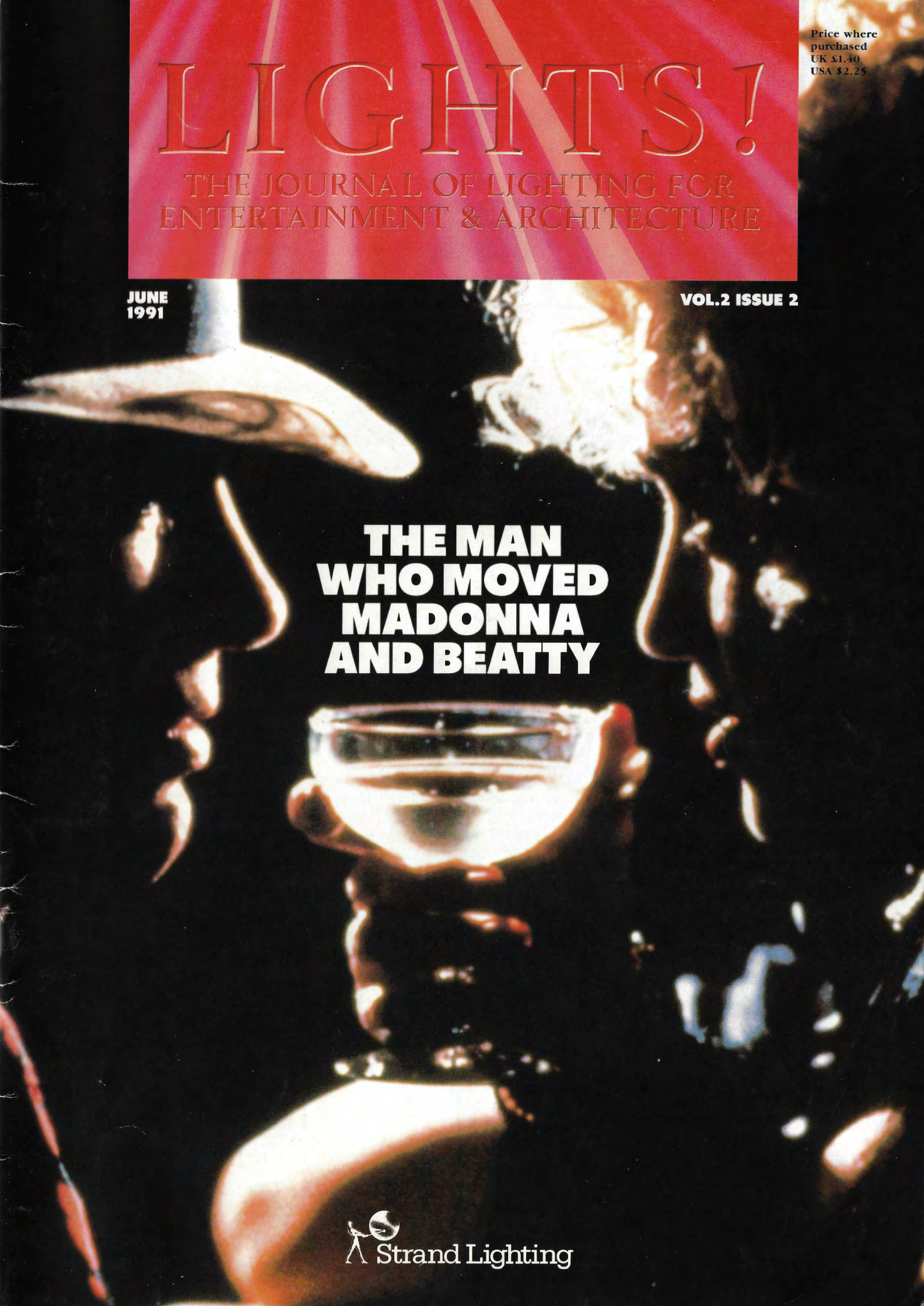
# LIGHTS!

THE JOURNAL OF LIGHTING FOR ENTERTAINMENT & ARCHITECTURE

Price where purchased
UK £1.40
USA $2.25

JUNE 1991

VOL.2 ISSUE 2



## THE MAN WHO MOVED MADONNA AND BEATTY

Strand Lighting

# Strand's new EC90 takes dimming out of the dark ages.

In the past, all dimmers were much the same. Sturdy, generally reliable, but unremarkable.

Now, a new kind of dimmer has emerged. EC90 from Strand: the world's most advanced digital dimmer. Why digital? Here are just a few of the benefits.

● Improved performance, greater flexibility and high reliability ● Full system performance monitoring and reporting when used with a Galaxy 3 control system ● Faster response than analogue systems ● Multiple output curves which remain constant without maintenance ● Automatic sensing of input protocol ● Patented load cable compensation feature.

**DIGITAL DIMMING FROM STRAND**

To find out more about the digital dimming revolution, call today or complete and return the coupon.

Strand Lighting

*A REPUTATION BUILT ON BRILLIANCE*

**Strand Lighting Limited**
Grant Way, Isleworth, Middx TW7 5QD
Telephone: 081-560 3171
Telex: 27976. Fax: 081-568 2103

Please send more information about the revolutionary EC90 dimmer.

Name

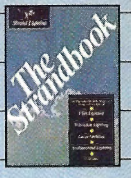
Position

Company

Address

Postcode

Telephone



# Doing our best to serve...

It has been a pleasure to receive letters recently from our readers prompted by our competition in the last issue. But please remember that we are always interested to hear about your use of lighting, or your comments about any aspect of lighting, wherever you are in the world. If you have a story to tell about the use of Strand products, please write, and send photographs if you can.

Our previous edition featured the model theatre of Norman Hunter. In this issue you will read about the visit we arranged for Mr Hunter to see the full size theatre which he used as his inspiration. The original article sparked so much interest from model theatre hobbyists that we would like to put you in touch with each other. *Lights!* is starting a register of model theatre enthusiasts, and if you would like to join the group, please write in and we will add your name to our list.

As the circulation of *Lights!* grows, we are constantly reminded of the importance of reaching the right people. The response to our previous four issues has been encouraging, and you may notice a few slight changes to the format of this edition which reflect the views of a number of our readers.

We value the medium of *Lights!* as a way to keep you up to date with the latest advances from Strand in entertainment and architectural lighting technology, and we know that our regular recipients value this contact.

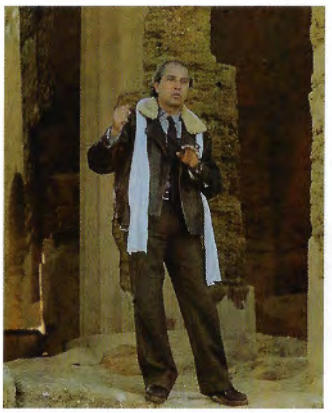
If you are not on our mailing list or did not complete the registration form in the last issue and would like to continue to receive *Lights!*, please take a little time to fill in the enclosed questionnaire. This will both ensure that you will receive a regular copy of *Lights!* and also that we know more precisely the interests of our readership. These details will help us to continue the production of an editorially-balanced journal. If you think that a friend or colleague would enjoy reading *Lights!*, please photocopy the enclosed form, or ask your nearest Strand Company for a *Lights!* questionnaire. Thank you for your continued support.

Editorial advisers: David Brooks, BSc., CEng, MIEE, DMS. Andrew Collier, BSc. Edward Pagett, BSc(Hons), AMIEE. Andrea Molinari, Dr.Ing.
*Lights!* is the official journal of Strand Lighting Limited, Grant Way, Syon Lane, Isleworth, Middlesex, TW7 5QD, England.
Telephone: 081-560 3171. Fax: 081-568 2103. Telex: 27976.

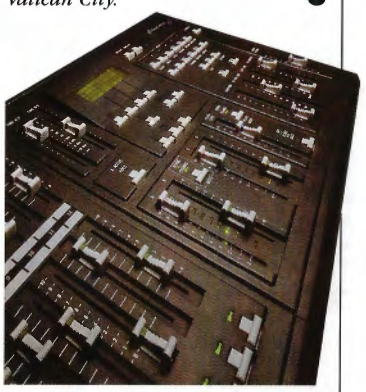
Vol.2, Issue 2. ISSN 0958-7217
Edited, designed and produced by: *Ledger Bennett Communications Group, Haywood House, Lake Street, Leighton Buzzard, Beds., LU7 8RS, England, and printed in England.*

## IN THIS ISSUE





*Vittorio Storaro has won many Oscars for his stunning movie lighting.* Lights! *caught up with him on a film set in the heart of his native Italy — in the Vatican City.* **6**



*Strand Lighting's MX system, with a MIDI interface could be the answer to a musician's prayer. Allan Ashton tells why* **8**

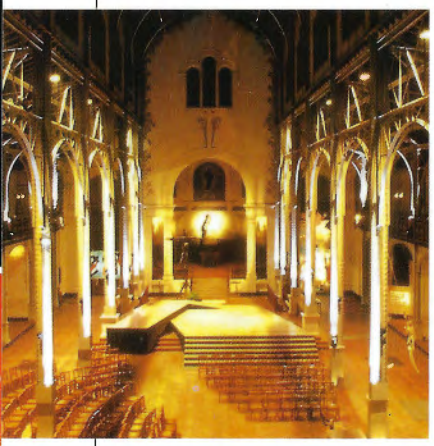
*Behind the scenes at RADA: we see how Britain's top drama school is training the rising generation of lighting stars.* **10**

Front cover picture: *Warren Beatty and Madonna proved an electrifying twosome in* Dick Tracey. *Lighting played a key role in their success. In this issue we meet the man whose ideas on lighting made this, and other, movies box-office blockbusters.*

# DRAMATIC APPROACH FOR CHURCH LIGHTING

**Strand Lighting's theatrical and architectural lighting has been combined in L'Eglise Notre Dame, one of Paris's more unusual churches, to highlight its contribution to the style of the industrial age.**

Hilite discharge architectural luminaires are used as uplights to create a special feature of the structural steel columns.



# IN THE GOOD OLD DAYS...

**...before the *Strandbook* came the *Strand Electric* catalogue. And for one Strand customer there has been very little in between, judging by a recent request.**

Electrical engineers John McNicol and Co Limited, of Glasgow, recently sent back their Strand catalogue to Strand Lighting's head office at Isleworth, with a request for a more up-to-date edition. The copy they sent back was a 1949 'interim' catalogue which carried an apology that 'owing to present supply difficulties, it is not yet possible to offer the same wide range of equipment as pre-war.'

Prices of Strand equipment, which included such items as an organ-console styled control board, luminaires and dimmers — but at that time, no TV studio lighting equipment — have probably proved to be reasonably inflation-proof over the years.

For example, a basic 'junior' control board, intended for schools or village halls, then cost £38.00 — about £1,500 in today's values, compared to today's infinitely more sophisticated MX control desks which start at under £1000.

A copy of the latest *Strandbook* has been sent to John McNicol and Co by Ian Haddon, general manager of Strand Lighting's UK Trading division, explaining 'we do update our printed matter more frequently than every 50 years!'

# PROFESSOR BRANESTAWM GOES TO THE THEATRE

**In the last issue of *Lights!* we featured 91-year old retired author Norman Hunter, creator of that madcap children's adventure character Professor Branestawm.**

With a lifelong interest in theatre, Norman built a scale model of the *Theatre Royal*, Drury Lane. Miniature Strand architectural spotlights provide the stage lighting.

But during the interview, it emerged that Norman had never been backstage at the *Theatre Royal*, having constructed his model just from basic plans in a building magazine. His dearest wish was to see the real thing.

In the great theatrical tradition, *Lights!* undertook to fix it for him, and make his wish come true.

Strand's Edward Pagett collected Norman from his home and drove him to the theatre, where he was met by George Hoare, retired manager of the theatre, and currently archivist for Stoll Moss Theatres.

Norman's visit included a conducted tour of the auditorium, 'treading the boards' on stage and a look behind the scenes.

His comment? 'I have longed for this moment for years. This has been a tremendously exciting day.'

**Footnote:** Our story about Norman Hunter's model theatre prompted mail from other keen enthusiasts. As a result, Strand Lighting has offered to set up a register and 'forum' for owners, to enable you to keep in contact with each other. Please send your name, address and telephone number, plus brief details and, if possible, a photo of your model theatre to Edward Pagett at Strand Lighting, Isleworth.
(address on page 15).

# CHANGE YOUR OLD LAMPS FOR NEW

**Older luminaires, manufactured to earlier, less strict safety standards than those now in force, may urgently need to be modified to make them safe, an expert has warned.**

The warning comes from David Bertenshaw, the head of Strand Lighting Research and Development, who feels that stringent new tests recently introduced for electrical equipment by the EEC may have left some areas of lighting in the dark.

Speaking at a conference organised by the Electrical Research Association (ERA) in conjunction with the Lighting Industry Federation (LIF), he said, 'Older luminaires in use made, possibly, to earlier safety standards could now need to be modified to protect sufficiently against danger. Certainly all exposed metalwork that may become live in case of an electrical failure must be reliably bonded to earth.

'All wiring should be inspected and if sufficiently deteriorated replaced with new, of appropriate rating, including temperature.

'Mechanical alterations may be required to ensure assemblies, accessories and suspensions are adequately secured and shields added to protect against the hazard of tungsten halogen lamp explosion if this could constitute a danger in actual use.

'The Health and Safety Executive reports that every year around 50 people are killed at work by electricity. It is hoped that very few, if any, of these are killed by failure of electrical luminaires.'

In describing the historical background to entertainment lighting, David explained that laws imposing a legal duty to provide luminaires to a particular safety standard did not fully come into force in Britain until the late 1970's — more than 90 years after the first public use of electric lighting.

Electric lighting was, in itself, a momentous leap forward in safety terms. From the time gas lighting came into general use, early in the 19th century, fire was a constant hazard, leading to the burning-down of a number of theatres, with loss of life in some cases.

The first theatre to be lit electrically was The Savoy, in 1881, where the London Fire Brigade reported that electric lighting appeared to be 'absolutely safe'. Barring a few accidents in various parts of the country while theatre staff learned how to handle the new source of power, it proved to be as safe as predicted.

However, although there was a steady development of voluntary standards over the years, it was not until Britain joined the Common Market that regulations were introduced, leading to the EN60598 standard for luminaires which provides a general safety standard for the lighting industry.

**Footnote:** A factsheet is available from Strand Lighting covering the full text of David Bertenshaw's paper. Send a stamped self-addressed envelope (A4 size) to the Marketing Department at Isleworth for a free copy. Address on page 15. Readers are reminded that there is a legal obligation upon them to check all electrical installations for safety. Strand Lighting Limited has a policy of providing products of the highest design standard, often in excess of minimum legal requirements, and is constantly reviewing and updating designs to ensure full compliance.

# FAME FOR STRAND'S PALS

**A new College for the Performing Arts — on similar lines to the New York school which inspired the TV series *Fame* — is to open in Nottingham complete with the latest Precision Automated Lighting (PALS) for its theatre from Strand Lighting.**

The college will be based at 'College Street', which opened in 1988 as the Nottinghamshire Centre for the Arts in Education, to train young people in the performing arts and use of theatre and studio facilities.

So successful has the scheme proved to be, with schools from throughout the county using its facilities, that Nottinghamshire County Council's Education Department has decided to extend it. This has allowed the setting up of a college and a BTEC course for students aged 16+.

College Street's theatre, which is used by visiting professional companies and by school pupils on training courses, is already equipped with a Strand M24 memory and effects board. This complements its video and editing suite, plus new desk top publishing facilities.

Strand's PALS equipment has been installed to allow pupils and students to become conversant with the latest technology.

College Street spokesman, Alistair Conquer, said, 'The PALS system reflects the high quality of equipment which is being used in the training of young people.

'Our County Council's Education Committee has always had a far-sighted policy with regard to the arts. It was considered necessary to have the same quality in the lighting system that might be encountered at any other professional venue.'

## Instruction

The PALS system allows motorised luminaires to be positioned according to instructions relayed either from a personal computer or a Strand Galaxy 3 system. It permits repeated pinpoint accuracy in repositioning.

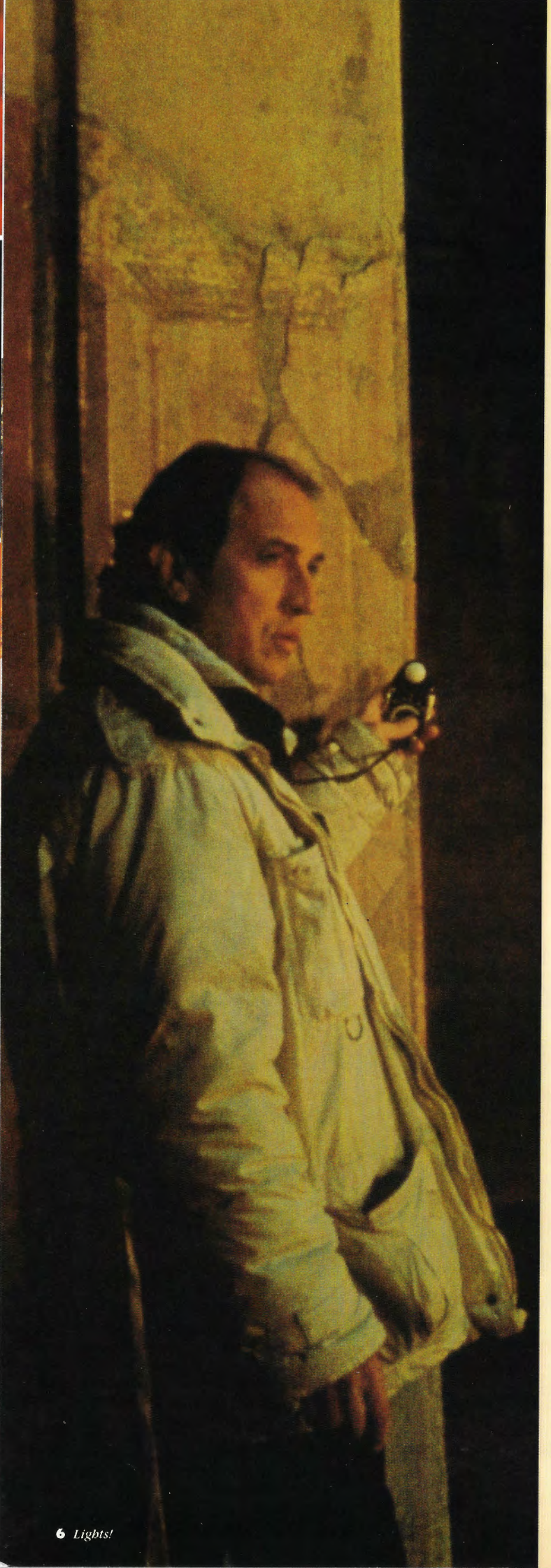
Although PALS will be used primarily by students from the School for the Performing Arts, it will also be available to visiting schools from throughout the county.

To demonstrate the latest technology available to schools and other small venues, Strand Lighting used College Street for a 'stage lighting roadshow', at which up to 4,000 schools from throughout the region were represented to see Strand products.

These included Gemini Plus, Act 6 dimmers, Strand's new MX system, and the newly-installed PALS system in full operation.

## REGISTER FOR LIGHTS!

**Are you on our mailing list to receive *Lights!*? Do you know of someone in lighting who would like their own copy sent to them? If you did not complete the registration card in our last issue, please turn to the back of this magazine.**



*The toast of the cinema lighting world, Vittorio Storaro, has revolutionised the industry by introducing lighting controls and dimmers into film studios.* Lights! *caught up with him, appropriately, in the hallowed confines of The Vatican, where he is currently...*

# IN SEARCH OF THE MEANING OF LIGHT

*Richard Humphries reports*

**To watch three times Oscar winning cinematographer Vittorio Storaro at work is to be in the presence of the proverbial Maestro. He has about him the air of a navigator; someone engaged on a permanent quest, sailing the uncharted seas of life in search of profound meanings. And his image and reality are totally in accord.**

Currently working on a 15 part series on the history of Rome, sponsored by the Italian Government and Industry, Vittorio has a string of historic films to his credit. These include *Apocalypse Now*, *Reds* and *The Last Emperor*, for which he won Oscars, and more recently, *Dick Tracey* and *The Sheltering Sky*.

In film lighting circles he broke new ground some years ago by introducing Strand dimmers into studio and location lighting.

To him it was not so much a technological revolution as part of his search for the inner quality and meaning of light.

Taking a break from filming ancient statues and priceless mosaics in the Vatican Museum for the new film series, he expounded his theories over a Roman working lunch of tomatoes, cheese, fruit and local wine.

'I think that life is a kind of journey. We are going in one direction, whether you are conscious of it or not, so we have a choice of selecting the people we want to work with and the medium we want to work in.'

His theories dictate totally his approach to his work. Work and relaxation, duty and pleasure are all the same to him.

He said, 'Before I can begin work on any new project I have to find out if the person who will lead the project and the project itself belongs to my own inner feelings. If it is something that belongs to me, something I can be part of, then it is something that can be part of my own journey through life.

'For me sometimes there

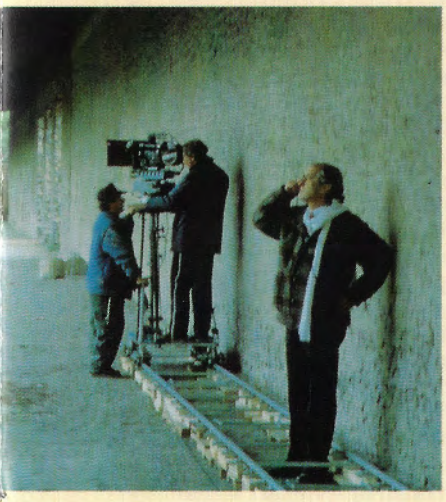
will be a friend on that journey, or a guide. If I can recognise that I am going in the same direction, then I will go for a while on the same road as them.

'For example, the time I have spent with the director Bertolucci seems very long. I first met him in 1963 when I was an assistant, and we have worked together ever since 1968.'

Vittorio, who will be 51 within a few weeks, first obtained a degree as a Master Photographer in 1956. By the age of 28 he had switched to cinematography and was already being hailed as a rising star. He was President of the Association of Italian Cinematographers from 1988 to 1990.

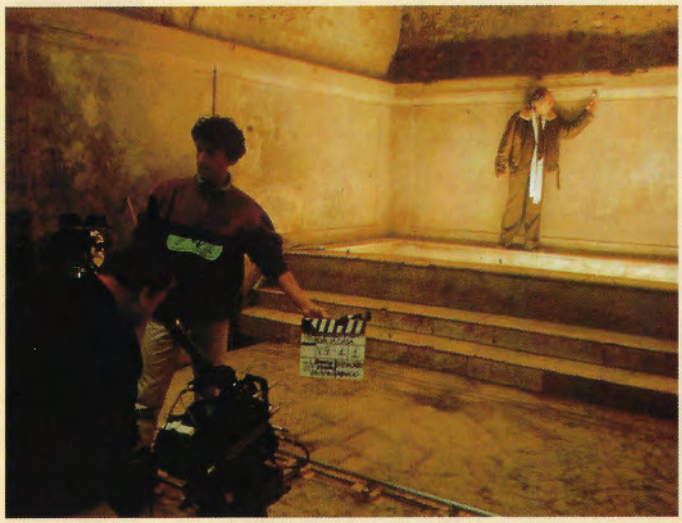
His quest for lighting truth began in the 1960's when, dissatisfied with the existing standards of film lighting, he sought ways of expressing his own feelings. What he was seeking, he discovered later, was balance.

He explained, 'I was always using two different forces against each other — light and shadows; one colour against an other; artificial energy against natural energy. I was trying to express my sense of research for balance.'



*'I was always using two different forces against each other — light and shadows; one colour against an other; artificial energy'*

By the time he had completed *Apocalypse Now* in 1979, he was ready for a year long break to reassess his values. For the next ten years he was exploring not just light, but every possible aspect of colour and movement of light. That culminated with his being invited to light the current series on Rome, with the Latin title *Roma — Imago Urbis* (Rome — Image of the City), which he feels 'is practically a resumé of my entire life's expression.'



He went on, 'The difference between cinematography and photography is simply this: if photography means 'write with light', then cinematography is 'write with light and movement'.

I have been trying to move light, always to give to an audience the feeling of movement. But when I started, the technology would not allow me to do what I wanted. 'I had to tell the story of the movement of matter — the magic formula of Albert Einstein. $E=MC^2$ is, to me, some of the best poetry I have ever read in my life. Matter and energy in movement. This became for me a symbol of my entire life and what I think is the life of the whole human race in a sense that we are all part of a common journey called evolution.

'It was always a surprise to me that theatre could use dimmers but cinema could not. Until then no one had ever felt the need to change the lighting within one shot. Shot by shot they could change the lighting. But in the theatre you have one shot which is there for an hour. You can't change anything visually in front of an audience, so you have to do something with the electrical side.'

His big opportunity came when working with Francis Coppola on *One from the Heart*, when Coppola asked him to find a new studio lighting system. Together they went to a lighting show in Las Vegas, were sold on the idea of dimming controls and felt this was the way forward for the film industry.

Vittorio explained, 'I thought this could be the answer to my needs. Of course, I was aware that dimming would change the colour temperature and could cause a slight colour shift. But I felt this system was so superior that it was a small price to pay.

'Then from one position and with one operator, I could control the entire lighting of the stage. It gave me incredible freedom to move light around.'

On returning to Italy, he worked closely with Giovanni Ianiro, of QuartzColor Ianiro Trading (the company which preceeded Strand's present Italian trading company), to develop something suitable for his needs. Then Vittorio felt he could not be without a dimming system if he was on location, so something portable would be required. There could be no turning back.

What was lacking was a suitable project to put his ideas into practice and warrant a sizeable investment in development of the system by Strand. That break came with the Rutger Hauer/Michelle Pfeiffer period masterpiece *Ladyhawke*, where Vittorio had to reproduce in a studio a total eclipse of the sun. This was the opportunity he was looking for, and the excuse for investment in a dimming system.

The final seal of approval for dimmers in the cinema lighting world came with the epic *Peter the Great*, which was shot on locations around Russia and Europe.

His 'unit' comprised Fabio Cafolla operating a flight-cased AMC console, with a minibus containing Strand Tempus dimmers; Ferdinando Certocci supervising the AC generator, with Filippo Cafolla as gaffer.

For all the initial reluctance by the studios to introduce dimmers, did he feel his own success had vindicated him? Vittorio shrugged his shoulders. 'It was a simple matter. Did we progress or did we stay in the cave, lighting it as man had done for thousands of years? An easy choice.'

*'I have been trying to move light, always to give to an audience the feeling of movement. But when I started, the technology would not allow me to do what I wanted'*

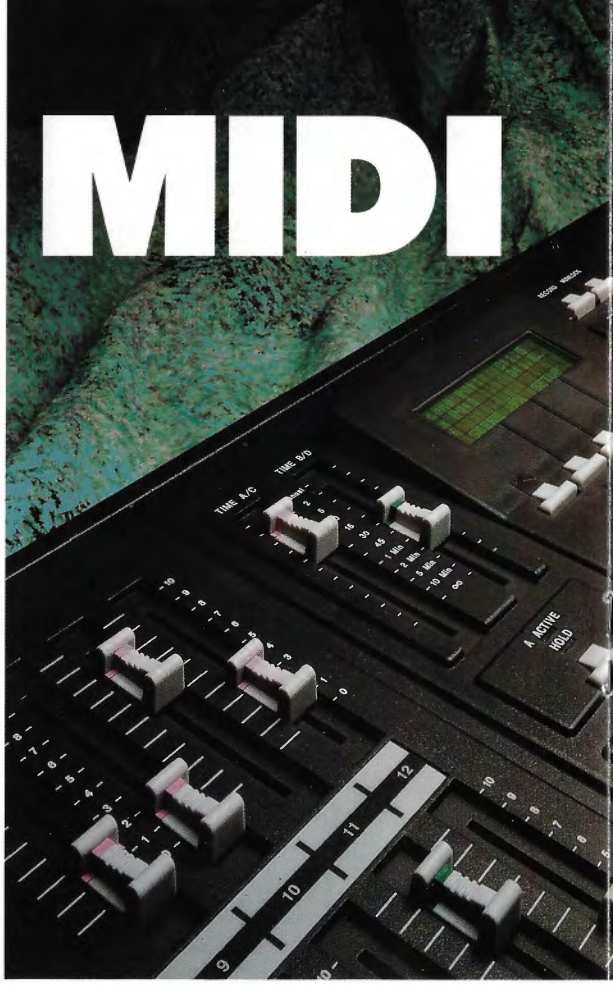
Vittorio's theories have been developed over the years and logged faithfully in a progress book — his magnum opus. He hopes this may be published before too long. If it is, it could well become the definitive work on modern film lighting.

He explained, 'My advice to young people interested in cinematography is first to learn what has happened in the past. All the great masters did. You have to understand the culture of cinema, literature, music, sculpture, paintings and photography.

'But the main thing is to have something inside you to tell. If you have some kind of real need or feeling that you want to express ... that is the most important thing. The knowledge of these things and the truth that you have heard make these inside feelings come out. And that is the basis of my own structure.'

# Shedding light on MIDI

*by Allan Ashton*

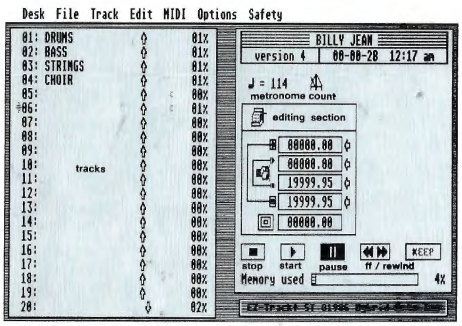


**In previous issues we have looked at Strand's MX lighting control desk and had a look at the world of Musical Instrument Digital Interface 'MIDI'. Like most things in life MIDI requires thought and perseverance to get the best out of it. In the early days, many musicians gave it the 'cold shoulder' out of sheer laziness. Today it is second nature in the music business and a lot of people owe their success to it.**

Sound to light has been around for years in one form or another and whilst the actual chases and flash patterns have got pretty sophisticated, the control side and how it responds to the actual music has not. The MX and MIDI will change all that, allowing the musician to create visually as well as musically.

Strand MX, or Mantrix MX as it is known in the USA, will appeal to the self contained Pro or Semi-Pro band or artist, and those who cannot afford the permanent services of a lighting engineer. The importance of lighting in the rock world is very apparent. Subtlety is rarely a consideration and imagination often goes 'over the top'.

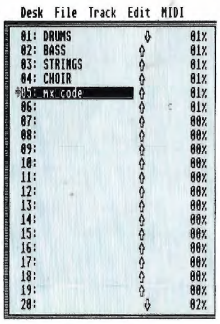
**Fig.1**




Whilst the theatre world is slow to change and fairly conservative, one or two top lighting designers have admitted utilising some of the more imaginative ideas that occur in rock lighting.

Ideas abound when a system like the MX becomes available. As with all new products you have to embark on a voyage of discovery to find out if what you want to achieve is possible.

**Fig.3**




## THE IDEA

The objective was to create a mood for each song and change that mood automatically with the verse and chorus. For example:
Intro — trigger red lights from a blackout.
Verse — fade in some warm yellows.
Chorus — trigger a suitable chase pattern.
Verse — all colours on.
Finale — slow fade to solitary blue light.

Pretty standard stuff for a lighting person but a whole new ball game for the average musician. The main difference here being this is all now triggered and controlled from a MIDI keyboard/sequencer, either a self contained unit or in conjunction with a computer.

## THE SEQUENCER

The musical sequencer may be unfamiliar to some people so a simple explanation is in order. A sequencer is a digital tape recorder. It records and plays back digital information in the form of musical notation. You input notes in time, or as near as you can get, to a metronome click at the speed that suits your musical abilities.

Only a few bars need to be recorded and these can then be repeated, altered, cut, pasted and generally played around with like a musical wordprocessor. As you record each track the previous one will play along with you.

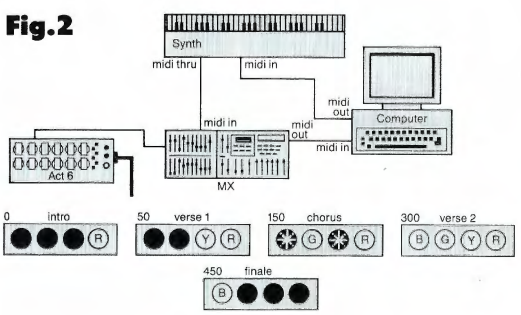
The power of the sequencer is in its ability to overdub without quality loss, something not possible with an analogue tape recorder. Fig. 1 shows a software sequencer; computer sequencers are much more powerful than onboard ones. This should be self explanatory, but a point of interest here is the amount of tracks available. It looks like there are 16 tracks left but in fact there are more than 100. This is because the four recorded tracks can be bounced down onto track one leaving the others free for recording again and again, and remember sound quality is not affected.

## THE MIDI MODES

On our voyage of discovery the four MX MIDI modes were investigated and work as follows:—
MIDI Normal — In this mode MX only receives the MIDI real time clock signals. No MIDI messages are transmitted.
MIDI In — Most console operations are suppressed board control is via the received MIDI signal. Only the grand master and blackout keys remain operative.
MIDI Slave — As above except the individual channel faders and flash buttons are not controlled from MIDI but remain operational on the console.
MIDI Out — All fader movements and most key operations are transmitted on the current MIDI channel. In this mode a MIDI SYNC will force a complete snapshot of the current MX status to be transmitted.

The Audio/MIDI switch and fader work in all MIDI modes. Depending upon the position of the Audio/MIDI switch the fader will control the speed of an effect either on the bass beat (audio position) or through a MIDI controlled sequencer clock (MIDI position)

**Fig.2**



## ACTION

Time to put the theory into practice. The setup was configured as in Fig. 2 and all required scenes were recorded into the MX memory as per normal prior to any musical action. Twenty scenes allowing five songs to have four automatic scene changes. No effects were added at this stage. Next, the MX was set to MIDI Out and the first song was played back. At the correct moment the scenes were faded in and out manually by using the C/D faders. This information was input to the sequencer on a spare track, an overdub, just like a music track.

On playback, the whole thing worked just as planned; even the manual fade times were remembered. Fig. 2 shows the sequencer clock pulse number that corresponds to the changes, and Fig. 3 shows that track five now contains the MX code for the song lighting changes. The other songs were dealt with in a similar manner, but this time effects were introduced manually. Flashes, chases etc. were added in real time to the already pre-recorded scenes. Once again on playback all worked in perfect harmony — most impressively.

A computer setup is not necessary in order to get something like this working as a couple of alternatives are available. First, as long as a keyboards sequencer can transmit and receive over MIDI the lights can be automatically controlled as mentioned. Secondly, and of more interest to the live musician who doesn't like sequencers, some of the patch change buttons can be programmed to switch scenes instead of changing voices as they normally do.

This is only scratching the surface really and as the MIDI/Lighting concept begins to get recognised some spectacular results are assured, and at a reasonable cost.

*Allan Ashton is a working musician with British soul band,* Respect. *He is also a lighting consultant for Strand Lighting service agent, Datapage.*

# THE SHOW DID GO ON FOR ITN

**In the few weeks when the world was poised on the brink of the Gulf war, staff at Independent Television News, in London, had more to handle than just the frantic pace of unfolding world events. They also moved home.**

**As we reported in a previous issue of *Lights!*, ITN was one of the first TV stations, after London Weekend Television, to install Strand Lighting's revolutionary EC90 dimming system. This was an opportunity taken during the fitting-out stage of its new studio and headquarters at Grays Inn Road.**

**But when the first phases of the move were under way from ITN's former collection of sites in London, the Gulf crisis meant that the viewing public became increasingly hungry for news.**

**Not only did ITN complete the move into the new building successfully but throughout the entire operation, round-the-clock news bulletins and full-length programmes kept on the air without interruption.**

**ITN had very sensibly called on Strand Lighting for advice in planning the lighting aspects of the new studio. In the event, the installation of the latest studio lighting technology passed off without a hitch.**

***With the world in crisis, ITN had its own problems to deal with. But 'the show' still went on. Newscasters Fiona Armstrong and Trevor McDonald are seen here running through stories for their next programme, while installation of Strand Quartzcolor luminaires continues above them.***

# Creating a bright outlook at RADA

*In the last issue of* Lights!, *internationally renowned actor John Hurt stated that more effort should be given to teaching lighting as a subject at drama schools. Christine White, lecturer in lighting at RADA, and her colleagues are taking steps to improve matters.*

**Any lighting designer coming in to RADA to give a lecture notices one thing the students have in plentiful supply. Enthusiasm. So says Christine White, lecturer in lighting at the Royal Academy of Dramatic Art, from where the cream of new theatrical talent spills out onto the stages of the world.**

The point she makes is all the more valid in view of the criticism by some established actors — most recently, John Hurt — that RADA's training in lighting for students in former years was less than adequate.

Since Mr Hurt was a student at RADA in London, in the 1960's, attitudes have modified considerably. Yes, there is a great deal of training now being given in lighting and sound techniques. But the view is very wisely taken that a subject as complex as lighting is best left to the specialists, while actors concentrate on giving an outstanding performance.

Christine explained, 'I think John Hurt's views may be valid for television because they are doing close-ups. The thing about theatre lighting is that you are not trying to make one person look good. You are trying to make an overall picture.

'Actors need to know about lighting in terms of how it affects their environment, which is what lighting does. It changes an environment within a setting.

'John Hurt was here quite some time ago and lighting and set technology hadn't reached the kind of level we are at now.'

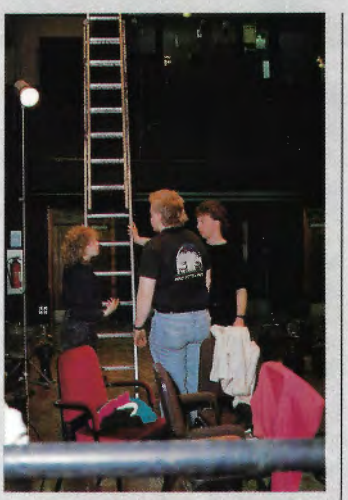
*Strand controls in all theatres.*

In addition to its annual intake of about 28 actor students, RADA takes in up to 20 stage management and 'specialist electrician' students, aged anything from 18 to their mid 30's. The Academy's full-time complement of 15 technical staff is supplemented by visiting lecturers, such as Francis Reid, Rick Fisher and Kevin Sleep, to give the much needed additional dimension.

Christine said, 'It must be quite refreshing for them to discover there are so many enthusiasts who want to have the craft explained to them. There is still a design mystique and they enjoy the demystification with people who are not afraid to ask "why do you do that?" That cross-fertilisation is very useful.'

Under Neil Fraser as head of lighting, RADA in recent years has expanded its technical course far beyond the basic 'how to rig' approach.

The Academy's main building in Gower Street contains three theatres, all of which are open to the public for the many performances staged by tomorrow's stars-in-the-making.



The largest of the theatres, The Vanbrugh, seating 150, has lighting controlled by a Strand Gemini 2+ board. The smaller George Bernard Shaw theatre, has an M24, and the smallest, 'Studio 14' uses a Tempus, with Tempus dimmers. A variety of luminaires is used throughout, to give students a taste of the variety they will encounter in theatres around the world.

'I suppose the biggest difference is that an ordinary theatre will select its luminaires for the job they are expected to do. We buy-in equipment in order to teach, not in order to light,' said Christine.

'We have a strange mix of luminaires — about 270 of

them and not all from one manufacturer. It is good in a way because we can actually say to a student lighting designer, "well, have you considered using a Harmony with..." and you have got it all here.'

As you might expect, there is no such thing at RADA as a typical day. But the general pattern of life for students is one of lectures and shows. If

> *'There certainly isn't a RADA way... there is a professional way of lighting'*

they are not learning, for example, how to light a particular type of production, then they are putting their learning into practice.

She explained, 'When we have outside lighting designers coming in, they may give a standard lecture on how and why they lit a show in a particular way, or their relationship with the director and what it meant to them in lighting terms.

'That works quite well and it also gives an added dimension. It is often a problem when you have a variety of people saying, 'well, actually, yes, we agree'.

'It consolidates what we are saying. Otherwise we might get very narrow in what we are teaching. There certainly isn't a RADA way...there is a professional way of lighting.'

Students are received into RADA on a merit system of enthusiasm, dedication, and previous theatre experience, so that at the very least, they understand the 'who does what' hierachy of a theatre company.

'But really it is how they are which matters,' Christine said. 'It is such a personality orientated business that they have got to be able to come in and to get on with people.

'You can be the best board operator in the world or the best lighting designer. But unless you can communicate with others, you are lost.'

Christine's own way into RADA came via Clywd Youth Theatre in Mold, North Wales, a BA in Theatre Studies at the University of Kent, stage management and a deputy post as electrician at The Lyric Theatre, Hammersmith. When the RADA vacancy arose, she was selected for the job.

Now aged 27, she has been at the Academy for two and a half years but maintains her professional 'eye' by freelance lighting design assignments for companies such as The Dance Studio. She is currently working towards a Master of Philosophy qualification.

She went on, 'The good thing about it is that I can go into a lecture, having just done a show somewhere and say, 'well, recently I did this...' and I am sure it gives what I am saying more credibility.'

However, they found that 'the American way' was not all they expected.

'They discovered that in the United States, they do a lot of theory but do not always have the practical aspect to see if the theories work.

'What we say at RADA is something like "go and create a moonscape", having discussed what they may need to do.

> *'Unless you can communicate with others, you are lost'*

Students are themselves urged to keep in touch with the 'real world' of stage lighting, by taking-in as many West End and provincial shows as they can manage — sometimes under strict orders to observe a certain aspect of lighting, ready for a lecture-hall discussion the following day.

Another aspect on lighting came recently for two specialist students who had completed their RADA course. They were selected to go to Yale University, in the USA, to study lighting under Jennifer Tipton.

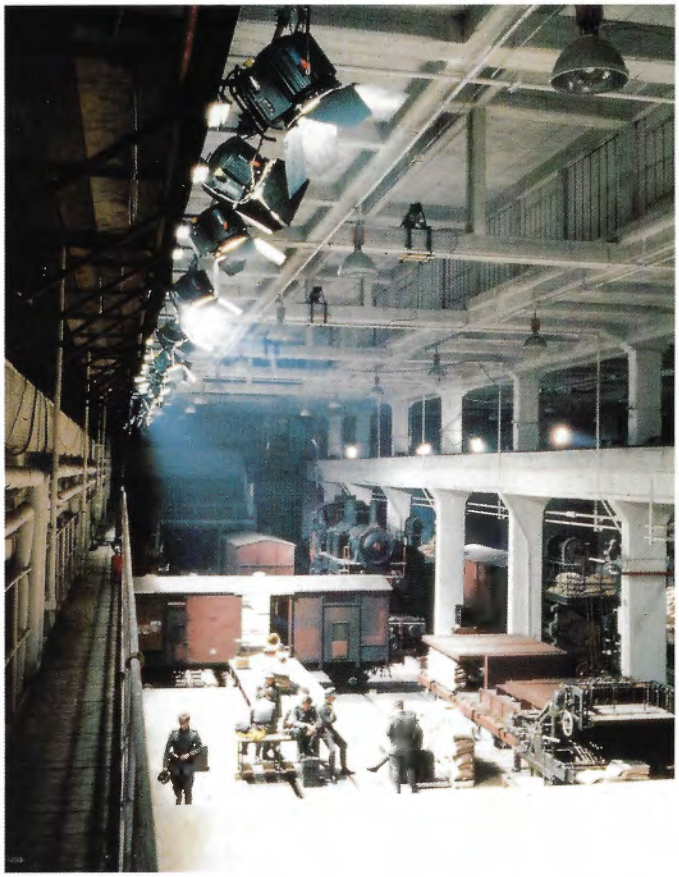
'Learning is always much better if you discover certain things for yourself. You need the practical experience to enable you to develop.

'We are teaching on the basis that we manipulate them to learn certain things and we are pulling them into certain areas, where we hope they will make some discoveries of their own and feel they have achieved something.'

And what can the successful student expect at the end of the course? Continual assessment of project work leads ultimately to a RADA Diploma. After which, for the new generation of lighting designers, all the world's a stage.

*Stefano Mariotti and Riccardo Bertocci review*

# THE LAST DAYS OF MANKIND



**During the 1930's, Karl Kraus wrote, in Germany, a monumental play, *The Last Days of Mankind*, dealing with the First World War as described by war correspondents.**

In 1990, Luca Ronconi wanted to revive this classic expressionist work, but keeping the industrial atmosphere of period set-pieces.

With a budget of five billion Italian lire it was possible to be very ambitious and to look for the perfect setting for the play. A regular theatre could not offer the kind of space needed for monumental work, so the choice fell upon 'Il Lingotto' (The Ingot), a disused FIAT industrial plant in Turin.

An area of 20,000 sq ft gave the opportunity of making the most of the atmospheric 'feel' of the old plant. Three huge platforms were built around a central area, where the audience could be seated. On these platforms, real railway engines, carriages and a construction crane could move during the play, continuously changing the look of each scene.

Furthermore, there was not just one single scene enacted at a time but up to eight individual scenes presented contemporaneously on different areas of the stage. In some cases the action was brought into the middle of the audience itself.

To avoid confusion, no particular scene was given prominence over others, nor one given greater emphasis by the choice of actors or lighting. There was no leading role and no area was lit while leaving others in darkness. Only in some cases did a certain area receive a little more light than others.

> *'It took us a long time to devise a computer program that would suit us but after that, things went smoothly'*

The choice of the kind of lighting was also quite unusual for theatrical work. The director wanted to retain the plant's lighting system, which consisted of 60 400W metal halide lamps, giving a colour temperature of about 5600°K. This was supplemented by HMI luminaires to match existing lighting. Strand dealers TTT of Milan supplied 56 4kW and ten 2kW Sirio QuartzColor HMI spotlights, 55 1200W Quasar Quartzcolor luminaires, all manufactured by Strand Lighting, together with 22 2kW floodlights, six follow-spots and 70 more 400W metal halide luminaires.

Using HMI light was no easy task. This kind of light is exceptionally intense and cannot be controlled with conventional theatrical dimmers. When the luminaires were focused against the railway wagons and locomotives the light was reflected in a random way. The only satisfactory solution was to light the scenery with 2kW floodlights directed against a reflecting screen.

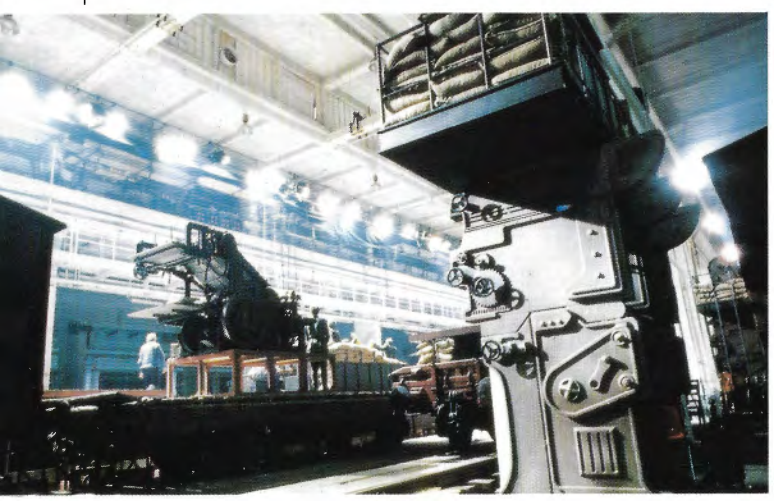
The director did not want to use any coloured filters. They would interfere with his ideas of a white wash that would cover all acting areas uniformly. That left only one possible variation — turning the luminaires on or off manually. And because there were so many of them, an army of technicians was necessary to control the HMI light switches. An even higher number of stage hands was necessary to move all the various pieces of scenery throughout the play. The high number of movements involved (more than 400 in just the first 45 minutes), created a series of problems.

The greatest one was to find a practical way of planning and organising the various movements. The solution was found in a computer expert who devised a way of putting down in graphic form all the pieces of scenery and then moving them around the stage in a logical way. A scheme of movements was finally printed out and each stage hand was given a personal schedule, telling him what to move and when. Even the six follow spot operators knew where to direct their beam at the right time, just by reading their individual computer printouts.

Marco Andriolo, the technical second director, explained, 'We tried every possible way to synchronise movements. It was just too big for us to handle and too time-consuming.

'It took us a long time to devise a computer program that would suit us but after that, things went smoothly.'

The Strand Quartzcolor HMI lights that were added to the existing industrial lighting of the plant gave an eerie feeling of dreamlike suspension between daylight and artificial light. This created the perfect atmosphere for an expressionist play.



*Stefano Mariotti is a well-known journalist for many Italian and English-language lighting journals. Riccardo Bertocci is a technical author.*

**Footnote:** Developments in discharge lighting technology and intensity control will be covered in a future issue of *'Lights!'*.

*Mike Robertson describes*

# 'LIGHTING FOR GODOT'

**It was just before the sticky summer of 1990 set in, that I was asked by the Strangeways Rooftop players to light their production of *Waiting for Godot* in the Edinburgh Festival.**

We arrived in Edinburgh, made hastily for the theatre and got to work on the fit-up, a day ahead of the rest.

I had met with the set designer and director a few months before hand and we had 'finalised' a set plan and an overall concept for the show, which the lighting would have to enhance.

It is a very surreal play. However the lighting for the production had to look predominantly simple and naturalistic for the most part.

The play itself calls for a day and night lighting state. We were to add a dusk state and few very surreal states for various parts of the show. We had decided that the show should seemingly be seen through a picture frame, as if in places the audience were watching a movie. This we did by having a series of projected titles and credits onto the front of house tabs, as the house lights went down at the start of the show.

*Samuel Beckett's image opened the play.*

This started with a large cameo of Samuel Beckett and progressively moved through 'Directed by...', 'Lighting design by...' (funnily enough that slide seemed to stick in the projector for longest...) and so on. These 'tab' credits were in the middle whilst a few Parcans made sweeping beams up the side and corners (A bit 20th Century Foxish). The tabs then opened to reveal a small white screen in the set which was being strobed quickly, whilst the rest remained in darkness. This was to give a sort of cinema feel. On final and rousing note of the show's musical prelude, the strobing window disappeared to reveal two screens with projections of grey skies, recessed into an otherwise black set.

The stage was being top lit in 'Brilliant blue', and the solitary white tree (the only other scenic piece) being cross lit from a perch in Full CT Blue with a sort of slatty lined gobo. The crossfade into daytime proceeded. This comprised toplighting in pale oranges and straw tints, and a few Parcans to suggest rays of sun. There was also a fair bit of front-of-house light, in open whites for the most part, and a barrage of backlight with break-up gobos.

The cross into night was quick and quite blue — quite a lot of perch lighting in 202, 201 and other blues. Meanwhile my projectors had been doing overtime, changing their slides from grey skies to blue skies, and leafy trees to barren trees, this was to enforce the action on stage, and some of the surreal ideas in the text.

When the show opened, the lighting worked, but I had had reservations about the power of colour, and so on, in it. By the next day I had toned down some of the strong colours and had eliminated cues which were unnecessary, thus rendering the lighting more simple.

Our own technical post mortem revealed that the show had been fun but a great deal of unnecessary hard work. Still, the party wasn't bad.

*Mike Robertson is a lighting designer at Merchiston Castle school, Edinburgh and a regular contributor to* Lights!.

*The intensive record keeping process common to major shows on Broadway or in the West End could now be a chore of the past, thanks too...*

# LP90 OFF-LINE EDITING

**A new software package claimed to do for cue-tracking 'what word processing did for writing' is now on the market following a joint venture between Strand Lighting Inc. and New York lighting specialists Lucida.**

Called 'Express-Track', the program provides off-line editing for Light Palette 90, using any Apple Macintosh computer. Already, the system has proved to be hugely successful. It means that cue data can be entered and edited away from the LP90 desk, so allowing savings in production costs and time.

Express-Track was devised by Lucida, working with a group of lighting designers, and developed with assistance from Strand Lighting.

It enables LP90 disks to be written and read via a Mac, and uses identical syntax to LP90. In effect, this allows a lighting designer to set up and program on disk all the lighting cues necessary for a major production before he has even set foot in the theatre or studio.

With exactly the same screen display as LP90, the software shows the designer at a glance the direction of moves, hidden commands and up to 800 channels, allowing any one to be tracked immediately.

Cue data is arranged, displayed and sorted automatically, as it is entered, with the date and time of every cue also recorded. Dynamic menus guide the operator to the data he needs within seconds.

The system has made the need for hand-written track sheets obsolete, for now any display can be printed out silently at the production desk, while work is in progress.

Express-Track is already being used by Richard Pilbrow, of Theatre Projects, and David Hersey, who is currently using it on the Broadway production of *Miss Saigon*

Miss Saigon — *now a hit on Broadway.*

Photo: Rex Features

'Apple' and 'Mac' are Trademarks of Apple Computers Inc.

# THE SCIENCE OF LIGHT

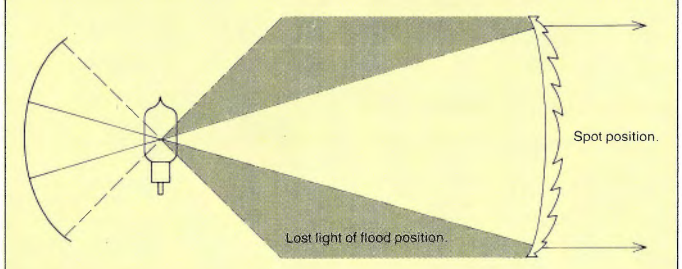
**Luminaires can use both reflection and refraction to control the luminous flux emitted by a light source, so that light is directed or focused in particular ways. Popular spotlights are classified by their lens arrangements, and by implication, the type of performance they give.**

Fresnel spotlights (Fig.1) utilise a type of lens which fundamentally consists of a series of concentric prisms and a small central convex lens. To simplify the description, we can assume that the lamp is a point source; in practice, of course, it has a finite dimension. Today's lamps, however, are more compact than those of earlier times when a simple plano-convex lens was used. The fresnel lens led to important improvements: firstly, it created a similar optical performance to a plano-convex lens by dividing the lens curvature into a series of separate prisms thus using considerably less glass and reducing weight. Secondly, a better distribution was achieved without the projected image of the lamp itself.

Although the fresnel lens is designed to have optimum performance at one particular beam angle, adjustments can be made. Used in conjunction with a spherical reflector, light is collected from the lamp and directed through the fresnel lens, which when close to the lamp gives the wide angle (flood) position. Moved further away, the beam reduces into a soft-edged narrow-angle spot. The spot position is the least efficient in light utilisation, although the intensity is still greater than flood. Light also spills a little from the 'risers' of the lens. The soft-edged feature enables overlapping of beams side by side and layer upon layer using several fresnel spotlights, to build up the lighting coverage on stage.

In recent years, the plano-convex lens has enjoyed something of a renaissance due to improvements resulting from the development of compact-filament tungsten-halogen lamps and an improved lens design, which by stippling the rear of the lens diffused the image pattern of the filament. Originally, this was achieved by small engraved prisms, hence the reference to 'prism-convex' or PC to distinguish it from the simpler plano convex type. Optically, the PC is similar to a fresnel, but it produces a tighter spot with less spill light and a soft edge. Some designers have found this an economic alternative to using a profile with the focus softened. Barndoors are usually added to control the degree of spill light and to give an approximate shaping of the beam on both PC and Fresnel.

**Fig.1** Fresnel spotlight in spot position.




Note: PC lens is similar, but focal length longer.

For even greater beam control the projection capabilities of a profile spotlight are required (Fig.2). An ellipsoidal reflector is used to collect as much light as possible to illuminate an aperture which is called the 'gate'. This illumination is related to the required distribution which may be either 'peaky', as in the American Leko, or 'flat' as traditionally favoured in British designs. The light leaving the gate has to be collected by the lenses efficiently to avoid waste, and so the converging main flux is focused by the reflector through the gate to a 'cross-over' point beyond. However, there is also a diverging beam of light from the front of the lamp. The two lenses form a compound single lens, the focal length of which is dependent on their separation. The compound lens projects an image of the gate on the stage, and the magnification is governed by the focal length of the lens.

**Fig.3** Photometric diagram of beam data.

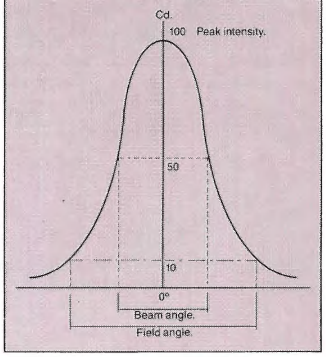
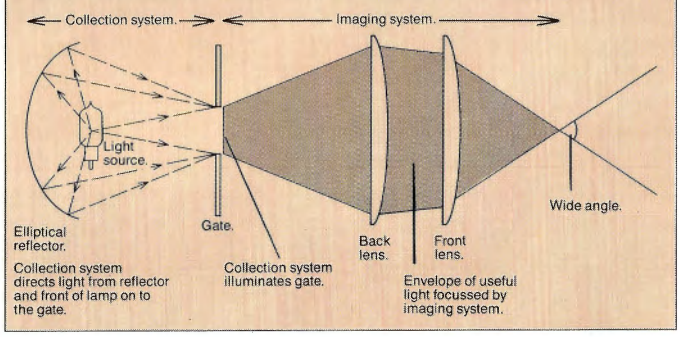



**Fig.2** Variable beam angle profile spotlight — wide angle.




Thus by altering the relative positions of the lenses, both the size of the image and its focus can be adjusted.

At the usual projection distances, the beam angle is determined by the focal length of the lens system, and it is this angle which frequently appears in the name of the spotlight: a Cantata 18/32 for example, describes a luminaire suitable for a range of medium beam angle applications between 18° and 32°. Four externally operated shutters enable the beam to be shaped and this image focused.

To illustrate the luminaire performance, a photometric diagram (Fig.3) will describe the variation in intensity across the beam from a central peak intensity in candelas, diminishing with the angular separation from the central axis, 1/2 peak indicates the brightest area of the beam and 1/10th peak represents the maximum beam angle for useful light from the luminaire.

Whilst these are the popularly used optical arrangements, reflector-only systems are widely used in flood, studio equipment and with a parabolic reflector in the very narrow beam projectors such as Beamlite.

Finally, we should not forget the integral reflector lamps such as the PAR 64 as deployed in Punchlite, or the small MR16 dichroic reflector lamps now popularly used in architectural Minispots.

*Luminaire latest — the Quartet range from Strand Lighting.*

# WORLDWIDE CONTACTS

## UNITED KINGDOM

**Andy Collier**
Strand Lighting Limited
Grant Way, Isleworth
Middx TW7 5QD, United Kingdom
Telephone: 081-560 3171
Telex: 27976. Fax: 081-568 2103

## AUSTRALIA

**Rod Gilbert,** Strand Lighting
264-270 Normanby Road
South Melbourne, Victoria 3205
Australia
Telephone: (03) 646 4522.
Fax: (03) 646 5020 (Int).
(03) 646 6727 (Ext)

## CANADA

**Peter Rogers,** Strand Lighting
6490 Viscount Road, Mississauga
Ontario L4V 1H3, Canada
Telephone: (416) 677 7130.
1-800-387-3403
Fax: (416) 677 6859

## FRANCE

**Bernard Bouchet**
Strand Lighting France S.A.
26 Villa des Fleurs, 92405 Courbevoie
Cedex, France
Telephone: (1) 47 88 66 66
Telex: 611921 F/Strand F.
Fax: (1) 43 3371 75

## GERMANY

**Heinz J Fritz,** Strand Lighting GmbH
Salzbergstrasse 2
3340 Wolfenbuttel-Salzdahlum
Germany
Telephone: (05331) 30080
Telex: 95641. Fax: (05331) 78883

## HONG KONG

**Phil O'Donnell**
Strand Lighting Asia Limited
802-4 Houston Centre
63 Mody Road, Kowloon
Hong Kong
Telephone: (852) 3-685161
Telex: 44953.
Fax: (852) 3-694890

## ITALY

**Enrico Piedi**
Strand Lighting SpA
Divisione Trading
Via Paolo Albera 82
00181 Roma, Italy
Telephone: 06-780 6251
Telex: 620178 Luxian.
Fax: 06 780 9018

## USA

**Steve Norman**
Strand Lighting Inc.
18111 South Santa Fe Avenue
PO Box 9004
Rancho Dominguez
California 90224, USA
Telephone: (213) 637-7500
Telex: 664 741.
Fax: 213-632-5519

**Rick White**
Strand Electro Controls
2975 South 300 West
Salt Lake City
Utah 84115, USA
Telephone: (801) 487 6111
Fax: (801) 466 1003

# COMPETITION WINNERS

**We had an excellent response to our competition to find ingenious ways of creating special effects in the last edition of *Lights!*, and we have chosen the best to publish here. We should like to thank Mr Fred Bentham for his assistance in making the choice.**

From Farnworth Little Theatre in Bolton, we heard about the special effect created for their performance of *On Golden Pond.*

Phil Brookes sent us details of the effect which used a shallow oven tray with broken pieces of mirror in the bottom, which were covered with water.

A Pattern 23 profile spotlight provided the source of light which was focused onto the surface of the water at a very shallow angle, giving the effect of a setting sun reflecting from the lake. But the effect was still not quite right, and as Phil describes, 'We soon realised that the only time the effect looked convincing was when a sure footed stage hand walked past and disturbed the water.'

A slowly revolving motor was then conjured up and a disc fitted to the spindle which was submerged in the water to provide a gentle ripple.

The Tyldsley Little Theatre in Manchester sent in a novel idea for creating the effect of a train moving across a small stage for their production of *The Ghost Train.*

This involved the ubiquitous Patt 23 shining on a triangular column of mirror tiles which was constructed on the platter of an adjustable speed record turn-table.

By varying the speed of the turn-table, Philip Peacock writes, 'One could almost imagine the train entering the auditorium'.

Brother D.A. Rock wrote to us with a description of his imaginative apparatus for creating a rising moon effect for *The Thwarting of Baron Bolligrew* at St Brendan's College Bristol.

This involved an ancient Patt 52 on a catwalk over the stage, fitted with a lens adapted from its former use in aerial photography.

A picture of the moon was drawn on a glass slide, and a twin-mirror arrangement was installed to the front. One mirror was fixed, whilst the second was controlled in two axes by an operating lever. The result was a realistic moon which rose from behind a SL groundrow, moved smoothly to its zenith, and set behind scenery SR.

# STRAND CLOTHING OFFER

**First the sweatshirt...and now the *Lights!* T-shirt, for those lazy, hazy golden days of summer!**

Make your mark with this stylish top-quality Cotton T-shirt, with a splash of colour provided by the internationally-recognisable *Lights!* title.

Suitable for men and women, it is available in black or white, sizes Large or Extra Large, at a price of just £4.95p each (including p&p and VAT). Please complete and return the order form, along with your cheque (drawn on a British bank).

The *Lights!* sweatshirt is still available, at £11.80p, including p&p.

Offers apply to UK only. Allow 28 days for delivery.



To: Clothing Offer,
Marketing Department,
Strand Lighting Limited,
Grant Way, Isleworth, Middlesex TW7 5QD

Please send me.....*Lights!* T-shirts @ £4.95p each, inclusive of postage and packing.
Size: L (to 42" chest) ☐ XL (to 44" chest) ☐.
Colour: Black ☐ White ☐ (tick relevant box).

Please send me.....*Lights!* sweatshirts @ £11.80p each, inclusive of postage and packing. (Large size only).

I enclose a cheque/postal order for £.....

Cheque/PO No:.....

(Block letters please)

Name: _____

Address: _____

_____

Postcode: _____

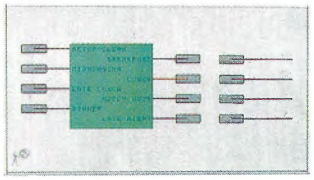
Telephone: _____

# Strand's new Premiere system - Commanding greater flexibility in architectural lighting control.

Strand's revolutionary Premiere system makes even the most complex combination of lighting scenes simple to achieve and easy for users to recall. So your creativity need never be compromised by technology.

Premiere is a PC configured system with a menu driven program, giving the designer total flexibility.

- Premiere allows you to define or redefine pushbutton or slider controls to perform any of over 50 functions.
- A possible 4096 different lighting scenes can be recorded across 32 different areas.
- Select from a range of 40 stylish control stations whose functions can be changed manually or automatically.
- Premiere controls up to 512 dimmers.
- Design information once transferred to Premiere's system processor can be accessed from control stations linked by a common data highway.



To find out more about the exciting possibilities offered by Premiere, call Strand today, or complete and return the coupon.

Strand Lighting

*A REPUTATION BUILT ON BRILLIANCE*

**Strand Lighting Limited**
Architectural Lighting Division
Grant Way, Isleworth, Middx TW7 5QD
Telephone: 081-560 3171
Telex: 27976. Fax: 081-568 2103

Please send more information about the new Premiere system ☐
Please telephone me to arrange a demonstration ☐

Name

Position

Company

Address

Postcode

Telephone