds from acoustic instruments being modulated by electronic sources.

Since the synths and effects were all performed live, there had to be essentially two musical directors - Mark Elder, the conductor in the orchestra pit, and Harvey at the mixer working with Ian Dearden, a young composer in his own right, who was brought in to help with the mixing.

"Balance is a problem," commented Harvey before the performance. "But that is the same with any orchestra; parts can be too soft or too loud. It's the same with synthesisers - that is the most difficult part of the performance and it has to be balanced very carefully."

Both Dearden and ENO's resident sound man, Philip Ashley, found the project stretched their technical abilities.

"The interesting thing about Jonathan is that he is one of the few composers in the 'classical' tradition who take a special interest in the use of electronic sound. For him, it is part of the composing process, so he knows how it will be integrated in the performance and the smart thing about the work is that he pushes the technology but doesn't ask for the impossible. It is both technologically demanding and interesting to do from a musical point of view."

The choice of equipment was geared around what would cope with the demands of 'Inquest'. ENO already own a Carac which is permanently installed in the sound room at the rear of the auditorium, but since it was essential to use a mixing position within the seating of the auditorium, an alternative had to be found.

"A lot of the techniques had been used before on other separate projects, but this had to bring it all together," explained Dearden. "What pushed us towards the Yamaha PM4000 was that it had the configuration that we knew we needed to achieve what the score demanded; the musical problems that have to be solved with technical means. By necessity we needed a desk that was very flexible so that we knew we could achieve the effects without the luxury of extended setting up and rehearsal times that you would get with a Workman's musical instrument. That desk fit with its facilities would allow us to achieve what we wanted to do and give us the flexibility of changing or adapting ways of using it quickly if we needed to."

In addition to the synths, two CD players were used, one for the atmospheres which had been transferred from DAT using ENO's in-house CD-R machine and the other had the complete SY77 sounds also pre-recorded onto CD as a backup, should there be a problem at any point in the performance with this instrument that was critically important to the score. Technology has now come to the level that allows new techniques to be explored with ease of use and flexibility coming together with the confidence that it will all work on the night, always a major concern for sound men involved in any live performance, and Philip Ashley's position is no different.

"When we produced 'Mask of Orpheus' in 1985 we were working with three 4-track tape recorders, it was a nightmare. For 'Inquest of Love' we used the knowledge we had already gained on previous projects, although the nearest was a Batzehide piece where the electronics are quite separate from the orchestra. The great thing about this is how well the electronics and orchestration are merged. It all went surprisingly well."

Tim frost

Right On Cue

Danny Kitainik and Gareth Magennis have combined to form a new company, dedicated to the demands of repairing audio equipment in any situation. Both men have worked in the audio industry for some years - latterly for Encore PA in Park Royal.

The hub of Cue's operation centres in their workshop in Islington. The company offers a 24-hour emergency call-out service, as well as in-house facilities. Cue have accounts with and access to spares from most manufacturers, and are also willing to travel abroad if needs dictate. Additionally, they will offer selective sales and will custom-build equipment as required. Cue can be contacted in London on 071-700 3661.

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NEWS SHORTS

The latest in the line of Wholesog lighting control system converts is American LD Roy Bennett, who, following a successful stint with Don Henley in America, has specified a Wholesog to control the moving mirrors and generic lighting on the current Prince tour which opened last week at the NEC. In addition to the main stage area the control is handling eight Tigerscans which are used to light a separate Coca-Cola promotional area. Meanwhile, in Seattle, Rod Stewart kicks off his world tour with Howard Ungerleider as LD and Michael Benjamin as lighting. The rig includes eight Superscan 2 and 14 Intellislave Hi- and controlled from a Wholesog lighting control system.

UK pro-audio specialist, Marquee Audio has supplied Concert Sound with their first two Yamaha PM4000 FOH mixing consoles. Concert Sound sent their first PM4000 directly out for three months with engineer Chris Hedges on Brian May’s first solo tour after the breakup of Queen. The second desk promptly followed on to Paris for Harry Connick Jr’s circuit of Europe and the UK which took in three nights at London’s Royal Albert Hall. Each of the Yamaha desks are equipped with 44 mono and 8 stereo inputs. Meanwhile Marquee Audio was the delighted recipient of Top UK Dealer Award from BSS Audio. The award was presented to Spencer Brooks, Marquee managing director, by Roger Keenan, MD, of BSS, at a ceremony which took place at the recent APRS show in London, following its appointment as exclusive UK agent for New York-based Lighting & Electronics Inc.

White Light are now launching the MR-16 test kit into the UK. The test kit will be introduced into White Light’s hire stock over the next few months. White Light first began working with Lighting & Electronics when Ministraps were specified for the London Production of ‘Crazy for You’.

Manchester Opera House will be the first venue for the Howard Eaton equipped new touring production of Phantom Of The Opera - and Theatre Projects has won the contract to light it. The show starts a 12 month run there in October before transferring to Edinburgh’s Playhouse Theatre. It’s a complex show, with up to 768 lighting channels controlled by a complex new custom-built Strand Galaxy Nova touring system. The Nova was specified by Howard Eaton Lighting to provide continuity in recreating Andrew Bridge’s original West End design - which, like other world-wide productions, also featured a Galaxy.

Audio Projects, exclusive UK distributor of Crest products, last week sold its first mixing console to PA hire company. Encore. The 32-channel Century CT Series console, was launched by US manufacturers Crest earlier this year.

Britannia Row was one of first UK customers for Yamaha’s new PM 4000 flagship console. Since being delivered to the company’s Wandsworth HQ, two PM 4000s have seen uninterrupted service across several continents. One console has travelled throughout the USA and Europe, first with Sade and then with Luther Vandross, and is now doing the rounds of the UK summer festivals. The other PM 4000 started out with Peter Gabriel on a four month tour of Europe and the UK, before crossing the pond for the US stint which runs until 4th August.

Squires contracts and administration departments have moved. Their new address is 1 Rivermead, Walnut Tree Close, Guildford, Surrey GU1 4UX Telephone (0483) 45 1803 Fax (0483) 451830.

The Compute Animator range of control desks for all moving lights, conventional lights and colour changers is earning its keep. Credits so far include TV, Paul Daniels, Tomorrow’s World, Wogan, Jules Holland (all with Superscan and/or VL5), Eurovision Song Contest (Intellabeam), West End theatre: Magic Flute (VL5 complete rig), Leonardo (PALS), Crewe (Superscan and VL5), Crewe (VL5), AV Pools (VL5), live music: The Jim Davidson Show, Blackpool (Syncrete). RCF (UK) Ltd are to distribute Marantz hi-fi ‘Source’ and professional audio products, to the pro audio and sound contracting industry. Among the line-up is the professional multi-play compact disc player, the CC-52 designed for long term continuous use and suitable for club/restaurant and retail sound system installations.

Garwood’s Radio Station, the in-ear monitoring system, is now available through a network of dealers across Europe, supplied via distributor, Personal Radio Systems.

Central Park in Kensington is the first London nightclub to feature Canon V-100 wide dispersion loudspeakers, supplied and installed by Sound Movies Ltd. The club’s 3000 seat capacity and 16 V-100s have been brought in to boost a JBL floor-surf face system driven by C-Audio and Citronic amplification. The Comedy Francais Theatre, in central Paris, has recently taken delivery of an Out Board Electronics SS2 automation system. The unit, supplied in a stand-alone format, has eight outputs which route to 16 outputs via an automated routing matrix, with input and output levels controlled by Out Board’s moving faders.

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Scan PRO218
BKSTS Moving Image

Moving Images '93 is the title of the BKSTS conference this year, to be held at the Cumberland Hotel in London from 30th November to 3rd December. The event will feature international speakers and a substantial number of delegates from overseas.

The subjects discussed will be those in the forefront of audio visual technology at both technical and social levels. Supporting the conference will be the 'Conference Showcase', which will provide delegates with demonstration opportunities covering a wide range of state-of-the-art technologies relevant to the themes of the conference. At least two other major events are planned for the evenings during the Conference: 'A celebration of the British Film Industry', hopefully to be staged at Pinewood Studios, and a television oriented evening at the British Academy of Film and Television Arts.

For further information contact Sue Brewer at BKSTS, tel 071-242 8400.

New Base for CSL

Chariton Sound and Light have moved to new premises following a three month transformation of an industrial unit into a high tech showroom with state of the art sound and lighting equipment. The company, run by husband and wife team Geoff and Jennifer Chariton, was established five years ago specialising in the supply and installation of lamps, lighting rigs, public address systems and mixing desks.

To celebrate the move the company held an open day in July with representatives from Bose, Audio Technica, Cliconic, Martin Professional and Custom Sound who were on hand throughout the day to talk to visitors.

Chariton Sound and Light can now be reached at Unit 9, Bulmer Way, Cannon Park, Middlebrough, telephone (042) 247096.

Guide To Electrical Maintenance

A new Guide to Electrical Maintenance, including the Testing of Portable Appliances, has been published by the Institution of Electrical Engineers (IEE). The 20 page Guide is intended for all those who have specific responsibility for the maintenance of electrical equipment.

It deals with legal responsibilities, equipment types, advice on periodic inspections and provides detailed recommendations for those carrying out the inspection and test of electrical equipment. The IEE Guide is intended to resolve many of the problems and uncertainties currently faced by users of electrical equipment and appliances.

Single copies of the Guide are available to organisations free of charge. Requests should be sent, on headed notepaper, together with a self-addressed envelope (10x7cm), to: Public Affairs Secretariat IEE, Savoy Place, London WC2R OBL. Further bulk copies at a cost of £20 per 10 are available from: IEE, PO Box 96, Stevenage, Herts SG1 2AY.

ABTT/North 1994

The annual ABTT Trade Show 1994 will be held in London from April 21-22 in Hall 1 of the Royal Horticultural Halls, the same venue at this year's event. Almost concurrently, the North Regional Committee of the ABTT announced that their event, ABTT North Trade Show 1994, will take place from October 13th to 15th at the Royal Northern College of Music. It has been arranged to fall within Manchester's year as City of Drama 1994. For details of the London show contact Ethel Langstone on 071-403 3728 and for ABTT North contact Mike Brown of The West Yorkshire Playhouse on (0532) 442141.

LiteStructures

LiteStructures (GB) Ltd have relocated from their current Wakefield premises to new ones just off junction 39 of the M1. The new facility gives them 15,000sq.ft in which to house their manufacturing, design and sales operations. LiteStructures can now be reached at Dutkar Low Lane, Dutkar, Wakefield WF4 3BQ. Tel: (0924) 240800 Fax: (0924) 254083.

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TECHNOLOGY STARS IN TINSELTOWN TRAUMA

A walk on the Wilder side with Tony Gottelier

The transition of Billy Wilder's classic 1950 movie tragedy 'Sunset Boulevard' into a blockbuster musical was not without its moments of techno-terror. Tony Gottelier talked to lighting designer Andrew Bridge and others about how they overcame a mountain of problems to stage London's latest Lloyd-Webber box office hit.

Sunset Boulevard is the story of an erstwhile star of the silent screen suffering from delusions of a possible comeback in the new age of the talkie. Her predicament is perhaps best summed up in the immortal line from the original Billy Wilder script: 'I still am big, it's the pictures that got smaller.' The tragic consequences of her attempted comeback form the basis of the plot, in a sort of drowning of the vanities.

In the Andrew Lloyd Webber musical adaptation, many of the classic lines are retained by writers Christopher Hampton and Don Black. Indeed, since the story was originally conceived for the cinema, rather than adapted from a novel, the musical attempts to reflect the Babylonian Hollywood element of the whole affair, as it veers in its ghostly consequences, by retaining, in part, the sense of a film sequence and of flashbacks: quite a challenge for set creator John Napier and lighting designer Andrew Bridge to achieve on-stage action in 16 frames-per-second simulation. As we have come to expect with such shows, and with apologies to Patti LuPone and Kevin Anderson, the technology is 'the greatest star of all'.

This is all made more complicated by the fact that, in order to stage such lavish productions with all the effects of a film sequence and of flashbacks: quite a challenge for set creator John Napier and lighting designer Andrew Bridge to achieve on-stage action in 16 frames-per-second simulation. As we have come to expect with such shows, and with apologies to Patti LuPone and Kevin Anderson, the technology is 'the greatest star of all'.

This is all made more complicated by the fact that, in order to stage such lavish productions with 270-tonne lighting, 500 horses, and 30 fire exits, the show is so much a 'boulevard theatre' to make it fit the concept, it has now become fashionable to acquire the theatre in which the production is to be staged. 'Beforehand,' he joked, 'I thought the theatre seems to be the order of the day, which is also an indication of the long-term investment potential of the Webber product in the eyes of his Really Useful Theatre Group who are playing this particular game of Monopoly for the highest stakes.' £3m put into the building was equalled by a similar investment in the production.

There has been a theatre on this site, in the Strand just opposite the Savoy Hotel, since 1896 though the present structure dates from 1901, making it qualify as Victorian. The Adelphi in the Strand, may now have seating for 1501 (this extra one for the Phantom/9), to meet the seemingly insatiable demand of the coach-party market. In all other respects this is a bijou theatre, especially in terms of the capacity of its stage to house such a lavish and technically challenging production. Napier's design called for one massive flown set, lifts, several stage trucks, and all manner of other stage gizmos which had to be squeezed in with, literally, millimetres of tolerance.

To have got away with all of that, from building site to virtually complete production in 16 weeks - only to be snookered at the eleventh hour by the intervention of the small, but crucial, electronics on board the hydraulic rams, in unexpected response to the walkie-talkies used by the crew - must have been enough to bring tears to the eyes of even the most hardened walker on the razor sharp edge of technology. And we can only imagine what the number-crunchers thought! ALW made his feelings clear on prime-time television, thus turning a disaster back into a financial triumph by gaining thousands of pounds of free publicity - an object lesson in how to make a silk purse out of a sour situation, and capitalise on Murphy's law of inevitability.

"Actress William Terriss, was fatally stabbed by a jealous rival at the stage door of the theatre in Maiden Lane in 1897."

It is Mike Barnette, the freelance engineer who has been involved in a similar capacity in a string of musical extravaganzas from Starlight Express, through Les Mis and Phantom, to whom most of the credit for the technical design of many of the sets must go. "Actually, I came from the earth moving business, swapping big yellow monsters which make a great deal of noise, for black machines which have to be totally silent," is Barnette's description of how it happened. He was quite sanguine about the situation with the hydraulics. "Actually, it was played up a bit," he told me. "The valves are an excellent product which enable direct proportional control from a computer, but it was the minorized receiving devices which proved to be over sensitive to the brand of shortwave radios in use in the theatre. However, Vickers Systems responded magnificently and changed the entire system inside 48 hours for an older model, though this requires external amplifiers." Barnette assured me that the devices are not in use in aircraft as yet. It would be a great shame if Barnette's great efforts in this incident for, in fact, the scale of his achievement is considerable, quite aside from all the other difficulties of squeezing a quart into a pint pot.

The main elements of the sets are: the massive interior of the star's Tinseltown mansion, all gilt and rococo, and weighing 8.2 tons, which occupies three quarters of the depth of the stage when in situ, and two thirds of the flying space when in store; three quarters of a mile of lighting pipes and drops; the scenery and mechanics for the car chase sequence, which is pulled in by hydraulic hoist, weighing a further 4.4 tons (this engineered by Robert Knight Complete Theatrical Services); then there is the shadowy Hollywood pool which arrives via horizontal scissor lift from the apron; several trucks are used for smaller intimate scenes and glitterettes and to create Schwarbs's Drugstore, Artie's apartment and Betty's office; 12 vertically flying panels, capable of 2m/sec. weighing 3¼ ton each, so presenting considerable breaking retardation, create the gates to the Paramount studio; these plus side blinds and horizontal sliders form the 'Samson and Delilah' Roman lot, which also has trousers slewing the side stage verticals with faux columns dropped from above - the latter achieved with a...
The Paramount Studio gate, formed from flying panels capable of travelling at two metres per second. Note the shadow projectors.

The 'mansion' and 'garage' sets are controlled by proportional joystick from the high level perch, and everything else from the computer in the basement. The sheer bulk of the 'mansion' set created similar problems for others also, including lighting designer Annette Brindle, which certainly accounted for there being several scenes where action takes place immediately below this structure. The solution was to build some lightings into the under-floor, and this was to include Vari*Lite and DHL automated light curtains as well as Parnac and other conventional instruments (now called 'steam' temps by Andrew and crew!) for which the tolerance, where in position on the stage, was so small as to be infinitesimal - never a happy situation with moving fixtures.

Furthermore, it was soon obvious to production electrician Alistair Grant that, with considerable numbers of practicals also on the set, it made sense to build the dimmer into the moving structure to reduce problems of cable management. Fortunately, Strand's LD90 dimmers present a slim profile and are lightweight, unlike more conventional dimmers but, perhaps more importantly, they do not require the extra added ventilation. Noise would always be a problem in such close proximity to the performance and 72 ways of LD90 dimming were neatly accommodated in the side of the structure. However, the problem still existed as to how to get two 63A feeds to the dimmers, and a 32A three phase supply to the lighting property, to send nothing of the data links required for those dimmers and the Vari*Lite, there being no room for trapezes - a problem neatly solved by the ubiquitous Howard Eaton who installed McCready cable winding drums installed in the empty grid. The security of the data links was resolved by modifying two of these to incorporate mercury wetted switch gear.

In fact, Howard Eaton Lighting had been involved early on in the transformation of the theatre for its present use. They were responsible for re-wiring the existing 240 channels of SMA and Permus dimmers, which provided the opportunity of directing all the outgoing circuits through a common marshalling box or mains patch, and enabling DMX control using Arri Connections. An additional seven Strand LD90 racks were also added and installed in the old dry room.

Following consultation with Bridge and Martin Heap, Really Useful's technical manager, Alistair Grant and others, a number of further changes were made, not just to accommodate this show, but also to sort out some of the accumulated impracticalities of yesteryear. The FOH positions, which were always going to be important for Sunset, were re-worked and follow-spot positions provided at either side of the gallery. Existing slots at each end of the gallery were opened up and a new aperture created in the ceiling over the stalls. An advance box was required for Sunset, which was installed along with a motorized focus track for access. The control room, originally one side of the circle, was redesigned to the old box at the top of the house, where Andrew Bridge's favourite desk, the Light Palette 90, was snugly installed alongside Vari-Lite's Mini Arman, the house Colorar: Xenon followspot and room still found for the essential movie projector.

The sound guys were not so fortunate, their mixing position remained at the back of the stalls under the balcony. However, sound designer Martin Levan made the best of things in his specification which included a 17:input Cedar Hyperdesk, 27 Sonosaxhier radio mics, 85 Srecedes Yamaha amps and a speaker melange of JBL, Meyer and Tannoy.

All the sound equipment was supplied and installed in one week by Autograph Sound Recording, who also provided the elaborate 30-unit Clear-Com beltpack system which operates on five rings. This comms system includes CCTV to assist with monitoring the scenery changes and to maintain maximum possible security of the complex movements of the scenery. As with Eaton, Autograph had been consulted regarding the refurbishment and, consequently, were able to ensure multicore cables and speaker rigging plates at strategic points in the theatre.

Bridge's original idea for the lighting was to take a sort of film Noir approach: "After all, several of the shows are very filmic and it is based on a tragic film script. I was going to use 5 and 10ks, typical of a film set. But that all went straight out of the window with the lack of space," Bridge told me in his typically forthright way. "Art versus logistics - the eternal problem! Plan 'B' was to base it on large frame projection, but that was rejected also, on cost and space grounds though as mentioned, room was found in the control area for a 35mm cine projector, a production requirement that plays a crucial role in the general atmosphere of the piece.

The final compromise was to use lots of shadow projection with palm tree and water tower silhouettes onto gauges, or directly onto the flats, to evoke the feeling and sense of fifties Hollywood. Anyone who has seen the ads and posters for the show will have got a feel for the
The lighting rig installed under the 'mansion' set, infinitesimal tolerances.

Hence the need for all those FOH lighting positions. Once again Howard Eaton is involved - Andrew had chosen the Robert Juliat 1200W FMI zoom profiles, first discovered while in Paris for the Wild West show at Euro Disney. It was suggested that with the Juliet's on-board diaphragm control and lamp ignition and high optical quality the lamp will resolve a dot pattern of up to 400 dpi, ideal for intricate patterns; it might be possible to project an animated gobo sequence. With help from Chris Cook of XTBA on the DMX front, these facilities were put to good effect and Eaton came up with a motorized gobo holder capable of projecting the image of a car travelling across the stage, one of the most successful filmic effects in the show.

Twelve of the 11 5/34 dog zoom profiles are on the show, which is the first time they have been used on a commercial musical. (Tom Mannings of Decoupe, Juliat's UK agents, tells me that a new 2500W FMI model will be launched at PLASA this year which will use double condenser optics to further boost the light output. Bridge has, apparently, already decided to use this model in the American production, which kicks off in LA in November - see News this month.) On the beams, Strand's 1 kW Optiques are used for gobo projection. Another idea had been to use Strand PAL's, but Andrew wanted them converted to DMX so that they could be run from the desk. Strand were unable to get involved, so it was again left to XTBA to resolve. Which they duly did, though too late for Sunset in the end, so they were put to good use during the run of Leonardo.

The main workhorses for the show, however, are the Vari-Lites which are used in various models under the auspices of Richard Knight and Paul Cook. As readers will be aware, Andrew has always been a great supporter of these automated luminaires for their ability to build ambience, rather than as a pure effect light.

There were 38 VLs specified for Sunset, though Bridge is surprisingly dismissive of the wash light in its present form. He cites lack of colour
accountability and the beam characteristic as his main bitches. "It is only useful, in my book, if you use a lot of them which, to be fair, you can do since they are relatively cheap. Also there is a lot of flare, which we had to modify out ourselves. Anyway, I still like the YL4s, because they are brighter and I can crossfade the colour." I thought he had managed a lovely, rich golden amber for the lighting of the 'mansion', also I gather that Vari-Lite are in the process of tackling the issue of the colour range of the VLS.) A side from that, Andrew is immensely pleased with what has been achieved with the robotic lights in the context of the show, and particularly likes the brand new VL2C which was another 'first' for Sunset. The 2C is, of course, a beam light but based on the Osram 600W HMI which delivers a colour temperature of 6000K. This is a bigger, brighter lamp than previously used by Vari-Lite, and has presumably been moved into place in advance of the VL5 to combat the threat from LSD's Icon in the concert market. At the same time the optics have been changed to provide a tighter focus than the B (4/22 degrees) and the resolution of the beam it has is has been much improved. Additionally, full timing control facilities have been provided on movement, intensity and focus.

"We have virtually done the whole show with moving luminaires. I don't think anyone in the audience would be aware of that, which is what it's all about, as none of them moves into view," said Andrew in a rare moment of self-satisfaction: "I have to admit that we are fortunate to have the clout to get the budget for this," he added. Special precautions had to be taken with all these fittings not only for the show, but also for the opening, as, obviously, the hotter they are, the noisier they tend to be. Aside from proximity to the actors, the orchestra is virtually unexcited and there is no noise of dialogue with music underneath in the show, so noise would be a crucial issue. Otherwise the ubiquitous colour scanner was everywhere, on virtually every ellipsoidal in the rig. The show followspots are six short throw Paris at the front of the house.

"As usual, Andrew is fulsome in his praise for his team of Vivien Leone and her alternate Keith Benson, Vari-Lite specialists Richard Knight and Paul Cook, plus production electrician Alistair Grant. "These guys are gold-dust," he told me. He was also delighted with the relationship built up with Alan Thomson and his team at Theatre Projects, who supplied all the kit, and with the service provided by them. "We do not get that kind of support from the manufacturers, but TP understand that this is Showbiz. During rehearsals and previews we are at it from nine in the morning until at least 11o'clock at night without break. So when something goes down we need action." From his team he singles out Vivien Leone for special mention: "She was actually my associate for the show and the idea was that she would move on to LA with the London experience in hand. Unfortunately, I am running short of associates, with five shows running concurrently (Phantom in Sydney and Holland, Five Guys named Mo in LA and Joseph in Frisco), so when Sunset was delayed I had to send Vivien to Sydney to move Phantom, and Keith took her place there."

Paul Cook and Alistair Grant also came in for praise for their technical input. "We have got a lot of processors talking to each other and Paul has had a lot to do with that."

In fact, he was very involved in the MIDI hook-up which made the 'on the road' car chase feasible in its use of combined media: Vari-Lite, conventional, the scenery mechanics, video projection and live actors. This scene is viewed through a gauze and the action is triggered by the orchestra's keyboard player, via MIDI timecode to the various peripherals. In the case of the Light Palette and Mini Artisan desks, the cues are managed by Richard Bleasdale's ' Cue List' software on a Mac. The role of this system is described in Robert Halliday's article on 'Grease', on page 41 of this issue.

Another exciting scene, technically, though a little macabre, is the opening frame of the movie (sic) where Joe, the waiter, appears floating face down in the swimming pool. "An animatronic dummy was intended to play this role and the idea was for it to be backlit and top lit through smoke and a scrim," Andrew explained. "Try as we might, we couldn't get it to work - all we got was a shadow. So the ASM was drafted in, and is suspended nightly from wires, while we light from above and below, onto the scrim panel set at 45 degrees, with ripple and water effects." KE wheels are used for the water effect and a followspot, positioned so that it hits the head of the 'corpse' without touching the screen. The audience clearly sees the cop fish the body out with a boat-hook. Dramatic stuff. Now we have a show with no smoke and no chaos. And that must be some kind of a first!" Bridge exclaimed. In fact, the smoke machine will not be the only kit going back to TP, the automated lights have apparently proved so versatile that 'a truck load of steam lights' will be going back into stock also.

I asked Andrew to sum up the Sunset experience: "As usual these days, 50% design, 50% politics! Actually, one of our biggest problems was that for weeks the stage was a workshop with the 'mansion' set being constructed in situ. In fact, at times it was physically unsafe to go on stage." The net result was that virtually no focussing was possible prior to the previews. "Remember the theatre was still a building site in April when we moved in, so half the time we couldn't hang lights, even if we wanted to. TP were ferrying the kit in two deliveries a day for a lot of the time!

Andrew Bridge is a reluctant interviewee, in fact he doesn't much like any publicity. "If I'm forgotten as the result, I shall be able to say: I am still the biggest in lighting rigs, it's just the rigs which have got smaller!"

London production photographs by Donald Cooper. Cover, contents and stage shots by Phil Dent.
Little Angels
Hull City Hall
LD: Tom Kenny
SD: Mark Kennedy

Lighting designer Tom Kenny is normally associated with Eric Clapton and is more often found working in 10,000 seat arenas. It was therefore something of a surprise to find him producing a show for The Little Angels at the 1,500 capacity Hull City Hall. The answer to this riddle was in fact a simple one: "In recent years, as well as my work with Eric I've also been doing a great deal of work for Bill Curshishley, The Who's manager. The Little Angels are co-managed by Bill and I was thus right in line for the job."

In fact, Tom Kenny seemed very happy with the chance to work in more intimate surroundings. "Obviously Eric keeps me very busy; the last time I did a theatre tour of Britain was in '91 with Chesney Hawkes. It felt so long ago that I actually called up many of the venues on this tour to check on what truss widths I could expect to fit in."

Despite Tom's efforts the limitations of Hull City Hall did force a compromise upon the system. With a limited number of available point holes through the false ceiling (the ceiling is in a moderately elaborate rococo style, the plaster work, though not outstanding in design, appears in excellent condition and well worth preserving) and with a two ton total load limit, Tom was obliged to drop his on-truss spots and also one of the coiled finger trusses (the latter due to lack of point in the right place, rather than the weight. The truss configuration is fairly simple: two 30 foot spans of Slick Maxibeam run across stage front and rear (their length in deference to the results of Tom's prior inquiries), limited by a 16 foot span running up and down centre stage.

Similarly, the three finger trusses run up and down stage, jutting out from the front truss, and are uniformly spaced, one on centre, the other two at 12 foot intervals either side. The trusses are almost full of Par 64s, front and rear having 40 and 48 lamps respectively and the fingers having 32 each. Where there are vacant sockets on the six lamp bars these are used to power the eight Colormags used to light the trussing and also a couple of White Lightning strobes and a Black Gun.

On the floor are four Molerams aimed up and forward from beneath the rear truss, four Colormags are dotted between the wedges and finally, two eight feet sections of truss are stood on end, one either side of the drummer, with two bars of four Par 64s in each (half complete with Colormags). As Tom expanded: "Nothing unusual, the band wanted to save the £16,000 or so they could have spent on more expensive lighting - this is just a quick three week tour."

"In late November and December they will be doing something much more substantial, culminating in a large show at the Royal Albert Hall, and they feel the money could be better spent elsewhere. In fact the band take a very active part in deciding their presentation, not only do they influence financial decisions, but also contribute ideas on lighting ‘looks’ and even a nice visual gag for the last song."

"They have strong ideas about how they should be lit. One of their general rules is to use white light predominantly and limit myself as much as possible, to one colour on stage to accompany it. These kind of pointers are good for me, not too rigid but a framework within which I can work happily." Tom was also very enthusiastic about another of the band's innovations. During the intervening gap between the opening act and the Little Angels appearing on stage, home movies of the band on previous tours are shown on a small (12 x3) roll down electric screen mounted on the front truss. Although retaining a very ‘home-made’ feel, these movies are of good visual and aural quality, not only entertaining, but also a good excitement builder during a full in the evening's performance which can be a bit of a downer, especially if the opening act have acquitted themselves well as the 'Cockroaches' did on this particular night.

Tom seems very pleased with the service and equipment he's getting from Dave Keighley at Samuelsons (as well as the aforementioned truss and lamps, Samuelsons provide a Celco 60 way Gold and two Avo 72 way dimmers for control), and is particularly happy with his two Crownman, Brian Condrey and Tim Phillips. Brian will, in fact, be taking over running the show from him after they’ve played Hammersmith, as Tom will be going to the Beacon Theatre in New York to start work on a new Pete Towsnend musical production.

In performance the band are reminiscent of Peter Frampton or perhaps Humble Pie in their heyday, though they play with even greater exuberance. They are young, good looking and unabashed, their image is very '70's retro - long
hair, jeans and T shirts.

Their music however is very fresh, no heavy metal here. But well structured songs, strong melodies and with powerful hooks. They hit the stage at full tilt straight after the intermission movie and hold the audience at a peak until midway through the evening when they do a nice acoustic interlude, just three members of the band on stools with guitars, and then it's full-on again until the finale.

Mark Kennedy, recently seen out with Chris Roe, was mixing sound from a Midas XL3. The PA is an ElectroVoice NT2 system supplied by New York Sound of Sunderland. It was extremely loud, the pressure level producing that exciting punch in the pit of the stomach, but this only matched the excitement generated by the band and although I had ringing in my ears for an hour afterwards, I can't imagine hearing them any other way.

Coming from Scarborough, it was perhaps no surprise that every song was received by a crowd: apparently they evoke the same response wherever they play. For me this was the most exciting band I've ever seen. If they 'break' in the USA I dread to think how they'll fare physically, lots of bed but little sleep I imagine.

On a technical note, Hull City Hall is not a venue that features often on a national tour itinerary. Talking to co-promoters MCP there emerged two reasons for the capacity and production. With the addition of a modest 'house grid' to ease the flying restrictions, and a storage space out of the hall for flightcases, which would go some way to increasing the audience capacity, this situation might improve. In recent years with the emergence of the House Martins and Kingmaker, and now the Little Angels, Hull and the North East coast is developing a reputation as a centre of music - it would be nice to see this talent capitalised upon in its home territory.

Steve Moles

Lenny Kravitz
LD: John Pollak

When John Pollak approached Meteorites with his idea for Lenny Kravitz’ world tour (pictured in performance right), they immediately turned Pollak's designs into 3D drawings which he could take to America to show to the man himself. Once the OK was given by Kravitz, Meteorités began work on designing and constructing the main feature of the design, the custom pod.

It was built from 10 pre-rig sections which bolted together to form a decahedron. The lamp bars than fanned out to form equally spaced spokes within this pod, each of the lamps having its own dimmer and desk channel to enable Pollak to programme a multitude of patterns. The pod also incorporated 62 Colorados producing an almost infinite number of colour variations. In the hub of the pod, six Intellabeams were mounted to produce remote swung beams to complement the Pars. This was particularly striking as the source itself was hidden and the beams shot through the centre in a 'Close Encounter'-like manner to pick up the band members or produce patterns. The Intellabeams were fitted with custom gobos wheels, produced by VeroFilter, which had dichroic filters attached to some of the gobos. In the very centre of the pod was a 2.2kW HMI lamp with remote dimmer shutter to give a brilliant white shaft of light from the centre. Another interesting lighting feature was the use of softlights hung on parachutes from the back truss, creating five large 2kW light sources behind the band.

The Intellabeams and the Colorados were controlled from the Wholehog console. Meteorites have upgraded all of their stock of 100 Intellabeams to run the latest software giving 12 bit as opposed to 8 bit resolution on the mirror movement, and the desk is able to operate the new software effectively on DMX. The generic lighting was controlled via an Avol (JM500) 160-way, the large number of channels being required to give each lamp in the pod its own channel.

John Pollak was keen that his design should be suitable for arenas and/or proscenium theatres with no need for expansion or contraction. He's a great proponent of 'less is more', especially when budgetary concerns are foremost. 'I aim to light the music, that is, cues are motivated by the emotion of the piece. Most of my original ideas were 'still-born' due to financial constraints. Lenny had the idea of a round truss, as featured in the 'My Way' video, but touring a rig made of refrigerator bulbs was a non-starter, so Parcans it was!' explained Pollak.

Unlike some entertainers, Lenny Kravitz has a great deal of input to all areas of his presentation. An unrelenting perfectionist, he expects his ideas to be brought to fruition. This, as with any tour, is a package of many different parameters which gives 'more bang for the buck'
Opportunities in the Middle East and Far East

Inova is a company specialising in the distribution and turnkey installation of sound, lighting, laser, video and AV equipment throughout the Asia/Pacific region. We are looking for entertainment industry professionals to fill a number of posts in our Dubai and Singapore offices.
Tertiary technical qualifications would be an advantage in Dubai, but essential in Singapore.

Regional Sales Manager (Singapore)
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A CLASSIC PROFILE

Bob Anderson reflects on natural selection, or survival of the fittest?

There are those who swear that there never is and never can be anything new in theatre lantern design. Renowned by the latest bells and whistles on consoles, impressed by intelligent dimmers, dazzled by DMX, these experts claim that everything about optics was known back when Newton was a lad, so how can the latest sleek spotlight possibly be any better than the 1970’s version? Some even have a theatre full of lanterns of early vintage to demonstrate their point. They are happy, but they are wrong.

Take the CCT Silhouette. True, the first Sil (the 1971 blue version, remember) had a 1kW quartz halogen lamp, two PC lenses arranged as a zoom, a gate with four adjustable shutters, a patented scientifically designed reflector and sufficient ironwork to hang it up, and so does the 1983 version. But compare the two, look carefully, and remember Charlie Darwin.

The blue prototype was intended for television. It was powerful for its day, but light leaked everywhere and it had a flat field. Great for TV gobos at 1500 lux, but not what theatre LDs thought they wanted.

So the design was modified, a new lamphead and black paint were the obvious changes but there was also a fast/peaky adjustment knob and a plug-in lamp carrier responding to early alarming reports of severely burned fingers caused by electricians continuing the old habit of plunging new lamps into lampholders without first checking that the circuit was switched off. The new Quartz lamps got hot so fast that skin was injured before the mistake was recognized. Now the design made sense for theatre and sales began to boom. But evolution had just started.

First came addition and multiplication processes giving three beam angles - wide, medium and narrow, and ultimately two more, very wide and very narrow, and then more power from a 2kW lamp in a bigger lamphouse. Lamp and lens options were flexible and bolted together interchangeably.

Construction changed to extruded aluminium, then changed back again to punched and folded steel to take advantage of CAD/DAM computer manufacturing techniques. Now both techniques are used. Suspension slotters were devised to allow re-balancing to compensate for heavy add-on colour changers, and removed again in favour of stronger tilt clamps when it became apparent that re-balancing was rarely used.

Two extra holes in the lorry provided a reduced height option when essential and two more offered offset rigging. Focus knobs moved to the side, turned red for pretty, and acquired calibration marks, but still slide easily and give firm positive clamping. Colour frame lugs changed to a ventilated box construction with a safety retaining clip. Safety bends, once an optional extra, are now offered as standard attached to a special strengthening.

Lamps and optics are, of course, interactive. Find a better lamp and the spotlight can be improved. First T9, T11 the CP24 for 1kW, CP43 and CP72 for 2kW, the CP77 axial lamps, then the T29 and CP90 1.2kW and CP91 2.5kW ‘stretched’ versions and then the T19, CP79 and CP92 biplane filaments all offered combinations of light output, dimensions, life and colour temperature to tax the ingenuity of the lantern designer seeking to satisfy more and more potential customers. Silhouettes copied all these variations and more.

The first Sil amused many customers by having sides. Also traditional was the fact that they got much too hot (another risk of firing flesh), bent inevitably whenever the lantern was carried about, and either fell out or jammed solid when actually needed. In 1970 all manufacturers expected the user to adapt to this. CCT, new to the market, offered a few solutions.

The repertoire cassette allowed the required shutter pattern to be set up and then clamped in a removable unit. It did not catch on. They tried putting all controls at the top, just feasible, but again, not a lasting change.

Then removable shutters, angled and reversible, hooked in and out as needed; new shutter material that distorted less; and better moulded-on heat proof handles without the trap of protruding rivets to blister the unwary. Then they added a rotatable gate to move shutters and gobos for fine adjustment.

All these improvements are much appreciated and now standard.

Today, new purchasers can try a Turbo version, with extra light available from the 1000w and 1200w lamps provided by an additional backward facing annular spherical mirror collecting the light that was once wasted on the gate supports. Measurements show improvements of 50-100% at most focus settings. Who said Pattern 23?

So, evolution rules, and for most customers the result truly is OK.

But what about those proud but poor owners of the mesolithicic® generation Sils? Has evolution doomed them to a twilight of 1970s and 80s technology? No, CCT policy has always been that improvements shall not make previous versions obsolete and that spares will always be available to remedy any misfortune. So, if your lens tube deserves a new lamphouse any new Sil lamphouse will fit, even the Turbo version.

The latest shutters fit all old designs® and the 1.2kW lamp tray takes 1kW or 1.2kW lamps and will fit any Sil since 1978. New lanterns for old at modest cost. Do-it-Yourself, like the Harrogate Arts Centre and White Light Ltd., or, for a fee, CCT will do the job for you.

Flat Lux.

*After 1972
SAVOY THEATRE RE-OPENS
Gilbert & Sullivan’s original London home goes Multi-Purpose.
John Offord reports

The ‘new’ Savoy Theatre now seats 1,137 patrons in Art Deco splendour.

The Savoy was the first theatre in the world to be lit throughout by electricity when the Gilbert & Sullivan opera ‘Patience’ was premiered in 1881. For its re-opening last month after a major re-build following the disastrous fire in 1990, it is once again able to boast the latest in technology, this time with the emphasis on a flexibility that will enable the venue to cope with a wide range of production requirements.

The original building, designed by noted theatre architect C. J. Phipps, had been constructed to the order of impresario Richard D’Oyly Carte. It had been “despised and much maltreated” according to David Lyle of Whitfield Partners, architects for the scheme. “The restoration demanded an inordinate degree of ingenuity from the whole team of architects, engineers and theatre experts to fit the machinery of a modern theatre into the accurately restored interior of one of London’s cultural icons,” he continued.

The theatre underwent major surgery in 1929 when it was re-designed in fabulous Art Deco style, rivalling the latest Parisian theatre interiors, and it was for the characteristics of this period that the building was Listed Grade II.

Whitfield Partners’ remit was to restore the famous interior to its 1929 appearance and to incorporate - invisibly - the latest theatrical lighting, sound and flying equipment, new air conditioning and all the other necessary statutory improvements since 1929. They also had to include a fitness centre to be let to the next-door Savoy Hotel (the swimming pool sits high above the stage), and rejuvenate the remnants of the Victorian elevations.

“No drawings of the 1929 decorative scheme survived,” explained David Lyle, “and the appearance of that interior had to be deduced from contemporary photographs and descriptions, and salvage of the fire-damaged remnants. Paintstaking researches and some happy chances combined to produce a high degree of accuracy which at first we did not expect to be able to achieve. For instance, we were able to provide Dick Reid’s modelling studio with images for all the Chinoiserie panels of the proscenium even though many were completely destroyed and indecipherable in the photographs.

“This came about when our architect Red Mason recognised in an antique Chinese screen at the Victoria and Albert Museum the source of those panels we had succeeded in rescuing from the debris. It seems that Gilbert Seale, the plasterer of 1929, must have used this screen as his model!”

The silver-leaing of the auditorium walls, one of the most striking features of the venue, was described in several contemporary articles, some of them even referring to it as gold. In fact the building accounts make it clear that aluminium leaf was actually used for the gilding with the gold and multi-colour effects obtained by using coloured varnishes.

Sufficient scraps of the original luxurious carpets were found hidden away in good enough condition to reproduce exactly, even though the auditorium carpet was entirely destroyed. Although long since over-painted with less lively colours, the original front-of-house paint scheme eventually proved deductible from fragments behind fittings, scraps and descriptions.

Theatre consultant in charge of the project was Jerry Godden of Theatre Projects Consultants.
who had the task of technically up-dating the theatre whilst at the same time
reconciling the remit of the architects to restore the venue to its 1929 style.
And, lest we forget, the original structure went back to 1861, providing him
and all those involved with the project with a very complicated set of
restrictions. However, I'm sure theatre consultants warn to this sort of job - if
a touch secretly - provided the end result is worth the effort.

"Much of the role of the theatre consultant involves out-guessing the needs
of any production which may run at a theatre in the future and providing the
technical resources to allow these needs to be satisfied," Jerry Godden told
me. "It is a task which incorporates practical knowledge of the theatre with an
understanding of the increasingly complex marketplace for technical
hardware and an appreciation of the work of an architect. The marrying
together of these layers of knowledge more or less describes Theatre Projects
Consultants' task in the case of the Savoy Theatre - on other projects our work
may be different.

"Space for technical hardware was very limited in the pre-fire theatre and
finding ways to implement a full lighting and sound infrastructure while not
marring the integrity of the restoration called for meticulous detailing and
co-operation from the different members of the design team.

"The new control room was the former private box of the late Sir Hugh
Wortner, chairman of the Savoy Theatre and whilst the space is very tight, any
lighting operator should feel that the compensation of working with a state of
the art Strand Lighting Galaxy Nova console is sufficient compensation. The
console controls all stage and houselight dimmers. Control of houselights is
also available from a stage manager's panel, stage left and, for security
purposes, from the Stage Door.

"Another bonus is the portable hand held key pad which will allow dimmers
to be controlled locally, eliminating the need to have a lighting console
operator present in the control room during luminaire focusing or routine
adjustments. For lighting and technical rehearsals a lighting designer's monitor
and remote control have been installed at the rear of the stalls.

"As is the case with the majority of West End theatres, there is no
permanently installed sound mixing console or fixed proscenium cluster.
These, together with other sound equipment, are typically brought in and used
on a show by show basis. Given the budgetary restraints we considered that
it was more important to provide an installed wiring infrastructure system to
which equipment can be connected as required.

Two temporary sound positions were selected, one is in the fairly traditional
location at the back of the stalls, the second is in the centre of the dress circle
with removable seats in this area to allow a sound console and ancillary
equipment to be installed as required. Audio boxes are placed under the floor.
to enable equipment to be easily connected to
the main system. Delay loudspeakers and effects
loudspeakers have also been integrated into the
soffits of the auditorium and the side walls
respectively.

"Building-wide show rely and paging systems,
a closed circuit TV network and an FM system for
the hearing impaired have all been designed and
implemented by Theatre Projects Consultants.

"As part of the rebuilding process undertaken
by Whitfields the entire stage house was gutted
and a new and more manageable grid leading
gallery installed. The old safety curtain has also
been replaced with a single piece rigid framed
curtain clad on the audience side with proflled
sheering, in a steel finish to complement the
auditorium. The new stage floor has been
designed to permit portions or all the floor to be
removed to facilitate the requirements of
particular productions. Two rows of chain hoists
have been integrated into the auditorium ceiling
to support a sound cluster or advance lighting bar.

"These seemingly diametrically opposed
viewpoints of restoration and the installation of
contemporary production facilities have been
successfully reconciled at the Savoy to create a
theatre which will answer the needs of modern
production companies and also look stunning."

Two PLASA members were involved with the
direct installation. Glantre Engineering were
awarded the contract for the supply of the
production lighting system, Shutsounds the
sound installation. The lighting equipment
includes the already mentioned Strand Lighting
Nova control console, the latest in their Galaxy
range of control desks. The system supplied has
two theatre playback panels, a channel control
panel, a group masters panel and a
memory/output panel. A custom panel was also
included which has controls fitted for houselights,
independents and dedicated orchestra dimmers.
Facilities have been provided in the stages for
duplicate remote colour monitors.

Dimmers are the MD version of Strand's EC90
digital range. Four dimmer racks house a total of
224 2.5KW and 30 5KW dimmers. An additional
small EC90 rack was supplied with 18 2.5KW
dimmers for houselights which can be controlled
from dedicated push-button control panels in
addition to the Galaxy.

For Strand Lighting it is no less than the fourth
time in the history of the theatre that they have
been chosen to supply the complete stage lighting
system. Their close relationship with the building
began with the major reconstruction in 1929
when they carried out the entire electrical
installation. A special hybrid 52 dimmer

Theatre Project Consultants' Jerry Godden
(centre) pictured in the new Savoy auditorium
with Matthew Tonks (left) and Derek Gilbert
of Glantre Engineering.

switchboard was built comprising a mixture of
resistance dimmers and liquid pot dimmers.
In 1960 Strand was called in to replace its 1929
installation and upgraded the theatre to have 120
remote-controlled transformer dimmers and a CD
control console. The third refit, in the early 1980's,
brought the theatre into the modern age of
electronics with a Duet memory desk and thyristor
dimmers.

Luminaires for the basic house rig are all from
Strand and includes a total of 166 Cantata,
Cadence, Prelude, Punchline, Iris and Nocturne
units and two Solo CSI followspots. Four 9m
internally wired bars and assorted cabling was
also supplied. A custom-built Worklight rack
manufactured by Northern Light handles both the
worklight and independent circuits. Dedicated
control panels are located in the lighting control
room and on stage, with local control switches
positioned in all technical areas.

Shutsounds, whose latest theatre credits
include Glyndebourne Opera House and the
Lyceum Theatre in Sheffield, evidently won the
race for the sound installation by a short head, and
Dawn Atkinson explained the background to the
project in more detail.

"In essence, it called for an extremely flexible
audio system, easy to use and integrated as
unobtrusively as possible with the unique interior
of the venue," he told L&S. "Flexibility was
paramount because the Savoy will play host to a
wide range of touring companies, each with its
own peculiar audio needs and preferences: "lack
of system adaptability in many of the old theatres
is the bane of every touring sound manager's
existence."

"The audio system now in place at the theatre
nearly pre-empts many common problems and
frustrations, and is designed to assist sound

Shutsounds engineers set up the sound.

Matthew Tonks (left) with Richard Desmond,
Savoy chief electrician, at the Galaxy Nova.

Main fly gallery with socket boxes.

engineers in every area of their work. Deploying
a wiring infrastructure was the logical solution,
and that, with a number of special adaptations, is
primarily what the installation comprises. Facility
panels are located at strategic positions around
the stage and auditorium, allowing connection of
mixing consoles, stage boxes, loudspeakers,
microphones and cue lights.

The positioning of the facility panels also
enables front of house engineers to operate shows
from all two levels in the auditorium.

"Some features of the Savoy installation are
unique amongst West End theatre sound systems.
For example, many of these venues most
commonly use Meyer loudspeakers, and the
facility panel beneath the stage is designed to
allow engineers to simply position their kit and
plug into the panel. Another unusual feature is the
speaker delay system. In many West End theatres,
managers do not permit touring companies to
operate their own delay systems. Anticipating this
problem, Theatre Projects designed a speaker
delay facility, fully integrated into the auditorium
interior, which was installed by Shutsounds.

"In every area of the installation provision has
been made for all standard industry equipment,
and the best wares in which that equipment can be
put to use. The Savoy is one of the few West End
venues, if not the only one, that is equipped to
meet the audio needs of practically every
individual theatre company," explained Atkinson.

More than 180 craftsmen and sub-contractors
were working on the Savoy site at peak periods,
and that, coupled with the man-hours spent on
research and special projects right down to many
smaller items such as interior light fittings, shows
in the price - a projected total cost of £11.4m. It
is now a most beautiful theatre auditorium, whether
Art Deco happens to be your particular preference
in style or not. And for that we have to thank the
Savoy Hotel, who put a realistic figure on the
insurance value and collected the cash to pay for
"it all when the 1990 fire struck.

The Savoy Theatre re-opened on July 19th
1993 with a gala charity performance by
English National Ballet.

Credits:
Architect: Whitfield Partners
Theatre Consultants: Theatre Project Consultants
Consulting Engineer: Max Fordham & Partners
Production Lighting Systems: Glantre Engineering Ltd
Audio Installation: Shutsounds Ltd
Auditorium Seating: Hille Ltd
Curtains/Drapes: Mick Temlin Ltd
Stage Rigging: Eurotrak
Management Contractor: Boris Construction Ltd
We're proud to be part of the long running success . . .

Strand and The Savoy

Strand Lighting

Strand Lighting Limited
Grant Way, Isleworth, Middlesex,
TW7 5QD.
Telephone 081-560 3171
Fax 081-568 3103

3 Apollo Studios
Charlton Kings Road
London NW5 2SW
Tel: 071-482 4224 Fax: 071-284 0636

For the Savoy Theatre, the complete stage lighting sub-contract was carried out by Gliante Engineering and included a Galaxy Nova console, ECG30B dimmers, working light system, socket boxes and luminaires.

Gliante specialises in lighting, sound, rigging, AV, conference and projection systems for theatres, halls, studios, presentation and leisure venues.

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Gliante Engineering LTD
2 Creymyl Road, Reading, Berks, United Kingdom
Tel: 0734 500711 Fax: 0734 505608
Anyone conducting business in the Far East will, I'm sure, be quick to acknowledge that Asia is currently the growth market for the leisure industry. New prospects are emerging in developing countries such as Vietnam, China, Cambodia and Thailand, whilst those further along the chain of 'westernisation' will soon be able to give the Europeans and Americans a run for their money. Singapore's economic miracle has made its people rich, and like the nouveau riche all over the world, they are flaunting their wealth for all the see, particularly in the leisure markets, where the lighting and sound industry's foray into the Pacific Rim is beginning to make itself felt.

As a result, Pro Audio & Light Asia might prove to be the show to watch in the years to come, and may well spring a few surprises. As things currently stand, however, with the show still in its infancy, it has yet to earn its spurs for major launches. I suspect it will have a fight on its hands as it seeks to establish itself as a major event in a calendar which sees its closest neighbours, SIB Magic and PLASA, currently taking all the prizes. Nonetheless, it did tease several smaller launches and a large number of enhancements out of those exhibitors present. Not surprisingly, the Brits were there in force, clutched together in the quiet hall, with a few outposts dotted around the twilight zone at the noisy hall. Under the watchful eye of PLASA, organisers of the OTI-sponsored group, they set up camp and created a kind of 'Brit Row' with Union Jacks to the fore.

Espotus were in the frontline with the latest line-up of Allen & Heath desks. Behind them Turbosound introduced the first in a new series of installation loudspeaker products: the TCS612 is a bi-amped three-way design employing a 12" LF driver and a new 6 1/2" co-axial device in a quasi-trapezoidal enclosure. Also on stand were BSS who were showing the TFC-900 Varicurve equaliser analyser controller, a portable, wireless remote control that allows the engineer to address a system of up to 16 Varicurve dual equaliser analyser units from anywhere in a venue. Programme event control, even of other non-BSS MIDI devices, is available, plus hard storage to PCM card for recall. Alongside Precision Devices had the Reference Series P1550, 1850 and 2150 high power, cone transducer which is designed to provide powerful bass frequencies with minimal distortion and power compression. Light Processor arrived at the show with their well-established range of discotheque products in the new Lightpower livery. Also on stand was the CQ range of desks and dimmers, together with the latest version of the Inigator. New to the East was the 24-channel DMX to analogue demultiplexer, the QDMX. Notable amongst its features is its LCD display for setting the start address and a safety net scene store to provide lighting in the event of a breakdown in the DMX signal. Input/output sockets for the DMX signal are fitted in both 3-pin and 5-pin XLR format, whilst analogue output sockets allow for four or six channel groupings.

For Martin Audio, the show presented an ideal forum in which to introduce the DMX series to the Asian market. Distributors Hawk and have recently installed part of the DMX range into TGI Fridays in Singapore and also at the Ozone Nightclub in Penang. Drawn by the covers of a new DL414 Quad Auto compressor/limiter which majors on its switchable hard/soft knee compression, peak level control adjustable between 0dB and +16dB and balanced XLR inputs/outputs.

Further down 'Brit Row' Colston were plying their wares in a sound booth-cum-cinema. It was a haven in which I would have been willing to see the show out, but alas it was only a one-seater cinema and unfortunately over-subscribed. The soundtrack to the film was provided by the impressive SR Series, whilst on the main part of the stand the new SRi series was getting its Asian launch.

Kam released two additions to their established M2/2/2/2 and Kam ranges. Both 19" mixers have three phono inputs, EQ for DMIC and output, split cue and assignable crossfader.

Many companies were in Singapore to introduce new products to the Asian market: Strand Lighting gave the Asia range a first airing, Penn had their familiar trust, Lucian Pali Laserpoint set up stall with the Pololite video wall and A C Lighting had the Wholehog, a product that most likely have them rubbing their hands with glee as it continues to scorch a trail through the touring wilderness.

Marketing were showing the Cameron multi-effect control system for video monitors, for which they are now marketing agents in the Asia Pacific region. Amek had their own, together with TAC and Langley hardware. The AV2 automatic volume control which was getting its first taste of Singapore on the stand of Formula Sound. The unit, along with the Sentry environmental noise control unit, was well received by those whose misfortune it is to have to address the problems of excessive noise in venues and workplaces. Next door Acri were testing the waters with the SmartTrack digital dimmer, a debutante at PLASA last year.

On the stand of Studiomaster was the Star System, initially designed for recording, but now the subject of much interest in the installation market. It has eight balanced XLR mic inputs with 48V, 10 stereo inputs for videos et al. Four with EQ. Cloud's new products take them away from discotheque sector and move them firmly into the pro-audio arena. The show was the production launch of Cloud's compressor/limiter, the OX235 which has a somewhat unique programme dependent circuitry, claimed by Cloud to give transparent sound under heavy usage. The other product of note is the CX233, a fully assignable stereo mixer/zone with five inputs and three outputs that has been so well thought out that it's nigh on impossible to begin to list its features here. A call to Cloud will serve you better.

LifeStructures, one of the 'outposts' with Jem and Wembly, came to the show with their familiar trussing ensemble, which provided the canopy to Jem's launch of the Mark II 220 smoke machine. This redesigned model now has a universal electric remote, high powered heat exchanger, XLR connectors and 0-10v input. Jem's Jon Potts was full of goodies and also new was the Mark III Jem Jogger which has been totally upgraded, again with electric timer remote with 5 pin Din connector and 1,000W chamber. Lip his other sleeve he had the new Y Mark II, an entry-level machine with new electronics, and now complete with remote control.

Paul MacCallum of Wembly, meanwhile, was hoping to announce two new relationships and confirmation is expected soon on Know handling their products in Singapore and Dubai, and Trinity

Freddy Lloyd (left) with Zero's Lightmaster XLS running the lighting on the on-screen mini theatre.

Part of 'Brit Row': A C Lighting had the combined talents oflands, Gelstream, Vision and more.

COEF has been manufacturing lighting effects since 1993 but only recently under its own name.

Roboscan, Robohap and Robocolor pull together for the Martin lightshow.

Turbosound launched the first in a new series of installation loudspeakers.
wasn't on show, talk centred around the LODI-launched Medallion which they started shipping in April and to which updated software (version 1.04) has been added. Tim Bachmann told me they hope to be in a few months to send out a further update. This new version features disk-file management and the ability to relabel and reorganise cues with selective retrieval. Future enhancements will feature an expansion of macros from 16-100.

Stephen Meenan of AVX Systems, also on the stand of Electro-Acoustica, was showing the upgraded VTLanV, which has been repositioned to allow the larger master station and now has 32,000 individually addressable areas, as opposed to the 250 of yore. It's the first truly digital life-saving PA system, and E-A have just won a $1m (Singapore) contract to supply overall control to the existing PA system on the nearby island of Seromos. 35 VTLan V5s will be installed in mid-August.

Altec Lansing were ticking over nicely with the new 9864-6A 'Engine', a high-powered coaxial speaker component mounted in a bass horn cabinet, while DAS had Factor 5 - a new monitor which incorporates a recently developed 5" bass unit and a ferro-fluid-cooled high-frequency tweeter.

The noisy hall was not for the faint-hearted, but the highlight of the day was by virtue of the F-factor of its lights. In the capable hands of Carl Dodds and John Lindell, Coemer put on a show that was slick and efficient. The Clay Pask/Pulsar combo stepped up a notch with the Asian debut of GoldenScan 3, and Lampo kicked bass with their Colonials, Dernojo and Apache effects.

COEF was the new kid on the block: the company used to manufacture SCH - now the two have gone their separate ways. The former is doing very well with its range of Compact scanners and new effects, the Tunnel and Astro, whilst the latter are now manufacturing their own lighting effects.

High End were showing a new version of the Trackspot which has a more compact form and improved optics, giving a 25% improvement in brightness, according to Bob Schachter; here was yet another one with a launch to come, this time the big guns are being saved for LODI in Orlando. The Multilight unit has also been enhanced with a new lamp.

New Spectacolor was prime mover on the stand of Ness, whilst La Novaleight had the world launch of Revolution which can produce a wide range of lighting effects and Cometa, an eight lamp unit which has synchronised independently operating mirrors. Studio Due had on stand the newly launched Stratos, a motorised spot with 300
degs of movement, two colour wheels, rainbow effect, two gozo wheels (one with rotating gobo) and an adjustable frequency strobing effect. Although was the Mini Beam, again with 300 degs of movement, six colours, rainbow effect, six gobos and strobe facility.

Fal were previewing products to be launched officially at PLASA. New scanners include the Primoscan 8 and the Supercleverscan 10. The Prime now has eight colours and eight gobos with colours that are now interchangeable, whilst the Super 10 now has 10 gobos and colours, both of which are interchangeable. Once again, the bait was laid for PLASA and Paul Dodd, who designed and programmed Fal's lightshow, promised that there would be a new mini Octopus at Earls Court, a fraction of the size of the current unit which will operate in what he called 'a slightly different way, offering some very interesting patterns'. He also hinted at a new Colourchanger, yet to be named, that will feature 10 interchangeable colours, strobing facility and black-out.

One of the most interesting things about working at exhibitions overseas is the opportunity to explore the host country and to learn something of its customs. Singapore was quite a revelation to me, not only because on the business front there is a strict code of conduct (if a person offers his business card with two hands, it should be accepted with two hands and never ever be written on), but because of the laws of the country that have earned it the nickname 'Fine City'. Drug trafficking still carries the death sentence: jaywalking, smoking and chewing gum are all subject to legal niceties and can bring the innocent kerb-hopping, smoking, masticator to his knees with hefty fines meted at the merest sight of a twigging jaw. However, the one that continued to fascinate was the $150 fine levied on those who forget to flush the toilet. It would be interesting to know how this particular misdemeanour is policed. It may also interest the Singapore Government to know that, given the antics of exhibitors abroad, I calculate that, as a group, we are in debt to them to the tune of at least $1m Singapore dollars.

Your sister-in-law, one of the most interesting things about working at exhibitions overseas is the opportunity to explore the host country and to learn something of its customs. Singapore was quite a revelation to me, not only because on the business front there is a strict code of conduct (if a person offers his business card with two hands, it should be accepted with two hands and never ever be written on), but because of the laws of the country that have earned it the nickname 'Fine City'. Drug trafficking still carries the death sentence: jaywalking, smoking and chewing gum are all subject to legal niceties and can bring the innocent kerb-hopping, smoking, masticator to his knees with hefty fines meted at the merest sight of a twigging jaw. However, the one that continued to fascinate was the $150 fine levied on those who forget to flush the toilet. It would be interesting to know how this particular misdemeanour is policed. It may also interest the Singapore Government to know that, given the antics of exhibitors abroad, I calculate that, as a group, we are in debt to them to the tune of at least $1m Singapore dollars.

Tan Cheng Hoo of Lingtec, Singapore with the DAS Factor 5 monitor.
CARVING OUT A NAME
Ken Dibble reviews the PT-2400 amp from Carver

It seems that users either love or hate Carver Magnetic Field Power amplifiers. I have to confess that, after some five years' hands-on experience with these products, I fall very much in the former category.

All these amplifiers employ Bob Carver's patented 'Magnetic Field' power supply principle in which energy is drawn from the AC supply line during periods of quiescent or low power operation and stored to provide high levels of instantaneous energy under large signal conditions. As part of this philosophy most Carver amplifiers have more than one HT rail supply - the PM-1200, for example, having one at +/-36V, one at +/-75V and one at +/-12V, with decreasing current capability with increasing rail volt.

A feed-forward circuit is used to select the rail line appropriate to the voltage swing requirements of the incoming programme, thus ensuring that the best combination of voltage/current supply is available to handle the programme characteristics. This is why many amplifiers of this design will not drive continuous sine wave signals at full-rated output power and why certain PA hire companies have found that meeting the demand for sustained low frequency level required by today's touring bands into the very low load impedances which result from paralleled 4 ohm sub-woofer cabinets, can be a problem.

However, the big advantage from this approach comes in size and weight savings - for example, the now discontinued Carver PM-2.0 came in a 2U x 300mm deep rack package, weighted just 5kg, and delivered in excess of 800W programme per channel into 4 ohms. Literally hundreds of these are still used by Clair Brothers with phenomenal economies of amp rack size and weight. In addition, the power supplies are stated to be considerably more efficient than conventional designs, protection and control facilities are easy to implement and the sonic quality which results from the high headroom provided by the high voltage rails is indeed impressive.

Following several years of close collaboration between Carver and Clair Brothers, a new range of high power products aimed specifically at the pro-touring market have been launched. These no longer exhibit any compromises in terms of sustained low frequency delivery or low load impedances, with the PT-2400 reviewed here being the flagship model.

PT-2400 Overview
This is a 3kW, dual power supply workhorse in a 3U rack package. It is still only 300mm deep and at 20kg - although about half the weight of any 3kW amplifier - must be the heaviest amplifier Carver have ever produced.

It comprises literally two complete amplifiers, each with its own separate power supply, in a single chassis, even to the provision of two heavy duty, shrouded, IEC mains connectors with make-up cables and retaining clips - this being necessary as the chassis is not capable of being run off a single 13A socket. In addition it has a host of features for maximum convenience and flexibility. The front panel layout can be seen from the photograph top right and the amp's rear panel is shown in Fig.1.

Facilities
The input connections are either by XLR type sockets or via a 6-way screw terminal strip to facilitate hard-wiring within equipment racks. The XLR inputs however can be switched to pin #2 hot or pin #3 hot by means of a rear panel recessed slide switch - a nice touch.

There are three further recessed switches, one to engage the 'clipping eliminator' circuit, one to switch the amplifier into its 'series mono' or bridge mode and one to select the 'dual mono' mode. A transparent cover is provided so that once set these switches can be protected from inadvertent or unauthorised re-setting if required. The 'dual mono' facility is interesting as this enables both amplifier channels to be driven from the channel #1 input using only the channel #1 volume control. By linking terminals between the hard-wire input block the channel #2 XLR can then be used as a link-out facility to feed another amplifier.

The outputs are duplicated and appear at each 4mm binding posts on standard spacing and arranged in alternate pairs so that normal outputs can be derived across each pair and bridged outputs across adjacent red terminals using a standard 2-pole banana plug. Again it is a neat and intelligent way of doing things.

Another feature which is virtually unique to Carver is the provision of a built-in sequential turn-on facility, whereby one amplifier can be used to turn on an entire rack in 3-second intervals, thus overcoming the supply line sag or breaker trip problems arising from the high inrush currents demanded by large amplifiers. This provision may also be used to facilitate remote control of the amp racks - e.g. from the mixing desk location using low voltage DC switching logic. The facility is pre-selected by the 'sequence' switch on the front panel and is accessed via a second 6-way terminal strip at the rear - which also incorporates a chassis ground-lift strip.

The design includes extensive protection provision including short circuit, thermal, DC offset and excessive HF level as well as soft-start, input mute and a switchable clipping eliminator.

Construction
The amplifier is built on a substantial 12 gauge aluminium open-sided chassis with pressed steel rear panel and front sub-panel and has an extended aluminium heat-sink tunnel running back-to-front through the centre with a 10cm axial fan at the rear. The output devices are attached along the top and down the side of this with the corresponding driver PCBs slung alongside.

It looks like a complementary output stage in which three Toshiba MOSFETs per side provide the RMS power stage, with three TIP35C/36C devices per side providing the first stage of headroom extension and a fourth TIP device per side providing the second stage. Apparently regulated by a rail commutator device, giving 14 power devices per channel in all. However, as I do not have a circuit diagram to hand this synopsis should be regarded as conjecture based on observation.

To either side of the central core are the two 'magnetic field' power supplies and the control electronics. These are screened from the driver boards by earthed mu-metal screens and comprise two massive iron core chokes, a 26A bridge rectifier, two huge 10,000µF 150V capacitors, four 3,300µF 80V capacitors, the SCR device which is the heart of the 'magnetic field' concept and its associated firing circuit. This actually is a highly ingenious arrangement as not only does the SCR regulate the supply rails according to the dictates of programme demand, it is also controlled by the protection circuits and so does not fire the charge store components under fault conditions.

At the rear of the LH power supply module is the loudspeaker output termination board whilst behind the RH module is the input pre-amplifier and function switching PCB - the latter being provided with another mu-metal screen and linked to the respective channel electronics by ribbon cables.

The build quality is very good indeed, if somewhat cramped and 'busy' by comparison to most UK amplifiers and employs high grade components on well made and nicely laid-out PCBs. My only reservation would be access to the output MOSFET devices or the output driver
boards in the event of a failure - which, even with the most sophisticated protection circuits, can happen. This would necessitate complete removal of one of the power supply modules with its numerous plug-in connections in order to access the board and the removal of all 14 power devices to access its underside for device replacement. Not a job to be tackled on the road I would think.

The finish is of the usual exemplary Carver standard with a superbly anodised slate grey front panel with all controls recessed onto the steel chassis sub-panel behind, and with a high quality black stone enamel paint job to the remaining metalwork. It has a very substantial and solid feel to it and the presentation makes a clear statement of purpose.

**Sonic Quality**

The amplifier was auditioned on a pair of Urei 809 monitors and a pair of Mission 763 hi-fi loudspeakers using a selection of favourite CDs played on a Mission PCW-2000 with a Haller DH-110 pre-amplifier. It has to be said that it quite out-performed the Haller DH-220 hi-fi amplifier which normally drives these loudspeakers, with absolute accuracy at low frequencies, a crisp and open high frequency performance, and of course, an abundance of power, resulting in virtually no headroom limitation whatsoever.

I can’t remember hearing a "professional" amplifier sound this good since I reviewed the Carver PM-1.5 and C-Audio RA-300 back in 1988/89 for Disco Club and Leisure International or since playing with a Crest Audio 6001 circa 1990.

The amplifier was also tested on the road driving the LF section (Altec 817s) of a 4-way live concert sound system and on a 2-way Bose 802 discotcheque system. Again, the effortless power, utter clarity and freedom from any hint of headroom limitation allowed the loudspeaker systems to run uninhibited with an obvious benefit in terms of loudness and quality.

**Specifications & Lab Test Results**

**PT-2400 Electrical Specifications**

<table>
<thead>
<tr>
<th>Power Output (20Hz-20kHz)</th>
<th>Both channels driven</th>
</tr>
</thead>
<tbody>
<tr>
<td>8 ohm/ch</td>
<td>750 watts</td>
</tr>
<tr>
<td>4 ohm/ch</td>
<td>1200 watts</td>
</tr>
<tr>
<td>2 ohm/ch</td>
<td>1500 watts</td>
</tr>
</tbody>
</table>

Series mono operation:

| 8 ohm                      | 2400 watts |
| 4 ohm                      | 3000 watts |

Output Noise:

- (from rated power @ 8Ω / A weighted) 90 dB
- Frequency Response 20Hz to 20kHz ±0.5dB
- Slew Rate: 2.5V/µs
- Distortion (at 120W) 0.6%
- THD Damping Factor @ 200V @ 1kHz
- Input Sensitivity 1.5V rms
- Input CMRR 70dB
- Voltage Gain 34dB
- Input Impedance 15k ohm each leg

Connections:

- XLR, barrier strip
- Output...5-way binding posts, 2 sets/channel
- Maximum Current Draw...40A
- (4 ohms: rated power)
- Cooling rears: to front w/100 CFM maximum Weight 43lbs
- Dimensions: 53.5 x 19 x 12.75" in.

**Fig 2. Power response curve at 50V into 4 ohms which equates to 1dB below the 4 ohm clipping level.**

The following table shows the measured vs rated output RMS sine wave power levels, measured at onset of clipping, both channels driven and loaded, clipping eliminator disabled, with AC mains supply maintained at 240V:

<table>
<thead>
<tr>
<th>Load</th>
<th>Rated &amp; p</th>
<th>Measured &amp; p</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 ohms</td>
<td>1500W</td>
<td>Ch. 1: 1571W 142W</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ch. 2: 1571W 142W</td>
</tr>
<tr>
<td>4 ohms</td>
<td>1200W</td>
<td>Ch. 1: 1201W 118W</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ch. 2: 1201W 118W</td>
</tr>
<tr>
<td>8 ohms</td>
<td>750W</td>
<td>Ch. 1: 747W 718W</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ch. 2: 747W 718W</td>
</tr>
<tr>
<td>16 ohms</td>
<td>Not stated</td>
<td>Ch. 1: 747W 718W</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ch. 2: 747W 718W</td>
</tr>
<tr>
<td>4 ohm bridged</td>
<td>3000W</td>
<td>Ch. 1: 3000W 2950W</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ch. 2: 3000W 2950W</td>
</tr>
<tr>
<td>4 ohm pulsed</td>
<td>Not stated</td>
<td>Ch. 1: 3000W 2950W</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ch. 2: 3000W 2950W</td>
</tr>
</tbody>
</table>

The pulse test signal comprised a broadband tone burst signal using the Gates Time Mod Llocity facility of an IEC130/IEC17A audio analyser and an oscilloscope to observe peak clipping within each pulse burst envelope. The tone-burst pulse width was set to 0.25sec and the repetition rate to 0.5sec.

It was observed that the clipping indicators at the top of the output-levels graph were illuminated exactly on onset of actual clipping as observed on an oscilloscope, under both sine wave and tone burst conditions.

The unweighted noise level was measured with both inputs open-circuit, at 62dB. Taking the maximum RVR/Sine wave voltage output this gives 92dB as the dynamic range, or 106dB based on the 100V pulse power output - all of which is pretty impressive.

**Summary and Conclusions**

At least I was honest and admitted that I am of the "pro-carver" school, and I have to say that the PT-2400 fully justifies that confidence, giving three very positive carver amplifier reviews spanning a five year period. It fully meets the rated output power levels, it delivers effortless power into loads down to two ohms. It sounds superb, it has a lot of non-gimmick features that are of real user value, it is extremely well built and looks and feels the part. And where else can you get a full 3kW/4 ohm amplifier in a 3U rack package just 300mm deep and weighing in at 20Kg?

Carver is distributed in the UK by AKG Acoustics, Vienna Court, Lumina Road, Godalming, Surrey GU7 1FG. Telephone: (0483) 425792.

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A perennial question amongst theatre producers is where the next generation of theatre goers is going to come from. The question has really come to light in the current generation, as people brought up with television and the cinema choose these sources for their entertainment.

The solution has only started to appear in the last couple of years. Someone realised that, through extensive television coverage and press interviews, audiences were very familiar with films before they actually went to see them. Theatre couldn’t afford a similar level of advertising, but what if they chose material that was already known? And then applied that the age-old technique of using a star-name, though preferably a young star from television or the music business with enough appeal to the new generation.

The first product of this technique was the new Joseph and his Amazing Technicolor Dreamcoat, which continues to pack the Palladium. The material was known - almost every schoolchild in the country has seen or performed in Joseph at one time or another - and Jason Donovan provided the youth appeal. And if a technique works, why change it? Hence Grease. Familiar from the mid-70’s John Travolta/Olivia Newton-John film and also from school performances, the new production at London’s Dominion Theatre is the first to feature the extra material from the film. Add in the star appeal of Craig McLachlan (ex-Neighbours), and Debbie Gibson and the result should be - and is - a smash hit.

All very interesting, but surely of little relevance in a technical magazine? Maybe, except that the youth-appeal has directly affected the technical work on the show. The anticipated punter are teenagers who have been brought up with the lighting effects and the sound quality of Top of the Pops, cinema and pop gigs. They are paying about the same, or even more, for their theatre tickets and are expecting the same style and quality.

The result on Grease is a mixture of styles and techniques which, at the end of the day, work well together. Terry Parson’s set design is relatively conventional, in the sense that all of the flying pieces are flat rather than house-shaped. The acting area thrusts out into the audience, and is defined upstage by a series of the slatted, rotating screens more usually seen carrying advertisements on roadsides. These rotate to show teen idol posters or distant skylines as required. The central unit flies to allow the band, who normally live on a platform flown upstage, to be dropped in for the overture, and later to perform at the school dance. Other skeletal flying pieces define the school or the burger bar, while tracks are used to bring on the unavoidable cars. And the whole lot is surrounded with pink neon, to add that glitzy fifties feel.

The lighting, however, is another story altogether. The challenges of lighting scenes fairly naturally and then dropping, in a moment, into rock and roll or pure fantasy, led lighting designer Mark Henderson to use many of the most sophisticated tools available. The conventional rig is a mixture of Silhouettes, Lekos, Minutess and Rainbow-Par 64s spread over the set, six electric bars on stage and a huge front truss, installed by Arrow Rigging, which compensated for the Dominion’s lack of front-of-house lighting positions. Much of the work is actually done by the moving light contingent - 15 120W HMI

ON STAGE GREASE

Robert Halliday on 'new style' lighting and sound at the Dominion

Super Scans and 24 Vari-Lite VL5s, both running from DMX12 control. A line of five DPA Digital Light Curtains ensures that every kind of moving light is represented, while a laser, some mirror-balls and countless sparkle strobes round off the effects.

The problem which confronted production lighting designer Simon Needle was how to control all of this equipment, both for the production period when rapid plotting would be required and then for the run when budget constraints demanded the electrics be dropped down to a single operator. "We tried out at all kinds of options," he recalls, 'starting with just running everything from a conventional lighting desk, although that would have been a nightmare for plotting. We then explored the different kinds of desk available, and settled on Compulite’s Animator to control the moving lights, with an Arri Imagine running the conventional rig."

Needle and Henderson both felt that the separation of control in this way was essential during the tight production period so that Animator operator Chris Dunford could sort out moving light sequences while Henderson carried out plotting states. The practicalities were worked out by Needle with Dave Ishenwood and his control team at White Light, which supplied the entire rig. The Animator sends out three DMX streams. Streams 2 and 3 were used for the movement control on the VL5s and Scans and sent directly to the appropriate units. Stream 1, used to control the VL5 dimmers, the scrollers and the dimmers for scroller-lamps, was taken out and combined with Arri’s DMX stream using an XTBA Smart Merge. Its ability to shift streams up or down, combined with a huge soft patch, leaves a single DMX stream which then passed through an Arri Reflex unit, giving a simple back-up, and on to the scrollers and de-mux units feeding the house dimmers and break-out boxes for analogue devices such as smoke machines.

As Simon Needle points out, though, this still leaves two operators. 'We had originally intended to overcome this by using a MIDI link between the two desks, but they didn’t seem to talk the same language.' The solution adopted was to use a Macintosh computer running a control package written by Richard Blaesdale. "This receives the cue information from the Arri and, on the appropriate cues, triggers the Animator, the other Mac controlling the DCLS, and the laser controller," Needle explained.

"We could have had the Mac triggering the Arri as well, but we decided it was better to have the operator pressing a go button rather than a space bar!"

In use, of course, all of this is invisible, but the technology does add to the excitement the show generates. 'Robert Stigwood, the producer, said to us: 'We’ve sold it as a pig,
they've come expecting a gig, so we've got to give them a gig," said Mark Henderson. His lighting certainly does that, with the Vari-Lites tending to vary between cues, and the Superscans doing the gobos work, a number of tight specials (including one cue following an actor that none of the four followspots could reach), and the sweeps and spins during the fantasy numbers. The VL5s, who have found a new fan in Henderson, really come into their own providing deep colour washes on the stage. As Needle says, "where else could you get deep blues like that, and consistently?"

To make sure that the light itself is visible, rather than just the result on stage, Needle deployed three DF50 haze machines. It's the first time that he's used these units, and is pleased with the results. "They do the job, yet don't leave residues on colour, and they're very economical - we've only had to top them up once in the entire production period."

The more usual smoke effects are generated by a pair of Skywalkers, some Howie dry-ice machines, selected after comparisons between them and low-smoke equivalents, and some of the tiny Scotty smoke guns. The overall result, especially from the DF50s, is excellent, giving a just-perceptible haze that fills the Dominion's stage with apparent ease.

The demand for a 'gig' type quality to the evening applies equally to the show's sound design, undertaken by control of Bobby Aitken of Autograph. Aitken's design is based around a Meyer system that features in much of Autograph's work, and contains a mixture of UPAT, UMI and UFMI loudspeakers, contained on the fake pros towers and providing under-circle fills, and 650RT sub-bass units hidden under the front of the stage. The system is run by a Midas XL3 desk, which Aitken enjoys, "for its sounds, which is more forward and 'bite' than others.

The show features a range of radio-microphones, from the new Senken head-mounted mics which offer some degree of resistance to performer's sweat, to hand-held microphones which, in some very neat blocking, seem to appear from nowhere when required. "There were demands from the producers to make the show more dynamic," Aitken added. "This led to the use of the hand-held mics, and also the installation of an off-stage vocal booth, since there is only so much level you can get out of body-mounted microphones." A result of these changes was the use of Midas VIP500 microphones.

As well as live sound, the show features a number of sound effects, ranging from the soundtrack of period songs playing as the audience enters to the effects of revving cars and the like. For these, Aitken is using DMP1000 Digital Cart Machines, which play sounds from 3.5" floppy disks. Both Aitken and sound operator Anno Christe like the units because of their high sound quality, but also because "the operating procedure is very similar to an old analogue cart," and so operators quickly become comfortable using them. Christe is helped with the show by a PC running a custom-written program which triggers the effects and re-programs the MIDI devices automatically. A particularly neat feature of this is the inset window which takes the conductor's camera feed, avoiding the need to clutter up the desk with more screens.

The show's resulting sound has caused one adverse comment from a critic in The Guardian, yet the teenagers at whom it is aimed seem to have no complaints, the cheers which erupt at the end of every number showing how happy they are with the result. To them, Grease is not 'stuffy' theatre, but an event to look forward to, then enjoy, then boast about to friends. It is FUN! The producers are already talking about a long run, no doubt slotting in new stars as and when required.

The only minor problem, which they discovered the day after the show opened when the band lift stuck early in the show and the performance was cancelled, is that an audience brought up with cinema shows very little listening when something goes wrong, the break-down making it to the front page of that well known theatrical commentator, the Sun. The old theatrical adage is that 'the show must go on'. Two thousand teenagers provides a lot of incentive to make sure that happens!

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PROVISIONAL PROGRAMME

CONTROL TRANSMISSION
ARE WE STUCK IN AN 8-BIT TIMEMARP
Chair: Derek Gilbert, Glantre Engineering.
Panellists: Adam Bennett, Arri; Philip Nye, DHA; Paul Mardon, Pulsar;
Steve Terry, Production Arts; Marco Van Beek, Vari-Lite.

GREEN, TEMPERAMENTAL AND SPIKEY
ALL YOU WANTED TO KNOW
ABOUT DISCHARGE LAMPS BUT WERE AFRAID TO ASK
Chair: John Watt.
Panellists: Don Hindle, CCT Lighting; Eddie Ruffell, Lee Filters,
and lamp manufacturer representatives.

ABTT INTO TRAINING
Chair: John Faulkner
Panellists: Tony Bond, National Theatre; Roger Fox; Joe Aveline, AETTI.

SOUND INSTALLS AND BSI
HAVE WE NOW GOT A STANDARD TO WORK TO?
Chair: Tim Frost.
Panellists: Mark Burgin, Shuttlesound; Alex Garner, Tannoy; Ken Dibble, Ken Dibble Associates;
Ivor Green, Creative Technikal Services; Vic Dobbs, Glantre Engineering.

SOUND CONTROL
OUT OF THE STUDIO AND ONTO THE ROAD
Panellists: Wladyslaw Wyganski, Outboard Electronics;
Mick Brophy, Aniek; Roland Hemmings, Theatre Projects.

VIDEO LIVE
Panellists: Malcolm Mellowes, Melville Presentation Services; Patrick Woodroffe;
David Crump, ScreencCo; Graham Burgess, Sony Jumbatron.

AUTOMATED LIGHTING - THE NEXT MOVE
Chair: Tony Gottelier, Wynne Willson Gottelier.
Panellists: David Hersey, DHA; Jim Douglas, Unusual Automation;
Ralph Dahlberg, AVAB; Andrew Bridge, LD; Danni Canuti, FLY.

ROBERT NESBITT INTERVIEW
Chair: Joe Aveline.
Graham Whale interviews Robert Nesbitt for the ABTT Archaeology Committee.

COLOUR - WILL DICHRIOCS EVER REPLACE GEL?
Chair: Michael Hall, Rosco.
Panellists: Donald Cameron, OCLI Optical Coatings; Jim Rees, Balzers;
Eddie Ruffell, Lee Filters; Durham Marenghi.

TIMETABLE

MONDAY
13TH SEPTEMBER
11.30 AM ~ CONTROL TRANSMISSION
14.30 PM ~ DISCHARGE LAMPS
16.15 PM ~ ABTT TRAINING

TUESDAY
14TH SEPTEMBER
11.30 AM ~ SOUND INSTALLS AND BSI
14.15 PM ~ SOUND CONTROL
16.15 PM ~ LIVE VIDEO

WEDNESDAY
15TH SEPTEMBER
11.30 AM ~ AUTOMATED LIGHTING
1.15 PM ~ ROBERT NESBITT
2.30 PM ~ DICHRIOCS V GEL
BOOKING INFORMATION

The information contained in this programme is correct at the time of going to press. Although the organisers will endeavour to present the seminars as scheduled, they reserve the right to alter the programme without notice. For the latest information on the full speaker line-up, please contact the PLASA office on (0323) 410335

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Following Philip Nye's Viewpoint on the future of DMX512 which appeared in our July issue, we've decided to extend the debate by printing three of the responses that arrived in the L+S office. The subject will receive a further airing at the PLASA Light & Sound Show in September where a seminar covering Control Transmission will take place on Monday 13th September. See full seminar programme, pages 44 and 45.

PLASA Working Party?

As PLASA's Standards Officer I welcome the ideas put forward by Philip Nye in his Viewpoint article in the July issue of L+S.

He asks that PLASA should set up a working party to find a successor to DMX 512 which we are all agreed has now come to the end of the road. Being helpful, PLASA has provided us with a list of eight facilities the new interface, which he has kindly called PLASA-Link, should provide. (In computer terms, we are talking about a protocol.)

I have looked carefully at his list, and there is no doubt that some specially-written and very sophisticated programmes, modern computer technology could do all that he has asked, although his item 2, a self-configuring network, is rather at the low-hanging fruit stage. However, it is not impossible, and even as I write, the well-known computer software company Novell is working on a so-called global network which will do for computer networks much that Philips has specified. As another example of what is possible, we have under the auspices of the International Electrotechnical Commission, the Open Systems Interconnect, a protocol which is laid down in thousands of pages of specifications and which can be made to do almost anything.

Soud Lighting's SMX is a cut-down version of this.

The problem does not lie in the technology but in people, and in their view of the commercial prospects of introducing something like PLASA-Link on a large scale.

Towards the end of 1991 PLASA sent out a questionnaire about a future protocol to 18 members prominent in the lighting field, receiving only 11 replies. Of these, all were in favour of a new protocol and all said 'yes' to the last question - 'If, after evaluation, a majority of PLASA members were satisfied with the new protocol, would you be prepared to implement it?'

However, on the ground matters were different, for when I spoke to some of the major manufacturers individually, each one said he had his own system which was of course either cheaper or better than his rivals, and because of commercial considerations, did not see any need to change. (Even Philip Nye has his own protocol, called Move Control Interface). In view of this attitude, I felt no further progress could be made and PLASA dropped the project at that time.

The letters included in this article show that this problem is still with us, as we now have two new contenders, each with a system which, as far as I can judge, is adequate for the purpose, but totally incompatible with each other and anything that has gone before.

Individual managing directors have their own views on what is best for their company, and this rarely encompasses the systems of a rival. One has only to look at the Digital Audio Theatre/Digital Light Dimmer discourse to realise this, and this is the rock on which Philip's excellent proposal founders. The system he outlines would undoubtedly push up the price of any lighting installation using it, since every luminaire would need a small microprocessor to carry out the required functions.

The actual microprocessor need not prove costly, only a few pounds, but the problems of getting it in place and keeping it working reliably in a harsh environment would cost much more. Of course, if every manufacturer implemented an identical protocol simultaneously the burden would theoretically fall equally on them all, but as we know, life is not like that.

We must also remember that the rest of the world will need to be persuaded to use PLASA-Link and fit the microprocessor in their products, an otherwise imported item would not work in a PLASA-Linked rig. Obviously, the United States Institute of Theatre Technology (USITT) and other similar international organisations will need to be consulted and involved.

There are also the difficulties that any new protocol would have to be rigorously policed and its documentation maintained, because before long some bright engineer would find a new way of implementing it at less cost, only to find much later there was a hidden incompatibility. I doubt whether PLASA could take on this task and one would eventually have to look at BSI.

Having said all that, PLASA is prepared to give full support to this idea of a new universal protocol. It must be emphasised however that we are looking at a really long-term proposal and very careful consideration will need to be given to it by all concerned.

The best place to get the proposal off the ground and test the strength of the support from manufacturers will be at the PLASA Show in September, when a seminar on 'DMX and Beyond' will take place. Steve Terry, the father of DMX will be on the panel and I hope everyone interested will turn up or make representations to enable us to judge the feelings of the industry.

Finally, let us hope this proposal is not too Nye-like!

George Thompson
Standards Officer
Professional Lighting and Sound Association

A Case for Compulite

I read Philip Nye's Viewpoint on DMX512 in last month's issue with interest. Compulite have just completed development of just such a product - or at least one that goes as far as we can in our capacity as a control system manufacturer.

Compulite have some ten years experience of design and manufacture of moving light control desks, firstly with the control systems for Telenex, and more recently with the introduction of the Animator range. We have always produced versions of the Animator specifically suited for various types of moving light, not only in terms of specially labelled key caps and provision of functions applicable to that particular head, but also by providing the appropriate output protocol. The majority of these are simply variations of DMX with either 10 or 12 bit resolution for the X and Y movement.

This line in the early days of moving light when designers would use a whole rig of Intellabeams or Vari*Lites, but as time moves on it has become increasingly more popular for designers to use several different types of moving light in one show. This has been accentuated by the introduction of the V15 which is invariably used in conjunction with a moving mirror fixture.

The Animator was seemingly set in a rigid output format, mainly due to the moving light manufacturers not standardising on a protocol rather than anything related to the architecture of the desk. You couldn't either set your desk up for, say, Syncrolite and have 10 bit resolution for the movement and have all the right key caps, or alternatively you could set it up for DMX-MIX where the system would output DMX to standard 8 bit resolution, but you could configure the desk for a wide range of different types of head.

The new generation of Animators to be launched at the PLASA Show later this year will have the option of being fitted with an output protocol consisting of 10 parameters with 8-bit data and 2 parameters with 12-bit data. A separate unit will then be supplied (the PLASA-Link) which will accept the Compulite protocol and have four separately driven outputs.

These outputs can be configured for any of the commonly available moving light protocols, such as Intellabeam and Syncrolite, it will then be possible to assign any of the desk spots as any of the output types. Thus it will be possible to have a wide range of heads being controlled from the desk simultaneously, some with XY resolution of 10-bit, some 12-bit and others running from standard DMX-512.

Well that covers most of it, but what about auto set-up? The Compulite desks already have the facility to be able to read back information from the Compulite digital dimmers about circuit breaker status, current drawn and rack temperature.

If the moving light manufacturers could agree on a return protocol there is no reason why you couldn't select auto set-up on the desk and it could detect each spot type and its starting address on the data line. I'd never say never, but, you know, it could take several years for the moving light manufacturers to agree on a bi-directional protocol standard.

Andy Stone
Divisional Manager
Compulite CB

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SDX - Beyond the Vision?

We read Philip Nye's viewpoint on DMX 512 with great interest as our company has developed a communications protocol which answers most of his needs and in some cases goes beyond his vision. The new code is named SDX (Show Data Transmission Protocol). Our purpose in designing the code was to overcome the problems inherent in DMX 512 and to present it for consideration as a new standard for show automation serial data transmission.

The code is based on a superset of the Manchester code which is the standard used for all forms of digital communications. This synchronous code is reliable, eliminates time skews, has high noise immunity and includes error checking and variable framing rates. The SDX code is designed to drive long lines over inexpensive cable and since there is no DC component to the signal the lines can be transformer coupled for low cost earth loop protection. The code is also fully compatible with all film, video and recording time base standards. Additionally, the code may be converted to DMX 512 using a simple circuit.

The current implementation of the SDX code blocks data into 512 bytes. However, 256 byte and 1024 byte blocking is available. 256 byte blocking allows for applications requiring a fast framing rate (up to 83 frames per second). 1024 byte blocking reduces the framing rate to a maximum of 20 frames per second but allows for a large number of devices to be controlled on a single data path.

In each data block there are 12 system bytes which contain the performance time (hours, minutes, seconds and frames), system information and status. The System information byte is user bits which are not pre-recorded and may be sent in real time with the show data. Currently, six of the system bytes are reserved for future use as command or special data packets.

Data blocking allows data to be double buffered. The whole data block may only be acted upon when it is complete and validated. This not only prevents a device from acting on erroneous data but also eliminates time skews between devices.

There is a diverse range of device types supported by the SDX code including: Lighting Devices, Servo Devices, Bit Devices, and ASCII Devices. These and other available device types support a full range of show equipment and media. Current implementation of the code gives resolution of device values up to 65,536 steps (16 bits), however this should not be considered the upper limit for future implementations.

Device values have many possible implementations such as percentages, on/off states, numbers and linear scaled values. Devices may also be assigned a quiescent value which is any value in the available range. With an eye to the future, the code can readily accommodate new device data formats. The protocol also supports systems that contain 'smart' devices that are programmed to respond at a particular time.

The only things we really question in Mr Nye's wish list is the concept of self configuration and device monitoring. In our experience both of these items are very expensive. In the case of device monitoring it can cost two to three times as much as the control system itself. Self configuration would require microprocessors on every device being controlled. Additional complexity naturally increases the risk of system failure and the chance that one faulty device will take down the entire data path.

A high data capacity, reliability and flexibility are the keys to the future of show automation data transmission. We feel that SDX has these features and more and we would like to present it for consideration as a communication standard. We invite interested parties to request a copy of the SDX protocol for review and comment.

Kevin Cutter
Senior Project Manager
R G Gray

Kevin Cutter holds a degree in Audio-Visual Communication and from 1980 to 1983 produced planetarium/multi-media shows. In 1985 he joined RA Gray and has designed control systems and provided technical support for dark rides, museums, and exhibitions. His most recent work includes control system design and technical consulting for the Pavilion of Spain at Expo '93 and Madame Tussaud's Spirit of London Dark Ride.
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