

# TABS

THE INFORMATIVE JOURNAL OF THE RANK STRAND GROUP

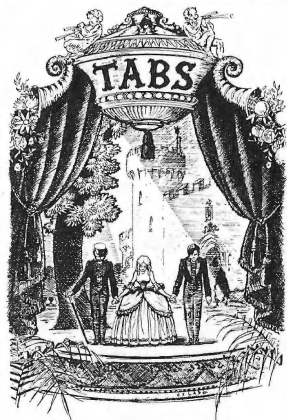


VOLUME 38 NUMBER 2 OCTOBER 1981

**SPECIAL FEATURE:  
STRAND'S NEW  
PRODUCT RANGE  
PAGES 4-10**



# TABS



Editor:  
RICHARD HARRIS

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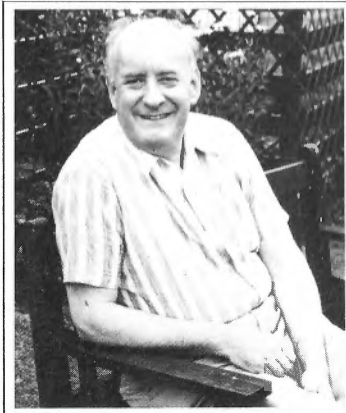
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# FROM THE EDITOR



Why has another copy of TABS thundered through your letterbox two months before time? Have Strand no mercy on either their readers or the postman?

Well, be of good cheer — we have advanced the publication date to bring you news of the new products at the same time as we are launching them on a waiting world.

Therefore we will not be publishing our next issue until Summer 1982 — so see you then.

What a fantastic three months! We have all been beavering away here at Brentford and Kirkcaldy launching not only a whole new range of lanterns — see major article in this issue — but designing and producing products for a complete new operation. Strand electronic and dimmer designers have now used their skills in designing and producing controls for a whole new range of tungsten and fluorescent dimmers specially developed for non theatre use.

The new range is called "ENVIRON". For details see article in this issue.

Incidentally we had quite a small drama just prior to ordering the product labels and the leaflets. We had settled on the name "Ambience" when suddenly we heard from our good friend in Strand Century, Chuck Levy — that doyen of American Theatre lighting sales — that an American company had totally independently just launched a range of dimmers under that very same name! So back to the dictionary.

## SITUATION VACANT

### DIRECTOR

A National Organisation concerned with technical aspects of one of the Performing Arts is seeking a Director. The Director will be responsible to the Chairman and to an elected council.

The successful candidate's background will have included journalism and/or public relations. Experience in conference and exhibition organisation would be an advantage.

A thorough understanding of and commitment to training is a vital part of the Director's role.

Salary indicator: £15,000/£20,000 p.a. plus suitable car or allowance.

Location Central London.

Applications to: The Chairman . . . .

This is the advertisement I hope one day soon the ABTT will put in *The Times* and *Guardian*. This appointment, I believe will mark the next stage of development of our association. My own view is that the ABTT has probably got as far as it can go under the present set up good and enthusiastic as it may be. I believe that the services of a full time professional are really now required to carry out what has become a very full time job. This thought came to me during Showlight '81. This was precisely the sort of event that we in the ABTT should have organised! It should not, I submit, have been left to the building services people. That was like leaving the organisation of a Mozart Festival to be arranged by the Music Stand Manufacturers' Association. Fie on us all!

## MINIMS GO INTO SERVICE



The new Minims are now being put to work. Steve Hocking of the L.A.M.D.A. Theatre in West London with two of the Minims his theatre have bought for their small hall touring rig. Did 500 Watts ever come in such a small package?

## SHOWLIGHT '81

Showlight should have happened at the same time as the ABTT Trade Show, and the proceeds from the fair should have been used in part to make the conference inexpensive enough for people actually working in technical theatre or T.V. to attend. If Showlight had been timed to coincide with the Trade Show, then rates for stands (or booths) could have been increased to provide this extra money, because manufacturers will always pay more when the event is going to attract a world market crowd. As it was, the Showlight conference cost £60.00 for a delegate to attend. As an example of the general price level, a delicious chicken salad, strawberries & cream & coffee came to £10. Before anyone tells me that lunches were included in the £60.00 for full time delegates — yes, I know, I am simply indicating the rather high level everything was set at. Far too high for the average technician who would not only have gained so much but would have enjoyed it all immensely.

There were some super things to be heard and seen. Richard Pilbrow's review of the state of the art of theatre lighting should have been heard by everyone who takes the subject seriously. Mario de Sisti of Ianiro told us all how they had motorised a dual flood/spot Kahouteck, as used in TV studios, using no less than nine motors! There was also a marvellous presentation by cine photographer Freddie Francis — lighting cameraman on "The Elephant Man" — illustrated with some wonderful clips, plus many other good things — and one or two not quite so good, but as to which these were, I have sworn to maintain an Iago like silence.

But your Editor's main feeling was that of a terrible sense of waste. This was a great and unique occasion on which the committee had obviously laboured long and diligently, and it should have been attended by many, many more than the two hundred or so top institutional and industry figures who were actually there. I, of course, came in on a press pass!

I have always said that the ABTT does wonderfully, considering that it operates on a basically amateur basis, but we have in Britain a theatre supply industry which is strong, healthy and selling successfully all round the world. This industry would, I believe, be happy to support a proper international professional exhibition — but a conference must be held at the same time to allow overseas delegates to 'claim their expenses'. Have I harped on this theme before? Yes, dear reader, I have. But good themes are worth harping on!



## OVER THE WEIR

Your Editor recently had a very pleasant Sunday, when as well as enjoying an excellent turkey, ham and pâté salad, he gave a slide lecture to the 200 or so delegates from amateur societies in the South of England gathered at the H.Q. of the Teddington Theatre Club hard by Hampton Court Palace.

I was one of a number of speakers covering various aspects of lighting. I dealt with the current technology, and the developments that had led up to it, while other speakers dealt with more "how to do it" aspects of the subject.

### New Recorded Lectures?

This Teddington meeting caused me to remember that our present series of recorded lectures on stage lighting is well out of date\*. (These lectures, for any reader not familiar with them, consist of a series of slides illustrating the particular lighting subject discussed plus a tape cassette containing the actual lecture, with the lecturer's voice saying "next slide, please" at appropriate points.) These lectures can be used by any group of interested people who possess, or can borrow, an ordinary 2 inch x 2 inch standard slide lantern and a tape cassette player. The last lectures were photographed in King Street, and were by the excellent Mr Francis Reid.

Quite a few groups asked for these lectures, and it has occurred to us that there may be a demand for a new series featuring new ideas and the latest equipment as well as how to get the best results from the old faithfuls.

Would any readers who think that a new series of recorded lectures would be of interest to them please drop me a line. If enough of our readers are interested, U.K. or overseas, we will see what we can do.

*\*No longer available.*

## U.S. READERS PLEASE NOTE

The number of our American readers has now risen to the point when it has become rather costly to mail copies of TABS direct from England to them. We are therefore now arranging for our sister company Strand Century Inc. of 5432 W. 102nd Street, Los Angeles, California 90045, Telephone: 213 776 4600 to send out TABS to American readers. All requests to go on the readership list to them, please.

I am also pleased to say that there will in future be articles specially aimed at our North American readers — and, incidentally, we would like to hear from any potential U.S. authors on T.V. or theatre technical topics.



## HANDSOME WORDS FROM A HANDSOME SOURCE

When we decided to restart TABS, and I was fortunate enough to be offered the Editorship, my first thought was to cloak my identity under a nom de plume. I did however, decide to use a photograph and this is the one I selected as being the very image of what a TABS editor should be. Cultured, wealthy, distinguished in mien and what the French call "of a certain age". After all, my predecessors all fitted this description! However, a little test marketing in Brentford revealed that three people had heard of John Barrymore, while one actually recognised him from the picture!

So I reluctantly put the portrait away. A few weeks ago, however,

when reading the very interesting biography of Peter Finch — "Finch, Bloody Finch" by Elaine Dundy, I came across this quotation from John Barrymore about the theatre switchboard operator, written after his famous New York production of Hamlet some time in the late twenties.

"This virtuoso, half-Edison half-Aladdin, hidden at his amazing console should receive the loudest applause, command the largest salary and merit the posthumous statue reared in the park."

It is rather surprising to see the word "console", which I would have thought could only be really applied to the 1936 Strand Light Console and its successors — hardly to the grand master type of machine I imagine Broadway theatres of the period must have had. Can any reader explain this, please?

It is also very surprising to see lighting so highly thought of as early as 1930 even before Harold Ridge and the Cambridge Festival Theatre and even, dare it be said, even before the first issue of TABS.

## REDHEADS HELP DUBLIN POLICE WITH ENQUIRIES

As Joxer Daly says in 'Juno and the Paycock' "So far as Oi am concerned, the Polis in Dublin is Null & Void!"

Well, modern equipment is helping to make that slander even less apposite.

The Garda Siochana, or Eire Police Force, have been using our Ianiro Red Head portable high performance halogen units for investigations at the

scenes of crimes. Obviously searching for clues, fingerprinting and scene-of-crime photography are all immensely aided by these remarkable units.

I would have suggested pressing the lit lanterns' bodies hard against suspects to encourage confessions, but these units, like all our range, run so cool that it probably wouldn't work.

## NEW FROM STRAND CENTURY

Here are pictures of the clever "Mantrix" system which caught the Editorial eye at the U.S.I.T.T. Exhibition at Cleveland — see last issue of TABS.

Mantrix is a manual 4 scene preset board designed to operate with Century's CD80 dimmers. It features 8 sub-masters, dipless cross fade (timed or manual), a grand master dimmer control — and how nice it is

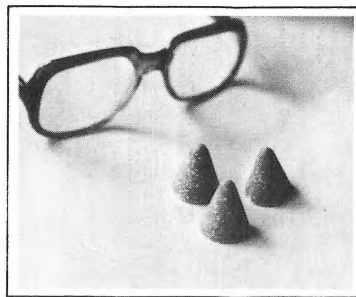
to see the old name brought back, even if for such a mini modern purpose — a black out switch, a matrix pin patch for grouping up to 288 — 2.4kW dimmers to 84 channels.

The CD80 portable dimmer pack containing 12-2.4kW dimmers goes with this control.

Further information available from Strand Century, 20 Bushes Lane, Elmwood Park, New Jersey 07407, or 5432 W. 102nd Street, Los Angeles, California, or Strand Century Ltd., 6520 Northam Drive, Mississauga, Ontario L4V 1H9.



STRAND CENTURY MANTRIX Control Console. Four Scene Preset, Submasters and Matrix Patch. Inset: CD80 PACK Portable Dimmer w/12-2.4KW Dimmers.



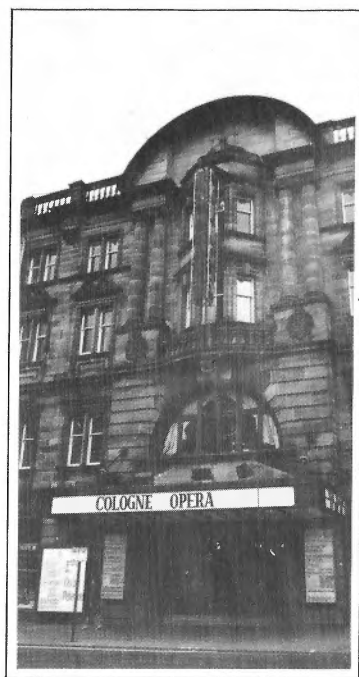
## MYSTERY SHOT

What part do these small objects play in the new lanterns? Answer at foot of column.

## STOP PRESS STOP PRESS STOP PRESS

Yet another decision for Galaxy. After the first Galaxy in London's West End, at the Apollo Theatre (see this issue) and the first one in Scotland at the King's Theatre in Edinburgh, we now have news from our Eire Agent, the redoubtable Kevin Bourke, that Ireland's national theatre, the Abbey Theatre in Dublin, have also selected Galaxy. Their system is of very full specification — 240 channels, 2 V.D.U.'s, Floppy disc library storage, Super Riggers Control (memories as well as channels controlled by a hand held unit). Alpha numeric keyboard, stalls control — rehearsal desk, electronic back up system plus the ultimate security of pin patch. There is also a printer and an auto-dump. This is not an old vehicle graveyard, but an arrangement that continuously records and up-dates the lighting as it is designed and recorded, so at any point in a rehearsal all the lighting is safely and automatically recorded on a floppy disc.

England, Scotland and Ireland have now chosen Galaxy. Do I hear good sounds from any Welsh theatre or studio?



Not taken in Germany! Our picture shows the Kings Theatre Edinburgh, acting as hosts during the Festival — a very good inauguration for their new Galaxy.

They are green plastic cones that are put in a vibrator with the die castings to polish them before final assembly into Preludes or Harmonys.

# Strand's Grand Symphony in Light



Minim



Prelude F



Prelude PC



Prelude 30



Prelude 40



Prelude 16/30



Harmony F



Harmony PC



Harmony 12



Harmony 22



Harmony 15/28



Harmony 22/40



Parblazer-4

**Minim**  
300/500W Fresnel Spotlight  
**Prelude F**  
500/650W variable beam spread  
(9° to 52°) Fresnel Spotlight  
**Prelude PC**  
500/650W variable beam spread  
(7.5° to 58°) Prism Convex  
Spotlight  
**Prelude 30**  
500/650W 28° beam spread Profile  
Spotlight

**Prelude 40**  
500/650W 40° beam spread Profile  
Spotlight  
**Prelude 16/30**  
500/650W variable beam spread  
(16° to 30°) Profile Spotlight  
**Harmony F**  
650/1000W variable beam spread  
(7.5° to 65°) Fresnel Spotlight  
**Harmony PC**  
650/1000W variable beam spread  
(3.5° to 60°) Prism Convex  
Spotlight

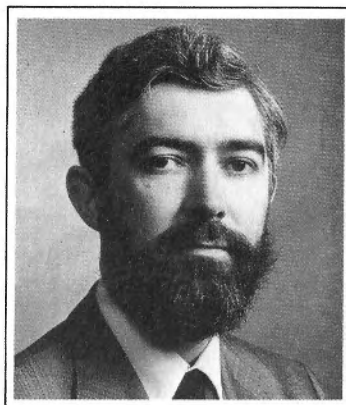
**Harmony 12**  
650/1000W 11.5° beam spread  
Profile Spotlight  
**Harmony 22**  
650/1000W 23° beam spread  
Profile Spotlight  
**Harmony 15/28**  
650/1000W variable beam spread  
(15° to 28°) Profile Spotlight  
**Harmony 22/40**  
650/1000W variable beam spread  
(22° to 40°) Profile Spotlight

**Parblazer-4**  
1000W Par 64 beamlight  
All luminaires except Parblazer are  
supplied with lamps. Power cables  
are detachable on Prelude and  
Harmony series and are available  
with a fitted 15A 3-pin plug or a  
moulded Schuko plugtop or with  
wire ends.  
Detailed specifications are  
available in the form of data  
sheets.



# THE FIRST COMPLETE NEW RANGE

by Michael J. Dyer, C.ENG., DLC, MIEE.



*Michael Dyer joined the Engineering Department of Strand Electric from Loughborough University, where he read electrical engineering — after completing a Management Training Course with Pirelli Grand Cable Works Ltd.*

*He subsequently joined Rank Film Equipment, being responsible for selling both luminaires and control systems to television studios. He was promoted to Overseas Sales Manager and circled the globe many times, his orbit touching Japan, Australia, Hong Kong, the United States and South Africa. In all these, and many other ports of call, evidence of his passing hangs aloft in studios, and glows multicoloured and cathode ray green in various control rooms.*

*Three months ago he was further promoted to the role of Marketing Manager where he is responsible for all new product development in Strand.*

IT might seem an unwarranted statement to call the range of new lanterns now becoming available from Rank Strand "the first new lantern range". However, despite all the work done over the past sixty years by a succession of lantern development engineers within the Strand Electric and Engineering Company and its successor Rank Strand, it is in fact the very first time that the Company has produced a complete new series of luminaires, arranged in families for complimentary use together, at any one time.

This range of lanterns which is now available worldwide from Rank Strand comprises a number of constituent parts and it may be worthwhile to consider the reasons that they came about and how they form a new family of Strand Lanterns which will most certainly become a familiar sight wherever Lighting for Entertainment is used, over the next few years.

When the original design specifications were drawn up, some years ago now, a number of people in Strand sat down to consider seriously the use to which luminaires are put. The common starting point appeared to be the throw distances, that is the distance from the luminaire to the area or people which it is illuminating. These throw distances fall into a number of easily defined groups and hence families of luminaires could be specified, before going to the drawing board, to fit in with the various areas of use. For example it is necessary to have a usable amount of light (measured in lux), at a throw distance of say between 5m and 7m for a small venue; for a much larger venue a higher figure of lux would be required and the throw distance may be up to 20m. In both these cases the diameter of the puddle of light produced by the spotlight needs to be approximately the same, because the whole idea of artistic lighting for entertainment is to use spotlights of all the various types to illuminate the acting areas or people, from a number of angles, and with varying colours and intensities.

The first lantern in the range has already been seen in many parts of the world and is called the Minim. This very compact 500 watt Fresnel Spotlight is intended for use in the very small entertainment venues but more particularly for use in display lighting in exhibitions, art galleries, museums etc. etc. and for use also where traditional lighting facilities for entertainment are not readily available such as clubs, pubs and discos. The Minim bears a strong family resemblance to the first of the full range of new Strand Luminaires which are called Preludes.

The musical definition of prelude, that is "something which comes before" is a name which fits its purpose very well, as this range of small

lanterns comes before the major professional lanterns of the Harmony range, and form in themselves a complete family suitable for use in smaller venues as well as complementing big lanterns in major auditoria.

Within the Prelude range, as one would expect, there is a Fresnel spotlight and a P.C. spotlight. These two units are not only complementary but lend themselves to the different lighting styles practised by different lighting designers in varying types of productions and geographical locations.

The three Profile spotlights in the range provide all the necessary hard edged spotlights for use in small theatres etc., two having fixed beam angles and one being a variable. The considerable flexibility demanded of modern theatrical lighting equipment has meant that the variable angle spotlight is a unit that will certainly find grateful users who cannot afford to buy specific equipment for specific jobs, and also allow those last minute changes of mind on focusing lights with which even the best lighting designers distinguish their work. The Prelude 30 (that is the 30° Profile spotlight) closely approximates its performance to the well known Patten 23 and although the Patten 23 will continue to be available for a while from Rank Strand, the advantage in new installations of having an integrated family of equipment including a spotlight of this nature will be obvious to our discerning purchasers. All the normal facilities of Profile spotlights such as beam shaping shutters, the availability of iris diaphragms and gobo holders, plus readily available lamp adjustment etc. are included for the Prelude family.

The Harmony range which completes the introduction of new spotlights at this time shows clearly the importance which Strand put to the one-kilowatt range of theatrical lighting instruments. As well as the Fresnel and P.C. spotlights of outstanding performance, no less than four variations of Profile spotlight are available. The ability to select a Profile spotlight of medium or narrow angle or two with a variable focusable beam, must mean that within the Harmony family every requirement is catered for. Spotlights in the Harmony range have a family resemblance of their own; not dissimilar to Prelude but somewhat more "professional" looking and bolder in their square lines.

Harmony in Music is a combination of sounds — in Lighting it is now a combination of Creative Luminaires.

The purpose of this article is not to describe in detail the specification or performance of all these various units, this is more than well catered for in the technical literature available from Rank Strand; but I would like to point

out some of the unique advantages of these units to the people who will be using them all over the world for many years to come.

The robust construction using high pressure die-castings and purpose-made extrusions ensures the ultimate in rigidity and hardwearing properties that can be built into a spotlight. The smart family image means that any rig adorned with these musically named instruments will indeed be an attractive asset to a theatre.

The whole of the spotlight range is designed with the latest international safety codes of practise in mind and even legislation which is as yet but a figment of the bureaucrat's mind has been taken into account. It is particularly interesting to note that the outside surfaces of the luminaires have been designed to run much cooler than the current units which are in use in theatre and television lighting, in order to comply with Health and Safety At Work directives both in the U.K. and in Germany. It is anticipated that in addition to the German Standards Approval which all the new Strand spotlights hold, Standards Authorities in many countries will pass these spotlights as satisfactory for retail sale within their own areas.

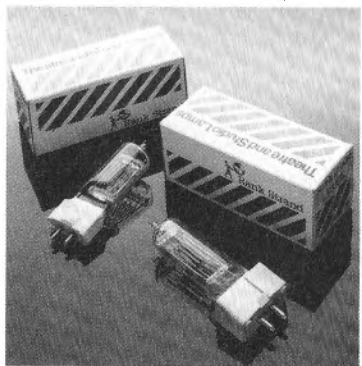
To ensure complete safety of operation even in the most unskilled hands the mains lead is detachable, and it is necessary to unplug this lead before access can be obtained to the interior of the luminaire for re-lamping. Every luminaire is supplied complete in a carton with its removable mains cable, in many cases together with the moulded plug suitable for use with the local approved type of socket outlet. A lamp is included with every spotlight and these are 500 watt in the Minim and Prelude range and 1000 watt in the Harmony range. 650 watt lamps for the Prelude range are for enhanced performance where a slightly greater output is needed and for the discriminating and more professional users.

Alongside these distinguished lanterns, a new Parblazer, the Parblazer-4, offers the flexible unit much loved by pop show lighting designers, and many traditional designers as well, giving the facilities expected of a luminaire designed to house Par 69 lamps operating at 120 or 240 volts.

The unique advantage of having families of lanterns ranging from small displays of spotlights to major opera house focus spots is the result of the very considerable investment in research and development, personal design efforts, tooling and factory facilities that has been made by Rank Strand over the last two years in developing what must surely be the first ever complete new range of spotlights from anywhere in our industry. I hope that you will see these units on

their many demonstration venues throughout the world, and will send for either general or fully detailed technical literature on the range or on the part of the range which is of particular interest to your applications in the business for which we all work: Lighting for Entertainment. ●

*All the lanterns in this new range, apart from the Parblazer-4, are supplied complete with a lamp.*

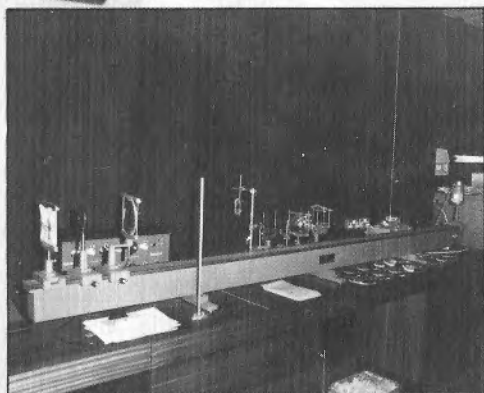
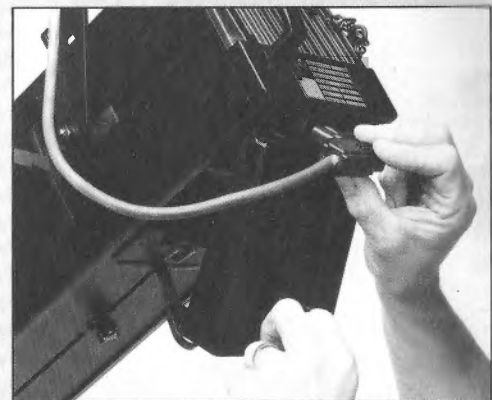




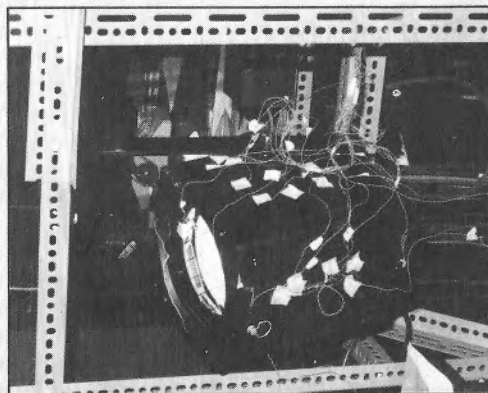
# Strand's Grand Symphony in Light



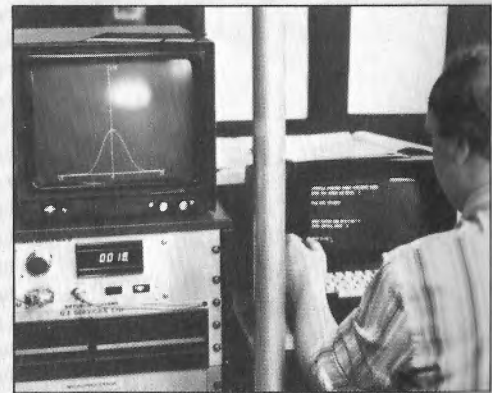
*The flexible power cable is available with a fitted 15A 3-pin plug, or a moulded Schuko plugtop, or with wire ends to suit other plugs. Our picture shows the lantern end of the cable with its special power connector.*



*First stage in designing a new optical system — set it all up on the bench.*



*Checking lantern surface temperature in the lab.*



*Running a test programme in the Kirkcaldy lighting lab, on a new lens.*



# THE DESIGN & DEVELOPMENT

by Mike Cawte

## The A to Z Development Project

AT the outset of this project — originally code named A to Z — the following major objectives were identified:

- 1 — To replace the existing product range and confirm Rank Strand as the leading manufacturer of theatre lighting equipment.
- 2 — To replace the wide range of manufacturing processes and materials employed in the current range of products with a new co-ordinated range capable of economic manufacture, whilst at the same time providing high quality in performance, durability and safety.

In view of the importance placed on designing for efficient production, it was decided to set up a new luminaire design team alongside the factory in Kirkcaldy where the products were to be manufactured. The close liaison between designers and the manufacturing functions being an essential factor in the design of the new luminaires.

The first major investigations for the new design team were a thorough study into the problems of the optics in order to achieve the high performance specified by the Marketing Department in their original design brief, and a thorough study into the problems of heat, so familiar to luminaire users.

A full time optics design engineer was recruited to control all optics design aspects of the new product range. He previously worked with British Rail, designing railway signalling, where clear visibility over a long distance is of prime importance, requiring highly efficient optical systems albeit over a narrow beam angle. Designing efficient optical systems for theatre luminaires was therefore familiar work to him, simply involving different beam angle and distribution parameters. Having said this, however, the greatest problem was in developing the optics within size constraints dictated by the need to use as many common components and sub-assemblies as possible.

The most interesting development from this work was the design of the Prelude Fresnel Lens. The original performance specification for this product from Marketing required the following performance:

	Spot Position	Flood Position
½ Pk. Angle	8°	45°
1/10 Pk. Angle	15°	50°
Pk. Candelas	40,000	4,000
Using 500W T.18		

No lens was available to provide this performance within the size constraints of the housing so a new lens was designed giving the following performance:

	Spot Position	Flood Position
½ Pk. Angle	9°	52°
1/10 Pk. Angle	16°	60°
Pk. Candelas	52,000	7,700
Using 500W T.18		

As will be seen, this exceeded the already high Marketing specification and has been incorporated in the excellent sub kilowatt range, under the name 'Prelude'.

To help in the arduous task of developing the optics from theoretical lens and reflector arrangements to the final pre-production prototypes, an Automated Illuminance Recording System was installed in the Optics Laboratory in Kirkcaldy. This is a microprocessor based system comprising:

1. Photometer — reads beam intensity in candelas and feeds information into the computer.
2. Goniometer — supports luminaire and scans it vertically and horizontally across the photometer head.
3. Computer — takes information from Photometer and Goniometer and produces VDU image of beam distribution curves from which hard copy can be printed along with a listing of beam intensities at all plotted angles.

This system cuts down Lab. Testing time drastically. A full iso candela diagram which, by hand, would have taken five or six hours, now takes about 20 minutes. In addition to this work, a remote terminal is incorporated allowing thorough optical evaluation of production luminaires. This will be an invaluable device in helping to control the quality of products leaving the production lines.

In parallel with the initial optical development work, preliminary mechanical design work was being concentrated on investigations into the heat problems experienced in luminaires. The three main areas being: lamp pinch temperatures, shutter assembly and skin temperatures. These investigations revealed information which could have drastically affected the mechanical construction of the range.

Of the total energy consumed by a luminaire, less than 10% is converted to light and of that, in a twin lens system, up to 20% can be absorbed by lenses and given up as heat again.

Therefore well over 90% of the total energy consumed is given up as heat and is lost to the surroundings by conduction, radiation and convection, the balance depending on the design of the lantern.

Thorough heat tests were carried out using a T.84 insulated with 2-in thick glass wool insulation material, proving that a lantern with a housing cool to the touch, relying on convec-

tion only to dissipate heat, was feasible. Moreover, if this convection could be arranged to pass over the lamp pinch this should improve the lamp life.

Work continued on designing and building a prototype to this theory incorporating an efficient baffle system with an insulated housing. The prototype was built around a 1-kilowatt lamp and proved to be remarkably cool to the touch. Most luminaire users would have been more than a little impressed at being able to pick up — by the housing — a 1-kilowatt luminaire which had been running for five or six hours!

However, three factors were against developing this design for production — excessive tooling costs for a complete range and excessive development time required to fully evaluate a design.

So a more traditional approach was taken whilst trying to use as much of this original design work as possible. Current products ranged from the all aluminium die cast Pattern 23 to the all pressed steel T-Spot, neither of which had been designed from the outset as a range of products. Of the two products the Pattern 23 was infinitely more reliable to build and more durable in use. However, the tooling investment required for an all die cast range of products was prohibitive but an essential requirement was to reduce the ever increasing labour cost of manufacturing and assembling complex pressed steel assemblies. The approach was therefore taken of investing in die casting tooling in areas where labour could be reduced, where strength and finish could be provided or where dimensional accuracy was required. Common side extrusion profiles were to be used and cut to required lengths, these extrusions providing features such as fixing points, adjustable fork mounting points and panel mounting grooves, all for no extra labour costs and with very low tooling costs. The remaining sheet metal parts where possible, were designed as progression tool pressings to cut down labour costs on handling between operations or where possible as parts to be produced on the new CNC Turret Punch now installed in the Kirkcaldy Factory. This machine is able to produce complex punched shapes from sheet steel without transferring between machines.

This approach has been the basis for the design of both Prelude and Harmony ranges as well as further products in the pipeline, and I believe the result is a range of luminaires with the same durable qualities so loved in the old Pattern 123 and Pattern 23 products.

The other area of mechanical design which has been given con-

*Trained as Industrial Designer at Central School of Art & Design in London 1961/64.*

*Worked in various Industrial Design Consultancies on Projects involving the aesthetic and ergonomic design of products ranging from computers and electronic equipment to coffee grinders and kitchen scales.*

*Joined Rank Strand in March 1977 as Staff Industrial Designer, working initially on the aesthetic and ergonomic aspects of products such as Duet, Micro 8 Mark II, Galaxy etc., with the Brentford R&D Team.*

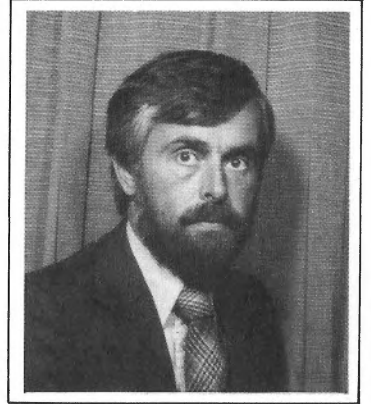
*Took responsibility for Luminaire Development in September 1979 and moved to Kirkcaldy to set up new Luminaire R&D Team, whose major effort has been on the A to Z development programme.*

considerable attention has been the one of safety. Every effort has been made to conform to British and European Standards for electrical and mechanical safety.

The most interesting electrical safety feature is probably the use of a detachable input cable which has to be removed before access can be gained through the lamp tray to what would have been live parts. This cable is clipped to the fork so that it never becomes detached from the lantern.

Other examples of the attention to safety requirements are the inclusion as standard of a wire lens guard in all 1-kilowatt products and the inclusion of an attachment point on luminaires for a safety chain rather than relying on looping the chain around the fork which itself could become detached from the lantern.

These products have, then, been designed to provide a high standard of performance and durability and be convenient and safe for the operator to use and maintain whilst being capable of manufacture with consistency and quality. ●





# Strand's Grand Symphony in Light

ONCE again August is with us, and, like a salmon whose spawning time has come, your Editor feels the strong pull of Scotland. Unlike the salmon, his purpose in this migration is not to spawn, but to subject himself to the most culturally stimulating event in the British Isles.

It became obvious that pleasure could be combined with duties, although, as you will see, these duties themselves were highly interesting and thus pleasurable.

Leaving Edinburgh on a magical day with the odd cumulus high in a blue sky, the gleaming bonnet of the Editorial barouche soon reflected the arches of the Forth Road Bridge — Yes, I know I always fulminate against modern roads, but the ferry no longer plys! To the right we see the superb 1886 venetian red rail bridge. Ten minutes later comes the fork marked "Kirkcaldy".

I first visited Kirkcaldy, located on the southern margin of the Kingdom of Fife, many years ago when the whole town existed under a faint smell of the linoleum which was its main industry.

Linoleum may, for all I know, still be produced, but electronics and engineering are nowadays the main activities.

Our own factory is involved in both these pursuits, but on this visit I was interested in the engineering aspect, specifically the building of the new range of lanterns.

The first thing to be said about the manner of making is that it is now totally different from that used for the T.Spot series and the old 700 and 800 series ranges. These were all basically steel pressings, which were welded or rivetted together and then assembled on a production line.

About a month ago, the heavy gang descended on the works and completely re-organised the whole production area. The old production lines were ripped up, the sub-assembly areas re-located, and even a whole new gas heating system installed. A new tool room was built and a great deal of new production equipment brought in.

The single greatest change in the factory is actually in the method of working. Each lantern in the new range is built by an individual. They no longer go from hand to hand — one man — or woman — is responsible for each lantern built. We believe it is most significant that the work force all find this new method a great improvement. They each now have an individual responsibility for the customer's satisfaction in the lantern which they have made for him. And we believe that people who feel both responsible and happy in the work method will build even better products.

We don't, of course, make every

single part of every unit. Cable, screws, castings and lenses, for example, are all bought out and the stories behind some of these vital parts were also investigated in my journey.

Stacks of the parts and components about to become Harmonys or Preludes are close by the lantern assembly points. On the day of my visit four girls and two men were completing a lantern every five or six minutes, I suppose a complete, inspected and packed Prelude was therefore going into the warehouse about every ninety seconds.

All the aluminium extrusions which form the sides, the die castings which form the ends and the expanded metal heat sinks are painted — actually powder coated — before assembly.

The very first assembly job on a profile spot is the fitting together of the shutter unit. Now this is a very special part of any Strand lantern. Let's think about what the shutters have to do. First, they must be easy to move — not just when the lantern is on a bench at a nice convenient height, but when the lighting electrician doing the adjusting is on top of a pair of steps, and the lantern is hung four feet higher still — and is probably hot. Even a Strand lantern must give off a certain warmth.

Second, when the shutters are set in their correct position they must not move. The lantern may hang for weeks on end and it may be used in most of the lighting cues, so it could well be heated through a hundred degrees and cooled again a dozen times in every performance — and still those shutters must not move. But if the position of the scenery is to be changed for any reason, or an actor feels happier further down stage, or even in a taller hat then suddenly one of the lighting men must be able to make slight shutter adjustments easily and quickly.

These totally contradictory requirements are met by us by the use of shutter blades made of a spring steel which has a very slight inherent curvature, so that there is always pressure between the blade and its housing, but never too much pressure. This brings another point to consider. If the blades are to be made of a spring steel, and we believe they must, then the punches and dies which stamp them out have to be of super hardness and accuracy. We can appreciate why some people don't use this type of shutter material — it is so much simpler and cheaper not to bother too much about the material and "after all, they will last for a year or two, and a lot of people buy on price anyway". Oh yes, this is the siren song that must be ignored. Many Strand lanterns have lasted for thirty years, and fifty is not unknown. Often it is only into their second or third decade that their quality

## ONE EVERY

THE EDITOR DISCOVERS HOW



*The molten glass goes into a mould.*



*Polishing the die castings — the mystery of the plastic cones is solved!*

is really appreciated.

But back to our main story — all the assembly benches have special plastic jigs to hold the parts so that not only is it easy to fit lanterns together, but holes for screws are precisely in the right spots, so that a compressed air screwdriver can be used to put machine screws straight into the already threaded sockets. Because the torque is pre-set on the driver, it will always be exactly at the specified tightness. And no time at all is needed to 'make things fit'. As both die castings and extrusions are inert, there is none of the pushing and pulling usually needed to get a group of pressings to fit together. I remember once visiting a mass production car factory and watching a team of strong arm body shop men making doors and boot lids 'fit' with the aid of rubber sleeved crow bars!

The use of castings and extrusions, incidentally, is one of the ways by which we have made sure that as lanterns heat and cool in use there will be no 'pings' or 'pongs' from the lantern bodies.

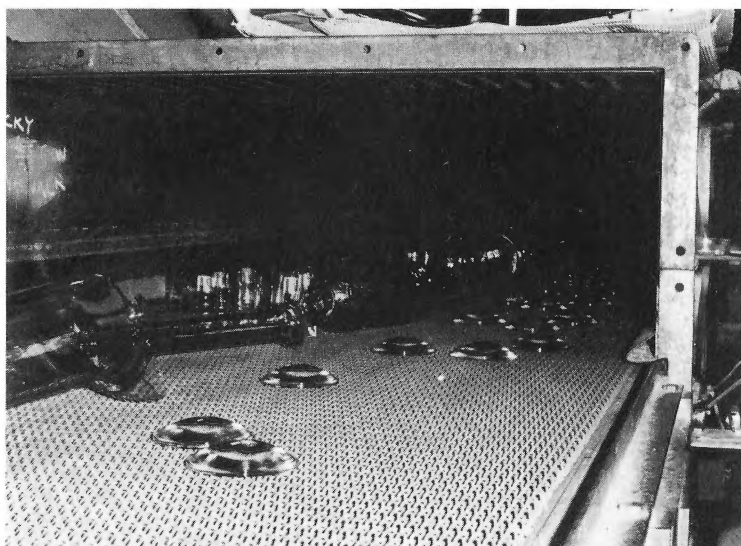
I thought I had caught out the factory at one point, when I saw what looked like a countersink bit\* was being used on one drilled and threaded hole. "Difficult fit?" I enquired. A rather pitying reply indicated that paint has to be removed to secure a good earth bond!

I quickly moved on, gathering a few remaining shreds of dignity, to look at the powder coating plant. This was actually put in a year or so ago but very much with a view to the job of coating Harmonys, Preludes and Minims.

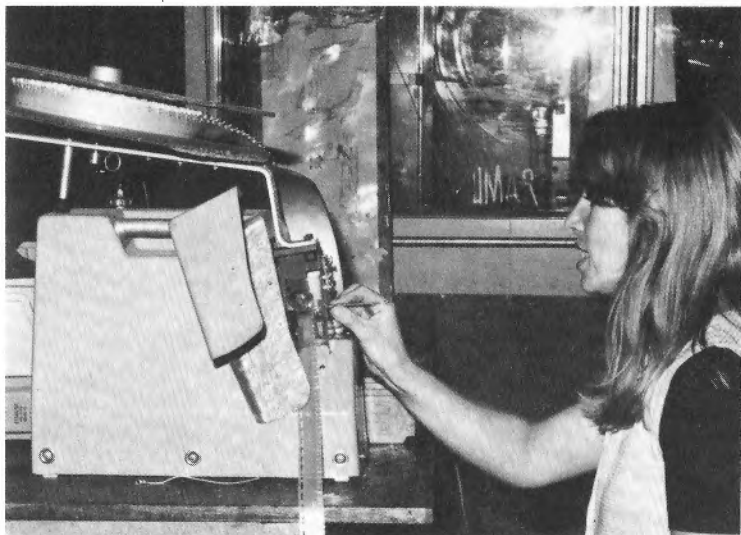
This painting system does depend on a moving conveyor. The parts to be coated are hung on hooks, up to six at a time, depending on size. And they are

# 90 SECONDS

## STRAND'S NEW LANTERNS ARE MADE



Lenses — plus some other glassware — travel down the cooling tunnel.



This machine automatically puts terminals onto cables.

first put through a de-greasing, cleaning and phosphating tunnel. This process gives an ideal key for the paint which is to follow.

The paint itself is actually a dry and very fine powder, not liquid at all! The parts to be coated are given a negative electrical charge, while the powder is given a positive charge, so they rush together as nature intended. To aid nature's work automatic guns constantly move up and down both sides of the moving parts. The powder which does not manage to attach itself is carried by air currents through various large pipes and is filtered and put back into the system. There is obviously no escape.

Once coated, the parts go into a long oven, where heat transforms the clinging powder into a tough, even, matt finish. Black for lanterns, green for A.M.C. panels, red for Tempus

desks. Special colours can be catered for a good deal more easily than in a wet spray process, so the plant is flexible in use.

Your Editor brushed up against some sprayed but unstoved parts and acquired a fair powder coat himself. How I wish you could have seen him being vacuum cleaned by two delightful if giggling Scots lassies — of such incidents are fantasies made!

There are many other new things to see — electronic weighing machines that know precisely how many bolts of any particular size are on the scales at any particular moment — so no weary counting is needed, and a fantastic new machine that punches and shapes metal parts entirely automatically controlled by an electronic programme are but two of the many technical wonders on view.

Out of the factory gate, through Falkland, where Mary Queen of Scots

had a Palace, through Abernethy, famed as the first home of a particularly dull type of biscuit, and on to Perth to see the lenses being made.

Perth, according to a rather immodest notice as one enters via a rough expanse of grass over which muddy footballs fly to strike the unwary, is known as 'The Fair City'. Scottish towns, I fear, rather go in for this sort of thing. My favourite such notice is at Musselburgh, a smallish place where Edinburgh peters out to the east, which calls itself 'The Honest Toon'.

In Perth I quickly located our suppliers who, incidentally, have been converting sand, and a few miscellaneous chemicals, into quality glass for about 150 years. Rather fascinatingly the company started by making ink, and it was the making of the bottles for the ink which led them into specialist glassware although nowadays the technology is considerably higher! One story they told me has a real period charm. While still in the ink business the directors decided that they should make a long term quality check for shelf life. So in 1836 they sealed up a bottle of ink, and solemnly unsealed it for testing in 1886!

The glass used in Strand lenses is known as borosilicate. This was chosen from the various types available for a number of reasons. First, its colour and clarity. There is no greenish tinge, which is sometimes seen in lantern glassware. No de-colourisers are needed. Even though these agents work they are best avoided in light transmission applications because although glass so doctored appears clear, actually up to 20% of the light can be absorbed.

Borosilicate lenses are also mechanically strong, and have a much better resistance to thermal shock than for example, white plate glass. Thermal shock? This means the effect of sudden heat or cold on the glass. A practical example could occur in a theatre in say, Sweden. After the show there is to be an immediate get-out. The lanterns are turned off and within a few minutes the scene dock doors are thrown wide onto the arctic night. Thermal shock, dear reader, is inevitable. And Strand lanterns are sold in almost every country in the world — not that we can't get the odd thermal shock in Britain now and then.

I asked to see the process of making some Strand Prelude lenses. First I was given a sheet of dark glass, about No.19 Cinemoid, and my guide, donning a massive asbestos glove, removed a brick temporarily lodged high in the furnace wall. I peered in at thousands of gallons of molten glass boiling and bubbling away inside, and promptly decided to lead a better life in future. I don't fancy even a few years in the hereafter spent in that environment.

Then steel rods were dipped into this molten lake, and dollops of white hot glass deposited in the stainless steel moulds. Tops were put on the moulds, a plunger descended to press the glass into shape, finally they were then slowly passed through a long tunnel that starts at about the melting temperature of lead and ends at about the heat at which the Christmas turkey is cooked. I was given a lens to examine but put it down very fast indeed! One man's 'fairly warm' is another man's 'hellish hot'.

Although our friends at Perth make the lenses and have designed the tools, the lenses are optically designed by Strand and are unique to us.

Somewhat heated by the glass furnace and exhausted with technical facts, your Editor sought a little refreshment as soon as he reached his hotel just outside Dundee, the next destination. "Ah," said Dr Johnson, as recorded by Boswell during their Highland jaunt, "so this is the drink that is strong enough to make a Scotsman smile." This rather double edged remark referred, of course, to what the Gaels call 'the water of life', which phrase we Sassenachs can only pronounce as 'Whisky'.

The evening in Dundee was spent inspecting the handsome, but as yet uncompleted, new Repertory Theatre — an article by its consultant, the elegant and accomplished Andre Tammes, will be in the next issue of TABS, and climbing the Law Hill. This is a fairly considerable protuberance that rises behind the city. I am a great looker at 'views' and never miss one. To reach the hill you pass the Dundee Royal Infirmary by driving along Dud Hope Road. What a sight to glimpse through the ambulance window as one is whisked thither for surgery! I would not be surprised to read of pyjama clad patients making a break for it at that stage.

After a good night's rest, off to the company who make the aluminium die castings for the new lanterns.

Their establishment, out in a residential street behind the city, could be either a small local school or a large local bungalow — in fact I drove past it once, so confident are the directors that their skill and expertise will bring the world to their door, without any unseemly advertising of their presence.

Rather like the glass makers, our die casters' products usually form a vital part of other people's products. In the entrance hall are several large glass cases, which hold examples of their work. There are the bodies of air pistols, and hammer heads from children's carpentry sets, as well as many familiar electrical parts, bearing such famous names as 'Reyrolle' as well, of course, as Strand.

I followed the progress of a particular casting, a Prelude end cover. The molten metal, injected into its mould, was taken out and shorn of extraneous bits and pieces on a press where a tool cuts the raw casting back to size, all the trimmings eventually going back to be re-melted.

After this there is a polishing process. The castings go into large vibrating open containers, rather like giant wash boilers, wherein lie several hundred small green plastic cones. Castings and cones are all shaken up together, and the familiar mottled dull shine of quality die casting emerges. I didn't dare tell my hosts that all their beautiful work would end up not only covered in paint, but 95% of that would be matt black — except of course, the earth terminal!

\* \* \* \*

A good tour, and highly encouraging. Our suppliers, as well as our own factory, are determined that the quality which is at the heart of the new products will shine through as brightly as the lanterns themselves.

\*Actually a 'spot face cutter'



# Strand's Grand Symphony in Light

## PRELUDE AND HARMONY ARE COMING YOUR WAY

AS this issue of TABS reaches you, we shall already have begun our local exhibition tour of the U.K.

All THE thirteen new lanterns which you will have seen featured in this issue of TABS will be at each location for you to try out so that you can convince yourself that these are the finest range that Strand has offered in the company's sixty five years.

To control the new range of lanterns a latest specification Duet will also be on view, and available for visitors to try.

All exhibitions are open from 12.00 noon to 7.00 p.m. Everyone interested in lighting for entertainment is welcome. Just turn up and come in!

## AND BRING AN OLD LANTERN WITH YOU

During the tour we will be holding an "OLD FOR NEW" promotion.

Any customer confirming an order for one of the Prelude range of lanterns on the tour and returning a sub or 1kW lantern of any make or in any condition, will be eligible for an additional 15% credit off their normal purchase price. This is restricted to the tour and is on a one for one basis.

Exhibition hours from 12.00 noon to 7.00 pm

**BRIGHTON**  
TUESDAY 13th OCTOBER

Pavilion Theatre  
29 New Road, Brighton

**SOUTHAMPTON**  
THURSDAY 15th OCTOBER

Mountbatten Theatre,  
East Park Terrace, Southampton

**BRISTOL**  
TUESDAY 20th OCTOBER

Rank Strand/MM Stage Electrics  
84 Mina Road, St. Werburghs, Bristol

**CARDIFF**  
THURSDAY 22nd OCTOBER

Welsh College of Music and Drama,  
Castle Grounds, Cathays Park,  
Cardiff

**GLASGOW**  
TUESDAY 27th OCTOBER

City Hall,  
Candleriggs, Glasgow G1

**ABERDEEN**  
THURSDAY 29th OCTOBER

Teachers Resources Centre,  
St. Pauls Street, Aberdeen

**EDINBURGH**  
TUESDAY 3rd NOVEMBER

Northern Light,  
39-41 Assembly Street, Leith,  
Edinburgh

**DARLINGTON**  
THURSDAY 5th NOVEMBER

Darlington Drama Centre,  
Trinity Road, Darlington

**MANCHESTER**  
TUESDAY 10th NOVEMBER

Lesser Free Trade Hall,  
Peter Square, Manchester 2

**BARNSELY**  
THURSDAY 12th NOVEMBER

Centenary Rooms,  
Civic Hall, Eldon Street, Barnsley

**BIRMINGHAM**  
TUESDAY 17th NOVEMBER

Midlands Arts Centre,  
Cannon Hill Park,  
Birmingham B12 9QH

**DUBLIN**  
TUESDAY 24th NOVEMBER

Bourke Strand Electric Ltd.  
30 Upper Abbey Street, Dublin 1

**BELFAST**  
THURSDAY 26th NOVEMBER

General Engineering Products Ltd.  
1 Church View, Holywood, Co Down.

**HARROGATE**  
24th-26th NOVEMBER

Entertainment '81 Conference &  
Exhibition  
Harrogate Supercentre, Harrogate

## OVERSEAS READERS

*Our local agents overseas will be holding similar exhibitions showing the whole new range of lanterns. Please contact your Strand agent for details of locale and date.*



AN occasional series of articles by the Editor describing the cinemas and theatres put up by private enthusiasts for their own interest and pleasure. Because, by their very nature, these are *private*, we shall not be printing addresses of these fascinating establishments. However, if readers wish to contact the owners of the buildings featured, the Editor will forward any letters!

\* \* \* \*

Seven p.m. one recent summer's evening, "somewhere in the North West", and your Editor was on his way to visit Clive Garner's famous private cinema. Famous? Yes, within the world of cinema enthusiasts, most certainly!

"Off the motorway, down the slope, under a railway bridge and turn right." The directions were exact. I found



*Behind this modest facade is a temple of delights!*

myself in a wide residential road, which must be described as "desirable". I surmised that many of the houses must be occupied by bank managers — it was just that sort of road!

A ring on the door — faint scurrying sound from within, to be explained before much longer. The door opened by Mrs Garner — "Mr Harris?" My husband's expecting you, please go through to the cinema.

As I entered the cinema vestibule, decorated with a moveable type "categoric board" on which the programme would be listed, as well as favourite photos showing sepia views of local cinemas — many alas now closed — the strains of that delightful 1936 ditty, "Around the Corner at the Odeon"\* met the editorial ear. A delicate and nicely thought out compliment to TABS and The Rank Organisation indeed. The scurrying sounds were obviously the musical and physical preparations being made!

And then began a truly delightful evening. First, the cinema itself. About the size of a large suburban garage, stepped floor, carpeted in grey with twelve matching grey tip up cinema

\*Note: I should explain for overseas readers that the theatres and cinemas owned by our parent group are all known as "Odeons".

## THE PRIVATE THEATRES & CINEMAS OF BRITAIN

by The Editor



*Interior of the Cinema. Drapes and seating by Strand*



*Strand seating being tested by Clive Garner, the fortunate owner, and the Editor.*

chairs, made at our Lowton seating factory — and grey wall drapes. And the auditorium lighting! Homage to Gillespie Williams would be a fitting description. The principles of the former Holophane designer, and, I believe, Managing Director, are beautifully applied. There are coloured lights, red, blue and yellow around the ceiling trough, and another trough with three colours to light the walls, all controlled by a Strand Discoplus. A six kilowatt load, no less.

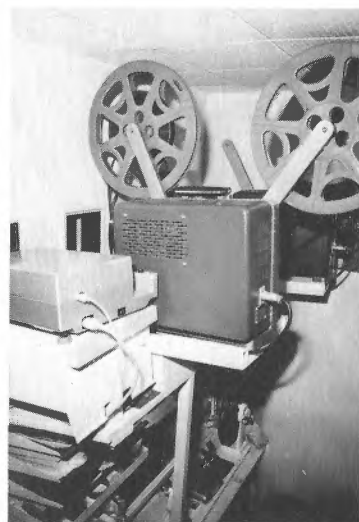
So there I sat, awash in a symphony of coloured light. The tabs parted, to reveal a reefer curtain, again being

played upon by the on stage lighting! Is Ossa piled upon Pelion? You bet it is! There are floats, battens and X-rays (vertical battens to either side of the pros. arch), all controlled by another Discoplus.

Clive Garner's principle is that the vintage programmes which he shows to a selected group of friends once a month, should always have a newsreel contemporary with the date of the main feature film — in this instance "Passport to Fame" dating from 1935 with Edward G. Robinson and Jean Arthur, so the British Movietone News started with an item called "Hitler

recruits a new German Army!" scenes showed grey coated men grasping flags and repeating an oath, all together. We knew four years later what it all meant, but in 1935 all this must have just been for idle curiosity. There were two delightful advertising films. In the first a knight in armour was seen enjoying a steaming beverage while on sentry duty on a castle's snow covered battlement — the subtle message being "Bovril, for cold nights". This was followed by a small drama in which a rather pudgy young deb with a South Kensington accent you could cut with a knife, tells Daddy that her young man had every right to become her finance "Because he smoked De Reske Minors!" C'est incroyable!

There are two Elf 16mm projectors,



a dual and a single slide lantern, and a double turntable for 78 rpm 'Non Sync'\* records, plus tape units, rewinders, film splicers etc.

The inspiration for the design of Clive's cinema was the Regal, Birkenhead, whose proscenium arch design is exactly reproduced in miniature. So perfect is the illusion, once one is sitting comfortably, that only the size of the seats in relation to the whole gives the game away.

My host, Clive Garner, is a man of many interests. The world of vintage cinema obviously, but also the popular music of the twenties and thirties, this latter enthusiasm being testified by his collection of no less than twenty five thousand 78 r.p.m. records! Louis Levy's original Gaumont British Orchestra recording of the "March of the Movies"? Nothing easier! "Regal Zenophone Hits of 1936"? Naturally. Roy Fox? Al Bowley? All present and correct, and many practically unscratched.

A wonderful evening of interest and enthusiasm - thank you very much, Clive!

\*For non cinema equipment aficionados I should explain that this is the term for the equipment for reproducing record sound through the screen speakers, but non synchronised with the film.



# THE SOUND OF GALAXY



The exterior of the former New Victoria, now re-named Apollo. While it was being built cockney cab drivers used to call out Sing Sing! to the builders. No one in 1930 was used to such a plain and dignified façade.

Inset: The Galaxy in its control room, the former projection suite. The very top of the stage can be seen in our photo. Note the V.D.U., Pin Patch and Alpha-numeric keyboard.

ORSON WELLS directed and starred in 'Citizen Kane' at the age of 26. R. C. Sheriff wrote 'Journey's End' at the age of 35. Two brilliant achievements and two brilliant men.

This thought brings me to a third brilliant man, young at the time of his greatest work, who operated in our own field, Mr Ernest Walmsley Lewis, the architect of the New Victoria Cinema. In his excellent recent book "Cathedrals of the Movies"\* David Atwell describes the New Victoria as "the most important cinema building to have been erected in Britain". After this one major work of true brilliance in concept, design and execution Lewis never designed another cinema or theatre. To quote David Atwell again, "It was to be the cinema's loss that after completion of the New Victoria, E. Walmsley Lewis decided to leave London and settle on the south coast where he set up his own quietly successful private practice".

The New Victoria was opened in 1930, and the interior, now somewhat altered, originally represented a

mermaids cave, with cool blue green house lighting shining indirectly from the dome and from enormous oyster shells formed in the plaster, and directly from glass stalactite fittings clustering thickly all round the auditorium walls.

The proscenium is an absolute delight, the motif being organ pipes — not actually the real organ pipes, which are in a chamber above the proscenium, but gilded replicas. The proscenium sides again follow the organ theme, all gilded darkly and richly. And the detailing! The various ballustrades and rails in the foyer, for example, have a finely moulded brass capping, while the intermediate horizontal rails of humbler metal are pierced by the uprights, with no wretchedly clumsy welding, as displayed in other much more recent and infinitely more costly theatrical buildings. Which brings me to yet another sign of Walmsley Lewis's professionalism — his budget was £250,000 and he completed the project for £82,000! The point is not the actual sum — this was after all, fifty

years ago, but the relationship between the budget and the final cost.

I first visited this marvellous building in 1946 or 47 to see Jeanne Crain and Victor Moore in "Centennial Summer" — 20th Century Fox, Technicolor, with score by Jerome Kern. I entered while this melange was showing, so in the post war restricted austerity era imagine the overwhelming effect of this building upon a provincial young man of taste and sensibility when the house lights came on — and, dear readers, they did not just rise together, they started in the dome and then the light not only increased but also geographically spread around the auditorium from the central dome outwards and downwards. (The sort of effect we can nowadays achieve with Strand's ENVIRON — see separate article.)

From that forties moment I date my enthusiasm for the designs of the early and mid thirties.

Incidentally only one memory of the actual programme remains. The main film was accompanied by a short subject featuring the trumpeting of a Mr

Harry James. One middle aged lady sitting a row or two behind me, having listened to the "Carnival of Venice" by this immoderate virtuoso said, very loudly, "Send him to bed early with a hot potato!" An unlikely criticism, but it has remained in my mind.

The occasion of all this enthusiasm? Because the New Victoria has been saved for us all, by conversion into a theatre. I believe I am right in suggesting that some news of a new 'live' version of the Von Trapp saga has leaked into the press — in fact "The Sound of Brilliant Public Relations" would perhaps have been as appropriate a title as "The Sound of Music". But let me not carp — after all there is a new career for this wonderful building and a new name "The Apollo". Oh, and by the way, a new lighting control — London's very first Galaxy!

\*Published by Architectural Press at £12.95.

# TRIPLETS IN TOTTENHAM COURT ROAD

A new entertainment centre described by Norah McNulty



Norah McNulty was born in Eire and educated at a convent school. Her family later moved to England where she completed her education at Cambridge reading English and History. She later became a technical author in an agency handling mainly engineering accounts.

She is active in the amateur theatre and a frequent theatre goer. She is married to a surgeon and they with their two sons, Jason and Charles, live together with three cats in a large Victorian house in Fulham.

SEVERAL years ago I took part in an impromptu contest as to who could name the most boring spot on the earth's surface. I won outright by announcing clearly and firmly "Tottenham Court Road".

For my overseas readers I should explain that this thoroughfare leads from the junction formed by the eastern end of that alley of bad taste known as Oxford Street, the poor part of Charing Cross Road and the western extremity of a thoroughfare so utterly tedious that no one even bothered to give it a name, and thus by default it became "New" Oxford Street.

In recent times the area has somewhat enlivened with the advent of about fifty HiFi and later, Video shops, becoming in time the Mecca for enthusiasts from all over the world, anxiously comparing the quality and prices of cameras, stereos and other mainly Japanese wares, offered by the many "Leisure Goods" shops in the Road.

More recently still it acquired a certain seedy exoticism with Porno shops springing up and an array of cheap, take-away food shops representing

almost all nationalities and tastes excluding their pungent aromas to mingle with the diesel fumes.

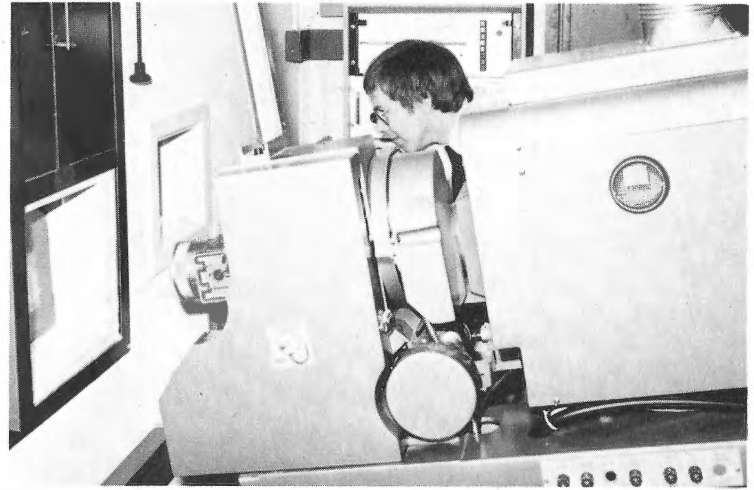
As regards real entertainment, the only bright spot has always been the magnificent Dominion Theatre. This edifice was constructed as a cinema with full stage facilities — and full indeed by 1930 standards they were. For example one of those much illustrated but seldom seen pieces of equipment, a Schwabe Cloud Projector was hung above the stage to cast its cumulus images on a giant curved cyclorama. In fact, as recently as 1975 this was still in position — probably the only remaining example in Britain.

Although so well equipped theatrically, the Dominion actually opened as a Cinema with Chaplin's "City Lights", no less. So anxious were the then owners to overcome the unfashionable geographic situation of their new pleasure dome that they actually took this film on terms which gave the renters 100% of the box office, the exhibitors having to rely on kiosk sales, restaurant takings etc. But then I guess a new Chaplin movie probably did put the Dominion on the map very firmly.

Now, in fact since noon on July 30th this year to be precise, a new attraction has arrived in Tottenham Court Road in the form of a brand new triple Classic Cinema in the new Central Cross Complex.

On this same site stood the old Berkeley and Continentale Cinemas, which were pulled down some years ago to make way for the redevelopment. Now, thankfully, Classic, spurred on by the success of their existing 5 screen complex around the Corner in Oxford Street, have re-affirmed their faith in the future of cinemas and "the magic of the movies" and brought not only an enormous new neon sign but also a new lease of life to Tottenham Court Road.

I suppose that now, within 200 yards of each other, we have very nearly the opposite extremes of approach to the cinema as it exists in 1981. The Dominion, apart from stage shows, still features 70mm long-running epics, with separate performances all displayed to its 1600 patrons by magnificent but labour intensive equip-



"Looks all right to me!" A Strand installation engineer checks the focus.

ment while the new Classic has three Auditoria, seating 328, 145 and 137 moviegoers, but only three projectors and one projectionist.

How is this possible? By the use of up to date projection equipment supplied and installed by Rank Strand Cinema. The common projection room houses the three Cinemeccanica projectors, each with a long-playing tower so complete films can be run without breaks or changeovers. Modern Xenon lamphouses eliminate the constant attention and adjustment that was necessary with the old Carbon Arcs (and also the mess they created) thus dispensing with the teams of projectionists who all played a vital part in running the show. At the new Classic one man can start and supervise all three separate projection systems within one spacious projection room.

The three Auditoria, although small by comparison with the Dominion, are furnished and decorated to an extremely high standard and the largest one has the added luxury of the latest

four track stereo sound system, to bring out all the realism of the special effects sound track, an increasingly essential feature of modern cinematography. Today's audiences are used to HiFi at home and naturally expect comparable quality in the cinema.

Many "old school" enthusiasts will mourn the passing of the carbon arc lamphouse, the old-fashioned projectors, which were marvels of precision engineering, the valve amplifiers and indeed the obsolescence of the projectionist's skill in the face of modern, simple, reliable equipment. Times are hard for the Cinema industry in this country however, and if we have to sacrifice the magnificent elaborate equipment of the past to keep the Cinema profitable then surely it is a small price to pay to ensure the survival of the Cinema at all. Companies like Classic lead the field in the battle to keep the Cinema industry alive and flourishing and we can all be grateful to them for at least brightening up what would otherwise be one of the dreariest parts of the Metropolis — Tottenham Court Road.

## EQUIPMENT SUPPLIED TO THE NEW CLASSIC TRIPLE CINEMA COMPLEX

### CINEMA No.1

#### Projector —

Single Cinemeccanica Victoria 5 belt driven single phase projector with manual 3-lens turret, disc type shutter, used in conjunction with a DGB 4 x 4 double sided long-playing device with a total capacity of 8000 metres of 35mm film.

#### Light source —

Cinemeccanica X2001 H horizontal Xenon lamphouse using 2000 watt bulbs and powered by a single phase T and R rectifier.

#### Sound amplification —

4-channel stereo optical system using Dolby CP 50 decoder (installed by Sound Associates) and a Cinemeccanica C/200 D amplifier rack providing approx. 100 watts RMS output per channel.

#### Loudspeaker system —

Three Altec biphonic loudspeaker

assemblies behind the screen plus 14 effects speakers mounted around the auditorium.

### CINEMA No. 2 and 3 (Same equipment in both)

#### Projector —

Single Cinemeccanica Victoria 5 with DGB device as in No. 1.

#### Light source —

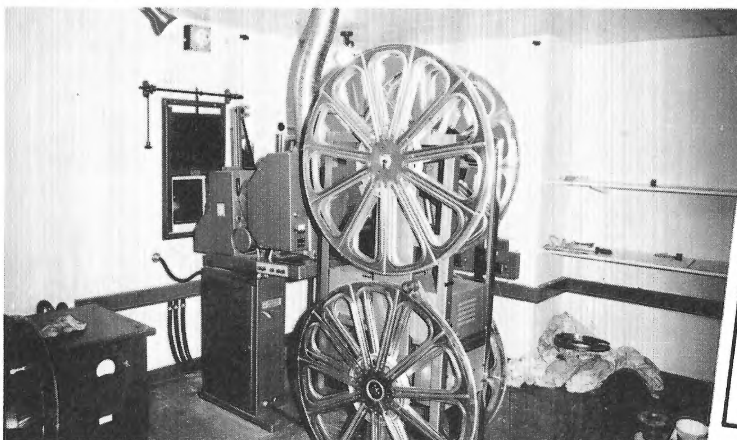
Cinemeccanica CX1600 vertical Xenon lamphouse using 1600 watt bulbs and powered by a T and R single phase rectifier.

#### Sound amplification —

Single track mono optical only using Cinemeccanica C/55 PT integrated sound system, providing approx. 30 watts RMS output.

#### Loudspeaker system —

Single Shure Premaster 701 loudspeaker assembly behind screen.



Long playing equipment. Up to six hours of continuous entertainment — courtesy of Cinemeccanica and Rank Strand Cinema.



# LIGHTING CIRCUIT

by W. G. Crisp

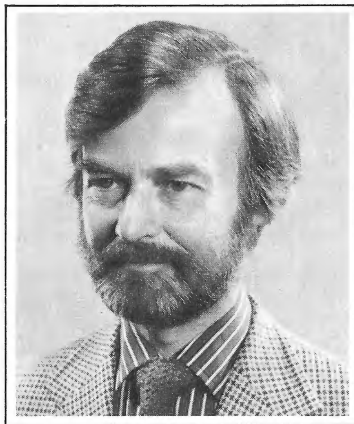
ONE way of finding your way around London, so they say, is to become a cab driver, another is to tag along with Mark Blaker, Salesman-cum-Driver of the Donmar travelling lighting shop for Strand theatre luminaires, portable kits, stands and spares. A new venture, fast settling into a pattern of trading which may well be taken up elsewhere in the country.

Leaving Brentford a short time back bound for central London, via the back turnings because the traffic was held up on the A4, allowed me a glimpse of 'The Hollywood Greats'. In West London? But of course when it's the name of a pub.

First stop was a courtesy call on LAMDA Theatre (London Academy of Music and Dramatic Art) in the Earls Court area, an independent drama school founded, surprisingly, way back in 1861. The existing experimental theatre opened in 1963, enables plays to be presented in several forms — proscenium, in the round, open stage or arena staging. Calling on LAMDA was for me an opportunity to renew contact with Steve Hocking the Stage Director — we last met when Strand photographed the Duet memory control lighting system installed there. His hospitality and that of the Chief Electrician, Iain Dall, was as warm as ever — coffee was offered and accepted, having arrived in a cup the size of a small pudding basin, quality matching quantity. Regretfully I had to turn down an invitation to stay for the matinee of Frank Loesser and Abe Burrows' "HOW TO SUCCEED IN BUSINESS WITHOUT REALLY TRYING". A pity, I might have become an overnight success.

From W.8 it's only a short ride to Marylebone N.W.8 and the Inner London Education Authority's Cockpit Theatre/Arts Workshop, for an appointment with Mike Roberts, Stage Manager and John Gibbon, Chief Electrician. The complex, for such it is, is part teachers' centre, youth centre, complementary education centre, 'animateurs' workshop and a public theatre.

In the flexible studio theatre where productions can be staged 'thrust' or 'endstage' or 'in the round' there is a fair mix of lanterns and a Strand AMC



*Bill Crisp is a member of Rank Strand's Marketing Department, where he looks after literature and advertising, with the odd exciting foray into organising exhibitions. He also fulfils the role of assistant to the editor of TABS magazine.*

lighting control. Following a demonstration by Mark Blaker of a trio of lanterns a need was established for two out of three of these which hopefully in due course will enhance the Strand orientated lighting rig.

By 1.30 p.m. it was time for refreshments, and a short walk beside the Regent Canal brought us to 'The Crown', a mid-Victorian pub, also a free house, which for the benefit of our overseas readers only means a pub not tied to a brewery: a magnificent establishment also known as Crockers Folly (that's the legend on the attractive barmaids' T-shirts). Crocker was the name of the man who had it built thinking that it would be adjacent to the new main line station which in the event was sited a mile away and is now known as Marylebone Station — hence Crockers Folly. (If he had read *The Times* of his day perhaps he would have been better informed! Editor.) I am indebted, for this snippet of local history, to Mike Roberts who hopes that one day he will be able to take a peek at the rather splendid public rooms which it is rumoured are upstairs, but which are now closed to the public.

At this juncture I parted company with the mobile shop although Mark Blaker continued his travels to the Ambassadors and Prince Edward theatres and quite likely one or two calls after that.

An interesting, and certainly a different way of spending the middle hours of a day, possibly to be repeated at a later date and of which perhaps more anon. ●

The "Mobile Lighting Shop" in action.



# STRAND ENTER A NEW MARKET

by The Editor

DOES it sound immodest of me to claim that Strand know more about dimmers and dimming than anyone else in the world? Well, perhaps just a little! Nevertheless, we have decided to use the technical design skills of the engineering team, from whose loins sprang both from the sophistication of Galaxy and the simplicity of Tempus, to design a whole new range of dimmers and controls for the non-theatre world of lighting.

Because controlled lighting, be it in a shop or a hotel, a showroom or a hospital ward, improves the environment we have christened the new range of dimmers "ENVIRON". First of all, what kinds of lighting can ENVIRON units control?

The tungsten and cold cathode are handled by one circuit design, while special circuitry is used for fluorescent dimming. Incidentally, we claim that it is in fluorescent dimming that the ENVIRON range's performance is especially impressive. Remarkably low light levels can be held with remarkable steadiness. A classic test for a fluorescent dimmer is to direct one's vision about six inches above the tube being controlled — this will maximise any unsteadiness in the light. My rheumy old eyes were recently directed by our engineers to just such a test, and there glowed the tube with narry a flicker.

The ENVIRON units are made in Kirkcaldy alongside the standard theatre and TV range, and the very high manufacturing volume enables us to offer them at a fully competitive price, even though they are made to what our technical boys call a "rather tasty specification".

How are these dimmers controlled? There are a number of controllers offered as standard. There are single, double, or treble rotary black knobs set upon the rich gleam of anodised aluminium. There are faders, which by the smoothness of their sliding motion remind one of the editorial motor car. There are push buttons in a multitude of configurations and a rainbow of colour. For example blue buttons could control the pre-sets for the lighting of an hotel dining room, while the adjacent red buttons control the lighting of the bar opening therefrom. Or one area could be arranged to always have the same relationships to the other whatever light level was wanted — so that for example, the bar could always be more brightly lit than the dining room and thus offer a constant temptation. Or perhaps an industrial control room needs dimmers so that people within can watch VDU's comfortably, but so that an adjoining area where other staff may be, can always be at a lower light level so that there is the minimum of distraction. All these requirements ENVIRON can cater for.

Are the face plates to be inscribed to indicate the area to be controlled, or light level pre-selected? Nothing easier. Should the puritanism of aluminium be abandoned for the flamboyance of brass? The ENVIRON department will be happy to agree to this little touch of extravagance.

Does the electricity bill for your building increasingly upset you at quarterly intervals? Then have you considered taking a course of ENVIRON dimmers linked to the daylight available?

The lighting is controlled by light sensors linked to dimmers so that as the daylight fades, up come the electric lights — but not until the daylight fades, hence the savings.

To handle these products we have started a new operation — Rank Strand Commercial Lighting Division, based at Brentford, with products suitable for all world markets.

## Electrical specification of ENVIRON

Two basic Environ units are offered for tungsten and cold cathode dimming 6 × 10A cabinets and 3 × 20A (or 25A in continental use) cabinets, while 3 × 16A are available for dimming fluorescent loads. Dimmers are installed in cabinets as required to meet specific installation needs.

The standard cabinets are 840mm high × 600mm wide × 240mm deep steel electrical contracting cabinets stove enamelled in two tone grey. They have lockable outer doors, louvred for ventilation, protecting the controls. Inside is a second panel carrying Reyrolle HRC dimmer input fuses and two per dimmer sub-circuit output MCB's, pre-set setting potentiometers and local control pre-set pushes are available where the units are to be used with pre-setting wall controllers. The second panel hinges outward for easy service access to the dimmer components which are mounted on a rear sub-plate. Contracting access is by a removable plate at the top of the cabinet for wiring to pressure pad terminals.

Individual unit dimmers for fluorescent and tungsten are also offered.

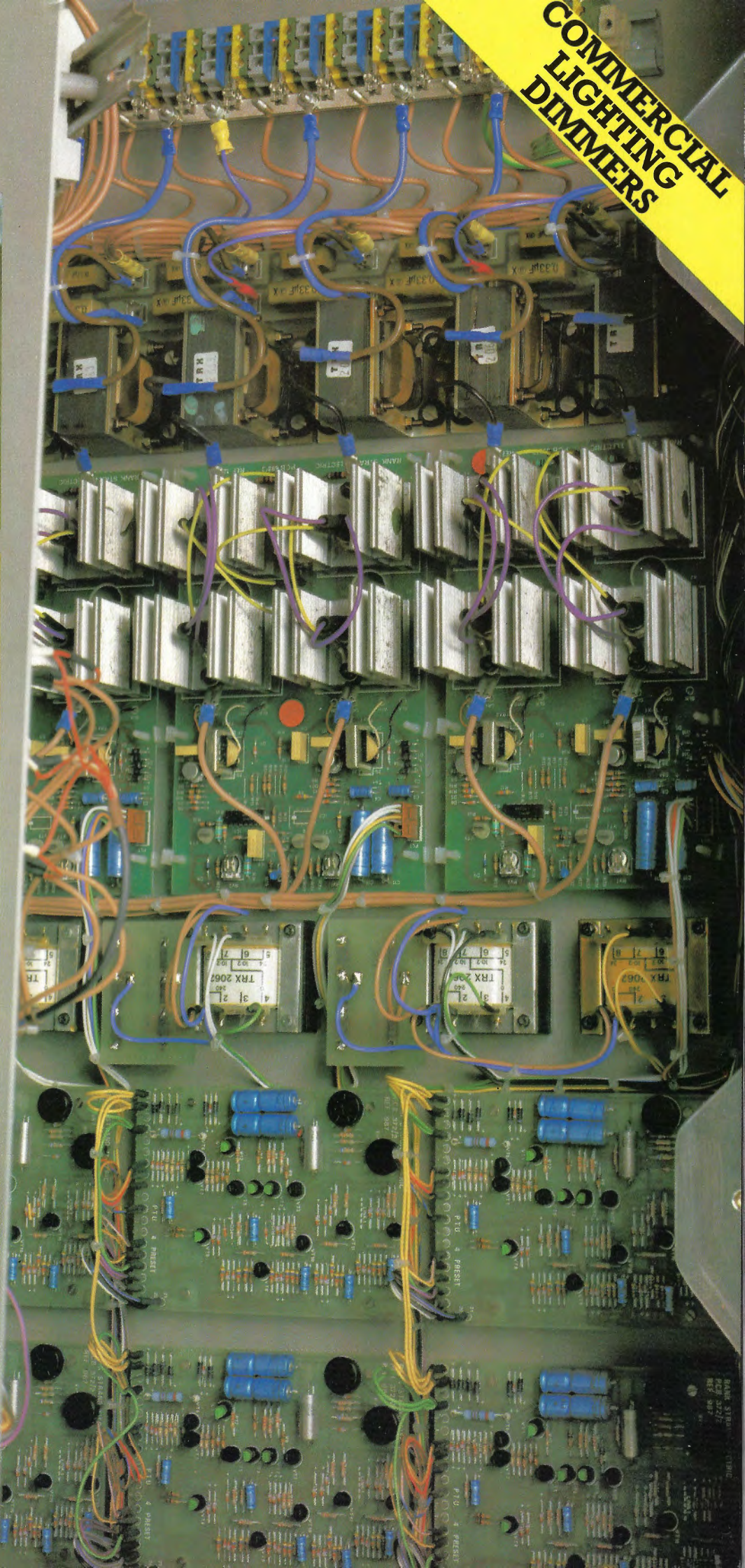
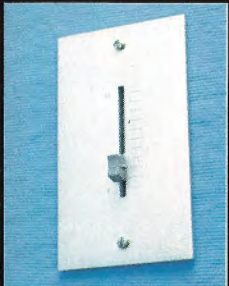
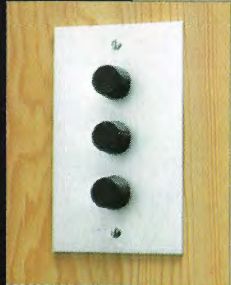
Environ dimmers are thyristor units fully protected by HRC fuses, filtered to BS 800. They are plug-replaceable and automatic compensation circuitry reduces adjustments to a minimum.

Where a fluorescent installation is to be controlled standard dimmable ballasts are required in the tube fittings and a 2 × 10A or 1 × 20A dimmer module is replaced by a 16A fluorescent dimmer and heater supply module. ●

# ENVIRON ENVIRON ENVIRON



# COMMERCIAL LIGHTING DIMMERS





# LIGHTING IN '81

by Richard Pilbrow

*Richard Pilbrow, age 48, founder and Chairman of the Theatre Projects Group, is one of the world's leading lighting designers, responsible for over 250 productions in London, New York, Paris and Moscow. He is an internationally*

*recognized theatre, film and television producer, with such productions to his credit as "Fiddler on the Roof", "A Little Night Music" (theatre), "Swallows and Amazons" (film) and "All You Need is Love — the story of popular music" (TV).*

*Richard Pilbrow's role as a Theatre Consultant is distinguished by his appointment to the National Theatre of Great Britain and by the creation of the world's leading consulting practice in this field. He was a founder of the Association of British Theatre Technicians, the Society of British Theatre Designers and the Society of Theatre Consultants. He was a member of the Drama Panel of the Arts Council, the Building Committee of the National Theatre and the Executive of the Society of West End Theatre. He is a Vice-President of the National Youth Theatre.*



*"NYMPHÉAS" London Contemporary Dance Co. Lighting: John B. Read. Photo by Anthony Crickmay.*





"CATS" Lighting: David Hersey, Photo by Benny Ball.



"I CLAUDIUS" Lighting: John Green.

THE occasion of the international symposium Showlight '81 at the new Barbican Centre, was a happy bringing together of international lighting practitioners from theatre, film, television and rock and roll. It was also a moment to weigh up the present position of lighting for entertainment and speculate on its future in the '80s.

Lighting is, in my view, 90% art and 10% technology. Equipment to the lighting designer is as palette and paint are to the visual artist — a means to an end. That end, creative lighting, is achieved with imagination, an awareness of the potential in light, a love and sympathy for the performance... and talent. Happily the conference, despite the usual preponderance of manufacturers, frequently endorsed this view and the view that, without trained talent, all the hardware in the world will not produce good lighting.

In the English theatre, the past decade has seen technical advances (mainly in memory control) but not much sign of an advance in overall design standards. The general status of the lighting designer's profession is still deplorable. At long last Equity, the designer's union, are making some progress toward a minimum contract. There is increasing concern over training which is virtually non-existent. A group of prominent designers, original founders of the Society of British Theatre Lighting Designers, which later broadened its base to include all theatre designers and led the way into Equity, have resolved to re-form a Society of Lighting Designers to specifically husband the non-union interests of lighting design. This was a move much welcomed by our colleagues in the Society of Television Designers.

Ironically, Showlight '81, bringing together the various branches of performance lighting, underlined an interesting fact. The question of status is not only a matter of the pride (or arrogance) of the practitioner, it is an intrinsic element in allowing lighting to make its full contribution. If there has been little or no recent artistic progress in stage lighting in the U.K., the same cannot be said in television or rock and roll or indeed in parts of the theatre in the U.S.A.

In British TV (particularly the BBC) the lighting designer is now the senior creative technician in the studio. He is in charge of everything seen and how it is seen. At best the results are superb,

combining the best qualities of lighting in protraiture, film and theatre. In rock and roll, the lighting designer, required to put on a hell of a show, has 'come out of the closet' and become a key figure in the presentation. While at times the results may be crude, often they are superb — using light with drama, flair and uninhibited vigour.

In the Broadway theatre, through a long tradition of union organisation and formal training, lighting design is regarded as an essential element. Status again results in best work being required and delivered, and new young designers pushing their elders in their enthusiasm for the design profession. All too often in the U.K. theatre, the lighting designer is still underappreciated by his employer and his director. He is underpaid, often involved in production too late and his full contribution is still not sought. Despite some vigour from young lighting enthusiasts, training is rare and progress through the profession very difficult. In short the lighting design profession is precarious and under-rewarded, resulting in ignorance among directors and others about lighting's potential contribution.

So the status of the lighting cameraman in films, the lighting director in TV and designer in rock and roll all present examples of how enhanced status would appear to have resulted in higher quality work.

It's also fascinating to find how in TV and the rock and roll business, some interesting technical developments have resulted, that in turn have or are having an important effect in the theatre.

The major contribution of TV has been in control system development. Most of the major developments of the fifties and sixties were prompted by the financial muscle of TV from which the theatre soon benefited. Rank Strand's traditional leadership was successfully challenged by Thorn who with the Q-File built a device in close consultation with TV users. Only the National Theatre's requirement for a new control system specified by Theatre Projects and built by Rank Strand combined the virtues of both approaches and made a real advance in memory system design — while at the same time restoring Rank Strand's technological leadership. Lightboard was the first memory system to be designed to truly allow the use of

memories to create and manipulate lighting in a quite new and much more fluid manner. Since the beginning of modern times, lighting has always been built up one circuit at a time to create a stage picture. In fact, of course, only a tiny minority of lighting cues in a show involve the movement of single circuits. Memory systems, once one has appreciated with wonder (and relief) the ability to recall exactly a lighting state, more importantly offer the designer the ability to rapidly move, balance and rebalance blocks of lighting to create a stage picture, and to move from picture to picture in a far more complex or subtle manner. These advances with Lightboard, despite numerous superficial imitations, have at long last been repeated in the new system, Galaxy. Pressure from Australia's theatre building boom, with encouragement from Germany (the only country who could and did afford Lightboard), has finally resulted in this microprocessor version offering much of Lightboard's new style of control at a reasonable price.

The technological contribution of rock and roll has been mainly in fast rigging and touring techniques. It is a world of one night stands; and trusses, lifts, multi-way sockets and cables, lightweight and simpler lanterns (often low voltage), portable dimmer racks and control systems have already had a major effect in theatre lighting methods both in the U.S. and U.K.

Theatre today needs to be just as cost effective as the more commercial (and successful) music business, and these techniques aiming for greater productivity are essential.

Control in rock and roll offers a fascinating challenge. In the U.S. memory systems increase in popularity, but in Britain three preset systems with pin matrixes to allow any circuit to be connected to a large number of sub-masters (some with programmable chase facilities) are most common. The emphasis is on spontaneous 'playability'. One suspects that an unexpected future might emerge out of a mix of Fred Benthams' Light Console, the type of manual board developed for rock and roll and Lightboard with an extended sub-master section. Add dimmers able to produce the voltage required and run from the latest micro...! Well, let's remember playability and ergonomics!

Which brings us back to people. The operation of lighting must be challenging, efficient and fun. Lightboard deliberately chose not to automate 'the plot' and to allow operator choice in the achievement of many effects. The TV and rock and roll lighting designers needs are very similar.

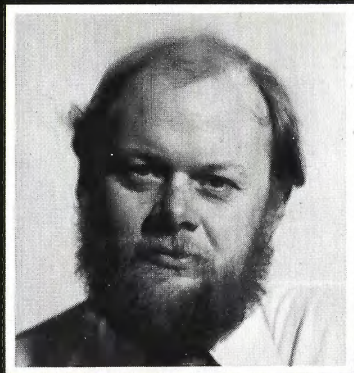
A greater interchange of ideas between these parallel skills will be of benefit; technically, of course, but as technology must be the servant of the artist, so the meeting of artists will be of benefit to all.



"BREAKING GLASS" Art Director: Evan Hercules. Lighting Cameraman: Stephen Goldblatt.



# HOW THEY SAVED THE MAJ.



by Tony Youlden

*Tony Youlden is the New South Wales Manager for Strand products within Rank Electronics in Australia. He was resident in Perth for seven years as administrator of the National Theatre, prior to joining Strand at the start of 1980.*

*His theatre experience spans twenty years and he still works as a freelance lighting designer when the pressure of Strand work permits.*





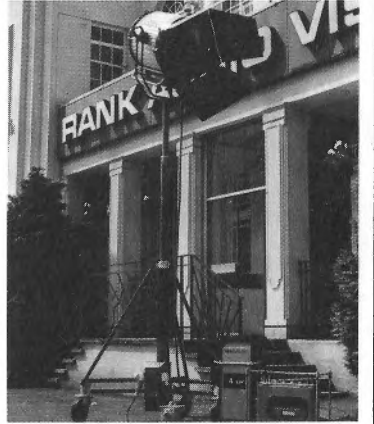
## UP, UP, UP, SHE RISES!

SO says the old sea shanty, and so say Strand, who are now agents for the Tatton Cinevator.

These are motorised stands which will operate from 110 volt AC or DC and will raise two of Tatton's Arri 4K luminaires, or anyone else's lanterns, up to 11ft from the ground.

They have lockable wheels, are fully weather protected. High winds are no problem.

Rank Film Equipment, in the person of Mr Tom Samuels, are the agents. ●



## THE GERMAN ALTERNATIVE

FOR sixty years we have made stage lighting in Britain. For fifteen years we have been agents for the Quartzcolor laniro range of Television studio lighting made in Italy. We now offer U.K. lighting professionals another range of lighting aimed at film and T.V. production units and lighting hire companies, the Arri Apollo series.

The Arnold & Richter Company of Munich, long famous for their professional 35mm and 16mm film cameras have now appointed Strand as their agents for the U.K. for their specialised lighting products. ●



*Graham Anderson and Barry Miller, both of Samuelson Lighting — a leading lighting hire company based in London, with two of their recently acquired Arri 4k Fresnel H.M.I. units.*



*The Arri Report 200 Watt H.M.I. Note the combined buffer unit, ballast and battery pack.*

of the Her Majesty's Theatre for use as a venue for both visiting and local companies and groups'.

Mr Tom Brown recommended that the building be acquired and renovated, as a base of operations for the State Opera and Ballet companies and others. He further recommended that the existing hotel and shops be converted and renovated to provide additional public spaces and offices for the theatre's operation, and to provide space for the administrative headquarters of the local Opera and Ballet companies, together with meeting rooms, rehearsal areas and teaching areas for community arts activities.

In March 1976, a seminar was held with representatives of all the Perth Performing Arts Organisations with the Premier and other Government representatives. The seminar unanimously recommended that the State Government should attempt to obtain the theatre and renovate it.

Within twelve months the State Government had purchased the theatre and planning for its renovation commenced. At one stage it was considered that the theatre should be 'gutted' and a new theatre built within the shell.

However, the project architect, Peter Parkinson, believed that the theatre's three tier seating structure could be retained by re-designing it.

The original drawings of the building had been lost and detailed planning for the renovation could not be undertaken until demolition crews uncovered the structural fabric.

Peter Parkinson said that he was never surprised, as he always expected the worst!

Wherever possible, the original fittings have been re-used, and where this was not possible, the fittings and mouldings were re-created.

Major restructuring of the foyers was made possible by using areas formerly part of the hotel. An enormous stairway to the dress circle was renovated to provide more open access to the stalls, and a new staircase, using the old balustrades, relocated. One of the old hotel bars was converted into a booking office.

Inside the auditorium the 'notorious' pillars that held up the dress circle have been replaced and repositioned to allow an unimpeded view of the stage by all stall patrons.

A new wall was provided within the auditorium to exclude the traffic noise of the city.

The original dome and its opening mechanism has been replaced with a fixed dome. The decoration of the dome is created by a large photomural.

The colour scheme of the auditorium is a deep burgundy with cream and gold highlights.

Continental style seating replaces the original. (Gallery patrons previously had to contend with bleacher style seating!) All floors have been re-raked, or re-stepped to improve the sight lines. The total seating, is now 1,247, a significant reduction since 1904!

On stage the proscenium was widened, and the rake on the stage eliminated. A larger orchestra pit has been provided to allow the local Opera and Ballet companies to use orchestras of an adequate size.

A new grid and flying system using counter weights has been installed, and improved loading dock facilities provided, while a completely new dressing room complex was constructed at the back of the theatre. Space has been made available in the Hotel areas to provide administrative offices and rehearsal rooms for the local Opera and Ballet companies.

The Strand name is naturally much in evidence with a wide range of luminaires from the 'ubiquitous' Pattern 23 to Iris 4 Cyc Lights.

Lighting Control will be by a new Galaxy Memory Lighting Control (the second of ten so far ordered in Australia). As the theatre was operational before Galaxy was available the 'Maj' has been using a 240 channel MMS temporarily.

The dimmers are the Australian built J.T.M. Dimmers in a bright orange finish as requested by the electrical consultants.

The architects had set out to retain the old theatre's auditorium, which still held a kind of magic, by inserting the necessary equipment in and around it to give it a 1980's function. Peter Parkinson always insisted that he was not engaged on a museum style restoration, instead he was "re-cycling the theatre to make it a viable venue in the 1980's".

Peter says: "If the 1980 audience walks in and says: How nice — new seating and a new paint job. Here's the dear old Maj back in business but what did they spend all the money on? We think that as architects, we will have done our job."

When the theatre re-opened on 28th May 1980, the audience could only agree.

### FOOTNOTE:

The name of the theatre has been the source of some controversy. One side insisting that the possessive pronoun should change with the reigning monarch, the other insisting that it was His Majesty's in perpetuity. The Premier of W. A. Sir Charles Court solved the problem by a cabinet edict, 'the words 'His Majesty's Theatre' are built into the original building, and cabinet has decided that this is the correct name to be used in the future'. ●



# THE EDITOR'S

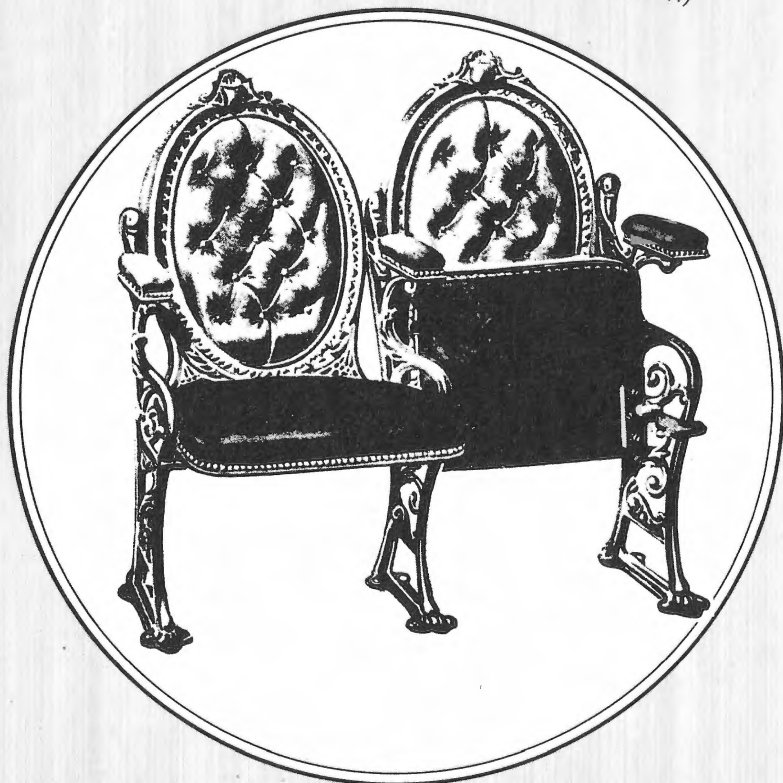
SIX-THIRTY A.M. and the melodious ring of my Little Ben alarm. Why so cheerful at such an hour? Then I remembered, I was off to Lancashire. Visits to the County Palatine are always looked forward to. Good and down to earth practical men and magnificent women with large chins plus a very independent manner.

I was off to visit the Strand seating factory at Lowton, midway between Liverpool and Manchester, to find out something about theatre and cinema seating.



PHOTOGRAPH BY KLEMANTASKI AND SUPPLIED COURTESY OF ROLLS ROYCE MOTORS

A more pleasant route to Rank Strand Seating (you can keep the M1!)



## A NEW LEASE OF LIFE

FIRST things first. In the Strand factory the piece of furniture that you and I, dear reader, call a 'seat' is called by them a 'chair'. Or to be more accurate, because we are in Lancashire, a 'churr'.

The men in charge are Len Holme and Geoff Molyneux. "Churr" men from way back. I always feel that if one was to surgically open their chests, springs and wool would shoot out! I mentioned this to Geoff, who said, quite unperturbed "No, polyether foam nowadays, not steel springs."

The factory itself, built about 50 years ago, is a large and rambling building, originally the Sovereign Toffee Works, as testified to by a rather sad plaque to those departed sweetmeats in the entrance lobby.

My interest this visit was in the art of restoration. A reasonably significant part of the seating scene at Lowton. Let me explain. Not always do customers wish to re-seat a theatre or cinema with all new seating. They may wish to retain the original appearance, they may be sentimentally attached to the old chairs, or they may even just want to save a little money.

If one stands for any time in the factory yard, the chances are that a lorry groaning under the weight of several hundred old theatre chairs will lurch towards the unloading bay. What a scene ensues. A group of Lowton demolition men will seize the cargo and quickly, with a few knowledgeable taps and blows reduce the chairs to frames, standards, seat backs and arm pads. See how knowledgeable I have already become, even the correct naming of parts.

Pathetic scenes sometimes transpire — one famous theatre's whole auditorium seating found its way to Lowton. So successful had their booking policy been that rear stall seats had been so undisturbed by patrons that they contained several mouse nests, whose denizens objected strongly to being disturbed. Some of the demolition men even complained of the odd bite. No, dear reader, I am *not* prepared to say which theatre. That knowledge must go with me to the grave.

The factory's large storage areas are extremely useful, because they are kept full of old seat frames and standards. A recent example of their usefulness has been in the refurbishing of the existing seating at the Birmingham Hippodrome. A new layout decided on by the architects designed to improve both sight lines and access for the audience meant that extra row end standards were needed. These would have to match the standard currently used, a 50 year old design known as "G.B. Sunray". I must not get carried away into another burst of thirties enthusiasm, but this is a well-known

pattern used in Gaumont British Cinemas before they came under the Rank banner in about 1940.

Goodness knows how they ever got into Birmingham's leading variety theatre which incidentally, is home still of the world's first MMS memory board — but they did. And Lowton were able to go to their large stocks of old parts and come up with the extra matching standards. It was not the visual matching of the design that mattered — that was destined to be covered by panels upholstered in the same material as the new seating covers anyway — but the matching of the pin height, the floor rake, etc.

This Birmingham job is worth looking at in a little more detail. It is a truism to say that any trade has its secrets and its expertise, and this is just as true of tip-up chairs as of electronics or theatre management. Let me explain. First, the economics. It is a fair guess to say that fully refurbished seating will be only half the price of a completely new job. And "fully re-furnished" in Strand terms means just that. The chairs are collected from the theatre, totally stripped down and all cloth, webbing, flock, coil springs and anything else that can deteriorate are cast ruthlessly aside.

The standards and all other ironwork are cleaned off and resprayed, the seats and backs are remade as necessary using band sawn hardwood frames and fire retardant polyether foam in place of the old coil springs, and then the whole is recovered either in a traditional wool moquette, a wool synthetic mixture or perhaps one of the very attractive new tweeds that have become so popular. Nylon based fabrics are not a good idea. One cigarette burn is fatal. You don't allow smoking in your theatre? Ah, but what about rehearsals, and conferences? and the cleaners having a sit down and a weed?

As explained, standards can be modernised by new panels to cover the old iron work details. Of course, if the standards are old enough to have bunches of grapes and art nouveau cornucopia, or sometimes even nymphs and shepherds, then we would suggest re-gilding, as the seats made about 1890-1910 were real works of art, being elegant and delicate and just ideal for a Victorian or Edwardian auditorium.

The original chair construction at Birmingham was rather strange. When the seating was installed the backs were fixed with bolts right through the wooden inner frames to the metal structures, and right through the covering to the seat back as well, so two bolt heads showed on each chair. The re-furbishment was used as an opportunity to change this construction to utilise set screws so — no visible fixing.

The absence of visible screws and fastenings has always been accepted as one of the criteria of good design.

# JOURNEYS

No decent car, for example, shows a screw head lurking about its dashboard. Strand's seating men hold to the same philosophy.

So a new, smart but strictly traditional red wool moquette, newly polished hardwood arm pads, new seat numbers and who would believe that so smart but appropriate appearance, plus a whole new lease of life had been achieved so economically? ●

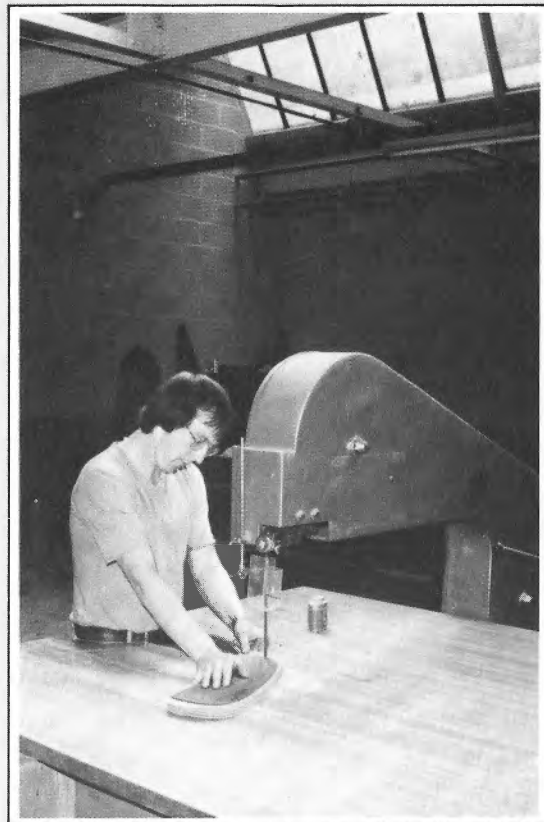
Rebuilding seats and backs ▶  
at Lowton factory.



Drum sanding new plywood seat backs. ▼



Cutting part of ▶  
a chair cover  
on a fine  
band saw.



◀ Sewing new  
seat covers.



Re-spraying wooden arms. ▲

Using a compressed air stapler  
to fix a seat cover. ▼



Awaiting ▶  
re-furbishment.  
A load of chairs  
ready to be re-born  
for many more  
years of useful life.





# CHROMOID

by Norah McNulty

YOU will have realised from the Editor's account of his visit to see the manufacture of Cinemoid, that this hallowed media, still by far the theatre's most frequently used colour depends on traditional engineering skills, with a series of individual stages of manufacture.

Chromoid, in contrast is based on a new plastic called Polycarbonate. Let's first see how this new technology alters the manufacturing methods.

The chemists at the works told me that they selected Polycarbonate, after a long series of tests, because it offered high mechanical strength, withstood heat very well and had really excellent clarity and transmission. And most important it could — after about a year's work and an extensive test programme, meet Strand's flame retardant standards. With so many sales to schools, amateur dramatic societies, village halls, never mind theatres! — Strand can't risk giving their name to any flammable material.

It was the creation of a technology for the assimilation of dyes of varying compatibility though which proved the real challenge.

The colour laboratory is the heart of the operation. The world of dyes and pigment suspensions is an intriguing one, an arcane mixture of empirical skills and boundless patience, combining the talents of the scientist and the artist.

Originally, the colours for theatre use were in gelatine (hence the word 'gel'), the dyes were available from the traditional dye suppliers in Central Europe, and some dyes long used to make the traditional Cinemoid colours were not compatible with polycarbonate or its method of production. So it was necessary to seek new dyes from all over the world, and often to achieve a near match to a Cinemoid colour meant a seven dye compound.

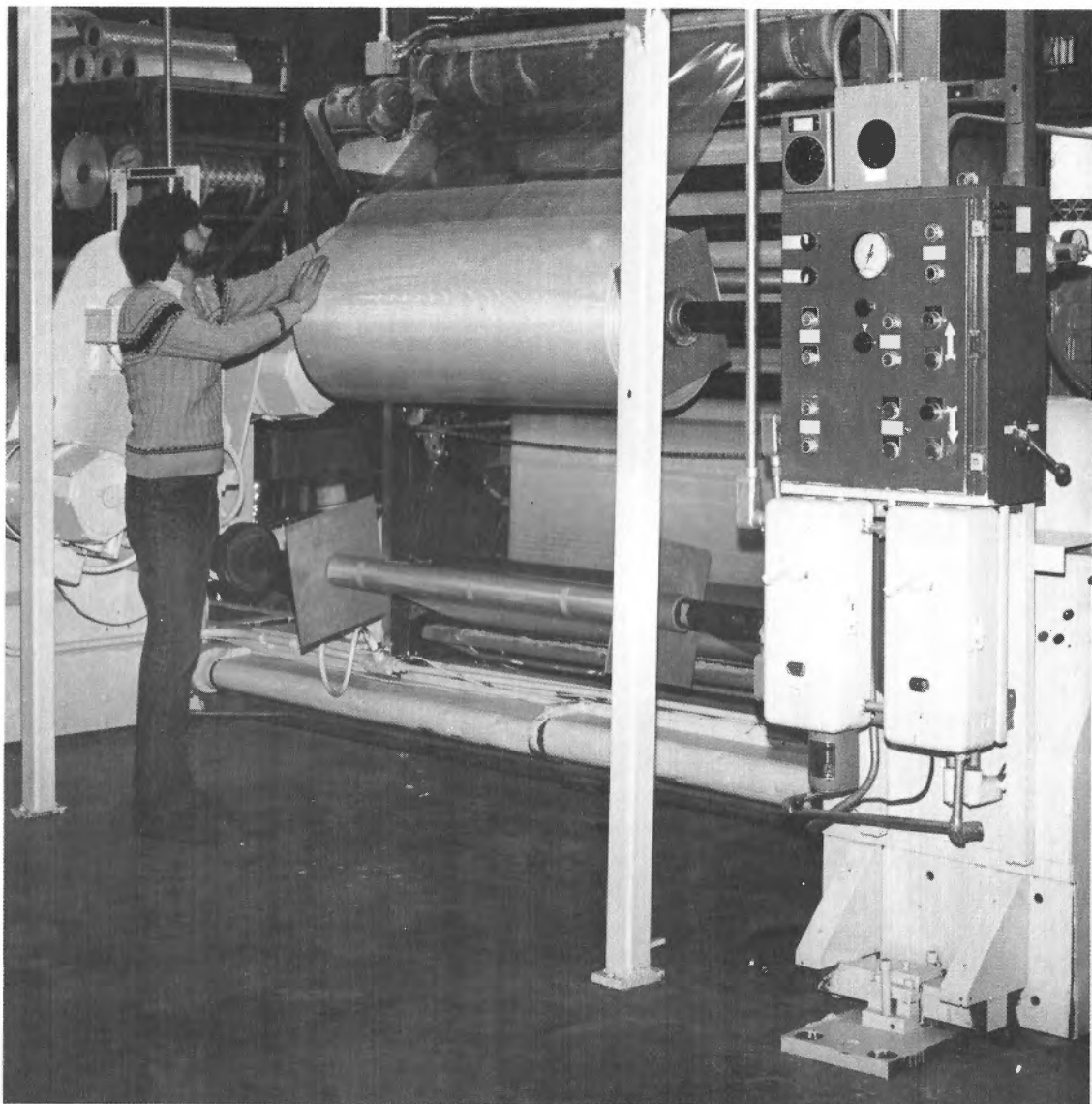
It is only in the last few years that lighting designers have been fully recognised as a truly creative force in theatre. Over many years Strand have maintained a dialogue with designers and have developed many new colours, each with subtle but significant shifts in tints.

In addition, there is a significant change from the traditional tungsten light sources to tungsten halogen which, apart from being more compact, has a higher working temperature and therefore colour temperature. Halogen lamps come much nearer to being a true white.

Designers and public alike have a much more sophisticated awareness and critical faculty developed by exposure to a constant bombardment of images from colour television and film.

Before a colour run, the dye formulae are prepared under strictly controlled conditions. Measurement is by weight determined on digital read-out recording balances.

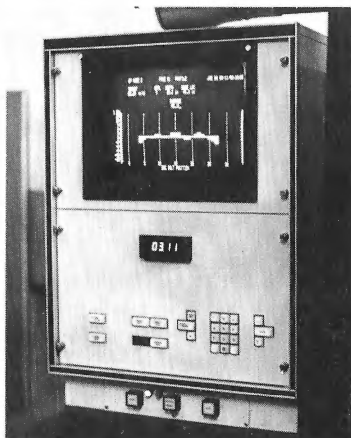
The polycarbonate pellets and dye compound are fed into a laboratory extrusion plant which heats the resin to 600°F and forces it through precision



*The final take-off point of the extrusion plant.*

milled jaws to form a hot flexible sheet which is coiled and cooled on a drum.

Still under control of laboratory technicians, it is monitored for thickness and checked through a recording spectrophotometer for compliance with the master record for the colour.



*Display unit of the integrated computer system which monitors continuously the film gauge.*

If all is well, the process is continued to make up a 1200 lb. weight 'batch' or concentrate and the colour rechecked. The concentrate moves into the main production plant — a noisier and very different world to the cool silence of the laboratory. The plant is one logical production flow. The mixture is fed into the hoppers of the main extruder and subjected to high temperature for complete melting and mixing. The coloured resin, now the consistency of honey, is turned repeatedly in a stainless steel vessel and pressed through a double helix by steel rams to assure mixing by hydraulic pressure, until finally the screw drives the melt through the thin slot of the preset polished die lips.

Many extruding companies can hold a 10% tolerance on gauge thickness and are proud of it — but for colour filters this is just not good enough as the colour density variations will be perceptible to the eye — a remarkably sensitive instrument. The current objective for Chromoid is a demanding 4% tolerance.

The thin hot sheet is cast on a highly polished chrome roller. The large

diameter roller is temperature controlled by an internal coolant. The cooling process continues as the film winds around a series of temperature controlled rollers in a tunnel held at a constant humidity.

If the colour laboratory is the heart, the next step is the brain.

The method of controlling and monitoring the thickness is fascinating, straight out of the Space Age.

Downstream from the extruder, a sensing head tracks continuously across the 26-in width. Underneath, a corresponding coil sends impulses from a nuclear low energy radiator through the film. As the sensor reads the film thickness, it displays the information graphically on a V.D.U. screen — a large display unit — which monitors data by integrated computer with the programmed standard. The screen shows 26 bar charts — above or below a horizontal line — each one representing a fine screw adjustment in the extrusion head, allowing instant adjustment to the thickness, while the operator still watches the screen, without stopping the process.



# TABS ON TABS

by Alan Jowett

The roller system is speed monitored and compensated to avoid any excess tension on the film as any pulling will disorientate the molecular structure of the film and cause shrinkage problems in use.

Finally, the 500m jumbo master rolls are moved on a conveyor to the sheeting department, where the rolls are trimmed to 24-in width and reduced to 20-in x 24-in sheets or 50-ft rolls. Availability in roll form is one of the benefits for large users of Chromoid.

It is during this process that the emergent film passes over a light box and is visually inspected so that should any blemishes occur they can be cut out in the conversion process. Only virgin resin is used. Trim is discarded and not recycled — unusual in the plastics industry but the highest clarity of the finished film is vital.

This technology has enabled important changes in the production of diffusion products.

For many years cinematographers have recognised the need for a variety of diffusion materials to control the nature of light and shadow. Before Chromoid was introduced there were only two Cinemoid diffusion types and generally theatre designers were not very interested in the use of diffusion.

Now television and theatre designers have begun to understand what can be done and so Strand have expanded the range of choices. The production of diffusion types no longer depends on the use of a 'filler' which has the disadvantage of colour change and poor transmission. Now with Chromoid a specific designed surface pattern is embossed on the clear polycarbonat by precisely etched steel rollers in line on the production flow. Of special interest is Tough Silk that gives directional qualities — taking a symmetrical beam from a lighting instrument and massaging its shapes to suit the designer's needs. This product has a special value in adding to normal colour on cyclorama units to minimise the scalloping effect through too wide a spacing.

The visit left me very thoughtful; the manufacturing process is a great contrast to the more traditional skills in use at Spondon and described in the first issue of the re-born TABS.

To make Chromoid, a leap forward has been made in several technologies — dye formulations, plastic resins and in manufacturing control techniques. These have been necessary to meet the challenge of the luminaire designers, with lanterns becoming ever more compact, and modern T.H. lamps transmitting ever more heat, as well as the need to create colours and tints for a new generation of designers in theatre and television. ●

*Editor's Note:*  
Norah wrote this article a few months ago. She didn't know about Strand's new lantern range — if she had the remarks in the last paragraph would no doubt have been given even more emphasis.

"CURTAIN up, light the lights" wrote Stephen Sondheim in *Gypsy* and the lyric, underlining two of Rank Strand's activities does emphasise that what theatregoers see first on stage are the curtains. When the audience is eagerly seated and all eyes are on the proscenium, the elegance of the auditorium can be enhanced or diminished by the quality of the curtains. The customers may rank the scenes of valour and amour before the velours, but it can't help the drama if the drapes are drab and dreary.

When I dropped in on Rank Strand's Northern factory at Ashton-in-Makerfield, I was pleasantly surprised at the range of their work and the variety of their customers. Manager Brian Povey listed just a few of the theatres both in Britain and overseas which had recently been supplied with curtains. These range from the newly re-opened and much acclaimed Lyric Theatre, Hammersmith, London and theatres in Leeds, Edinburgh and the Isle of Man. Venues overseas include the magnificently-named Chiang Kai Shek Memorial Hall in Taiwan.

The workshop also supplies drapes to many customers other than theatres and these include local authority buildings, schools and colleges, hospitals, broadcasting studios and clubs. One of the sample photographs that Brian Povey proudly displayed was of the excellent curtains made for the Lakeside Country Club, in Surrey which was Club of the Year in 1981. Here the curtains were completed with the club's distinctive kingfisher motif.

As Brian Povey modestly says, while

there is no mystique in making curtains Rank Strand's customers do recognise the quality of production. There are many small back-street outfits, he acknowledges, who are able to make up short jobs or have a stab at a set of tabs. When it comes to making up a full set of curtains to the rigorous standards that local authorities and theatre architects specify, then Rank Strand are among the best.

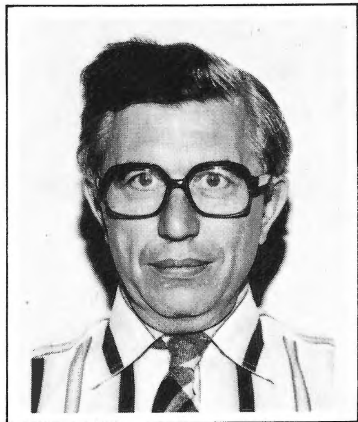
It is not just the expertise of the team of highly-skilled seamstresses and the workshop's experience in supplying drapes to all parts of the theatrical world, but the complete A-Z service that customers can expect. From the initial drawings provided by the company's draughtsmen and the making of the curtains through to the final installation, the work is done not only with an eye to standards and detail but with efficiency and cost-effectiveness as a priority. In these hard, inflationary times Theatre managers, both private and municipal cannot be extravagant and customers at Strand know that they are getting value for money. Nothing is too much trouble — one recent project meant that the workshop had to make templates out of hard-board so that they could set out drapes to fit a proscenium!

While the audience might never realise the work that has been involved, managements know that curtains are an investment that will have to last for twenty years or more. When it is time to restore or replace often dusty and crumbling curtains, it is to Rank Strand's workshop that discriminating theatres turn. ●



*Alan Jowett is a freelance consultant and writer who has contributed to arts and entertainment magazines in both Britain and the USA. He has taught drama in secondary schools, worked for an arts association and performed on stage in clubs and theatres reading his own verse.*





Colin Rae has worked in the Theatre and Television Equipment Industry all his life starting 30 years ago as a theatre apprentice in his father's company, Rae Stage Equipment. He joined Mole Richardsons in 1964 and formed Telestage Associates with his brother in 1972. He considers his forté is common sense engineering!

THE use of the computer in industry and commerce is acknowledged and in most respects welcomed.

On the stage to date the computer has enjoyed overwhelming acceptance in the field of lighting control but to date the influence on mechanical equipment has been limited to a few major installations. Our personal involvement has made us cautious of the electronics man to the extent that we seriously question the full magnetic control for scenery handling equipment.

The early systems involved simple TTL logic\* with numerous components, many separate cards which made commissioning long and arduous and very expensive with long term reliability to say the least, slightly questionable.

The method of control of each machine was based on analogue measurement for position with tachogenerator speed monitoring so that synchronous working and group operation would be practical. This has added to the complexity as analogue to digital conversion is necessary to be compatible with the computer storage. The drive method must also have a distinct bearing on the control equipment.

Our experience being dominated by the use of variable frequency A.C. servo amplifiers of either 6 or 12 phase operation. These solid state drives normally operate in the range of 0 to 20 Hz and when properly commissioned give smooth speed control. The advantage of using this method of drive some years ago was that we could deal with the electrical signals for speed command, acceleration and position finding deceleration such that the overall integration seemed logical and practical, as all things including power were derived electronically.

All these things have proved to be possible but at a cost which has proved to be horrendous, our latest system controlling in excess of 100 services for the National Theatre of Macedonia in Skopje includes much of the latest techniques including five micro processors, an electro pneumatic automatic interconnecting machine,

# ALL THE WORLDS A COMPUTERISED STAGE

by Colin Rae

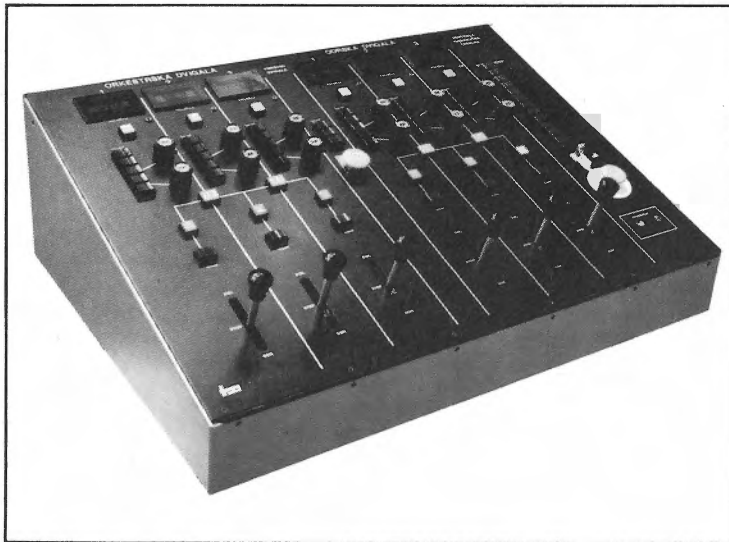
V.D.U. screen data readout and tape control memory, the problem is not making the system work, it is the time that commissioning of the electronics has taken. We have spent one and a half years in commissioning this equipment.

Our concern is really that every system is so custom designed that either the Theatre must employ graduate electronic engineers to look after the equipment or try to persuade one of our installation crew to join the Theatre staff. We are not keen on the latter and a suitable graduate may not be found in the former.

This experience has shown us that solid state computer logic is very impressive when complete and working reliably but any prospective purchaser must recognise:—

1. The costs will be very high as there is no standard.
2. Commissioning and run up can take anything from six months to two years for a full system.
3. Maintenance and after care will require skilled staff whose wages might well off set any labour saving that may have been saved in terms of fly men.

*Control desk for hydraulic scenery hoists. The lever raises and lowers the hoists. The rotary knobs are for pre-setting hoist levels.*



What are the alternatives?

We see two major methods of offering power operation without tears and neither would we state, need a computer to give the Theatre a value investment.

Which equipment really needs variable speed and presettable deads?

The answer is scenery flying and point hoists certainly, house curtains need speed control and revolves or stage wagons may with advantage be controlled with variable speed.

We have seen solutions where these drives have been provided by our competitors using industrial 3-phase thyristor D.C. motors with full regenerative feed back and custom built front ends and control panels, these are fairly successful and we understand they have been used to good effect in the United States of America.

We have not pursued this course as we have certain reservations on the use of D.C. machines concerning noise level and to some degree the low speed torque. The basic D.C. motor would probably have a rotor speed of either 1500 RPM or 1000 RPM at maximum speed set, therefore, the need for a gearbox and brake would be obvious and in certain countries, of course, the regulations might deem it necessary to fit two brakes to meet the safety regulations.

We have very much based our current installations and future schemes on the use of fluid power. Fluid power has had a chequered history but it should be remembered that apart from spectacular failures like "The cable cylinder" system in the United States, many systems have been literally operating for 100 years or so.

Systems such as the installation in the Budapest Opera House, I believe originally installed by an Austrian firm in the 1880's and only just in the last couple of years being taken out of service.

Also many of the Municipal Theatres in West Germany and Austria have finely engineered accumulator

load holding lock valves have reached extremely reliable standards.

The major advantage in using this equipment is that the proportional valve can be provided with solid state electronics to meet our control function criteria as standard industrial packages.

This obviously has a price advantage as it means that less equipment has to be custom built and, therefore, the research and development costs are very much lower. The service provision can in many cases be obtained from the local agent of the hydraulic supplier of the original equipment.

The next question is what method should be used to apply the fluid power to the load?

In the field of scenery flying there are various ways and methods which can be adopted, systems tried and proved successful to a lesser or greater degree include:—

1. Multiple purchase compression rams which largely are not considered favourably by us due to the large size of ram necessary to accept the very high compressive forces which in turn puts up flow rates and pump sizes etc.
2. The multiple purchase tensile ram which we do favour in new installations where cost is a major consideration.
3. The linear ram systems operate direct to the scenery load and many Theatres prefer to have some counterweight assistance. A fluid motor powered winch that can be placed at the base of most conventional counterweights to overhaul the weight frame with up to a 50% of its contract load out of balance. This system offering a power operation in Theatres that exist with traditional counterweighting, power to size ratio of fluid motors is far superior to electric drives allowing the drives to be fitted with minimum counterweight modification.
4. A similar device i.e. a fluid driven head sheave block, this works on a frictional principle using a 200+ degrees of wrap to enable adequate traction, again to transmit up to half the contract load using permanent counterbalance loading.

Both these systems offer to the Theatre the major advantage of being able to revert to manual control easily and quickly in cases of power failure or even some necessity to scenic need which makes hand control more applicable.

Finally, a new development is a very small fluid motor with a three sheave friction system which actually operates by driving the hand line hauling rope in a traditional counterweight system as an assister.

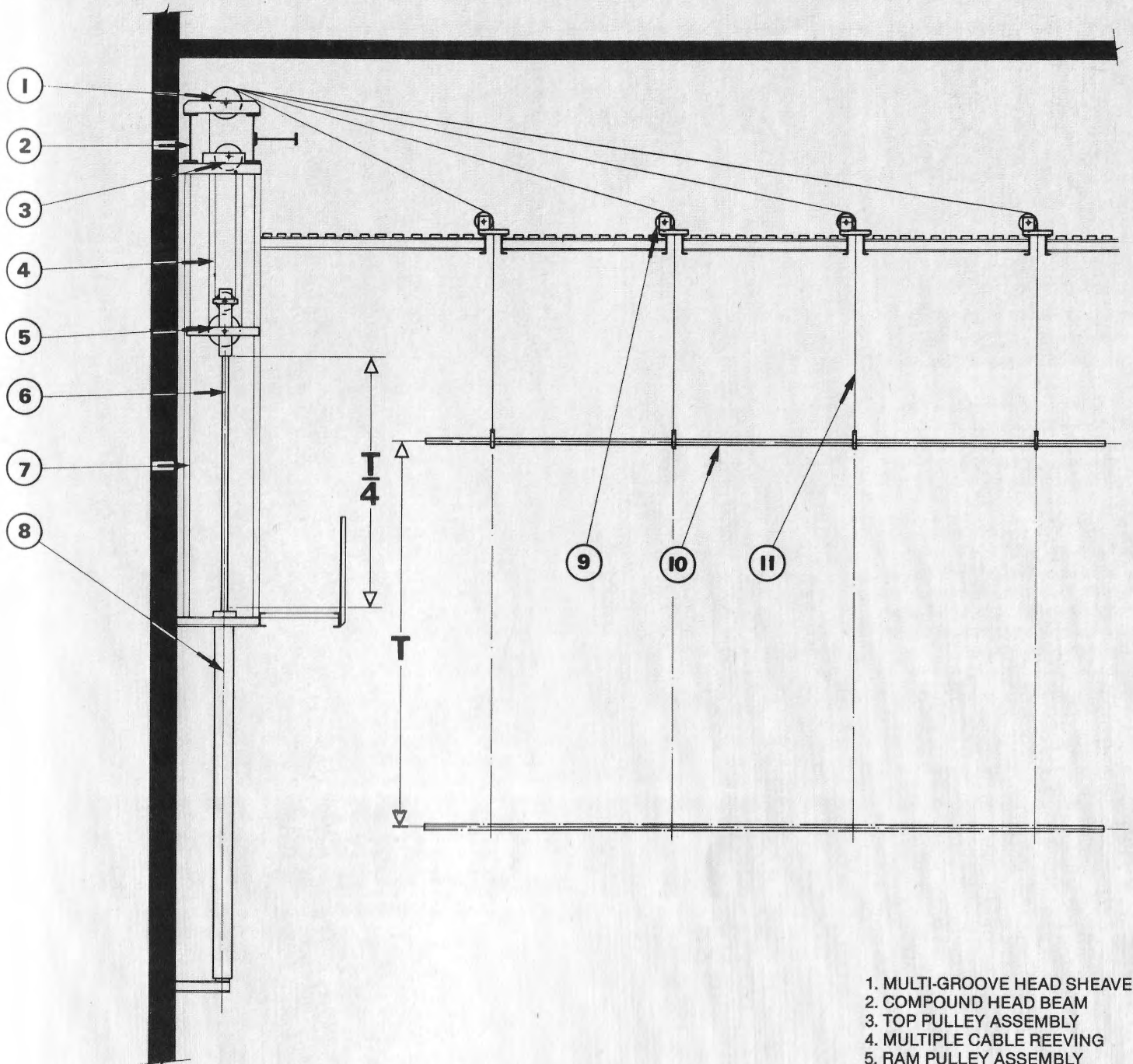
All these systems have been tried either in complete installations or in prototypes and our Company are currently installing in the Ivan Cankar Centre in Yugoslavia the powered head sheave version and have several small installations of the tensile rams now working.

hydraulic systems using either compressive or tensile rams as the prime movers.

Many of these systems incorporate simple but accurately made devices to allow remote control for both speed and height position. Virtually all of these equipments have proved reliable and safe in operation over a realistic time span.

We, therefore, on the grounds that hydraulic equipment generally is now universally used in the industrial field in everything from earth moving to remote controlled factory operations, have opted to follow that direction. With the latest development in hydraulic valve technology we now have at our disposal superb proportional pressure compensated flow valves for accurate control of speed, the latest seal technology almost guarantees leakproof rams and safety





1. MULTI-GROOVE HEAD SHEAVE
2. COMPOUND HEAD BEAM
3. TOP PULLEY ASSEMBLY
4. MULTIPLE CABLE REEVING
5. RAM PULLEY ASSEMBLY
6. RAM
7. RAM PULLEY GUIDES
8. HYDRAULIC CYLINDER
9. SUSPENSION PULLEYS
10. SCENERY BAR
11. SUSPENSION CABLES

Diagram showing basic hydraulic flying principle

The next question is "Where does the Computer fit into this form of Technology?"

We believe that we should take parts of the modern technology to serve us, rather than to control us, and for this reason we would like to consider the control of these equipments in stages.

We recognise fully the requirement that one should be able to remotely control these equipments even though it is clear that in many instances it will be necessary to brail sets from the fly floors and in that respect it is impossible to rule out and dispense with flymen completely. However, the modern servo valve does allow that the use of a D.C. voltage plus or minus 0 to 25 volts can control adequately the speed of these systems throughout their range. The modern proportional control valve can now be provided complete with its

own electronics package which includes a pre-settable acceleration rate and deceleration rate as well as in many cases up to four pre-set speeds, should these be required.

Now, I reiterate, these components are standards for industry and are used to control robot machines and automatic warehouses so therefore their reliability is excellent.

The next quest is to control the position, or stopping positions, or the scenery.

Here there is a mechanical method in which deceleration valves are struck by cams driven either by the rotary winches or by some form of sliding actuator which will give smooth progressive decelerations and accurate stopping positions at all times. These cams being available for manual readjustment or by the addition of a small

electric servos or solenoids to give adjustment remotely. Most installations require some form of position readout, this in terms of a non coupled readout can take the form of a geared multi turn potentiometer coupled to the first grid drop pulley in any system that will accurately depict the set position as a digital number on a readout panel at stage level.

In non coupled systems we prefer to use a potentiometer as this does not require continuous voltage to maintain its memory of position as would be the case if a digital device was used.

More advanced schemes obviously can be provided with incremental shaft encoders, synchro's or other esoteric devices to provide digital information which can be displayed on V.D.U. screens or stored in a computer.

The developments in this field have

a little way to go but the day must be close when the peripherals of lighting control equipment can be used to minimise costs and maximise the control facilities of scenery flying.

My plea would always be though, that we continue to use the best designed computer which we have, namely the human brain coupled to the human eye, using electronics only as a backup and as a safeguard to what surely must be one of the most human activities we have, surely all the world's a stage but we humans are the actors, actresses and administrators and we should control our art, not the computer!

\*These initials stand for Transistor-Transistor-Logic, commonly called "discrete". This method preceded the current practise of using integrated circuits.



*Gail believes she is the only female graduate to-date of the ABTT sponsored City & Guilds Theatre Technician's certificate. She worked as a theatre electrician at Manchester Palace, ABC Blackpool and the Bristol Hippodrome discussed in her article.*

*She is now a freelance journalist and editor of industrial T.V. programmes. With her husband she runs "Video Training Services" who organise specialist courses for industrial video users.*

THE end of an era occurred in Bristol in 1980. No fanfares accompanied this momentous occasion, no headlines were made, though maybe a tear or two were shed at the passing of a wonderful old lady — the Grand Master board from the Bristol Hippodrome.

To those who think it a contradiction in terms to describe a Grand Master as a lady, I can only say that she must have been female. As her only full-time woman operator, I should know, and I expect most of the men who've had the privilege of working on one of these grande-dames of the theatre would agree. Her scales were upside-down for one thing, so a lamp on full resolutely registered 0 on the scale, and a lamp at quarter-check meant a reading of 8 (half-a-point being altogether too finicky to reproduce).

A masterpiece of engineering, the gearing between her banks was a joy to behold — and we honestly didn't find the fact that the autos and specials bank wouldn't go into reverse too much of a nuisance. The old lady would occasionally let a locked-off dimmer slip by her, but a fade to very-nearly-black was a small price to pay for the smoothest fade imaginable!

Positioned at the master wheel, awaiting one's cue (a buzzer loud enough to wake even the doziest electrician, but never a peep reached the audience's ears from our backstage perch) it was easy to imagine oneself as the captain of a ship, nursing the great heap of iron through slow cues and fast, towards "house up" and the successful completion of another voyage... I mean, show.

Today's generation of technicians, brought up with the luxury of thyristor boards, can have little idea of the sheer energy needed by us older folk. The climb to the perch up a twenty-foot vertical ladder was tiring enough, and the shows always involved a good deal of leaping about — no leaning back in a reclining chair with controls at one's



# FAREWELL OLD FRIEND

by Gail Hardman

fingertips for us! Still, the amount of room on the perch did have its compensations — during one particularly boring show I made two rugs!

A lack of understanding of the realities at the top of the ladder often caught out lighting designers who graced our portals — the less experienced ones, that is. During lighting sessions they would pause to admire the state they had called for, and the Grand Master operator would sink gratefully back into his/her chair. Several eternities later, the chap in the stalls would say, "Could you just take a couple of points off number 83 please?" Gathering my legs beneath me in a gallant attempt to rise and perform the requested alteration, I was frequently halted by the words, "Oh, great, fine, super, that's much better thanks. Plot it!" Which only goes to show that even a lighting designer's eye can be fooled into seeing what it wants to see.

A replacement for the Grand Master was suggested several times, but when it came to the point there was always some good reason why it didn't happen. Often, this amounted to the fact that, management having made up their minds (again!) to buy a new board, they dithered so long before accepting the proposed expenditure that the price had doubled by the time they were ready to go ahead, and then they couldn't afford it.

Derek Peel, the ex-chief of the Bristol Hippodrome enjoyed a love/

hate relationship with the board for many years, but he wasn't too surprised that she outlasted him.

"Those old boards will never wear out, either electrically or mechanically, provided they get reasonable maintenance," he told me. (It was actually the contactor room which blew up in the end, and sounded the board's death-knell.) "I think they were more reliable than the new electronic boards." — Ours certainly never went wrong, anyway!

"There's a lot to be said for the new computer-type boards, but I honestly don't think there's much they can do that a couple of good operators couldn't manage on the Grand Master. The new boards are cheaper to run, of course, since you only need one operator. Two was normal for us, though on exceptional shows like "Hair" and "Godspell" there were five of us falling over one another to do an average of a cue per minute. Variety bills couldn't have been simpler, with the banks being ready colour-coded according to their colour states.

"Computer boards are here to stay, but I doubt if they'll ever have the character that the Grand Masters had — of the hundred or so boards installed, I doubt if any two were exactly the same!"

Roy Hynam, the present chief, is more than pleased with the Duet which has proved to be the Grand Master's eventual successor, but he still has nostalgic feelings for the old board.

"The Duet's great, very flexible and easy to use, and much quicker for plotting and operating than the old board, but there was something about a cue done on the Grand Master, a... what's the word? ... a subtlety, I think, which seems to be missing now.

"I feel quite sad when I see the old board sitting there, useless and partly stripped down. And I must say I preferred being backstage — there might not have been such a good view of the show from the perch, but we could absorb the atmosphere, which is missing FOH."

Over the years the Grand Master, which performed its first show in December, 1948, has consumed an estimated three million kilowatt hours spread over her ninety-six ways of 1500W ± and 2kW ±. She has performed around a million cues (give or take a few thousand) and has graced the performances of some of the legendary figures of the stage — Van Johnson, Max Wall, Tito Gobbi and Rod Stewart to name but a few of the thousands of artistes she has illuminated.

Now, she is likely to find a new home in the Theatre Collection at Bristol University's Drama Department. A fitting end, perhaps, for this piece of theatre history. But I expect the old girl will miss her perch, and that intangible, yet unique, atmosphere of her old home.



# HIRE TODAY, GONE TOMORROW

by Philip L. Edwards

IN the beginning was the Strand Electric and Engineering Company whose hire department enjoyed a virtual monopoly. Then came Theatre Projects and then came all the rest until today there are, perhaps, half a dozen big hire firms and a whole host of small businesses such as that which goes under the name of Philip L. Edwards (Theatre Lighting) and is run by my wife and I attended by our three year old son and assisted by a couple of friends part time. There is no such thing as a typical hire company but I don't think we're untypical of the smaller ones.

This, perhaps unlikely, organisation grew from the half dozen lanterns I owned when I moved to the North West eight years ago and now has stocks of several hundred lanterns, control gear and sundries such as rigging equipment and orchestra stands. A sales side inevitably developed, first a few sheets of Cinemoid to help hire customers who wanted to get all their requirements in one place, then a few lamps and so on. Now we stock large quantities of several ranges of colour, substantial numbers of lamps and recently we have started holding a range of pyrotechnics.

In the early days I was lucky to be able to store lanterns at my other workplace. This became impractical when my stock of lanterns started to become comparable with those that rightly belonged there. We were lucky to be able to move into a building on a trading estate near the house, of which more later.

Our storage of colour in the early days is worthy of comment. I was reluctant to store colour at work due to the risk of confusion between the two stocks. Looking round we realised that the floor area under the beds was hard-

ly fully occupied, thus Cinemoid went under our bed, Chromoid under the spare bed! It may have been unusual but it ensured that the colour was kept flat and enabled us to clean under the beds by sliding out both colours and dust!

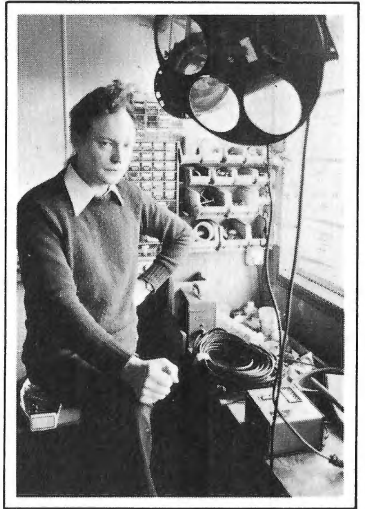
As I said we have a store near the house — a building which seemed large when we moved in but is now hopelessly small. We are hoping to be able to move into a larger purpose-built building on the same estate within a year or so. Until then I shall continue to suffer from a recurring nightmare about the day when all our equipment is in — and probably around — our store at the same time.

The big advantage of being small is the ability to get to know our customers, several of whom we now class as friends as well. We have never kept normal, formal office hours. An awful lot of people, especially in the amateur world don't find it easy to collect and return equipment between 9 and 5 Monday to Friday so as far as possible we try to meet them when it's convenient for them. This has led to a regular date after morning church on a Sunday when equipment comes back, is checked and if we are lucky goes out again straight away.

This business of doing our best to fit in with customers does have its problems like the man who nonchalantly suggested 'Thursday' great, except that this Thursday happened to be Christmas Day! On that occasion we were shut!

Customers come in all shapes and sizes. No doubt other hire firms find the same thing. I suppose the perfect customer is the man who telephones his order well in advance, confirms in writing, collects when he says he will in

*Philip Edwards is a lighting designer and technician who runs a lighting hire and sales business in North West England. He is also the resident Lighting Director at the Royal Northern College of Music Opera Theatre in Manchester.*



*In the stores — our author in pensive mood.*

a vehicle large enough to carry the gear safely and then returns the equipment punctually in immaculate condition at the end of the run. The other end of the scale is the person who telephones one order, confirms another; if he confirms at all, tries to collect twelve foot stands in a Mini and eventually returns the gear with the cables tangled, lanterns with the shutters pulled out, bolts and half the colour frames missing and plugs only half connected to some of the cables. In between come the rest and really they are all marvellous — they must be — they keep us in business.

The question of looking after hired equipment is a vexed one. Whichever hat I am wearing, chief electrician or hire operator it seems natural to me to look after the gear properly. Obviously any damage has to be put right and the putting right costs money. Equally obviously the person who ultimately pays is the customer. As has been said before, 'If you keep our costs down it will keep yours down'. Hire operators all attempt to offer a good service and supply well maintained equipment and it is in the customers own interest to look after it.

I mentioned cables earlier. In common with, I think, all hire firms we supply cable coiled and taped. It is no hardship, surely, to return the cable in this state, even if there is no tape available you can always use string. Whatever you do don't just tie the end round the coil, firstly it comes undone and secondly it doesn't do the cable any good. In any case secure the coils. Imagine being faced with a heap of tangled cable which you know is really twenty leads. Sorting it out takes time and costs money — your money. As an extension of this, if you must change plugs put them back properly so that we don't find out! We don't put plugs on with the cable grip done up on the individual wires and the earth disconnected and neither should you.

Now all this sounds as if we do battle with a procession of people who smash our equipment. We don't really but inevitably the bad ones are the ones who get noticed. In fairness to the vast majority of our customers and I'm sure to everyone else's too, they do look after the equipment and when they haven't been sure how to handle it they've asked.

This perhaps is another advantage of small is beautiful. We actually handle the stuff so we've got a pretty good

idea of the quality of the equipment. In my case I light shows and I handle other people's lighting so I keep up fairly well with what's available and how good it is. Most of our range is, naturally, Strand equipment, for two reasons. Firstly it is by far the most comprehensive range from one manufacturer and secondly most of our customers ask for it. This doesn't mean that I've no criticism of the range. The editor of this magazine came in for some of it in his previous post and the Northern branch get it regularly. I am pleased to say that it has all been taken in good part and indeed alterations have been made as a result of criticisms from me and people like me.

This, of course, is true not just of Strand but of any firm. We enjoy a lot of conversations with our customers and we try to find out the sort of things that they want to hire and buy, we have to, to keep in business. Also, though, we try to keep our range up to date by adding to it whenever something new and worthwhile comes on the market.

Like any supplier we are always pleased to advise or demonstrate equipment — as I said I use it regularly so I have a pretty good idea, for example, of how difficult it is to get an 808 into a ceiling slot — bloody difficult. Why can't somebody make a small 2kW profile spot, and before anyone answers that I know why, but it doesn't make it any easier!

I mentioned three year old Glyn at the beginning of this article. He has a splendid vocabulary including 'barn-doors', 'switchboard', 'Cinemoid' and so on. We have to be very careful though. He has adopted our stock of 6-way Mini-2 desks as 'Glyn's switchboards' and we now have to ask him before he sees us give one to somebody! He also has an endearing habit of picking things up and 'putting them away' so next time you are handed a colour frame from the bin which is otherwise full of spigots it's not illogical, just Glyn!

So that's Philip L. Edwards (Theatre Lighting), like this article loosely knit and rambling but I think performing a useful service to our customers. Just as we try to look after our customers we are very well looked after by all our suppliers especially Herbert\* and Co. at Lowton to whom my many thanks. ●



*The next generation. Young Glyn helps dad load up!*

\*Herbert Hughes is the Strand Northern Regional Manager—Ed.



# TABS BOOKSHELF

TABS will in future review, for its 12,000 readers, books submitted on Theatre, T.V. or film technical subjects. We

intend to get experts from within the Strand Group and from our panel of authors, to review books on their own

particular subjects.

We were delighted that the first book to come in is by our contributor Graham Walne. To

review "Sound for Theatres" who better than the General Manager of Strand Sound, Mike Lowe, while the Editor grapples with "Curtains".

## 'SOUND FOR THEATRES'

Graham Walne

To be published by

John Offord Publications

THE illustrious editor of TABS recently handed to me the draft of a new book from Graham Walne of Leisureplan. He asked me to get someone in Strand Sound to review the book for this issue. Since it seemed like an excellent idea I readily accepted, tucked the folder under my arm and returned to my office with the intention of persuading one of our technically aware Strand Sound people to write the appraisal. This all seemed like a fairly easy job of delegation until I made the mistake of opening the folder and reading the contents.

A General Manager usually has to be content with gross margins, equity ratios, ROCE, RONA and WIDGETS and is not allowed to juggle with such terms as decibels, feedback, Hertz, PPM, woofers and tweeters. It could be because we don't know what they mean!

At last, here was a manual that not only explained their meaning but also their significance when applied to the reality of providing a good theatre sound system.

I read on.

Having explained the technical terms the manual then goes on to explain the problems and opportunities of acoustics in the theatre. Now I know why the Albert Hall has those flying saucers suspended in the dome!

The equipment section is fascinating and is introduced by the

sentence "Now we come to the most important part of the chain — the equipment itself". As a supplier of professional sound systems I have to agree with this sentiment and the one in the introduction where Mr Walne says "Suppliers are rarely able to offer, of their own manufacture, a complete system to a compatible standard". Whilst not always of their own manufacture, the major components of the Strand Sound chain are under one brand name and therefore carefully matched for performance and

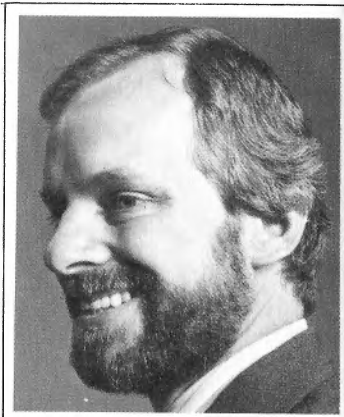
guaranteed by Strand Sound.

I am by now deep into the section on examples of the problems of providing good sound in such diverse locations as swimming pools and churches, large venues and banquets when my secretary hands me a note from the editor reminding me that the review I promised is due to go to press tomorrow.

The section on sound effects, communications and the future is fascinating. In short, I have found a book which is highly readable, but also

gives me an insight into a very interesting sphere of activity and which I can understand. In addition I can appear to be reasonably knowledgeable the next time I have to listen to a sound engineer explaining to me 'why'.

If you are at all involved in sound in the theatre then you cannot afford to be without a copy of "Sound for Theatres" by Graham Walne. I confess I may hang on to the draft whilst I save up the £6.95 for the book which is due for publication in the City Arts Series by John Offord Publications.



Mike Lowe joined Rank Audio Visual in 1972 and at present is the General Manager of the Rank Strand (Auditorium Group) responsible for the Sound, Cinema, Seating and J.M.B. Hire facets of Rank Strand.

## 'CURTAINS'

C. Brereton, D. Cheshire, J. Dunbar-Nasmith, J. Earle, V. Glasstone, I. Mackintosh and M. Sell

To be published by John Offord Publications in November. Price not yet announced.

JUST outside the pleasant town of Sevenoaks lies Knowle Park, and within the park may be found the magnificent and ancient Knowle House, home of the Sackvilles since the days of the first Elizabeth. In 1670 His Majesty King Charles II announced that he would be coming to Knowle for an overnight stay. The then Lord Sackville anxiously enquired as to how many apartments would be required by the Royal Party. "I am only bringing an overnight valise," said the Merry Monarch. The next day a party of

seventy assorted courtiers and attendants, plus the King, arrived. In answer to his host's despairing excuses His Majesty merely remarked that "For a King, seventy people is an overnight valise!"

What brought this nightmare-like incident to mind? It was the sheer number of the authors of this offering. Seven, no less!

Beneath the bold names and initial letters which are all I can deduce from the galley proofs from which I have sampled this work, I think I spy the architect from whose loins have sprung two fine theatres which now embellish Scotland as well as Mr R. Pilbrow's prop and staff from 110 Longacre.

The others of the party remain an enigma. So to the book.

"Curtains" is a gazetteer of all the theatrical buildings of Britain — not only those currently in use for their proper purpose, but those that have suffered a sad sea change into Bingo

Halls or supermarkets.

I have, as I have said, only been able to sample this book from a few proof pages, so I can give no opinion on the number or quality of the illustrations that are to be offered, and these will, I think, be a major consideration as to whether "Curtains" will be an active pleasure to read and to own, or whether it will be only a well intentioned and efficiently compiled work of reference.

Judging from the sample submitted, there appears to be an absence of that anecdotal information that TABS readers will know to be my joy and my weakness.

I think I must admit to finding exact architectural descriptions a poor second to the story of the famous actors who have graced a particular span of boards, or of the playwrights who have bitten their first night fingers.

I believe many readers would like to have confirmed for them, for example, that the unlikely site of Irving's very last

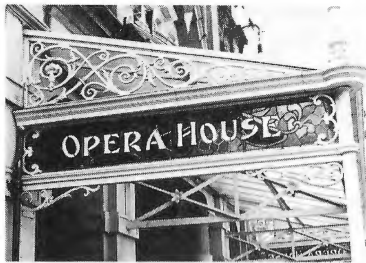
appearance was the Theatre Royal Bradford. They may be pleased to be reminded that the Royal Court in Sloane Square had a noble past long before Mr Osborne, or that the other Royal Court, the one in Liverpool, had, some three years ago, the distinction of being the objective of a march by local housewives who were protesting that their current run of Bingo might be ousted in favour of a season of plays!

I suppose it is unfair to criticize a book for not being something that it perhaps did not set out to be — but by doing the book their way the Magnificent Seven have effectively stopped anyone doing it in my way for at least ten years. To sum up — the purpose is noble, because many a restorable theatre may be rescued through the publicity this book will give to its current plight, but I would wish the execution had been a trifle less exact and less noble, and a wee bit more interesting in the dilettante, gossipy sense.



# DUET AT A SPA

by the Editor



every summer of the Buxton Festival (see TABS two issues back, for article by Philip Edwards).

The decision was taken for a memory system, and, as the theatre decided on 120 ways, Duet was the obvious choice. And how glad we are that they made the decision to go for Strand again. Their 1938 bracket handle board, see photo, had certainly given good service. As readers will deduce, it was on a perch, actor's left. The Duet, which will actually be Duet No. 261, will be in a circle box, actor's right.

As the Editorial Pentax was put away, hacksaws went to work on the

HUXTON, the famous Derbyshire Spa, was, I seem to remember, discovered by Lord North. His Lordship was riding home in the wee small hours from an evening spent with crochies. They had all been drowning their sorrows over the success of His Majesty's rebellious subjects in the Americas. He awoke lying by the roadside the next morning, feeling no trace of headache, liver discomfort or even general malaise. This was put down to the fortunate fact that his aristocratic mouth had been partially covered by a Buxton stream



## LETTERS TO THE EDITOR

TABS, The June Issue  
From Mr Bobby Pagan

Dear Sir,

It has been my good fortune to see the June issue with Frederick Bentham's most fascinating pages on the early days of STRAND.

His pictures of the Hyams Theatres include a Troxy Foyer shot which I don't recall ever seeing, and you both may be interested to know that Charlie Passmore (House Engineer at Edmonton) was at Bedford School with me in 1920/21.

I never saw him again until after a terrifying debut (as a Hick from the Sticks) on Trocadero's Wurlitzer in August 1933, when he re-introduced himself while reminding me that I had not switched off the organ blower. This was just before Troxy's opening and I was being launched at the Troc in the last week of Quentin Maclean's holiday.

Passmore made "in-circuit history" when Edmonton's remote control piano got tired. He reversed its motor and coupled it to a point of the Vacuum Cleaning System. Incidentally there was one quite sinister aspect of the orchestra and organ lifts at Edmonton. It was that in the event of the orchestra coming down before the organ went up, the organist must not put his elbows restfully on the metal surround, lest the descending orchestra lift would shear them off!

Organ presentations were largely dependant on the collaboration and inventive genius of our chief projectionists, notably Percy Pilgrim, Ernie Hurry, Bill Richardson and later, Stan Place under whose guidance I learned how to do a change-over on a GB Kalee 21.

This could go on forever but must not.  
I am, Yours sincerely,  
Bobby Pagan  
Brighton

From Ian Reekie,  
Scunthorpe Borough  
Council

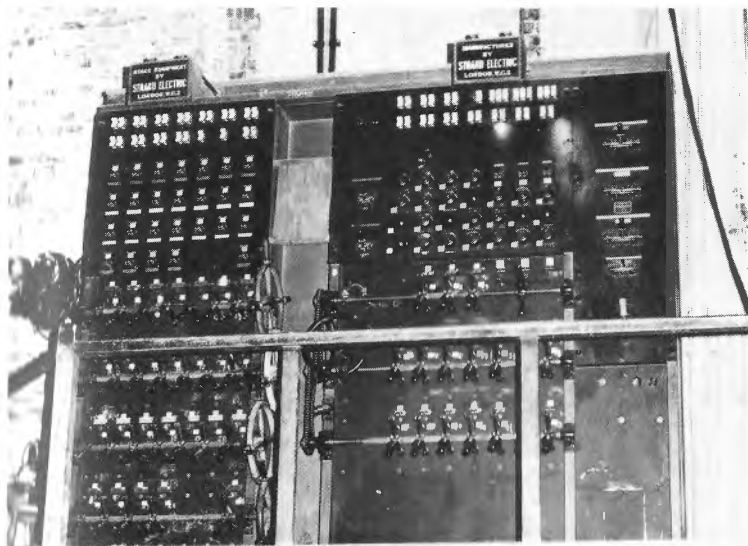
Dear Richard Harris,

I refer to the article headed 'Special Lighting for The Who' which appeared on page 11 of the June issue of TABS in the section which documented 'The Editor's Journeys'.

Your comments concerning the effect of The Who's lighting rig, which inferred that Scunthorpe's prevailing atmospheric conditions would make any smoke machine redundant, only serve to perpetuate the popular misconception that seems to be held by that deprived section of the community who have never visited the town. There is certainly every indication that the editor's journeys have not brought him in this direction at least in recent years. This omission is particularly unfortunate in view of the large quantity of Rank Strand equipment used in the presentation of the Council's thriving cultural and entertainment programme.

You may recall that during my time in Barnsley, when the Civic Theatre became one of the first purchasers of the new A.M.C. board, I was able with the assistance of Jack Watling to counteract your equally jaundiced views concerning the delights of the South Yorkshire countryside. I am confident that if you were able to find the time to visit Scunthorpe on your travels you could not fail to be impressed (a wet Monday in February is not recommended). With the Humber Bridge at last open civilisation (?) in the form of Hull is only 24 miles away so any expedition need not be too painful. No passports are required and I can guarantee you a warm welcome.

Yours sincerely,  
Ian Reekie  
Deputy Chief Leisure and Recreation  
Officer



The old Strand Bracket Handle Board — installed in 1938, now 'reduced to produce'.

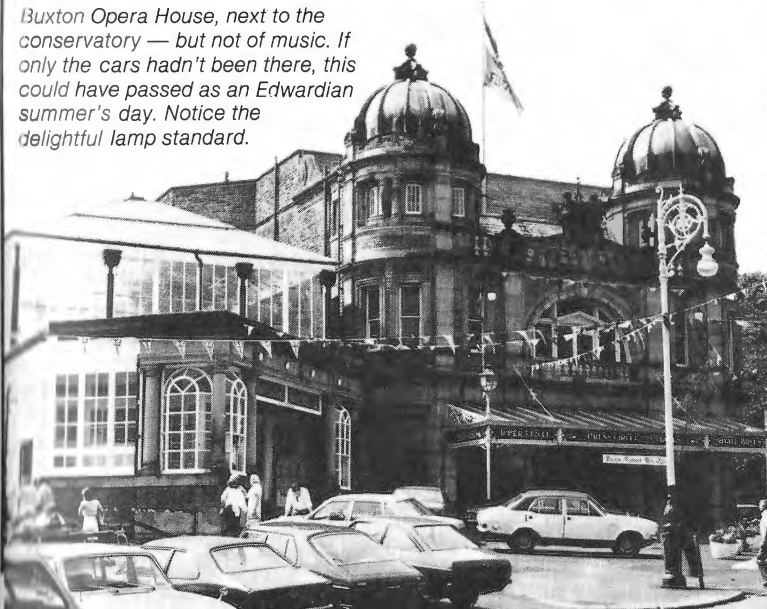
and some local water had been injected. Thus were the health giving properties of the local spring water discovered for a grateful world.

Our story now moves forward to the beginning of this present century, when the Duke of Devonshire, the local magnate whose seat is nearby at Chatsworth, provided many handsome buildings for the town. Among these was the Opera House, a charming if miniature theatre, now the home

old board, which was, in the Rolls Royce phrase, "reduced to produce".

Sadly, with the exception of Mr James Laws of Attleborough, I do not believe anyone is collecting old theatre or T.V. technical equipment. In fifty years it may be as fashionable as steam railway memorabilia. Why, I had to spend 20p each on some Midland Railway porter's brass buttons recently to adorn the Editorial blazer! ●

Buxton Opera House, next to the conservatory — but not of music. If only the cars hadn't been there, this could have passed as an Edwardian summer's day. Notice the delightful lamp standard.



### TABS — NEXT ISSUE

WE hope to publish the following articles, along with our usual contributions.

The New Dundee Rep. André Tammes, the theatre consultant, writes about the project.

Kathy White covers the history of the Dundee theatre.

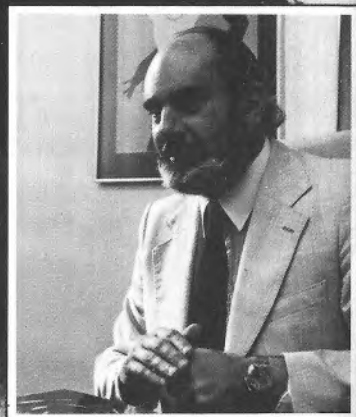
Fred Bentham will give us another slice of fascinating technical autobiography.

Computer Box Office — both major companies have been given space to put forward their advantages — you, the reader, will be the judge. Plus Graham Walne, Philip Edwards, Norah McNulty etc.



# TELL US HOW YOU PRODUCED IT

by Stan Attrill



Stan Attrill, our author, is producer/director at Lee International Audio Visual, Wembley.

We asked Stan to write a short article for TABS, on how the Galaxy presentation was produced.

AFTER we first unveiled Galaxy, we were so pleased with our new board that we decided to try a new method of introducing it to our customers — by using an Audio Visual programme. I should explain here that Audio Visual (or AV as the knowledgeable call it) is a method of electronically controlling three or more automatic slide lanterns linked to a sound and effect tape.

Photography, sound effects, music and commentary are all combined together to make a new and very 'strong' medium of expression. There is an electronic interlock so that the slides, as they mix, cross fade or superimpose can never get out of order or out of synchronisation with the sound track.

Incidentally, this programme will be

on show every hour at the ABTT Trade Fair, and it will be shown by our dealers overseas at shows and exhibitions. It is also available on video tape (professional standard) for showing to T.V. customers abroad.

Great, I thought, when Strand asked me to put together a ten to fifteen minute, triple projector tape/slide presentation, on the new Galaxy memory lighting control system.

What a subject; multi-image galaxies, universes, things from outer space, futuristic sci fi. Look out, Stanley Kubrick and Stephen Spielberg.



## RTM VEHICLE

by Vic Gibbs

RANK Strand were awarded a Contract towards the end of 1980, for the supply of a Mobile Television Lighting Control Vehicle, for use by RTM in Western Malaysia.

The vehicle being equipped with comprehensive Video and Audio facilities in addition to Lighting Control and Dimmers.

The vehicle chassis is a standard Bedford unit, with specialist coach building by Gowerings (M.V.C.) Ltd.

The vehicle is divided into 3 main areas, the forward compartment being the operational control room. The centre compartment being the dimmer and output cable storage area, and the rear the power input cable area. The rear roof area is reinforced for use as a camera or follow spot platform, and in addition the top rail of the fold down guard rails can be used as a luminaire rigging barrel.

Access to the first two compartments is via steps stored below the doors. The control compartment houses a 96 channel Duet and Video Display Unit, four monochrome, and two colour monitors plus a wave form monitor, back up pin patch and non dim controls, video and

audio switches, clock, talkback unit, low power distribution unit and air conditioner controls. The air conditioners being mounted in the luton section.

The central compartment houses 30 ways of 5kW Tempus dimmer packs, high power distribution and 1.5 kilometres of output cable.

The rear compartment houses two 16 metre power input cables, one being a plug and socket type for connecting to a generator, the other cable being suitable for connection to a sub station supply, the first cable can then be used as an extension if required. These two cables are stored on powered winding drums fed from the technical services battery.

To give maximum flexibility of use, the lighting system can be operated in four different modes.

- 1) On Vehicle — Full power is brought to the Vehicle and Luminaires plugged, via the output cables, into the dimmer packs.
- 2) Duet derigged off the Vehicle — The vehicle then acts as dimmer room. 100 metre control extension cables being carried in the rear compartment.

3) Dimmers derigged off the Vehicle — The vehicle now acts as a Control room and uses an auxiliary low power input for services.

4) Duet, Dimmers and Power Distribution derigged — and being used remotely i.e. in a theatre. The vehicle can then be used as a monitoring and video switching control room.

Special allowance has been made for Malaysia's climatic conditions, all doors and lockers being triple sealed. Duplicate Air Conditioners are fitted, and a pull-out sun and rain shield can be rigged at the back when the rear doors are open.

Skirt lockers are provided for storage, technical and vehicle battery access and for technical feeds. No luminaire storage is provided as these will be carried in a separate simple tender vehicle.

1. Control Compartment showing the Duet and V.D.U. monochrome, colour and wave form monitors, pin patch, switchers and talkback unit.

2. Dimmer Compartment showing the Tempus packs with cable access lockers below, derigable high Power Distribution unit and some of the 1.5 kilometres of output cable.

3. Rear Power input compartment showing the motorised cable drums and one of the input cables.



Don't think it wasn't fun, but it didn't quite work out that way.

Come to think of it, it never does. First there's the budget to agree. In the hard, competitive world of sales and seminars, the budget is hardly ever lavish and sometimes barely adequate... "We're not making *Gone with the Wind*, you know".

Then there's the production schedule. This is inevitably just short of comfortable. It doesn't matter if it allows a fortnight or six months, there is always a last minute panic to meet the first conference or exhibition date.

Now, if I were to give you a step-by-step account of how I produced the show, you'd be inspired to dash off and do your own, wouldn't you?

You'd start with a brilliantly conceived treatment from which, when approved, you'd write a scintillating, selling and emotive script, having first found out as much as you could about the product, its history and its purpose. You'd be picking the brains of Strand design engineers and marketing executives constantly. And all the time, collecting information about your audiences, the eventual purchasers of the product, wouldn't you? It's people like you who make us AV producers redundant.

Then I suppose, you'd get hold of a top notch AV photographer and brief him on the visuals, directing him out on location, shooting the product in R and D and in assembly, at theatres and studios, at a usage ratio of around twenty to one.

You'd probably be briefing photosetters and artists at the same time, to compile your graphics. And utilising the nearest rostrum camera to make your slides.

I expect you'd contact your favourite agency and get them to book a superb voice-over guy, like Hubert Gregg, then spend a few hours putting the script onto tape, using a broadcast standard recording studio.

Yes. And you'd listen to a lot of library music before making your final choice; dubbing, mixing and mastering, wouldn't you?

And editing, mounting and traying slides like crazy, working your sound recordists' and assistant directors' fingers to the bone.

I know your type; you'd finish it off by personally directing the encoding, us-

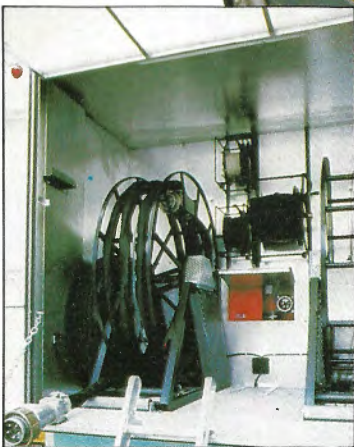
ing a fantastic digital computer like the AVL Eagle; programming in a complex series of dissolves, supers, split-screen effects, etcetera, etcetera.

Good heavens, you'd probably end up with a fabulous, instructional, inspiring, hard-selling, portable AV presentation, almost as good as the one I've just done for *Galaxy*.

Just ask to see it, on big screen or video cassette. I believe the Brentford people want as many viewers as possible; they believe they'll sell more *Galaxies* that way. And their agents around the world will also be arranging showings.

But I'm blown if I'm going to tell you how it was produced.

A film clip showing some of the scenes from the *Galaxy Audio Visual show*.

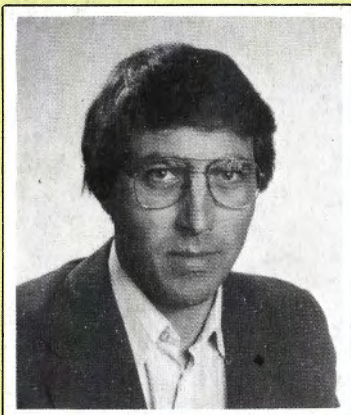


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After ending his education in 1963 and after doing his army service Finn moved to the Danish Atomic Energy Research Establishment for some years until in 1971 he joined the Danish TV service. He began in a workshop making various electrical devices and then entered the Planning Department in 1974 as a planning engineer in the studio/lighting group.

AARHUS TV? What is that?

Most people will ask where is Aarhus. Aarhus is the second largest town in Denmark. The town is on the East coast of Jutland, a half an hour flight from Copenhagen. The town has been called "The City of Smiles".

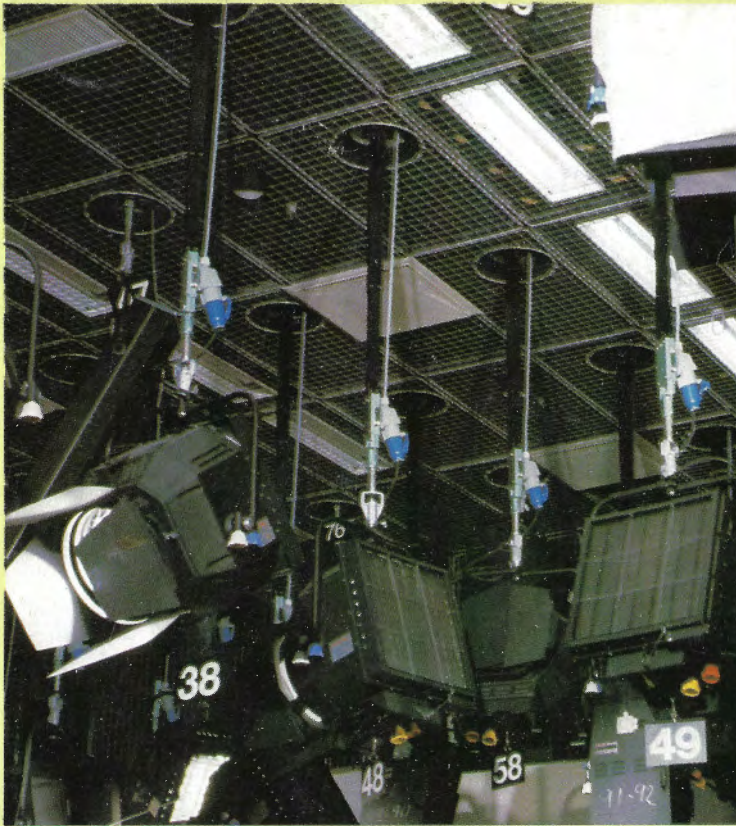
The history of Aarhus TV starts on 1st October 1962 where a beginning was made with 800m<sup>2</sup>. This 800m<sup>2</sup> presumably held the world's smallest studio, with a size of 16m<sup>2</sup>.

The extensions necessitated by developments were resolved by Danmarks Radio for a few years by the lease and purchase of the old theatre, but developments continued with some speed and it was eventually decided that the right thing was to build a new Aarhus radio and TV centre. Building started in 1970 with what was called Stage 1 embracing the radio section.

Stages 2 and 3, covering TV, were started in 1977 and adapted so that Stage 2 containing a 150m<sup>2</sup> studio was finished in 1980 and Stage 3 with a 600m<sup>2</sup> studio will be completed in mid 1982.

The small TV studio, ST11, is used for the production of documentaries together with serials and magazine programmes. The size of the studio is 150m<sup>2</sup>. The ceiling height is 5m. Eighty motorised telescopes supplied by Telestage are suspended from the lamp ceiling. These are mounted permanently in the ceiling with a separation of 1.2m. Kahouteck 2½/5kW spotlights are used in the studio. The cyclorama is lit with Iris 2 units.

The lighting installation comprises 100 circuits in all.



# AARHUS TV

by Finn Vaabengaard



The studio with the "Light Trench" closed.

Part of the installation can be remote controlled by radio from the studio. Light settings can thus be carried out quickly while the lighting engineer with his remote control unit can select the telescopic unit from the studio floor and can guide it to the correct height and then switch on the Kahouteck, either to spot or soft light, as necessary, feed the instructions into the memory and then pass on to the next operation.

The size of the big TV studio ST12 is 600m<sup>2</sup>. When this is completed it is intended to use it for the production of



The "Light Trench" in the open position — and all at the touch of a button.

musical programmes, including drama and entertainment. The cyclorama is 9.5m high. Along the studio walls and between the cyclorama and the studio floor there is a one metre wide trench from which the lower part of the cyclorama can be illuminated. In this way the transition between the floor and the cyclorama is invisible on the TV screen, giving an infinity effect. This trench can be closed so that the studio floor can be completely utilised right up to the studio walls. There are 116 booms and 10 hoists on the lighting ceiling for cyclorama lighting. These

Fixed T.S.A. Monopoles with their Kahoutecks. Note the C.E.E. plugs and sockets. The cables are self reeling.

are all supplied and installed by Telestage. As regards the lighting fittings, it is intended to have 1kW, 2kW, 2½/5kW together with the few 10kW Fresnel spotlights. For soft lighting it is intended generally to use 2½/5kW. Operation of the hoist and lighting installation can also be carried out by radio from the studio floor as for the ST11.

All in all we naturally consider that we have two studios which from the lighting engineering standpoint will meet requirements at present and for a long time in the future.

Paul Wild, the Manager of Strand Sales Operations has added a few technical points of clarification to the article by Finn Vaabengaard.

Stage 1 — 150m<sup>2</sup> — Studio called ST11

1. The studio has 100 lighting circuits.
2. The Telestage motorised telescopes are fixed position and comply with DIN Safety Standards.
3. The studio is equipped with Quartzcolor Kahouteck dual source soft-light/spotlights, fitted with 2½/5kW twin filament lamps plus Iris 2 Top Cyclorama units.
4. The studio is equipped with a memory control system and radio linked riggers control. This controls both the raising and lowering of telescopes plus the control of the lighting and memorises both.

Stage 2 — 600m<sup>2</sup> — Studio called ST12

1. Equipped with motorised hoists by Telestage.
2. Main feature of this studio, which is nearly unique, is the groundrow "lighting trench" around the studio. The groundrow units have been specially designed by Quartzcolor and are positioned in the pit. When used in conjunction with Iris 4 Top Cyclorama units, this produces an infinity effect for ballet productions, etc.

When the groundrows are not required the pit can be covered at the touch of a button, enabling the maximum studio floor area to be utilised.

3. Cyclorama cloth height is 9.5 metres.
4. The studio is equipped with 10 specially designed cyclorama units. There are 116 2.5m length, general lighting hoists, all motorised.
5. Unlike the smaller studio, this studio is equipped with traditional spotlights and softlights from Quartzcolor, these include:—  
Polaris 1kW spotlights  
Castor 2kW spotlights  
Pollux 5 and 2½/5kW spotlights  
Vega 10kW spotlights  
Antares 2½/5kW spotlights
6. All lanterns are pole operated.
7. The hoists and lighting rig can also be radio controlled from the studio floor.

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