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April 1986 Volume 1 No.6 'Time' at the Dominion Theatre London—the Release of Power with the Rock Star (Cliff Richard). See exclusive feature in this issue.

£1.50

Lighting 'Time'

Andrew Bridge's explosion of light at the Dominion.

With his commitment to bring the lighting designer and technicians into full focus, Julian Williams profiles Andrew Bridge exclusively for L+SI, and discusses his work at the lighting desk for Dave Clark's mammoth production of 'TIME'.

A production such as Time, which opened at the Dominion theatre in London's West End on Wednesday 9th April would never before have been possible, and in theatre technology terms it is the perfect example of the 'state of the art' as it is today.

In my view there is no other place on Earth where 'The Best of the Best' of theatre production specialists, together with theatre's latest technology could have realised producer/creator Dave Clark's magnanimous conception.

Time' is about making the World a more secure, safer and caring place, suggesting how with reason and thought confrontation can be avoided. Time' is set in space and the Earth is on trial for its survival and its continued existence.

The trial takes place at the 'High Court of the Universe' and is presided over with 3 judges, Trigon, Lagus, and Morgua. The Earth is represented at the trial by a 'Rock Star' (Cliff Richard), and the prosecutor is Melchisedic who is the 'Lord of Time'. The witness on behalf of Earth is space pirate Captain Ebony. All are ultimately answerable to Akash 'The ultimate word in truth' (portrayed by Laurence Olivier with the aid of a unique theatrical technique created and directed by Dave Clark).

As the show opens we are looking onto the back of a Rock concert when slowly the entire set and rig revolves 180 degrees to reveal a battery of Par lamps flashing in domino sequences from a multi-rigged truss, with chasing Vari-lites, focusing on the performing Rock Star.

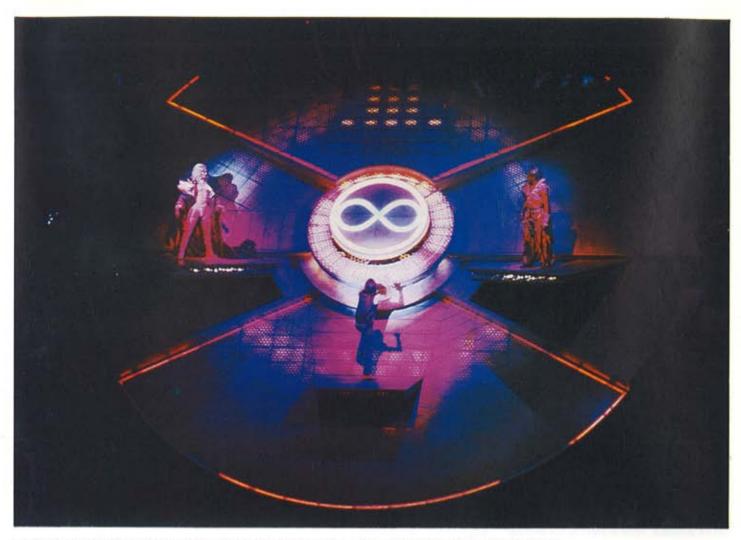
Following this, we are transcended by the magical power of a simulated sequence of technical 'effects' known as the 'Ascension'—the 'ultimate' transformation

scene?—while the Rock Stage folds away, complete with all its rigging, into the depths beneath the stage. Two million three hundred thousand and sixty-five light years from the Earth we eventually arrive at the 'Andromeda Galaxy' in the Universe of Space, and are present for the landing of the Flying Saucer (known in the trade as 'The Disc'—which takes up the whole space of the stage area when in its horizontal position) at 'The High Court of the Universe'.

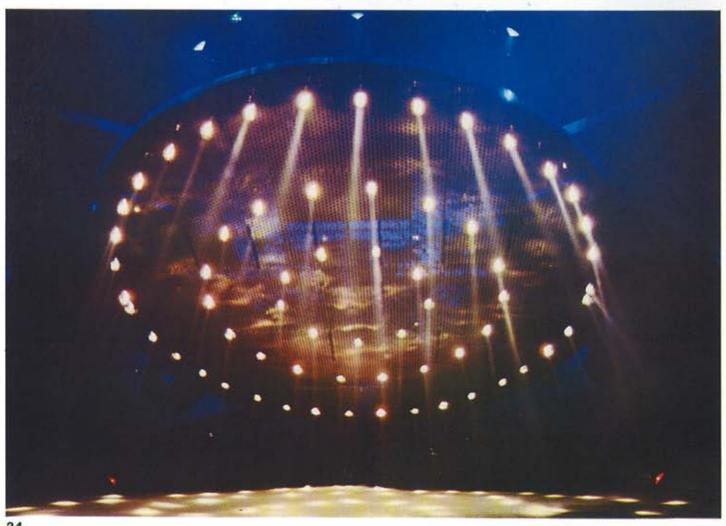
The 'Disc' moves by hydraulic pressure on traversing shafts at each side of the stage, and will also pivot and turn from a horizontal position to a vertical position. The controls are off stage on the fly floor, and operated by one operator who adjusts the speeds and moves to digitally pre-plotted positions. To move all this machinery in a show situation requires a teamwork effort from the stage management and production crew to be in visual position from all sides while it is all in motion (including from the audience), and to be verbally communicating with each other when checking its passing deads. So



UFO's and the Time Lord with lights directed towards the audience.



The Disc-Flying Saucer-in vertical position with flippers (above) and in an almost horizontal position as it lands (below).





ANDREW BRIDGE-Lighting Designer

Andrew Bridge trained in London on a technical drama course and then worked as a technician for the Welsh National Opera and for Glyndebourne Festival Opera. From 1973 to 1978 he was lighting designer with the London company Theatre Projects. He now works as a freelance lighting designer and has lit productions of The Rocky Horror Show (Europe), Scala Espectaculo (Barcelona), John Paul George Ringo and Bert . . . (UK Tour), and in the West End, Kennedy's Children, The Canterbury Tales, Tomfoolery, Billy Bishop Goes to War, Carte Blanche, An Evening with Tommy Steele, Oliveri (also in Canada and on Broadway, New York), Blondel, The Boy Friend (both in the Old Vic and the West End), Abbacadabra (with Elaine Paige), Little Me (with Russ Abbot) and Torvill and Dean-The World Tour in Wembley, Nottingham, Canada, Australia and the USA. He has also lit concert shows for Bing Crosby, Julie Andrews, Tommy Steele and has been Shirley Bassey's designer since 1976, travelling extensively with her. In London he now works with the design group Imagination, who specialise in international presentations, conferences and exhibitions. o

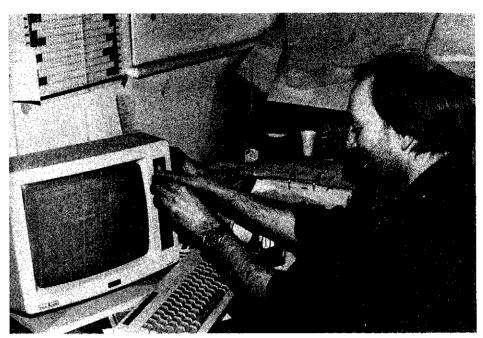
sophisticated is some of the aviation type of equipment being used that with precision deads, in certain tolerances the equipment will refuse to manoeuvre.

Discussing the production with Andrew Bridge, his view is that: "in this day and age any amount of technology and equipment is available-which in itself is enough to ruin a show." And he is also of the view that the production*crew is now more important than ever before for a designer.

Part of the brief from set designer John Napier called for a big 'Ray Gun' effect requiring neons whilst running a laser effect from all directions. Also, the walls of the auditorium have to "explode into light" for a prime visual effect.

Andrew explained: "You simply have to follow the set designer-if he says he wants the floor to light up then you have to use '600' Linolites to light it up. Then the GLC want it all hard-wired in as a permanent installation." The cost obviously increases as a result.

Pacing each effect for such a show as this is a major task-but each and every plotted effect has its purpose, and is carefully fitted into the production. Although there are over 500 LX cues-almost 100 in the first ten



All show lighting data is stored on an Amstrad micro computer.

minutes!--Andrew knows what he wants to achieve. And he wants a lot of variation. "The lasers are there to create a 'wall' to get the suspended and floating 'Judges Thrones' onto the set without being previously noticed-being part of the scheme of things like a sparkling back wall in a Night Club," he told me.

The concept for the lighting of the show he says "requires the brash and sharpness of Rock and Roll, the dignity and subtlety of Opera, and mixed in with it the occasional style of West End musical. In addition to the

discipline of a West End theatre production you are limited with the spontaneity that normally comes with a Rock and Roll concert. As the first part of the show is in fact a Rock and Roll concert, we have to have a Rock show that is reliable but which still has live spontaneity. You have to let the operator work within a parameter just as the lighting designer normally works his own lights for a Rock concert. These are definite cues we want, and in between we have certain matrixes which the operators' can hit on drum attacks and punches."

Time was devised and created by Dave Clark. Book, music and lyrics co-written by Dave Clark for the Right Time Production Company Limited. Book and Lyrics co-written by David Soames and music co-written by Jeff Daniels.

Directed and choreographed by Larry Fuller.

Musical Direction by Mike Moran

Designed by John Napier

Lighting designed by Andrew Bridge

Special choreography by Arlene Phillips

Sound design by **Bobby Aitken** and **Jonathan Deans**

Chief Production Electricians Howard Eaton and Michael Odam

Chief Electrician Paul Taylor

Assistant to Lighting Designer Simon Bruxner-Randell

Lighting Operator Andrew Olsen

Varilite Operator Andrew Gibb

Laser Production Programmer Gary Westcott Production Projectionist Dave Middleton

Head Follow Spot Operator Mike Cordina

Production Electricians Jonathan Badger, Greg Hamlin, Nick Jones, Eneas Mackintosh, Mark

Doubleday, Mike Dawes, Vera Morgan

Theatre Electricians **Tim Turner** Production Manager Paul MacKay

Equipment and Contractors

Lighting equipment supplied by Theatre Projects Services Ltd.

Additional lighting wiring by Limelight Services Ltd.

Multiplex Control Equipment by Impulse Technology Ltd.

Dry Ice Machines manufactured by Howard Eaton Lighting Ltd.

Electrical Contracting by RWS Electrical and Audio Contractor Lasers by Laserpoint

Lighting Boards: Kleigl USA, Avolites Limited, Vari-lites USA

Sound Equipment by Autograph Sound Recording

Main Scenic Contractor Kimpton Walter Itd. Hydraulic Systems by Delstar Engineering Ltd.

Neons by Argon

Vari-lites supplied by Samuelson Vari-lite Europe Ltd. Specialist rigging by The Unusual Rigging Company

Optical Effects by Axtells



Howard Eaton (left) and Mike Odam-chief production electricians-pictured on the Rock 'n' Roll truck, hidden away underneath the stage.

To keep the running costs down the chief production electricians, Howard Eaton and Mike Odam use their Amstrad micro to assist them. They are, said Andrew: "Working to an incredibly strict budget. Every piece of lighting equipment is a standard item with no special effect being made for the purpose, although we are pushing barriers with firsts on some equipment.

"They have a special DHA Gobo designed by our production team which Vari-lite have had fitted into their units to create a multibroken-up-beam effect-and a frost device to produce a soft beam image. Also moving Vari-lites on a counter-weight track on either side behind the Proscenium facilitate using the Vari-lite at a side beam position-allowing the flexibility of using the light under the moving Disc. Specially designed Par Cans with pattern 252 optical effects attached to produce a brighter image are projected onto the ceiling of the auditorium.

"For efficiency," Andrew continued, "we have installed the rig with hard-wiring and cable ties with no tripes used at all. In the Rock and Roll canopy roof John Napier has designed it to move into various positions around the set so the entire 450 lantern rig, which traditionally fills the space with lights, has been purchased for the purpose and is conduited and trunked and is also cheaper to wire in than cut up hire equipment.

The lighting rig is split into three sections: Rock and Roll, Stage Area, Auditorium.

The Stage: In addition to the Rock Concert rig at the beginning of the show, there is the traditional musical rig on the stage area which is complemented with various practical effects such as an array of illuminated spheres in a variety of shapes and sizes all over the backing of the set. On the back



Andrew Gibb at the Vari-lite control desk at the rear of the Gallery, with Andrew Olsen in the background.

wall, interspersed with hidden Star Strobes, are a multi-galaxy array of Fibre Optic Stars of the Space Universe. There are Linolites, inset into the main stage, which is the suspened and revolving 'Disc', with a battery of Lanterns and Floods internally installed. Interspersed all over the set, additional effects include Neons, Par 36's, Uplighters, Floods, and some disco 'toys'.

Auditorium: On each side of the Auditorium walls is a one-off effect known as the Ascension-which utilises 500 Par 36 units mounted into panels with rotating motorised mirror sheets. There is a large quantity of Arcline in the ceiling with more illuminated spheres and Fibre Optic Stars. In addition there are Disco Helicopters and small 'winking' lights in Ebony's Space Ship legs. For Ebony's Space Ship arrival there are a battery of Aircraft lights in the ceiling of the auditorium.

The 'Judges Thrones': There are three hydraulically operated 'Judges Thrones' each having its own operator on its base and mounted onto a hydraulic crane which can glide up and down and traverse around the set in any direction, towering above the actors, and each carrying a 'Judge' sitting on a Throne in the 'jib' position of the crane, Each of these units has a complete intergrated lighting rig and dimmer unit of its own which incorporate M16 highlighter spots, vertical coloured Neons into the Throne structure, Solar Projectors, a Light Box with white and blue Linolites, and Red Downlighters.

Neon and Electro Luminance costume heads light up to create an ethereal and slightly 'weird people' effect, who also have back projection material in their costumes.

Flying Saucers: These are mounted onto motorised pivoting 'trapeze rods', each having its own rig of Lanterns and a Vari-lite built into their structures. The latter often simulates a big 'watching eye' moving around the set when they come into a scene.

The Laser system: There are three Laser Heads; two mounted on the Bridge and one (with a split beam) on the back wall.

Andrew wanted to have laser beams coming from all directions on stage as well as coming out from all over the Auditorium ceiling-but he didn't want the audience to

Equipment Schedule

Main Lighting Rig: 232 Par 64

6 Par 36

6 Par 64/AC 8-Lite 112 Altman Leko

24 Century 8 x 13 Leko

32 Patt. 23 4 Patt. 23N

4 Patt. 243

1 HTI Prelude

6 Minuette

14 Coda Flood 12 Patt. 252 + FX

8 Bowens

22 Colorsette

4 Colormax 16 Vari-lite

Rock & Roll Truck Lighting Rig:

145 Par 64

218 Par 36 15 Par 46

122 Sunflood

14 Starstrobes

16 Beacons

10m Arcline

32 Linolite 12 Pyro-Flash

Lighting in Set:

400 Par 36

63 Par 46

24 Birdies

30 M16

6 Par 36 Scanner

2 Helicopter

2 Astrobeam 6 Optikinetic Solar 250

80 Starstrobe

78 GLS Lamps in Spheres

30 Light sources in Fibre Optics 25km Fibre Optics

150m Arcline

120m Neon

500 Linolites

Projectors and Follow Spots: 1 4kw Xenon 35mm Cine

2 2.5kw Xenon 35mm Cine

4 Pani 4kw HMI Slide Projector

4 Short Throw HTI Ultra-arc F/S

Short Throw HTI Lycian F/S

Smoke Processor 2 Cloud 9 Smoke Gun

Dry Ice machine

3 4 watt Laser (water cooled)

5 Remote control mirrors for Lasers

4 Mirror ball

Control for Lighting Rig: 1 Laserpoint Laser control system 2 Kliegl Performer II.2

60-way Avolites desk

2 160 × 20 Pin Matrix

1 Vari-lite desk

382 Dimmers (2.5k and 5k) 64 Multiplexed Relays



The Rock and Roll Stage and Rig, complete with coloured lights flashing.



The Time Lord's first entrance, enhanced by Vari-lite gobos and laser beams.



A long shot of Time Lord standing by the sign of infinity. The Judge's Thrones and Ebony complete the scene.



The Laser Gun Battle.

know where they were coming from!

There are beam bouncers, reflecting mirrors and aluminium venetian blind deflectors all over the rig. For one effect the laser is bounced to the highest point of the Auditorium, from the Bridge and through the ceiling void. Beams zig-zag across the Pros arch in 'stop-start' fashion, controlled by seven servo shuttered mirrors.

The unique effect specially designed for the show is the Sheetsweep, and this is controlled via 5 servo sweep-arms for 2/3 metre linear mirrors to produce an adjustable angled curtain of laser. The effect is principally used for the Judges' Throne's entrance and Time Lord scenes. The laser scanners and servo mirrors are pre-programmed on an Aries 4 Scanner Effects Generator Panel and VDU, utilising designed software by Laserpoint designers.

There are almost 60 laser cue sequences—being tied in with the main LX called cue sequence—activated simply, in a show situation, by a 'hard disc' computer with a 'go' button to run a performance.

Projection: Four Pani HMI 4kW Projectors are mounted into the Circle fronts. Each contains 14 slide effects with remote control. These are focussed around the auditorium walls and one is focused straight onto the back wall of the set. Also, 6 Pattern 252 Cloud effects are mounted in this position with Colour Wheels on them. Additionally, two specially adapted Par Cans with special effects are projected onto the Auditorium ceiling.

Film Projection: Two 35mm 2 kW Zenon Film Projectors and one 35mm 4kW Zenon Film Projector are mounted onto the front of the circle and are programmed by computer control. The 2kW Projectors (one for back-up) are for a computerised sychronous film as part of an Animatronic illusion for the portrayal of 'Akash'. The 4kW Projector runs an Effects Film.

Follow Spots: two short-throw HTI Lycium Follow Spots are mounted in the Perch positions with four FOH Ultra Arc HTI short throw Follow Spots (due to the mounting space available) mounted at the back of the

Howard Eaton and Mike Odam pictured alongside

Howard Eaton and Mike Odam pictured alongside the lighting gantry at the rear of the gallery.

gallery. Each of these units have 'frost' filtering which creates a soft long-distance beamlight effect.

The Control System: The concept of this unique but very simple and totally flexible control system comes from Andrew Bridges' requirement to be able to call upon any one light for manual operation at any one time-and to be controlled by one operator. The problem, says chief production electrician Howard Eaton "is that the show has to run 8 times a week and for a long period, and there has to be consistency of operation". They came up with the idea of having a manual desk driving Sub Masters on a Memory Board so that via a system of pin patches any other channel could be called up. The problem was taken to John Singer of Theatre Projects who devised an interface to put the two systems together by using two Kliegl Peformer memory systems to handle the capacity of dimmers in use-each being capable of controlling 160 dimmer channels and giving a total of 320 control channels. These controls are used in conjunction with



Mike Odam (background) and Howard Eaton (foreground) crowd out lighting operator Andrew Olsen at the main lighting control for 'Time' with the Kliegl boards centre picture and the Avolites board nearest camera.

Colour Photography by **NOBBY CLARK**

In his eighteen years as a professional photographer, Nobby Clark has worked with most of the leading theatre, hallet and opera companies in Britain. These include: The Royal Shakespeare Company, The National Theatre, The Old Vic, Ballet Rambert, the Royal Ballet and English National Opera. He has also worked on many West End productions including Andrew Lloyd Webber's 'Starlight Express' and 'On Your Toes'.

His journalistic experience includes seven years freelance for The Observer and four years for The Times as well as various assignments for The Observer and The Sunday Times colour magazines and a trip to China for Nowl magazine. Film and television work includes David Hare's 'Dreams of Leaving' and 'Wetherby', Jack Gold's 'The Chain', Richard Eyre's 'Insurance Man' and 'Past Caring' and 'The Hotel du Lac'.

He has had several exhibitions including two at the National Theatre, both of which toured Britain and the first of which—Photocall—also toured Australia. His most recent exhibition was 'Mental Handicap Now' in aid of MENCAP which was at the Royal Festival Hall and he has just spent time working on Comic Relief concerts in aid of Ethiopia.

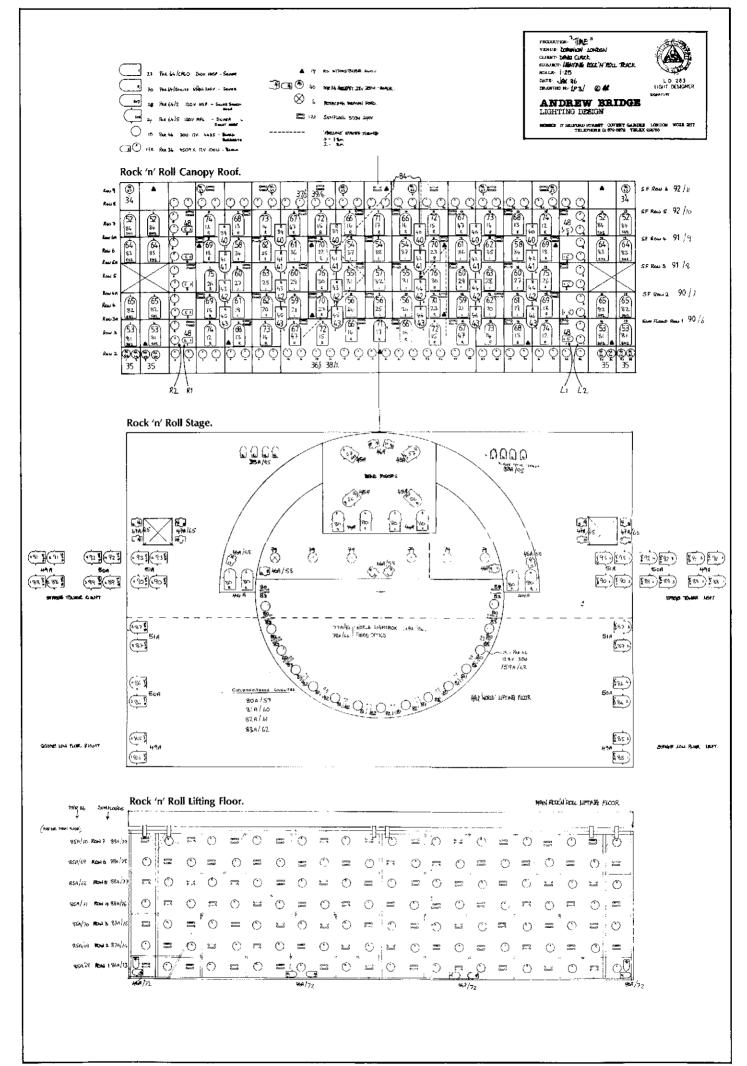


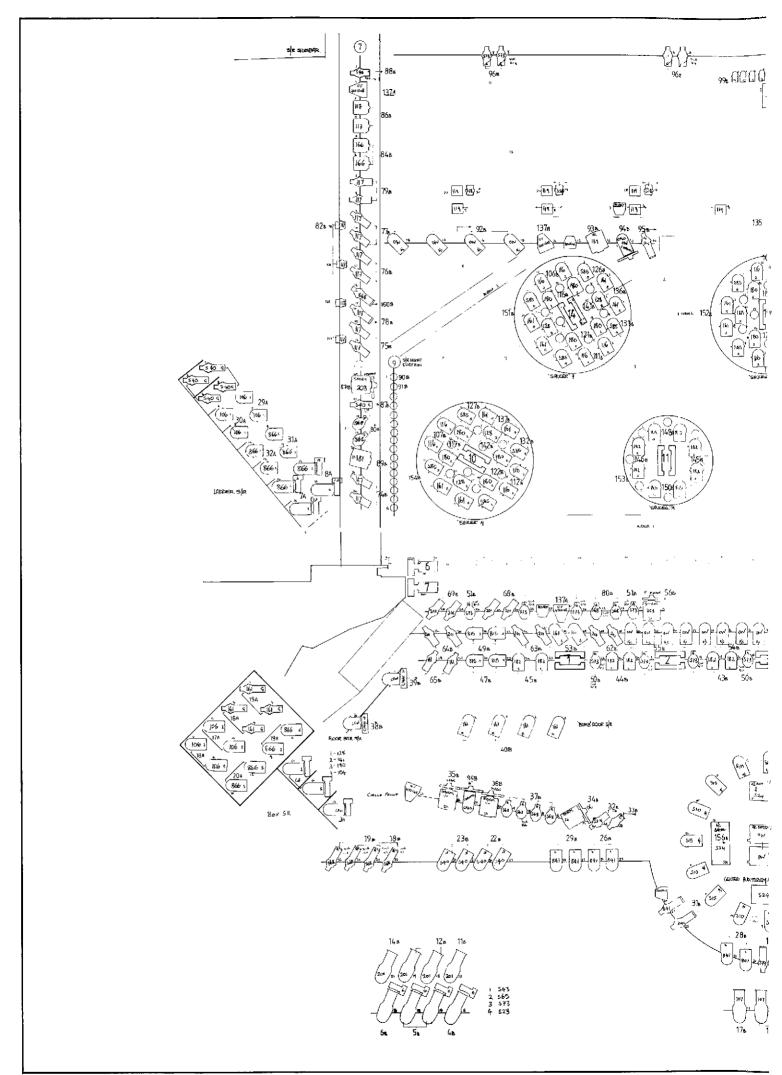
Julian Williams (right) discussing Time's lighting plan with designer Andrew Bridge.

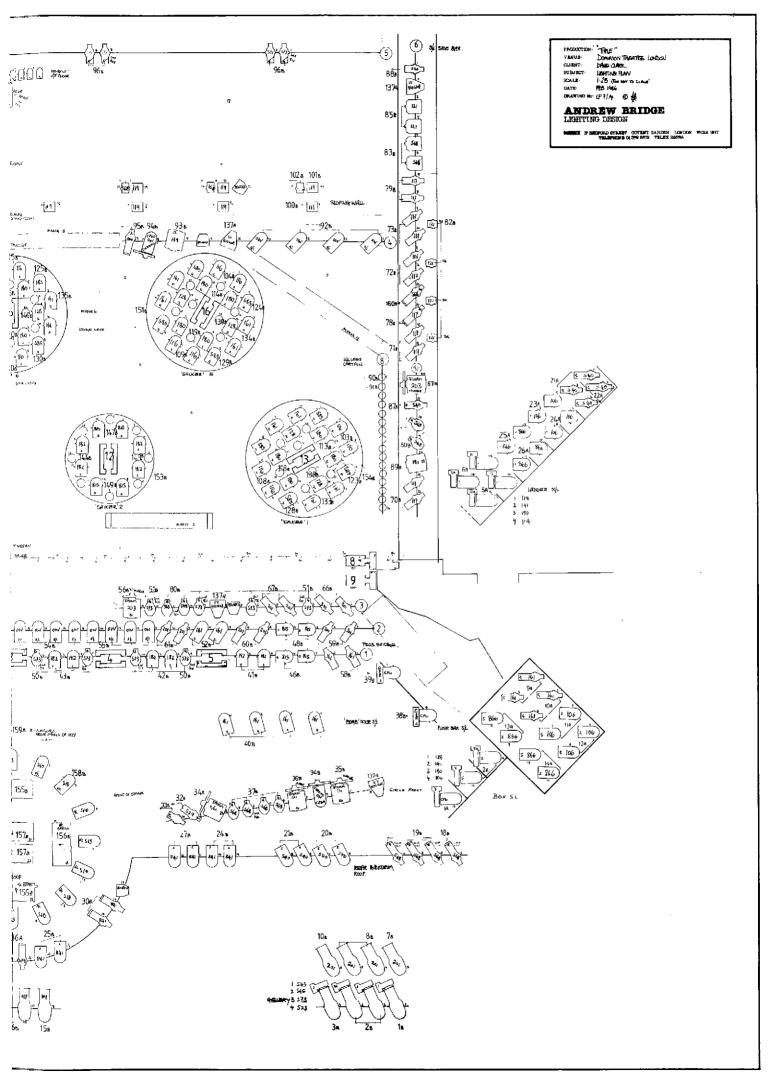


Ebony's Space Ship arrives with flashing coloured lights.









a 60 way Avolites multi-group 3 preset manual desk for accessing memory subgroups from the Kliegl boards.

The Avolites desk is used so that the first 10 Faders drive the Sub masters on Kliegl 'A' board. The second 10 Faders drive the Sub masters on the Kliegl 'B' board. Faders 31 to 40 drive a pin patch paralleled with the Kliegl 'A' board. Faders 41 to 60 drive the same arrangement with the Kliegl 'B' board.

In this way any channel may be accessed via Sub masters via the Kliegl memory system's Sub masters or via the pin patch. This allows the entire system to be controlled either via the manual desk, which gives the freedom to operate the show 'live' or with standard memory groups of states.

The two Kliegl boards are linked together to a remote Master Control panel thus allowing control from one set of controls.

It is claimed that the Kliegl Performer is the only system that has the capable chasing facilities required. Being an adequate hire stock item that can run a minimum of 400 channels, coupling them with the proven manual sophistication of the Avolites board (also readily available) has proved a good and cost-effective choice. As far as the lighting team are aware there is no make of board that can combine these requirements as a manufactured standard stock item. The control will, in addition, via a special 64 way multiplex switching system run independent circuits to control such practical effects as Smoke, Dry Ice, and Effects Motors.

Andrew Bridge has successfully brought together the principal elements of theatre in stage lighting terms by intergrating the use of movement of the 'intelligent' light with the Disco type 'toy' effects surrounded by a basic theatre light rig.

For the first time in the UK the Vari-lites are intergrated into a full scale legitimate 'running' show, by their subtle addition into a standard lighting rig. Using his lighting for specific stage effects, Andrew carefully focuses one's attention by accentuating the use of the light with immediacy onto a given area. He cleverly 'moves' the beams of lights to establish a given point—often implying an eerie supernatural being is communicating with us . . .

To set back for each performance, the starting angles of some of the lighting rig have to be measured—such as the seven Flying Saucers which are suspended above the lighting rig. These also contain a mini-light rig of lanterns to complement the main light rig. Due to the quantity of cues, to set up for each half of the show, both the Vari-lite and Kliegl Performer boards have to be redownloaded, requiring a change of discs, tapes and cards to retrieve memory storage.

Communication and efficiency is the prime factor in organising all the sophisticated hardware involved and Andrew has high praise for his loyal and hardworking crew—some of whom have worked with him on other recent major productions.

At the Lighting Desk in the stalls, keeping organised with the three Lighting Layout plans of this somewhat complex rig requires constant updating. With his recently-joined assistant, Simon Bruxner-Randell—who is responsible for the Follow Spot cues—Andrew keeps track of the documentation while running through fast sequences of

Lasers in 'Time'

L+SI invited **Andy Holmes** of Laserpoint to give the background to use of laser equipment in the production of 'Time'.

"To laser or not to lase?"—that is always the burning question when planning any visual spectacular of light, colour and movement.

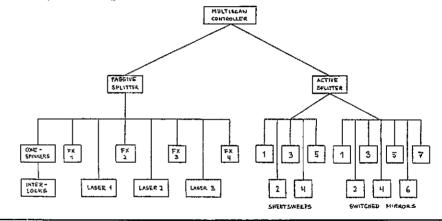
Lasers are accepted as a stunning special effect, but they are still misunderstood by the majority of designers and producers. Misunderstanding leads to fear, and that fear to rejection of the concept in many cases.

When a company of the size and stature of Imagination takes on a project of the importance of 'Time' musical, there are many areas of consideration for their producers—but Imagination's approach was to go beyond what was generally the 'norm' in laser effects, by laying down ideas that were both inovative and creative. They simply said that the classic situation of a source of laser light sending beams to mirrors and scanning patterns on a suitable screen surface was not acceptable. They wanted effects but no visable laser source—flexible barriers of laser light woven into the scenery and flown in and out as required. So by ignoring the basic fears of average producers, Imagination solved the decision making problem by laying a general brief before Laserpoiont which enabled the company to design new ways of incorporating lasers into the show. I say that the problem for Imagination was solved, because if Laserpoint had not come up with the ideas on paper which satisfied Imagination—then the lasers would not be in 'Time' today.

So the scheme was drawn up to create a range of reveal-type effects which would enhance the impressive array of moving set and stage mechanics. The main-stay of this laser display is the battery of 5 remote servo mirrors—2 and 3 metres wide—slung over the stage and mounted on the back wall.

The sheet sweep mirrors are controlled from the multiscan 5 channel control computer which also handles 4 scanner outputs from 3 separate lasers. Like an AV computer, the multiscan controller enables the operator to load scenes in the order he wishes them to appear, and then run the show as a series of isolated cues. The whole show could be automated if required, but this is not appropriate when operating in such a complicated combination of cine, slide, lighting, sound, mechanics and hydraulics. Multiscan is effectively controlling 22 channels of separate but synchronised effects modules.

The system is configured as follows:



rehearsal cues, also keeping in constant communication with the main lighting board and Stage Management.

Andrew also has his Vari-lite Operator by his side while they design the visual effects, and programme the computer from diagramatical plans, and for quick referencing use the aid of 'nick-named' jargon lighting positions. After this was achieved, the Varilite board was positioned alongside the Main Lighting Board and Laser/Cine control desks at the back of the Gallery for running the show.

Andrew was strongly supported by his chief production electricians, Howard Eaton and Mike Odam, who took it in shifts throughout the production period to stay by his side at the desk during rehearsals. They also organised a constant flow of almost 50 LX crew members working around the clock in 36 hour-plus shifts, to finish the rigging and maintain the equipment, which went on throughout the production rehearsal period of three weeks.

With each and every cue being carefully planned without any repetition of effects, Andrew has successfully brought together the broad cross-section of Rock and Roll, Opera, and Musical theatre lighting, and it has taken much pre-planning to 'dodge' it through the machinery surrounding the set.

There are occasions when there is a definate feeling of floating in space—and there are some stunning effects such as the creation of the Time Lord scenes where the use of specially made Gobos in the Vari-lites and revolving shafts of Laser light blend mysteriously together. There is also clever use of the 'ever present intelligent watching eye' (of the Vari-lites) peering round at the audience from the Pros Arch. In the UFO scene they even 'nod' up and down to one and other as they traverse vertically along side boom tracks!

At the same time when the experts are saying that technology in the theatre industry is in danger of over-taking its purpose, it has to be said that the production of Time would not have been possible at all without the use of present technology. Both John Napier and Andrew Bridge have utilised it to its fullest potential, to hugely enhance a theatrical presentation in performance.

Julian Williams.



TIME. AND TIME AGAIN.

The new production of Time uses conventional lighting, complex control systems and Vari-Lites. And no small amounts of skill, experience and creativity.

We're proud to have played a part.

If you'd like to use the same
resources on your next production,
give us a call: Gary Brown at Theatre
Projects Services on 01- 622 4272,
or Jimmy Barnett at Samuelson
Vari-Lite on 01-208 0011.

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