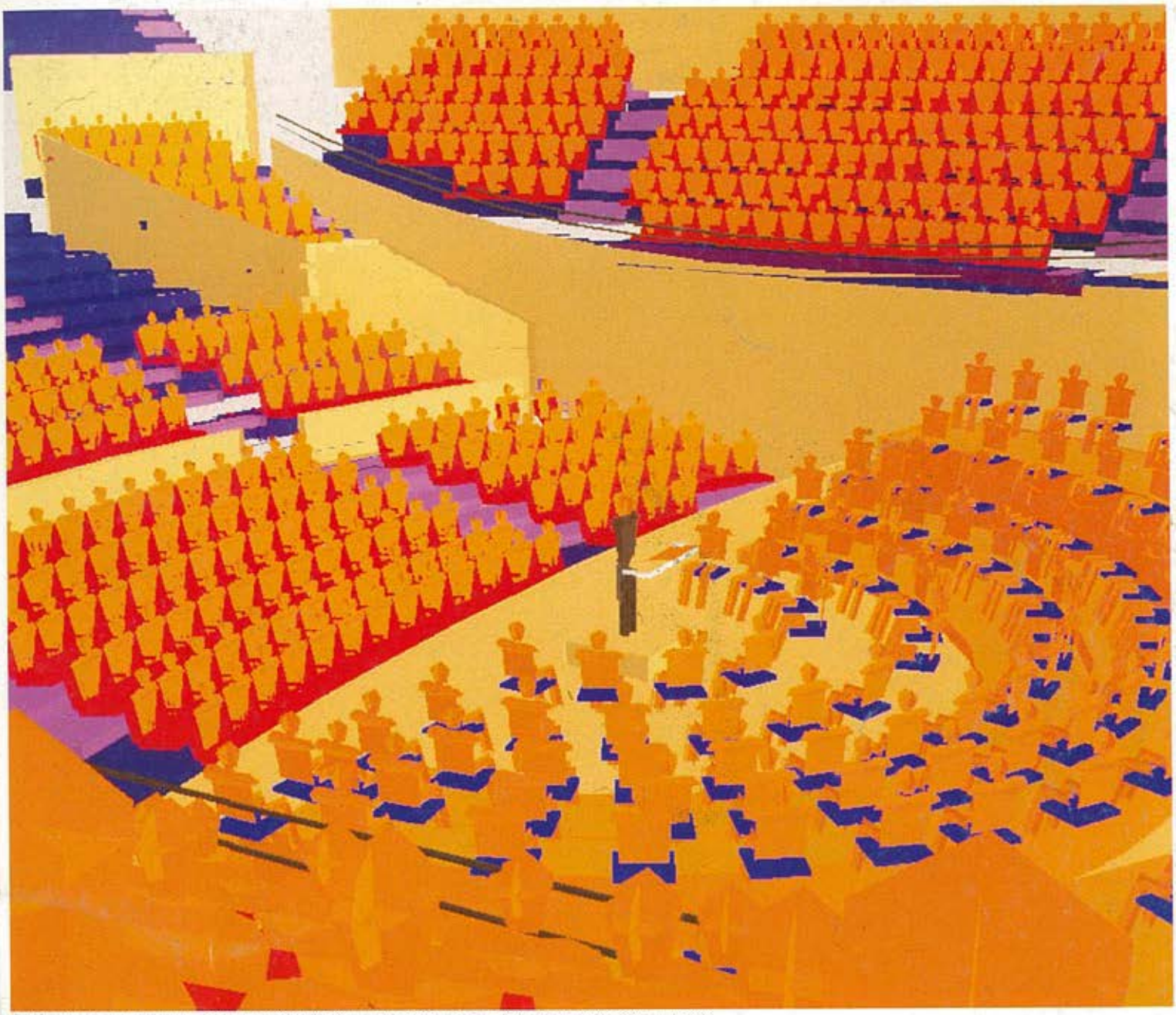
LIGHTING+SOUND International



SHAPE OF THE FUTURE: WALT DISNEY CONCERT HALL, LOS ANGELES (THEATRE PROJECTS CONSULTANTS)

- A Voyage of Discovery: L+SI pays Special Tribute to 35 Years of Theatre Projects
- Company in Profile: the success story of Formula Sound
- Imagination and a Holiday Inn special at The Royal Albert Hall
- Training for Tomorrow: The National Youth Theatre
- Show Automation and Kiss of the Spider Woman
- On Tour with the Red Hot Chilli Peppers

NOVEMBER 1992

KISS OF THE SPIDER WOMAN

John Offord researches the basic technical background and headlines a London-New York collaboration on the Showtrack automatic scenic control system

Substitute a spider's web with an intricate system of jail bar grilles and replace its ordained design abilities with man's current best in computer control and you get an idea of how much 'Kiss of the Spider Woman' relies on the dynamic of scenic form.

In the words of Robert Hewison in the *Sunday Times*, London's latest opening has as its principal assets the director Harold Prince ('brutal energy and technical skill'), a highly mobile design of steel grilles, and slide projections by Jerome Sirlin.

Straying away from our more usual main 'lighting and sound' theme (although basic information and some more detail on the projection is included later in this piece), I took advantage of the opportunity of a backstage visit to the Shaftesbury Theatre to see the mechanics and trace the source of the imagery.

Complex Jailbar panels and central stage truck that make up the constantly moving set for Kiss.

The contract for the automation was awarded to PLASA members Triple E Ltd, the London-based track and linear motor experts and regular equipment award winners, and it marked the first major UK cooperation between them and Feller Precision of New York. Previously 'workshopped' in New York, the show premiered in Toronto where Feller provided the automation using its Showtrack computer system along with Triple E's Unitrack. In London, Triple E are using the same equipment following an exchange of information and data from the original show.

David Edelstein of Triple E explained: "Collectively, Peter Feller and I have an enormous amount of experience of automating and producing effects for theatre productions. Our companies have both developed complementary systems and by working together we can offer the producers of shows not just one-off set solutions to a show, but an on-going relationship where original production arrangements can be easily produced, saving both time and money."

In fact, Triple E and Feller Precision have already worked together on a number of shows including Miss Saigon in New York. "Peter's system has a tremendous reliability record and a first class reputation," continued David Edelstein. "Basically it's a touring system. All the winches come on wheeled frames and the slave racks and master control are all flight-cased. The system is designed as a complete 'ready-to-go' package, with cabling all prepared. It's a fraction of the size of other American systems I've seen and I think it also offers tremendous competition for UK systems. However, it doesn't lend itself to concert work; it is more technically appropriate for a show that's going to have a run. It can be broken down into small parts and used independently, but it is designed for multi-channel theatre work."

So, to the detail, and what was was tracking where, and a run- down on how no less than 24 winches got involved in the act. "There are four tracks 18 metres long, and on each there are four jail bar panels which individually weigh approximately 150 kilos," explained David Edelstein. "We have four winches per track - one for each panel - giving 16 winches dedicated to the 16 panels. In addition there are three pairs of tracks with black travellers on which can move over centre. Each pair has two winches, making a total of six, bringing the total up to 22. Additionally, upstage there are a pair of centre overlapping curtains involving one winch. This group of 23 winches are all mounted within a purpose-built steel frame on the stage right fly floor. The 24th element is the centre stage truck, and the winch for that is located understage in the basement."

One of the main problems at the Shaftesbury is lack of wing space. In Toronto all the winches were mounted on stage, but in London it was a different story. "Fortunately there was just enough space on the fly floor, but we had to drill 6" diameter holes through 9" of concrete to enable all our wire ropes to pass through to the framework above," said David Edelstein.

Some very complicated diversion pulleys

David Edelstein at the Showtrak control desk.

The flight-cased Showtrak and one slave rack set up in the Triple E showroom.

View on the fly floor betweep the double stacked rows of 23 winches.

were employed to overcome the problems, and it took many hours on Triple E's CAD drawing system to work out the necessary routes. All the tracks are hung from chains from steels in the grid, and Triple E employed a Unistrut structure underneath the fly floor so that the tracks could be fixed in a rigid situation, as flexing of the tracks could have caused major problems.

Control lines are taken up to a specially built platform, high up stage right and just below the fly floor, where the Showtrack master panel and three slave racks are located. From here, high up in the Shaftesbury, David Edelstein explained features of the Showtrack system.

"Each of the three slave racks takes eight control channels. Each one has a three-position switch: computer, manual and automatic. On 'computer' it obviously runs on the computer master. On 'manual' you are able to control it from the front of the rack and you have five forward and five reverse limits you can run to. You then have speed controls (0-10) which can be controlled individually. The F1 and R1 limits are always at the extreme end of travel and whatever happens the motor will always stop at one or other of these limits. There are also intermediate limits which can be set on the winch itself to emulate computer positions during the show so that should there be a computer failure or some other problem, you can run the show on the manual limits.

"If you set the switch to automatic, you can set the eight winches to different limit settings and then use the master buttons on each slave rack to control eight winches at a time with the local controls. What usually happens is that a system is worked out so that should there be a computer failure, intermediate limits can be used in the case of an emergency. These don't necessarily correspond exactly to the ones in the show but are quite sufficient given the situation. Fortunately, in the 10 years this system's been in existence - it's done 15,000 performances and 50 shows.

"On most occasions the manual system is used while the show is being set up so that while the computer operator is working on something else we can run the winches manually for testing purposes to make sure the wire ropes are satisfactorily set up and not snagging, for instance. But you've got full control, full override, and that's one of the beauties of the system.

"The other tremendous advantage with Showtrack is that each winch uses a revolver system which means that the winch position is absolute. If the power failed in the middle of a show, when it is restored everything knows where it is - you don't have to go through a marker point. The other possibility is that you could disconnect the gearbox from the chain drive to the winch drum with two pins to enable you to turn the winch with a manual handle and without losing position."

For the London show Triple E had six weeks notice of the production and three weeks available to set up the full system. "It was just about enough time," explained David Edelstein. "We brought over Chris Smith and Andy Helck from Feller Precision, who were both involved in the Toronto production, and they handed over to our UK operator Gavin Wetherall."

Another effort in company co-operation came with Triple E working hand-in-hand with Gerriets, one of the leading suppliers of curtain, projection and screen materials. The two have worked closely for many years, in the UK and overseas, and both are located in the Tower Bridge Business complex in London. Stewart Crosbie of Gerriets (also British production manager for Kiss of the Spider Woman) explained how they had come up with two new products for theatre after diligent sourcing of materials: one to aid the projection artist, the other of equal importance to the acoustician.

"Ariadne is a 100% bobbinet gauze of high quality, a fine material ideal for projection effects, and it suited the demands of Jerome Sirlin to perfection. I found the material after a lot of searching and was luck to find a mill making it in sufficient widths for our purposes.

"Echovelour G is a synthetic sheeting with velour coating on one side and it has useful acoustic properties. It is the first time the fabric has been used in a theatre production. Sound designer for Kiss, Martin Levan, was so impressed by its sound reflection qualities that he immediately specified it for the show. It resolves the concern of actors and singers about acoustics when traditional stage velours absorb large amounts of sound energy or let it pass through, making music and speech unclear.

"The fabric has been developed to deal with these problems and is versatile because it has differing reflecting qualities on each side. The 'front' is a high quality stage velour, whilst the reverse is made of soundproof synthetic sheeting. It has been used throughout the orchestra pit to change the sound effects as necessary. Tested at the Institut Mueller in Munich, Echovelour achieved a reflection ratio of 82% compared to 43% for the usual velour, whilst the reflection intensity scored -0.9dB against the traditional velour which dampened the sound energy by -4.2dB on average."

At which point it is appropriate to stray back to our more usual role and tell you that sound equipment for Kiss of the Spider Woman was supplied by Autograph with design by Martin Levan Sound Design. The show's system features a two-part loudspeaker system, with one 'open ambient' section consisting of six Tannoy dual concentric drivers without cabinets, whilst the other utilises six UPA and two USW loudspeakers from Meyer Sound. Both sections are powered by Yamaha PC2602 and PC4002 amplifiers. Mixing is via a 61-input Cadac J-type console, with the mixer's automated assignment facilities controlling the 24 orchestra mics and the 21 Sennheiser SK2012 body-pack transmitters. The radiomic complement includes Sennheiser MKE 2R 'Red Dot' miniature mics and Sanken COS11 units. The EM 1036 true-diversity receivers are interfaced with Sennheiser's remote monitoring software, running on the Amega A500 to allow AF and RF levels for all channels to be monitored FOH.

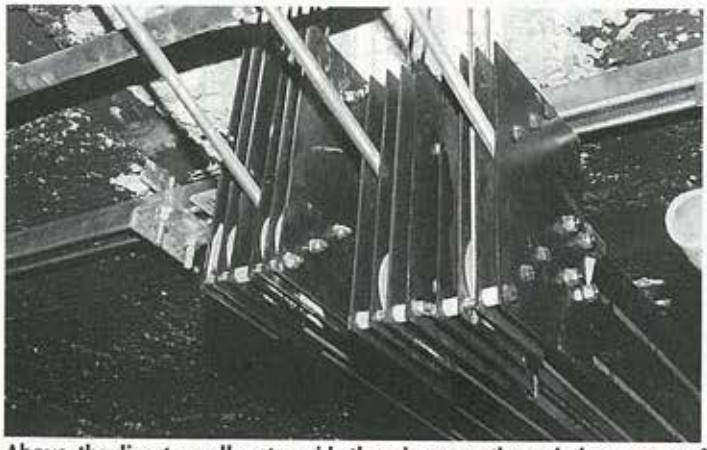
Autograph's Duncan Bell, who was responsible for their element of the installation, told L+SI: "We have had previous experience of the Shaftesbury Theatre and the venue did not present any serious problems. However, the size of the orchestra pit did result in some drastic re-building to accommodate the enormous percussion section. A wall had to be removed and a separate booth installed at the rear of the pit to house the drum kit and the vast array of percussion instruments."

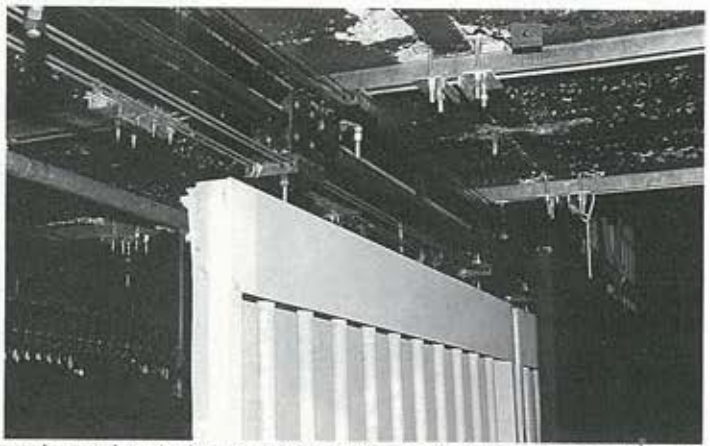
All sound effects for the show are stored on CD, with the replay system using two machines working in tandem. The effects are routed around the stage and auditorium via the Cadac J-type's programmable routing section, in conjunction with a Yamaha DMP11 mixer.

As mentioned in the introduction to this article, in addition to the jail bar grilles, the principal scenic element of the production is composed of projected images designed by Jerome Sirlin. For the transfer from Toronto, Visual Techniques of London were recommended as consultants and suppliers for the projection work. largely, no doubt, for their work in the field of high-powered projection.

Visual Techniques' Martin Lindsay told L+SI that they arranged an introduction of the Hardware for Xenon 500W projector to Jeremy Sirlin who had previously used Pani in the original production in Toronto. Obviously Sirlin was suitably impressed as three units with automatic slide changers, purchased by Visual Techniques, were used on the production.

The position of the various projection surfaces from the rear cyc to the pros arch required a lens which possessed a large depth of field to avoid difference in focus and the Reichmann 180mm lenses employed offered sharp focus through the entire depth of the stage. The projection surfaces range from a metallic surface through to conventional black and white gauzes. "The result on black gauze was of significance as the 5k achieved excellent results on what is traditionally a difficult surface to project on to," explained the company's Dave Herd. "The requirements of a compact installation to avoid problems with audience sightlines on the circle front was achieved by cutting out the centre rows of the seating risers to provide a level to build a platform supporting the projectors, with power supplies positioned below the platform but accessible for





Above, the diverter pulleys to guide the wire ropes through the concrete floor and up to the winches, and right, the jailbar panels attached to Unitrack.

The Cadac J-Type console in situ at the Shaftesbury Theatre.

maintenance. Due to the noise of the cooling fans of the 5ks, a sound-proof housing was required to cover the units which meant that forced air conditioning to cool the projectors had to be installed."

The original production was controlled from a lighting desk but Visual Techniques decided to use AVL 2.14 software to offer more control over the dissolve ramps and timings, allowing the director to achieve smooth transition of images in context with the action. Other equipment supplied by Visual Techniques included three AVL Dove x 2 dissolve units.

Vari*Lites came, quite naturally, from Vari-Lite Europe Ltd. with 12 VL2B's and six VL4's involved and with a dimmer interface for the Rainbow scrolling colour changers. The conventional lighting equipment was supplied by Theatre Projects Services Ltd and included a veritable array of bits and pieces to cover the rather interesting demands of an unusual show. The list shows a total of 226 Altman ellipsoidals, seven CCT Minuette profiles and eight Starlite 1200W fresnels, 32 Par 64's, two Berkey 5 degree 1k profiles, 12 Strand Harmony 1k profiles, 13 Par 64's, 16 Birdies, 12 8' Altman M16 battens, one Redhead and a Great American Market Stik-Up 200W. Follow spots were Pani; two short throws and one 500W Beamlight. Control was via the house Arri Imagine 250 desk and Strand Permus dimmers from Theatre Projects. Effects equipment, also from TP, included a Cirrus 'A' cracker system, 32 Rainbow Two 16 colour scrollers, and a total of six Patt 252 with various attachments.

Credits: Scenic design and projection: Jerome Sirlin; Lighting designer: Howell Binkley; Sound designer: Martin Levan; Technical director: Don Finlayson