

LIGHTING+SOUND

International



ANDREW LLOYD WEBBER'S SUNSET BOULEVARD

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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 unfolds in its ghastly consequences, by retaining, in parts, the sense of a film sequence and of flashback; 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 without sharing the spoils with other impresarios, to say nothing of the problems of hacking someone else's theatre to bits to make it fit the concept, it has now become fashionable to acquire the theatre in which the production is to be staged beforehand. 'I liked the show so much I bought 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 1806



Norma Desmond's 'mansion', a rich golden amber and lots of practicals.

though the present structure dates from 1901, making it qualify as Victorian. The Adelphi in the Strand, may now have seating for 1501 (is the extra one for the Phantom?), 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 gadgetry 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 interaction 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! AL-W 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.

**Actor 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 miniaturized 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 effort has appeared to be tarnished in this incident for, in fact, the scale of his achievement has been 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, placing great restrictions on 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 obligatory Hollywood pool which arrives via horizontal scissor lift from the apron; several trucks are used for smaller intimate scenes and vignettes and to create Schwarz's Drugstore, Artie's apartment and Betty's office; 12 vertically flying panels, capable of 2m/sec. weighing 1/4 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' movie lot, which also involves slewing the side stage verticals with faux columns dropped from above - the latter achieved with a



The FOH lighting arrangement for Sunset at the Adelphi.



Andrew Bridge's favoured Light Palette 90 and Mini Artisan cheek-by-jowl in the new control room.

single counterweight moved by hydraulic motor, plus plywood, and dollops of beeswax to overcome the inevitable resistance; and the three articulating step units which can also convert into garages for the arrival at the mansion of the arriviste scriptwriter who is the ultimate victim of the diva's delusions.

It is not possible to give a full explanation of the difficulties and solutions applied to all these pieces, in an article of this length. Clearly the biggest problem all round was how to squeeze it all into the limited space available. For example, the 'mansion' set could not be suspended from the grid, which is original and found to be askew as soon as it was handed over to the production crew.

"The structural engineers were not happy that the Victorian steel could, in any event, take the application of the 17 ton load which would need to be applied," commented Barnette. So the load is counter-weighted to direct the load back to the head steels. "You can imagine that the problems of moving an 8.5 ton counter-weighted object, which has to traverse up and down stage when the roof trusses come six metres below the grid in places, was quite a problem. In the final analysis, we achieved it with only 75mm to spare on either side, which is really no tolerance at all." This involves the use of an enormous fluid winch, which is rated at 0.5L/rev. to move the counterweight cradle and a 5kW electric motor, on-board, which pulls the house on cables up and down stage. And, of course, all of this has to be backed up.

Another tricky problem was how to contain the forestage lifts, necessary to move the swimming pool, in a space of only 120mm, which was governed by the awkward sitelines of the Adelphi and the mass of services present below stage in that location. Not wishing to upset the MU by encroaching into the orchestra pit, Barnette has realised four scissor lifts which track up to 0.8 metres but still compress to 120mm. "There are added complications with the two downstage trucks which also have to cross this unit at various times," Barnette added.

All the truck winches are in the basement, together with the motors which lift the 12 flying panels. These winches have to rise up and down on vertical rods to enable the wagons to traverse the pool. Hydraulics have been generally used, and there are two 30kW pumps in the basement which feed a ring main for this purpose, but electric motors are employed for the side blinds, horizontal sliders and the house traversing motor. There are also a few manual pulls which, although using an incremental counter, have to operate to tolerances of 15mm!

Most of this complex machinery is intricately managed by a modular motor control system which has been developed by John Hastie and Simon Needle of Electrolite Control Systems in conjunction with Quin Systems, who are specialists in factory automation - materials handling again! The reason for the link with Quin is that they bring to the table a standard range of positioner units which can be used with any kind of AC or DC motor, or hydraulic ram. "There's no point re-inventing the wheel," as John Hastie wisely pointed out.

The front-end software for the PC-AT compatible which runs the system has been developed largely in house, very much along the lines of a lighting desk, with four playbacks and a control channel. Like a lighting desk, any range of cue numbers up to 999 can be used including 'point' numbers. Unusually, the Electrolite system allows live speed alterations during a cue and cue editing is very simple via the built-in tracker ball, which is an essential facility during rehearsals for such a show. Timed cues are easy to plot, either for one motor individually, or for a whole sequence, so that multi-motor cues finish on time without the previous hassle of balancing speeds between each driver; and cues can be plotted with 'wait' indications which works as a soft interlock. There is a 'virtual' facility for blind programming.



The Paramount Studio gate, formed from flying panels capable of travelling at two metres per second. Note the shadow projections.

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 strenuous problems for others also, including lighting designer Andrew Bridge, especially as there are several scenes where action takes place immediately below this structure. The solution was to build some lighting into the under-floor, and this was to include Vari*Lite's and DHL automated light curtains as well as Parcans and other conventionals (now called 'steam' lamps by Andrew and crew!) for which the tolerance, when 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 dimmers 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 fan assisted 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 traversing motor, to say nothing of the data links required for those dimmers and the Vari*Lite's, there being no room for tripes - a problem neatly solved by the ubiquitous Howard Eaton who installed McCaddy 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 sliprings.

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 STM and Permuss 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 Connexions. An additional seven Strand LD90 racks were also added and installed in the old rope 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 followspot 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 bar was required for Sunset, which was installed along with a motorized focus track for access. The control room, originally to one side of the circle, was redesignated to the old Bio 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 Artisan, the house Colorarc 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 77-input Cadac J-type desk, 27 Sennheiser radio mics, BSS delays, 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 safety 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 scenes 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 which 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 gauzes, 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.

technique.

Hence the need for all those FOH lighting positions. Once again Howard Eaton is involved - Andrew had chosen the Robert Juliat 1200W HMI zoom profiles, first discovered while in Paris for the Wild West Show at Euro Disney. It was suggested that with the Juliat'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 deg 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 HMI 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 booms, Strand's 1kW Optiques are used for gobo projection. Another idea had been to use Strand PALS, but Andrew wanted them converted to



LD Andrew Bridge, plotting cues at the LP90.

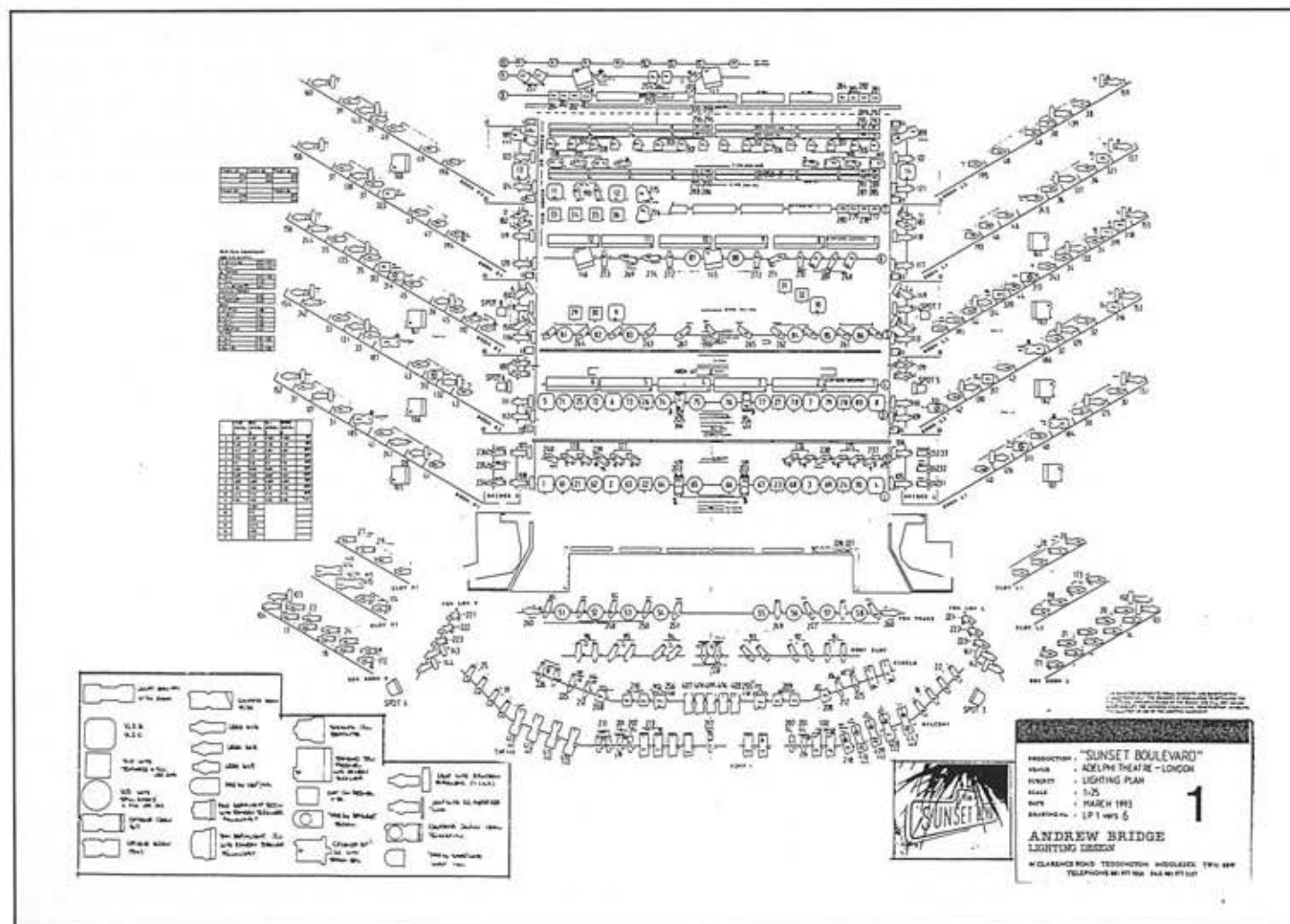


Sound designer Martin Levan, monitoring output.

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*Lite's 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 VL5s 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 VL4s, 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 VL5.) Aside 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 HTI 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 VL6 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 degs.) and the resolution of the beam iris 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 flare, but also for dampening as, obviously, the hotter they are, the noisier they tend to be. Aside from proximity to the actors, the orchestra is virtually unmic'ed and there is lots of dialogue with music underneath in the show, so noise would be a crucial issue. Otherwise the ubiquitous colour scroller was everywhere, on virtually every ellipsoidal in the rig. The show

followspots are six short throw Panis 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 11 o'clock at night without breaks. 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 here." 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's, conventionals, the scenery mechanicals, movie 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 writer, 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 degs, with ripple and water effects." KK 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 chases. 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 focusing was possible prior to the previews. "Remember also, 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 per 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.

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