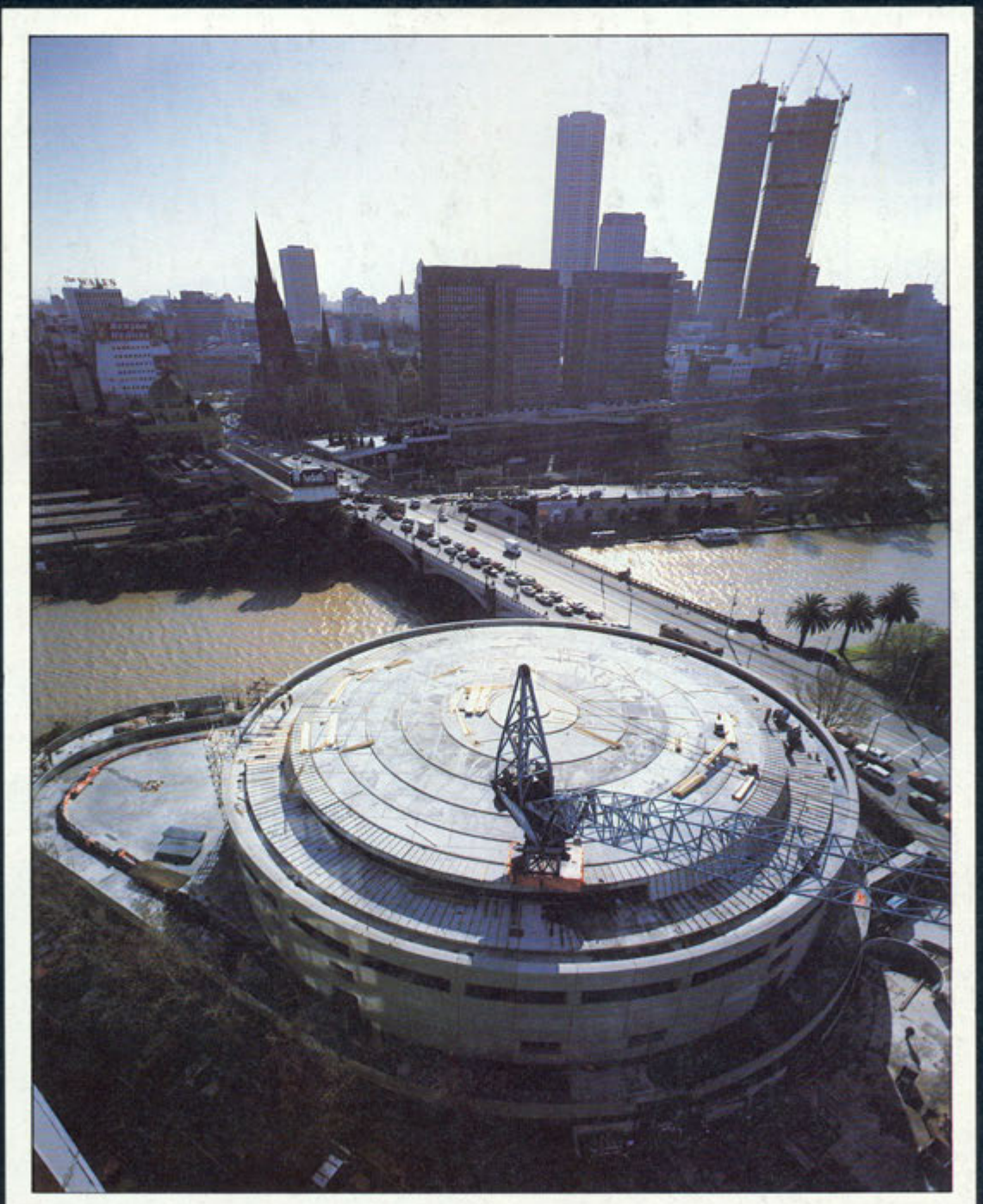
TABS

THE INFORMATIVE JOURNAL OF THE RANK STRAND GROUP



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TABS

Editor:
RICHARD HARRIS

Cover: Aerial view of Victorian Arts Centre, Melbourne.

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FROM THE EDITOR

Firstly, perhaps a few words about myself and my qualifications to assume the editorial eyeshade. I have been with Strand for ten years, first in a selling role, being only recently raised to the ermine of Marketing Management. This piece of information is to establish that my views are, and will be, highly prejudiced. Secondly I must claim readers' indulgence over any infelicities you may detect in Tabs — producing our house journal has to be a part-time job for me, just as it was for my illustrious predecessors, Fred Bentham and Francis Reid.

You will notice that we have adopted a somewhat different style and format for Tabs compared to its last appearance in the Autumn of 1978. We have, of course, dropped the subscription charge which was introduced in an attempt to support the very elaborate full colour publication that Tabs became and we have reverted to a free list and to being a frankly promotional publication on behalf of the Strand Group, as frankly promotional indeed as Tabs was in its earlier days of the late 30's.

This has been done because we want to achieve a wide circulation for our news and views on the lighting and technical theatre and television scene.

I suppose, in discussing the editorial style at which I am aiming, the comparison must be that if Fred Bentham was our Northcliffe, then Francis Reid was our Beaverbrook and your servant is hoping to be our Rupert Murdoch!

As a very young man I worked for a season in the theatre — I was a follow spot operator, and later a very junior electrician, at the Imperial Theatre, Brighton. I am afraid this rather imposing late 30's building subsequently fell from grace, becoming first a Cinema (O.K.) and then devoted itself to the eyes down brigade (definitely not O.K.!).

While it was still a theatre, I "follow spotted" for a summer show called, with real wit and drawing power, "High Tide". My principal memories of this part of my career concern the terrible tedium which ensued when the principal comedian took the stage and the orchestra quietly disappeared through their rabbit hole en route to the "Two Flags". I and my fellow operator then had to endure fifteen minutes that we would, in fact, far rather have spent with the band.

My second memory is of the appalling noise made by the blowers which cooled the irises on our Ross high intensity arc spots. From this experience, incidentally, I date my total aversion to fan cooling on theatre lanterns, *unless* this is carried out with Teutonic thoroughness. The quiet zephyr of cooling breeze which lies gently on the operator's ear from a Pani or a Niethammer is a different thing entirely from the fiendish whistle I had to endure! Every few years a designer somewhere makes a mess of his cooling and another noisy rash of forced draught equipment breaks out, but never, I must quickly add, from Strand!

After the summer show I joined the stage staff, but after a few all night get-ins I decided that the theatre was not the world for me, so I descended into the world of sales and marketing.

So far as actual editorial skills go, my practical experience is covered by seeing the National Theatre's production of "The Front Page", and this intensive two and a half hour course will have to suffice. However, I do hope for readers' comments.

We want to hear from you as to how we can give you the articles and features that will make you want to read our magazine — please drop me a line before our Spring issue. We can't promise to have everything as you want, but we can promise to read your views, take note, and try to fit in all reasonable requests.

If, as we hope, you wish to receive further copies of Tabs, please fill in the enclosed pre-paid (in the U.K.) card. If we don't hear from you we shall assume that you are no longer interested in lighting — you will appreciate that our Tabs mailing list is now over two years old, hence the need for an up-date.

CALEDONIAN CULTURE

As you will see further on in our magazine, I had the pleasure of being in Edinburgh during the Festival. I offer this photo as evidence of the wide spread dramatic cultural influence in the city, no doubt stemming from the annual high jinks!

REPERTORY RE-PLAY

Some years ago your Editor went up to Birmingham to see the very first M.M.S. system into the Hippodrome Theatre. I was accompanying a Very Well Known Producer. As we entered the auditorium a rehearsal for the pantomime Robinson Crusoe was in progress. King Neptune, who was being portrayed by one of those ancient appearing men who look like Ghandi but whose voices reach the remotest corner of the gallery, was in full booming spate. I remarked to the Very Well Known Producer "What an excellent Neptune." He replied, after some consideration, "Yes, he *is* a good Neptune, but he's a *fantastic* Emperor of China!"

For those of us who love panto, this says it all, for those who do not, the loss is theirs!

I was reminded of this happy occasion when I visited Birmingham again last month, but this time the location was the newish Repertory Theatre, who have just installed a Strand Light Palette.

200 DUETS

One of my antecedents as Tabs Editor, Francis Reid, now holds court highly successfully as the Manager/Administrator of the Theatre Royal, Bury St. Edmunds. Among Francis' many virtues, most people would allow that he really understands lighting and its technology. It was thus with particular pleasure that we received an order for a 120 channel Duet for the Theatre Royal to replace their faithful 1960 Strand control. This is the 200th Duet supplied by Strand.

Incidentally, Francis' Theatre is a Georgian delight and well worth a visit to see the building, as well as the show. The Theatre has a very active group of friends and supporters, who don't only hold fund raising routs and jollifications, but actually labour in the vineyard. For example, the auditorium has recently been re-carpeted and the Theatre friends themselves removed and subsequently replaced the seating to speed the carpet laying. Incidentally, when Strand used to sell carpeting a few years ago, I visited a well known West End Theatre proprietor and gave him my sales pitch on a particular type of cord carpeting I was trying to sell him. "This carpet," I enthused, "is made from the hair of the underbelly of the goat, the most long lasting fibre you can get!" The impressario replied: "Mr Harris, if you had ever *seen* the underbelly of a goat, you wouldn't suggest I allowed it in my theatre!" Ah well!

Francis Reid rehearses the opening ceremony using the Duet rigger's control.

A MESSAGE TO TABS READERS FROM GEORGE TEMPLETON

General Manager
Strand Group
Director
Rank Audio Visual

I am very pleased to welcome our readers both new and old, to the first issue of our re-born house magazine, Tabs.

The Strand group now covers the manufacture and supply of a wide range of entertainment technology. Theatre and studio lighting and control, stage and studio engineering and equipment, professional film cameras and projection, theatre sound and communication and auditorium seating are all now under the Strand banner.

We shall seek in each issue to interest and to inform our readers and customers about the euipment which we supply and the buildings in which it is used.

We shall always try to be accurate, we shall usually try to be serious but we do reserve the right to occassionally try to amuse.

OUTLINES FOR LIGHTING DESIGNERS

We have recently introduced a stencil to help lighting designers with the quick production of lantern rig drawings. The stencil, in pale green plastic, covers the current range of Strand lanterns and key accessories. The scale is 1:25 and the items are in plan view. There are thus now three vital items for the lighting designer: a Cinemoid colour book, a lantern stencil and the current issue of TABS.

PALATIAL EVENT

One day in April 1911, Arnold Bennett made the following entry in his diary:—

'London Palace Theatre. Pavlova dancing the dying swan. Feather falls of her dress. Two silent Englishmen. One says "Moulting". That is all they say.'

The point of this anecdote for Tabs? The Palace is the latest Theatre to have a Strand Memory System installed, a 160 way Light Palette having been put in for the revival in the West End of "Oklahoma" — lit, incidentally with his usual wonderful mixture of artistry and efficiency by Richard Pilbrow.

GALAXY

We have just finished a series of Exhibitions to launch Galaxy, the latest of our range of Memory Systems. You will find a fully illustrated article in this issue by Mike Dyer the Product Manager responsible for bringing Galaxy to the market.

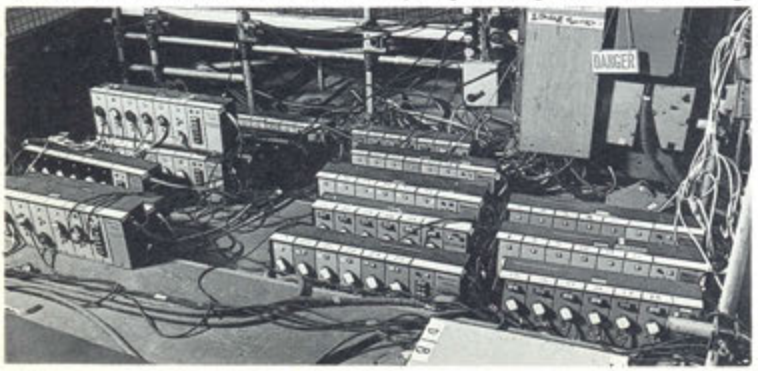
BBC AWARD HALF MILLION POUND CONTRACT TO RANK STRAND

The Rank Strand Group are pleased to announce that the BBC have awarded them a contract worth £500,000 for the re-equipment of Studio 2 at the BBC Television Centre Shepherds Bush. The contract includes the provision of new grid and hoists and the supply of studio lighting together with the installation of a 240 channel Galaxy lighting control memory system with Strand MCM dimmers.

Studio 2 has been out of use for many years, and has never been used for colour productions. The work being undertaken by Strand will form part of the overall refurbishment designed by the BBC Capital Projects Department to bring the studio up to the very latest technical standards.

A Galaxy system has also been ordered by the BBC for their Glasgow Studio B. These two latest orders, together with the sixteen other systems ordered to date, confirm the rapid acceptance of Galaxy by theatre and television customers both in the U.K. and overseas.

This photo below, which I absolutely refuse to identify, shows not a snake pit, but an extensive Mini II rig.In spite of everything Strand gear comes up smiling!



by Derrick Ross, General Manager Sales and Marketing, Rank Strand

A Long Run Resumed

THIS first issue of the new TABS after a two year interval reflects the changing environment in which we as manufacturers operate today. We have to try to cope with technical production problems of material availability, the vagaries of suppliers, rapidly advancing technology and violently fluctuating exchange rates.

And yet Strand is, and must remain, more than simply a manufacturing company. We are firmly part of the world of entertainment, which even though many of its denizens call it an industry has a very large admixture of art. We try always to remember that our customers use our products to entertain, inform and educate and that our job is to help them to make their presentations in all these areas as compelling as lighting, sound and stage and studio equipment can achieve.

Obviously TABS is one of the most important ways we have of speaking to our customers. But it will only have achieved half its purpose if it fails to provoke a response from them. We want to find out what products, in our various fields, the users of our equipment need. In TABS we are seeking to tell the reader what we are doing, and about the logic which we hope always shapes our products. We want to receive from you the input which will help us to design and produce for the future.

In TABS we will be especially trying to include "How to do it" articles to help all Strand customers to get the very best out of their equipment. We ask professional lighting designers and users to bear with us because we believe we also have information at their level.

Thus TABS has a challenging role. We all hope you will find it useful, and perhaps even interesting. But whether you do or not please, tell us!

DERRICK ROSS

STRANDPARTS

OR HOW TO KEEP YOUR LIGHTING EQUIPMENT IN 100% CONDITION

by Nigel Pounder

ABOUT a year ago Strand decided that one of the best ways in which they could help their customers was to make spare parts readily available to them from sales counters, dealers and service agents wherever they are represented around the world.

It quickly became obvious that the first thing to do was to analyse the records of spares orders to determine which were the most frequently needed parts. It also quickly became obvious that users' needs were best served, wherever this was possible, by including a kit of parts so that a customer always got the washer with the bolt and wingnut, rather than-infuriatingly-possibly buying the first one which was obviously needed, and then finding that a damaged wingnut had probably damaged its mating bolt, so another order had to be raised or perhaps another trip to a counter had to be made.

For some needs, Strand judged it more useful to include several of the same items where experience told them that they are going to be needed sooner or later. A good example is pack No.27 854 05 which contains six cast colour runners for 223/743's. It must be the rigours of touring that provide the appetite for these small but vital items.

For some items, the inclusion of just a single unit was obviously the most sensible approach, for example, Strandpart pack No.27 493 00 contains one P.28 medium pe-focus lampholder while Strandpart pack No.27 734 06 contains one GX9.5 2 pin lampholder. These two packs between them thus cover 85% of lampholders used in current Strand product.

It is worth mentioning that all Strandparts are made by the same machinery, and to the same stringent specifications as are their originals built into brand new equipment from Kirkcaldy and Brentford.

Should you wish for helpful advice on the availability or use of Strandparts, then you only need to contact your local dealer, service agent, or Strand sales counter.

A FLIGHT TO THE FESTIVAL

The Editor pays a visit to Edinburgh at Festival time to look into lighting, dip into drama, consider concerts, harken to a hire company, preview a picture gallery and generally enjoy himself.

Monday

SEVEN o'clock in the morning at Heathrow. The lowest point of anyone's week. Crowds of gloomy businessmen with a counterpoint of trained cheerfulness from British Airways girls. I join the Edinburgh shuttle and by some crafty footwork get row 13. Not superstition but a wish to have the extra space between rows that this escape route on a Trident allows!

I look at the business attache cases on the floor around me. Mine is battered and black. The others are of smart beige or rich chestnut. One obviously wealthy Scotsman even has a maroon case with a digital watch set in massy polished brass below the handle! We land at the new Edinburgh Airport and I collect my hired Volkswagen Polo. As it was made within a few miles of Strand's German factory I am curious to see if its workmanship matches up to theirs. A few miles later I decide 'nearly, but not quite'.

The first port of call is THE PLAYHOUSE THEATRE in Leith Walk.

This fine building, formerly a cinema, has recently been acquired by the Lothian Regional Council for use as a theatre, and has been economically but effectively equipped under the direction of the Lothian Region Architectural Services Director, B.V. Cottier, and Michael Holden, the London Theatre Consultant.

I approached the building with tremendous anticipation, as the super cinemas of the precise era of the Playhouse are one of my passions, and 1929, the year when the Playhouse threw open its mahagony doors, was the *annus mirabulus* of cinema construction.

It was the year which saw the opening of many great buildings. The Astoria at Brixton, for example, featured an 'atmospheric' roof, where stars twinkled in a deep blue Italian sky, while small classical temples flanked the proscenium and Nymphs and Baccantes sported themselves, but decorously, along the walls.

That year of grace also saw the opening of the famous Tudor cinema, the Beaufort near Birmingham. This wonderland included among its many delights oak panelling around the pay desk and there were even stained glass windows in the restaurant, where 'Dainty Kinema Teas' were offered. One of these windows featured King Edward VI, in full Tudor drag, offering the locals a thousand foot tin of nitrate stock from his beringed and bejewelled hands!

Alas, the first sight of the Playhouse showed immediately that the John Knox influence had been very strong in Edinburgh even as late as 1929. The building is extremely well constructed, and the money was obviously spent on a fine stone façade and high quality joinery rather than on such southern fripperies as fake temples or stained glass.

The theatre has, however, been sympathetically redecorated and recarpeted, the latter in a suitable art deco pattern.

A new Strand Light Palette and S.T.M. dimmers plus a new Strand lantern rig, featuring mainly T84 variable beam profiles and 818's has been provided.

One difficulty that remains is the get-in, which is via a scenery door which is about 20 feet above the small road which gives access. This is because the theatre's frontage is on Leith Walk, which runs along the ridge of a hill, the land sloping down to the south thus producing the twenty foot difference in level between foyer and stage. One side of the access road has small houses along it, which must cause some happy moments when late night scenery changeovers are necessary.

The front of house projection room, in which the Palette resides not only provides an excellent view of the stage, but also contains a pre-series Strand Grand Master, obviously original equipment, two 1950's Strand Sun Spots and projection equipment which is either original or dates from the late thirties. This consists of that top quality combination of its day, Super Simplex projector mechanisms, Peerless High Intensity Magnarcs and Western Electric Mirrophonic sound. This fine trio would have been installed in top West End and city centre cinemas of the day. All the equipment is in excellent condition, and is a real tribute to the technical staff of the Playhouse who maintained it over the years.

Although Tabs is a lighting magazine, I hope readers will forgive the Editor's enthusiasm for this wonderful projection equipment, and will bear in mind that such is his devotion to the world of cinema and projection equipment that he retires every night with the Kine Year Book on his bedside table and rises every morning to shave using a beautiful 1930's mirror into whose surface is cut the phrase "R.C.A. Photophone, The Magic Voice of the Screen"! This latter, incidentally, rescued from a recent Rank Film Equipment modernisation contract!

The Playhouse seats nearly 3,000 people, and during the Festival Scottish Opera presented Madame Butterfly and Rigoletto to excellent houses.

Before its destiny was settled, it looked as though the Playhouse might be demolished to provide space for yet another office block. Fortunately the action of an enlightened local authority plus local interest and pressure brought the much happier present scene to pass.

The Playhouse project was handled on behalf of Rank Strand by Eric Baker, who is responsible for memory system sales in the U.K. with local collaboration from Arthur Rowley, our Scottish Regional Manager.

Tuesday

The next day was to be spent looking around some Festival Fringe activities. As most fringe productions use hired lighting equipment, I toured a number of sites with Mike Smyth and Johnathan Allen, both of Northern Light, Strand's Scottish dealers, who, as well as selling Strand equipment in Scotland operate the biggest threatre lighting hire operation outside London.

The first port of call was to the beautiful white and apple green Georgian Queen's Hall, where a sextet of 123's were valiantly lighting a ditto of stringed instruments.

The next visit was to the Boy Scouts Hall, where Johnathan Allen joined the Editor on stage to test a rig of 23's and 137's — a typical small scale Festival fringe Strand rig.

We then moved on to the Old Chaplaincy Centre, at George IV Bridge, now the Edinburgh University Students' Theatre. This particular rig of Strand equipment was hired from Centaur Lighting of Edinburgh although originally supplied by Northern Light, and I think is interesting as showing almost a T.V. type saturation rig for four plays in repertoire with different plays on matinees, early evening and late evening each day. No time at all to re-rig or re-colour.

The plays were "Grimsby Trawler", "Camberley's Diamond" and "Progress", all written by undergraduates, plus Noel Coward's "Present Laughter".

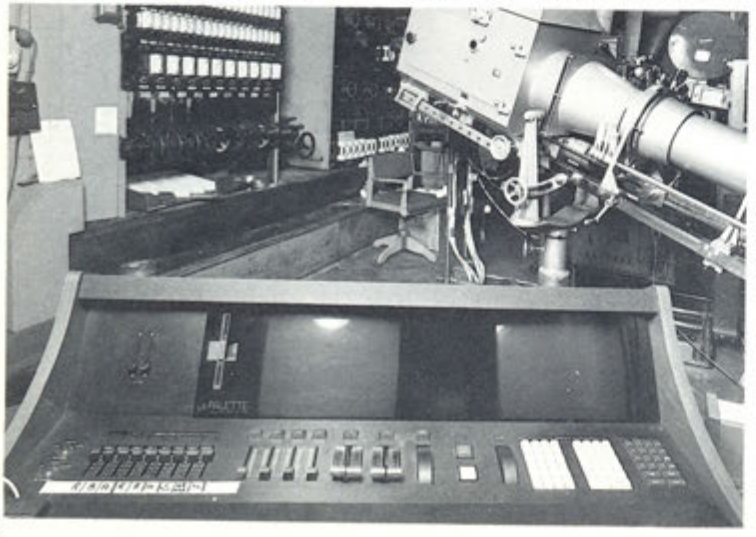
The next port of call was the Assembly Rooms, where the National Theatre were presenting Miracle Plays.

I particularly like the dustbin, while the cheese graters are merely saucy. The more conventional unit, top right, is one of the 764's used.

Tuesday evening brought several hours of stimulating chat with Andre

Exterior of Playhouse Theatre, Edinburgh. Sited on Leith Walk, this large theatre was originally opened in 1929 as a super cinema.

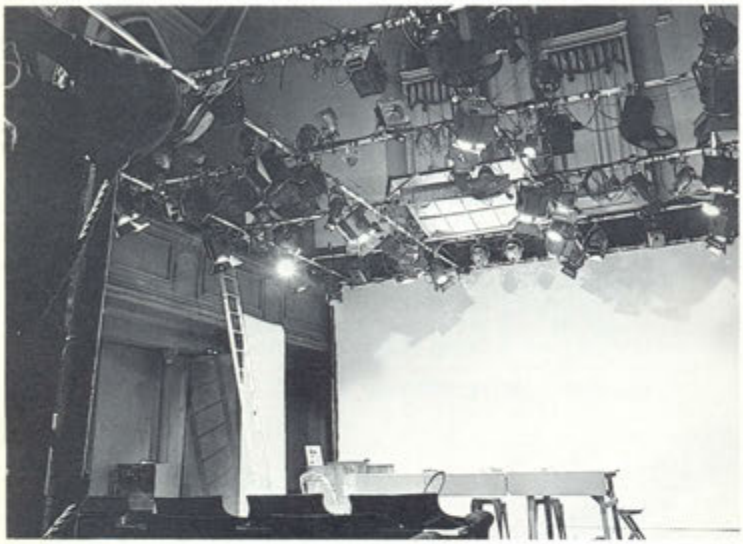
Three generations of Strand equipment at the Playhouse, Edinburgh. In the background there is an original "pre-series" lighting control installed when the building opened in 1929, and in use until very recently. This board was examined by the Editor and is pronounced clean, safe and beautifully maintained! To the right we see a Sun Spot, also in very good condition, which Paul Weston reckons left Vauxhall works about 1950. Naturally this is in full and perfect working order. In the foreground the recently installed Light Palette memory system, which brings the Playhouse control up to the very latest international standard.



Johnathan Allen of Northern Light and the Editor on stage at the Boy Scouts' Hall, illuminated by F.O.H.123's.

Tammes, the Edinburgh based theatre consultant and lighting designer who is currently working on some fascinating commercial lighting projects, as well as acting as consultant on the new Dundee repertory theatre. For the evening's meeting our agenda consisted of several tankards of Bellhaven bitter, mysteriously known as 'heavy' in his subterranean local. As I had read somewhere that alcohol destroys thousands of brain cells with every seeing, the best thing in it being the Portrait of Lord Reith, founder and guiding spirit of the BBC. The artist, Sir Oswald Birley, has painted Reith as full of energy, so dynamic that you feel that he could hardly sit still at his desk long enough to sign a contract, never mind have his portrait painted.

And so to Shuttle and to dear old Brentford very happy that Strand equipment was represented in every single drama location I visited, which



Saturation rig of Strand lanterns at the Old Chaplaincy Centre, now the Edinburgh University Theatre. T84's were seen all over the Festival.

gramme taken, we restored the cerebral balance later at a fish restaurant.

Wednesday

To the Castle Parade Ground to see the rig for the Edinburgh Military Tattoo. A few days before my visit, Mr Robert Ornbo, Deputy Chairman of Theatre Projects Services and the object of our picture dressed to suit the Duet which controlled the lighting he designed, was caught by the photo grapher while between cues — hence the dark V.D.U. We understand he and the Duet worked well together.

In the afternoon I went on to the beautifully lit Eye to Eye exhibition at the National Portrait Gallery. The exhibition designer, the highly talented Peter Julien, has described the exhibition and its lighting elsewhere in this issue of Tabs.

I will simply ask, is there any end to the usefulness and versatility of the dear old Patt.23? Everyday, including Sundays and holidays, somewhere in the world, an average of 120 of these lanterns are purchased — and they have been in production for nearly 30 years now.

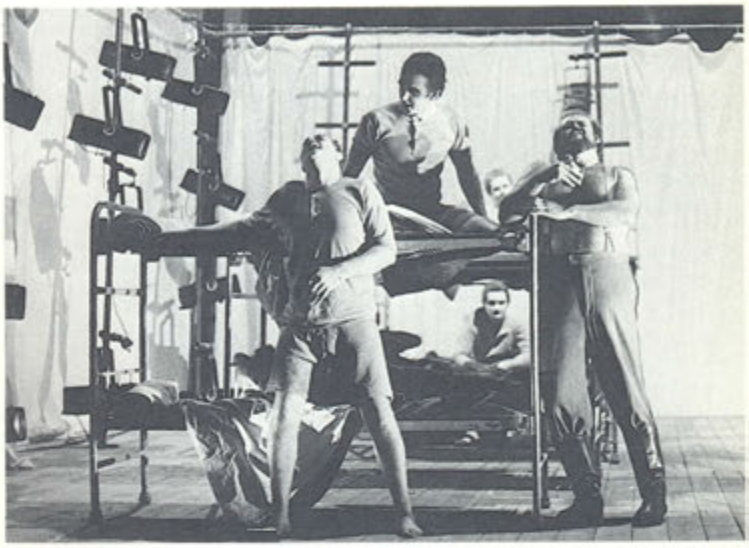
The Exhibition itself was well worth included quite a few that we did not photograph.

My thanks to Arthur Rowley, Strand's Glasgow based Regional Manager, and to Mike Smyth and Johnathan Allen of Northern Light both for arranging the visits and not least for highly stimulating comments on both the lighting and the productions visited.

Robert Ornbo, of Theatre Projects, dressed suitably for Duet at the Edinburgh Military Tattoo. See text.

Dustbins aloft! The very special rig for the National Theatre's Miracle Plays at the Edinburgh Assembly Rooms. The light on the dustbin is from one of the 764's.

THE MASTER'S HAND HAS NOT LOST ITS CUNNING

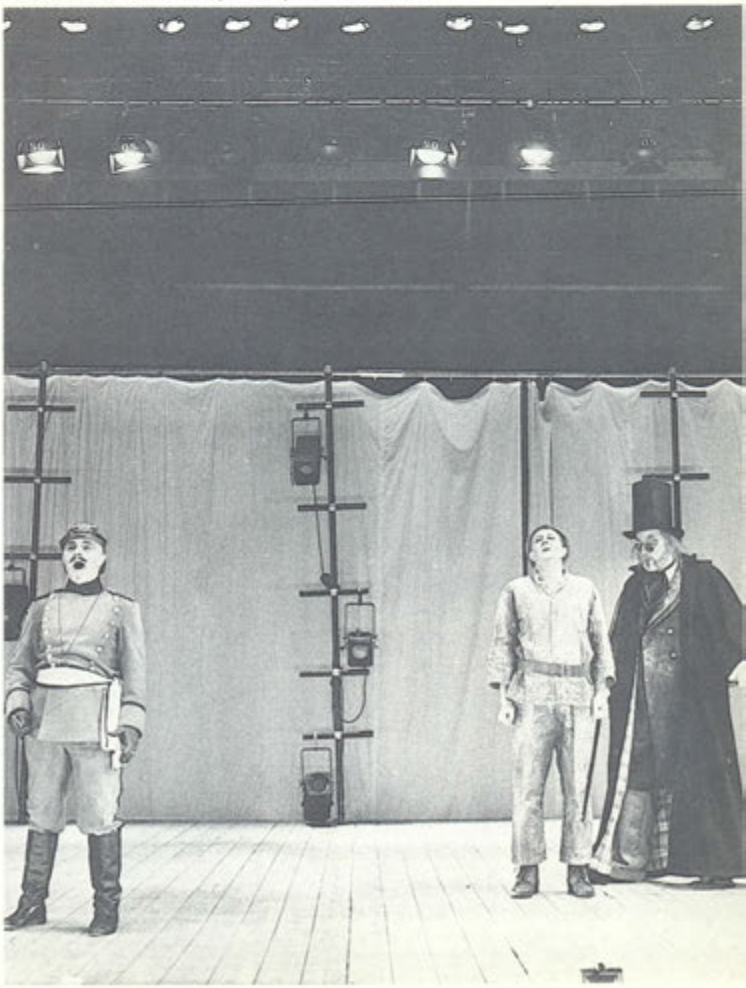


SCOTTISH OPERA'S PRODUCTION OF "WOZZECK" AT THE KING'S THEATRE

THE master's hand I am referring to is that of Charles Bristow noted lighting designer and refugee from Liverpool.

The photographs really tell the story. Not only was the lighting wonderfully atmospheric but from Strand's point of view T Spots and 743's actually appeared on stage — always a treat for us.

The opera, which was produced by David Alden and designed by David Fielding, with lighting by Charles Bristow was one of the most highly praised productions at this year's Festival. Wozzeck was played by Benjamin Luxon, Marie by Elise Ross, the Drum Major by Arley Reece, the Doctor by Roderick Kennedy and the Captain by Francis Egerton. The *Observer's* critic mentioned that the show was "much enhanced by Charles Bristow's livid blood red moonshine"!



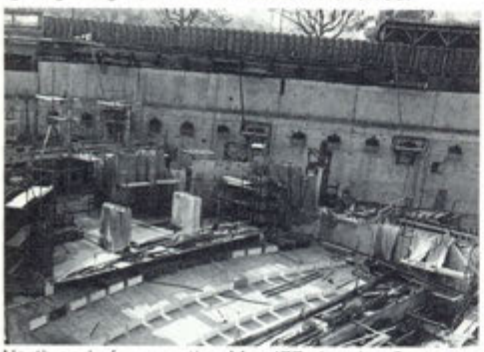
THE VICTORIAN ARTS CENTRE, MELBOURNE

by D. C. Irving

Denis Irving is Director of Entertech Theatre Consultants, a fully independent consultancy based in Melbourne. He is a member of the British Society of Theatre Consultants.

ON receiving the Editor's request for a piece on the Victorian Arts Centre for the revival issue of Tabs, my first thought was — how to overcome a reaction against yet another description of a major theatre project taking years to complete; no one is really interested in statistics on acreage of site, or numbers of committee meetings, cups of tea or bottles of the hard stuff unless personally involved, in which case they don't need to read about them. So, it seems appropriate to start by writing a little on the Australian theatre background, and the string of venues of which the half completed Victorian Arts Centre is one of the largest.

Up to a few years after World War II, subsidised theatre was virtually non-existent, and working theatres were owned and operated by commercial entrepreneurial managements, including a few links with film houses. There were also some semi professional drama or opera companies receiving ad hoc assistance, but rarely having permanent theatrical home bases. The formation of the Australian Elizabethan Theatre Trust in 1954 was the beginning of a change to the present situation where most commercial managements do not own theatres, but governments and developers do. The AETT aim was to co-ordinate government funding of theatre activity; arranging grants to drama companies in each state capital; setting up national touring opera and ballet companies; providing a 'central' production workshop and offices, plus assistance in various forms to numerous small groups around the country. Here, we should remind you that large distances are involved. The Trust office in Sydney was further from the principal West Australian centre (Perth) than London is from Istanbul, even the nearest other capital, Melbourne is over 500 miles (800 km) away, and no motorways either. So, in order to reduce the huge costs of travelling major productions which meant people, costumes, sets, lighting, control systems, audio and often complete revolves or lighting bridges, the Grand Scheme evolved.



North end of excavation May '77 showing State auditorium floor slabs. Black rectangles ⅓ down concrete walls are ends of rock anchors.

There was to be a fully equipped opera/ballet theatre in each State, with maximum feasible compatibility of staging facilities, designed to minimise the get in time as much as possible. While we were about it, some compliance with overseas requirements was desirable, so as to attract major productions from Europe, America or wherever. Establishments such as the Lincoln Centre, Ottawa National Centre, Covent Garden and Royal Festival Hall were amongst many to be visited and revisited during the discussion stages. Drama in either repertory or experimental forms was not to be forgotten although here the brief differed in that each capital was encouraged to develop its own Theatre Company similar to but on a larger scale than the familiar English rep companies. Then the inevitable happened when the first major venture to be part of the overall plan, the Sydney Opera House, turned out to be an outstanding success in terms of spectacle and national public relations, at the same time suffering theatrical disadvantage to the extent where it could not reasonably be used as the model for its successors in other States. Far more practical was the Canberra Theatre Centre with a 1200 seat single tier theatre with moderate facilities and a 300 seat Playhouse having only a small stage with no full flying facilities. The Canberra Theatre continues to be a successful working venue but is not and was never intended to be to major international standard.

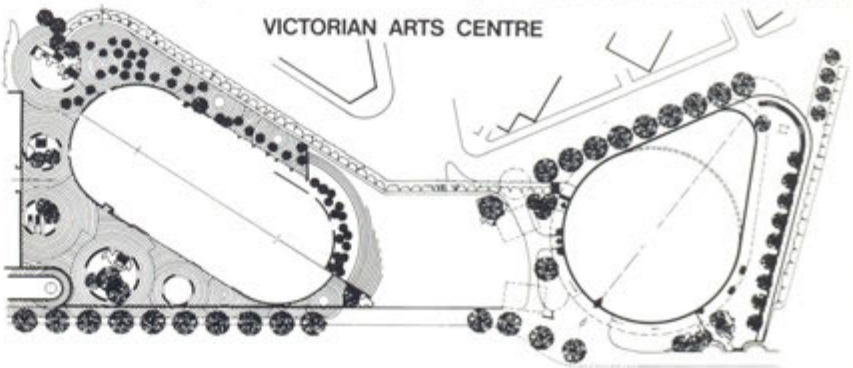
By the late '60's the Theatre Trust was changing in character, and from it emerged the Australian Opera Company based in Sydney and the Australian Ballet Company based in Melbourne each to be significant fully equipped companies in their own right, with workshop and technical staff and facilities but no permanent theatrical homes. About this time the political climate was in favour of substantial Government expenditure on major public buildings, libraries, galleries, museums and theatres. The National Gallery in Melbourne whose design was started in 1959, opened in 1968 on a site just south of the City of Melbourne sufficiently large to accommodate the future theatre complex. In more or less the same period the Adelaide City fathers were planning a large Concert Hall which with the advent of the Dunstan Labour Government had its brief changed and finances enlarged to become the first stage of the Adelaide Festival Centre, being a 1900 seat Opera/Ballet Theatre with concert shell conversion, soon to be followed by a 650 seat Drama Theatre on the same site.

The Adelaide and Melbourne theatres have one member of their design teams in common, being Tom Brown as Theatre Consultant (who was later appointed also to the design team for the Queensland Cultural Centre) so that here we begin to see some chance of co-ordination even though the three jobs have substantially different budgets and very different architectural outlooks.

Returning to Melbourne the design was from the very beginning bedevilled by site difficulties. From the overall general viewpoint of public and planners alike the site is ideal, being on a main thoroughfare just across the river from the City Centre with excellent access by train or tram or even rowing boat if you feel like it. During foundation work on the gallery construction it was established that the ground was mainly fill on top of a swamp and plenty of ancient Melbourne rubbish and therefore had poor load bearing capacity. As there was good solid bedrock some way down it was eventually proposed to excavate down to that rock level and fill the resulting hole with theatres and ancillary accommodation most of the roof of which would form a plaza at Street level with a big spire on the top for decoration.

This was agreed to and work actually commenced with a ceremony in November 1973. It had earlier been decided that the concert hall would not easily fit into the original site, so the design was amended, the concert hall becoming a separate auditorium closer to the river, hence substantially reducing the excavation requirements.

As work proceeded it became only too evident that to excavate several acres to a point well below the water table was fraught with considerable difficulty, not helped by the discovery of highly acidic conditions requiring special precautions to prevent corrosive attack on the structure. The site had to be lined with concrete plus a butyl membrane as a barrier against the surrounding fluids, with a result akin to an enormous boat which naturally attempts to float. Hence an integral part of the early design is a series of rock anchors radiating out and down at about 45° from the side walls in order to keep everything in place until construction is completed. At any rate there is less concern than usual about ultimate overall weight of the building.



As this is being written the work is proceeding under two contracts, one for the Concert Hall (2,500 seats) and the other for the Theatres and Spire section now incorporating the State Theatre (2,000 seats) for opera and ballet productions, the Playhouse (870 seats) for Drama and a rectangular area for experimental work together with usual offices, a Performing Arts Museum and some dock space but no production workshops as the place is designed primarily as a large scale touring house. This philosophy of multiple, single purpose theatres or halls on one large site is generally preferred here, as against the American tendency to favour mechanical distortion of a single interior to achieve various sizes and shapes of stage and auditorium.

As, for the usual reasons occurrent on most major building sites, work on the Victorian Arts Centre has suffered some delays, the project is not totally photogenic, at least for the purpose of this article. However, the Arts Centre Trust has kindly provided plans and sections of the main areas. These are self explanatory but we will nevertheless make the following supporting comment.

The Concert Hall is a conventional three level example, with ample foyer and circulation areas. It has been recognised though that there will be the inevitable requirement for staging of 'open' productions as well as straight musical performances, and that there is considerable potential for conventions, commercial promotions and so on. The stage is therefore able to be modified by the use of two lifts, one being the normal pit/floor/apron variety and the other used to create high level choir stalls or a rearward extension of the stage itself. The drawings incidentally are schematic — the lifts are mechanical screwjack variety, not hydraulic as might appear.

Although the ceiling will be clear right through to the rear of the stage, a number of power winches are being provided, some to support demountable lighting bars, and the others operate scenery battens or individual spotlines, so there is reasonable provision for suspension of extra equipment or sets as required. There is a liberal sprinkling of stage lighting

Interior of State Theatre looking towards stage, before roof construction.

outlets, fed via disturbed patching panels to a 120 channel Galaxy.

Across the concourse is the Theatres and Spire section; the plan clearly shows the three peformance areas outlined earlier. The major part of the building is devoted to the State Theatre, having a 'T' shaped stage with flying height over the central acting area only. The resulting reduction in working height over the side stages precludes the use of single purchase counterweighting so after much debate over costings of alternatives, power flying was adopted — there being a total of 101 full width scenery barrels and six side barrels each working from a six line winch with a variable speed DC motor. The motors and their associated limits are driven via a 30 channel VS drive system and control desk, via a patch field.

The machinery is not restricted to the grid. From the earliest it was planned to incorporate a German style wagon stage system with full sized wagons storable in the rear stage area with alternate settings able to travel on from the side stages. It would appear that the whole operation would have been simplified had the stage been an 'L' rather than a 'T' thus enabling side and rear wagons to be the same size. However, this was not to be and the stage now incorporates wagons of half width each side which meet in the centre when a full set is to be carried on. They are further divided half way up stage so that there is a total of four side wagons and eight elevators plus a large elevator in the rear stage carrying two wagons atop each other, one incorporating the revolve and the other a plain ballet floor. The elevators are intended only to sink the wagons flush with the fixed floor, there is no sub stage scenery space.

Aside from all this the theatre is straight forward three tier with conventional seating and excellent sight lines. As in the Concert Hall there is a large number of lighting outlets via distributed patching, which is tied to a 240 channel Galaxy — there are in fact four Galaxies in this site as the original idea was to follow the Adelaide example of a DDM/2 from which Galaxy was evolved.

The section drawing has a heavy dotted horizontal line running from about half way up the upper circle along through the proscenium wall. This is not the path of a bullet in the ballet, it merely indicates street level, and gives some idea of how large is the excavation volume. We were able to obtain one photograph of the State Theatre interior before the roof form work went on and this does give some impression of the size.

Back to back with the State is the Playhouse Theatre, sharing the same scene dock space which is some 11 metres below street level, there being a large hydraulic scissor lift capable of carrying semi trailers full of scenery direct from street to dock and vice versa all being well. There has been some concern expressed at the get-in being totally dependent on such a piece of machinery and we understand that there may well be thought given to a vehicle ramp some time in the future subject to the availability of the land opposite.

The Playhouse is a two tiered drama theatre with single purchase counterweighting, and a lift to form a semi thrust stage. No surprises here and the only comment electrically is that the board has 180 channels, the rest being as for the other stages.

The third space, the Studio, really awaits someone to decide how he/she wishes to use it. At present, it will consist of a rectangular space with gallery around, catwalks above, and trapped area in the middle. The you know what has 100 channels and there will be mobile blocks of seating of the type used in television studios, plus provision for lighting, sound, and stage management control to be connected in a number of different positions.

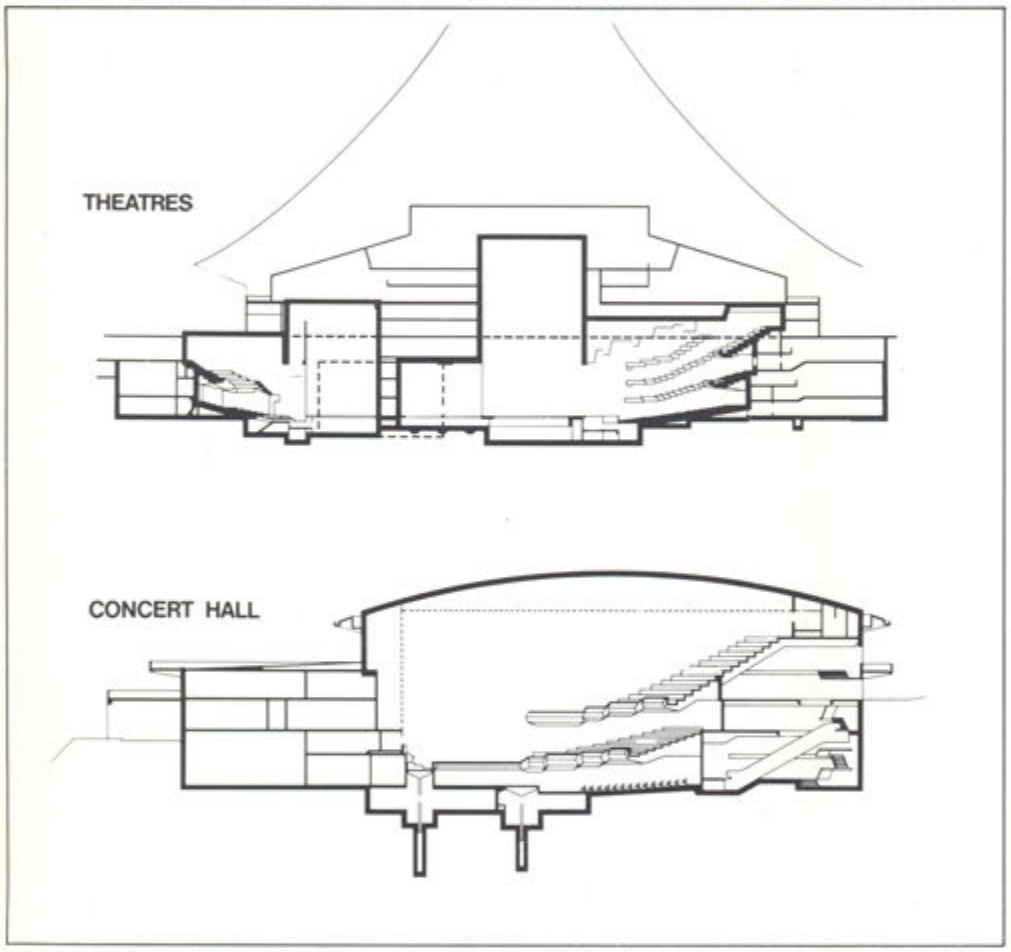
Apart from the theatrical detail, the whole project has been carefully planned to become an interesting part of the city life at all times, there being various eating areas from plush restaurant to open air barbecue, plenty of display and exhibition spaces and the concourse area is to have lawns and trees blending in with the gardens across St. Kilda Road.

The site immediately south of the Gallery is occupied by the Victorian College of the Arts which has amongst others, facilities of Dance, Drama and Music all of which will have close associations with the Arts Centre Theatres. The teaching (at both secondary and tertiary level) is currently for those intending to be professional performers, but the intention is also to have formal training for production and technical staff, again in close conjunction with the Arts Centre itself.

Even further out, a large area of South Melbourne surrounding the theatres is now subject to a planning ordinance whereby the Arts Centre Trust has a vote in the approval proceedings for building permits. It is hoped by this means to encourage co-ordinated redevelopment whereby the district assumes a form and function with the Gallery and Theatres as a nucleus. Some dispute exists at present over a proposed Casino and light entertainment proposal nearby, opinions being divided over whether its existence would add to or subtract from theatre patronage.

Whatever the outcome, there is no doubt that Melbourne will shortly have a world class theatre, centre, so that with others existing, under construction, or planned, Australia will be able to attract major productions for natural tours in well equipped and comfortable venues.

We wish to acknowledge photographs kindly provided by the Victorian Arts Centre Trust.



A PORTABLE STAGE FOR THE ROYAL BALLET

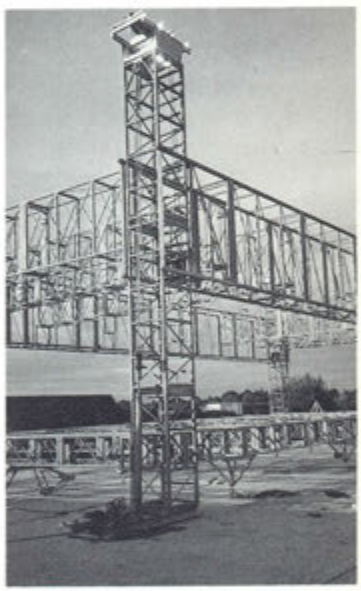
by Steve Futers

Mr Futers who was for some years the Chief Engineer at Pinewood Studios, subsequently worked overseas as a Regional Sales Manager for Rank Film Equipment, joining Telestage Associates, part of the Rank Strand Group, some two years ago.

A NEW design of a portable "Fit-up Stage" was recently manufactured at Thetford by Telestage using the joint resources of Telestage and the recently acquired Mole Richardson Company.

The thrust stage has a floor area of 70ft. × 50ft. incorporating floor modules specially designed to the requirements of The Royal Ballet for whose performances in the Queen Elizabeth Stadium Hong Kong the project was originally conceived.

The special feature of the design was the simplicity of rigging and derigging the complete assembly. By



replacing nuts and bolts with pins and clips and close fitting components it is possible to rig the stage together with flying systems for lighting and scenery within 24 hours and to derig in half that time.

All the component sections had to be manufactured so as to allow them to be carried in a passenger lift for elevation from street level to the Stadium area located on the third floor.

The flying system comprising six bridges is raised 40ft. in three stages by hydraulic rams on each of the four corner towers. Hydraulic control permits individual or synchronous operation as the flying system is raised to the top of each section. Our photograph shows a test installation at Thetford works two days before shipment to Hong Kong.

Due to the Royal Ballet's urgent requirements design and manufacture had to be completed in eight weeks and everything was as usual, shipped on time.

THE LONG SHORT

OUR pictures show the best stands available for Studio and Theatre lighting. They are all strong and lightweight, and all fold into the least possible space.

Left to right.
1. Samson heavy duty wind-up telescopic stand. 1.4m to 2.7m. To accept 1 1/8" TV spigot.
Code No. 52 083 01

2. Goliath tall stand, with heavy duty double extension. 1.56m to 3.66m. To accept 1 1/8" spigot.
Code No. 52 069 0T

3. Atlas telescopic stand double extension with locking wheels. 1.25m to 2.62m. To accept 1 1/8" TV spigot.
Code No. 67 785 09

4. Folding, cast base telescopic stand. 1.33m to 2.37m. To accept 3/8" or ½" thread spigot.
Code No. 26 896 09

5. Folding braced stand for follow spots. 0.9m to 1.5m. To accept 1 1/8" TV spigot.
Code No. 26 897 04

6. Super tall telescopic stand, double extension 1.5m to 3.5m. To accept 3/8" thread spigot only.
Code No. 26 898 0T

All these stands are manufactured of aluminium and steel, giving the ideal compromise between strength and lightness.

AND THE OF IT

A

B

C

D

What is light, folds easily and yet is 100% steady in use?
The Strand Telescopic Stand.
(Code No. 26 896 09)

Our photo sequence shows how easily this new stand is opened, locked and fitted together.

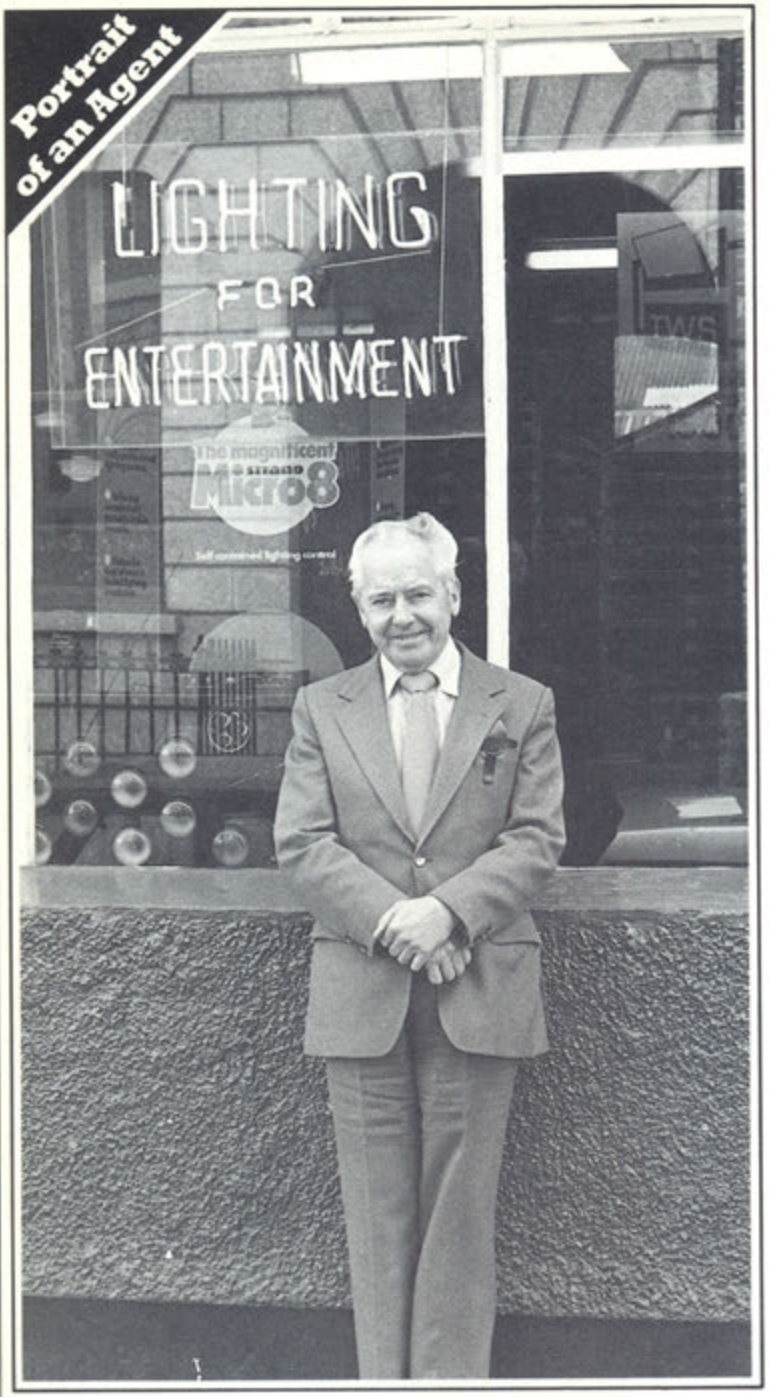
A. The stand base folded for travelling.

B. The stand feet opened out — shown upside down in the picture.

C. The locking ring is rotated; this bears on the sloping lower face of each of the three feet, making the base absolutely solid.

D. The telescopic plated tube is inserted in the base — result: a totally rigid stand that folds and travels easily!

Portrait of an Agent



In each issue of Tabs we intend to feature a profile of one of the agents who represent the Strand Group around the world.
Some agents represent the whole of our range: Stage and television lighting, Telestage studio and theatre engineering and Strand stage curtains and drapes, while some, usually for historical reasons, represent only one or two areas of Strand's many products and services for the entertainment world.

KEVIN BOURKE

BOURKE STRAND ELECTRIC Dublin

by the Editor

Kevin Bourke, the first subject in the series, although only becoming an independent agent rather than a Branch Manager for Strand about ten years ago, has been involved with our theatre lighting all his working life.

THE second finest meal to be eaten anywhere in the world is an Irish breakfast. Your Editor found himself partaking of one of these feasts, on your behalf of course, on a recent morning in the coffee shop of his hotel on O'Connell Street in Dublin's fair city.

Eggs like the sunrise, sausages bursting with goodness like miniature exploding zeppelins accompanied by fresh brown scones and tea which leapt from the spout as red as a fox in the morning.

A short sunny walk then brought me to number thirty, Upper Abbey Street. This address is not only the offices and stores of Bourke Strand Electric but is an historic site in the entertainment annals of Eire. It was from the Abbey Studios here that, in 1961 Telefis Eireann, the Republic's own television channel, sent out their first ever production.

The studios had been built by a company controlled by Kevin, and his brother Lorcan Bourke, originally as a film studio but after re-equipment Telefis Eireann was accommodated for nearly a year. After the departure of T.E. for their new Montrose Studios, the Abbey Studios continued for a time as a commercial studio. Years later the studio part of the Bourke premises became a disco, but eventually even this show business connection was ended by a serious fire during the night of 3rd and 4th January this year. Most of the damage to our agents part of the premises was by water from the firemen's hoses.

With astonishing speed and all possible support from Brentford it was business as usual within a couple of days.

Now for the details of that business so providentially saved.

Kevin and his staff, which includes both his son and his daughter-in-law, sell Strand Theatre Lighting throughout Eire. They have arrangements with local firms in the remoter parts of the country so that customers are never too far from a source of supply, and when needed, spare parts. Incidentally, Bourke Strand carry the full range of Strand-parts and Kevin votes the scheme one of the best ideas from the agent and users' point of view to ever come out of Brentford.

They also carry the full Cinemoid and Chromoid range, and our picture shows Helen O'Neil getting out a sheet of No.24 green — what else? — for a customer.

There is also a very large hire department. Our picture shows a young member of the staff servicing a 743.

The firm's service ability extends to sophisticated Strand equipment, and our photo shows Pat Farrell using an oscilloscope to test a card from a service stock Duet. It is worth nothing that six out of the total of two hundred Duets now installed are in Eire, hence the need for a full back-up of spares and skilled service.

Bourke's also carry a range of pyrotechnics, smoke machines, etc., but I must add, positively nothing to do with the recent fire!

Our agents can also, through an associated company of which Kevin is a director Messrs. C. J. Ryder & Co. Ltd., offer a skilled electrical contracting service throughout the country. Ryders, incidentally, are one of the largest electrical contractors in Ireland and are currently keeping the studio connection going by wiring the new R.T.E. studio complex.

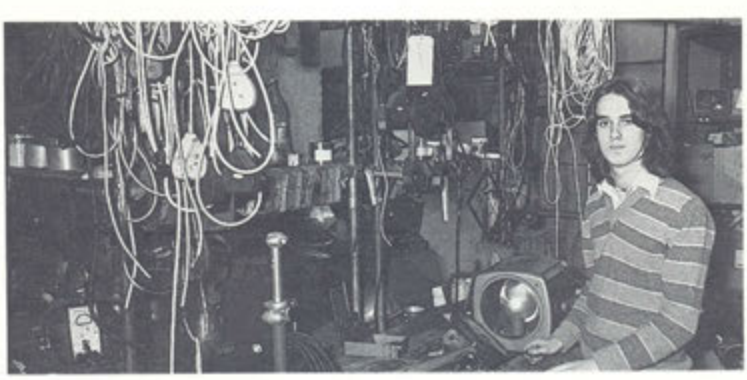
To sum up, the strength of our Irish agent lies in three main areas. Firstly, a strong and continuing connection with the market with four generations of the Bourke family having worked in theatre, secondly a very comprehensive stock of Strand equipment and spares, thirdly a determination to see that customers' needs come absolutely first. I can certainly confirm that Bourke's often put very great pressure on us at Brentford to get their customers the goods and service that they need. And this is the attitude that has kept them number one in their market.

Above: Kevin Bourke outside his Dublin showroom. Note the neon slogan!

Above right: Helen O'Neil gets a sheet of No. 24 for a customer from the large Cinemoid and Chromoid stock.

Right: Not a spaghetti factory, but a corner of the Dublin hire maintenance department.

Below: Pat Farrell servicing a Duet card. The Duet itself is a service stock standby unit, to make sure that Irish lights keep shining — Strand ones that is.



COLOUR FILTER DEVELOPMENTS

by D. C. Martin

ALWAYS an interesting subject for debate is "How many colours are needed in a range of colour filters?" Some purchasers argue that manufacturers offer too many and just confuse, while lighting designers see the need for new colours to fill gaps in the range, perhaps a blue that is lighter than ----, but darker than ----, and perhaps allows a little more red light through?

Over the years the range of Cinemoid colour filters has gradually grown to cover these needs. In most cases each new colour has its supporters, coloured frosts however, must be listed among our rare failures. We attempted to get one sheet to do the work of two, but obviously we did not allow sufficiently for the subtlety which is such a Strand filter plus!

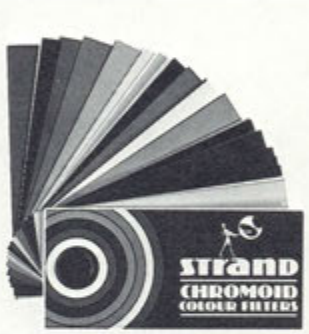
One very well known lighting designer always finds a point in every pantomime he lights for "double 50", i.e. two sheets of Cinemoid to give a deeper version of the actual shade he wants. Who are we, as suppliers, to quarrel with this fine fellow?

Many of the colours which now feature in the Cinemoid colour book came into being because a designer asked for them. For example, we are currently discussing a new shade with a well known television organisation — it will be a beautiful hue, somewhere between a spring leaf and the delightful pigment which enobled the City of Liverpool tramcars over many a decade. Proposed Cinemoid reference name, "Shepherd's Bush Green".

We can always produce new colours for customers, provided they can use a sufficient quantity, or that we can see a reasonable general use.

When the need for a material for high temperature luminaires became apparent, the question was "What colours should be selected?" Should they simply duplicate the colours in the Cinemoid range or should we choose a completely new range?

To some extent the choice was made for us because Chromoid was born out of a new plastic called Polycarbonate. Like Cinemoid it can be dyed in the mass, rather than just surfaced coated. It is also self-extinguishing, just like Cinemoid, so it fills the two basic Strand requirements



for colour filters of safety and the longest possible life. However, the dyes needed for polycarbonates are quite different from those for cellulose acetates. This means that Cinemoid colours could not be duplicated precisely, so new colours became necessary.

Chromoid was originally introduced with a range limited to 30 colours, some the equivalent of Cinemoid and some slightly different. This was a test marketing exercise for the acceptability of the range. After evaluating the product, we are now extending the range to 55 colours by adding 27 new ones and withdrawing two (135 and 139).

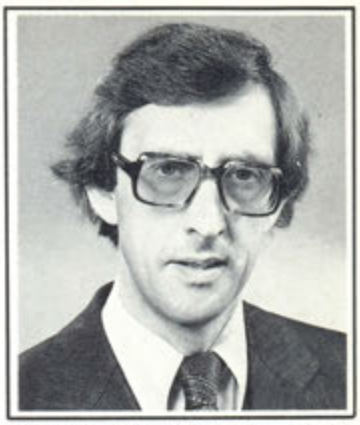
Now for a few words about the choice, numbering and names of colours:—

There is a move in this country to introduce a standard name and number series for colour filters. Whilst superficially this may assist, in practice, it would probably confuse. Colour filters which are made of different materials require different dyes and it is unlikely that "Prometheus Filter Co. Ltd's" coated material would be capable of matching a Cinemoid colour which is dyed en masse.

We tried to bear this in mind when choosing numbers for Chromoid. Where a number in the Chromoid series is over 100, it will be a close match to the Cinemoid colour with the same last two numbers, e.g. 106 in Chromoid and 6 in Cinemoid are very similar. Where colours are not equivalent, the Chromoid numbers are under 100.

You will understand from the article on manufacturing Cinemoid why the material cannot currently be offered in roll form. There is no such limitation with Chromoid and all the Chromoid colours are now offered in roll form as well as sheet. We believe that rolls offer a larger user and the re-sale trade real savings because of advantages in cutting to suit frame sizes as economically as possible.

Both Cinemoid and Chromoid colour swatch books are available by post or from a Strand counter or dealer at 65p and £1.00 respectively. These prices include post and packing. Swatch books are also available from Strand agents in every country in the world where we are represented.



David Martin is the Manager in charge of existing Rank Strand products. He has been with Rank for 15 years, and for the last ten with Strand, where he has handled, among other projects, the recently introduced new range of stands and the widening of our colour filter line. Before coming to Rank, David was with G.E.C.

HOW TO PAN WAGNER

by the Editor

RECENTLY a German television company, Bayerische Rundfunk, made a filmed record of excerpts of Ring der Nibelungen, Das Rheingold, Die Walkürie and Siegfried from the Bayreuth Wagner Festival Theatre. It was necessary to add extra punch to the stage lighting for filming so, as is so often the case, Quartzcolor lanterns were called for. In this particular situation once the scenery was in place, access to the lanterns was a problem, so remote controlled pan tilt and focus equipment was needed.

The luminaires illustrated are Pollux 5k's. Quartzcolor laniro manufactured the actual operating gears, while Strand Germany made the push button control end.

Remote control pan, tilt, focus and barn door operation is available to special order on most laniro equipment.

GOING DEUTSCH

by Tim Masters of
Barrie West Associates

Barrie West Associates are the advertising and publicity company that hold Strand's account. They also design and are responsible for constructing and bringing together our various theatre and television exhibitions around the world.

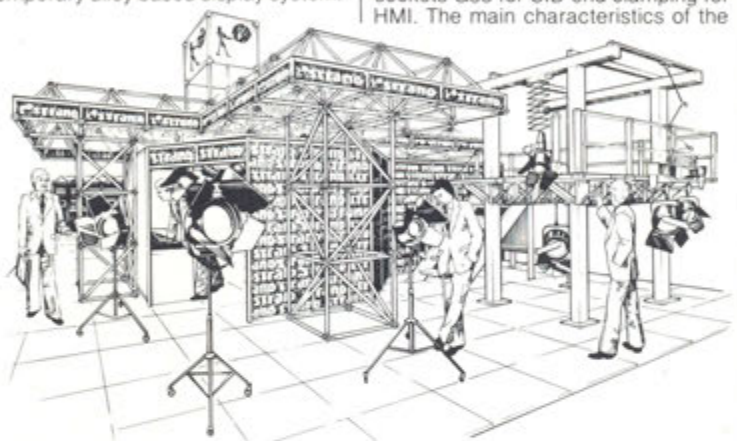
THIS year, Rank Strand in conjunction with Quartzcolor Ianiro and Telestage Associates have exhibited theatre, film, television and photographic lighting; lighting control systems; suspension and stage equipment at two separate international exhibitions in Germany. Why Germany? The answer is, of course, that this is where Photokina and the BTT Theatre exhibitions are held. But a further factor is that Strand's German subsidiary, Rank Strand GmbH of Wolfenbuttel near Hanover, is the leading theatre lighting company in that country. The technical equipment market for German theatre is the largest in Europe, so this success is particularly significant for Strand.

The first of the two exhibitions was the BTT Show which was held in West Berlin's newly built and impressively futuristic Congress Centrum. This was primarily for the theatre and our stand featured mainly Strand luminaires and controls, with back-up exhibitions by Strand Sound, Quartzcolor Ianiro and Telestage. This exhibition saw the launch of the new Galaxy system described elsewhere in this issue. The exhibition was extremely impressive and we believe that Rank Strand and the stand we designed for them were not the least impressive exhibit on display! As well as Galaxy, the stand featured Light Palette, Duet and Tempus systems, so every level of sophistication was covered. The long-awaited new 818 2kW Follow Spot was on show, as was the rest of the luminaire range. Incidentally, the T84 has apparently repeated in Europe the overwhelming success it has enjoyed in the U.K.

Strand Sound, Telestage and Quartzcolor Ianiro all had their own areas within the Strand group exhibition almost constituting a mini trade fair in itself.

We hardly seemed to have got back to the tranquility of our Herefordshire base, when it was time to gather together a few additional exhibits, pack them into the Volvo Estate and set off again to Cologne for Photokina. This of course, is the world Exhibition for the Photographic, Film and Television industries and (it goes somewhat against the grain for an Englishman to say so) overshadows all other exhibitions covering this field. Literally everybody in the industry can be found in the exhibition halls by day and in various Cologne haunts in the evening, varying from elegant restaurants where I am told, American Express does very nicely thank you, down to the less formal establishments where friends get together to drink a few beers.

The Photokina stand was virtually the same configuration as the BTT exhibition, but without Strand Sound. Our brief had been to design a stand which could be used for both venues with the minimum amount of modification. This was made more straightforward by the fact that Strand, on our recommendation, purchased a modular exhibition system in 1977, which is a unique combination of two entirely different products. The "gridwork" being a specially finished steel space-frame and the "walls" being a 'non-standardisation' for want of a better phrase, of a contemporary alloy based display system.



The whole package for a stand 12m × 12m, when packed, occupies three palettes and weighs roughly 6.5 tonnes, takes three men four days to erect, is dismantled and packed within 24 hours, and will support far more weight than Strand and Quartzcolor's requirements combined. Having dismantled the stand in Berlin, it was kept in storage for two months and then dispatched, courtesy of German Railways, to the Cologne exhibition halls. This time the emphasis was on the Quartzcolor lighting range, Strand lighting control and the film and television aspects of Telestage's business.

Quartzcolor produced the usual impressive range of new products designed with the radical yet practical, thinking of Michaelangelo combined with the artistry of Benvenuto Cellini — they said so themselves so it must be right! Some of them are described here:

The Altair Spotlight 1kW Model 2170

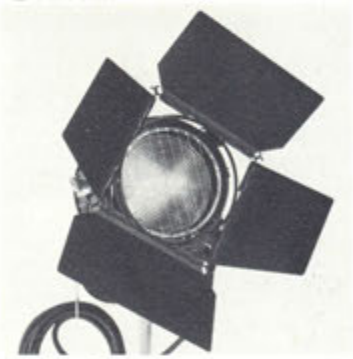
This unit is based on the well established Sirio 1200W HMI unit but also accepts the Thorn CID lamp or the Osram HMI. Each lamphead is fitted with two sockets G38 for CID end clamping for HMI. The main characteristics of the CID are that it offers hot restart, 70 lumens per Watt and 5,500°K ± 400 colour temperature. The Altair uses the same ballasts as the Sirio.

The Altair Spotlight 2.5kW Model 2180

This unit also takes both the Thorn CID lamp and the Osram HMI and uses the same ballast unit.

Incidentally it is worth mentioning that ballasts have been redesigned in Mark II form so that they fully meet the latest European electrical and safety standards.

ALTAIR 1kW



ALTAIR 2.5kW

BAMBINO 1kW

MIZAR

Polaris Bambino 1kW Model 660

This is a small version of the famous Polaris series, and is a continuation of the Bambino 2kW, 5kW, 10kW range of compact luminaires with the size and weight dramatically reduced. However, unlike the normal Polaris, pole operation it is not offered. This unit is available with two lampholders the G22 or the GY9.5. The Polaris Bambino can use a 500 Watt or 1000 Watt lamp at all world voltages.

The new Mizar Spotlight Model 250

This unit replaces the old Mizar 204 and is designed for Tungsten Halogen lamps of 300 and 500 Watts socket type GY9.5. Particular attention has been paid to ventilation and temperature. The Mizar is only 164mm wide, 216mm high and 132mm deep. It must be the smallest lighting unit in the world built to studio and theatre professional standards.

Mini Redhead Model 3130

This glass reinforced plastic unit follows the path blazed by the famous original Redhead. It features a variable beam and the body of the lantern is resistant to both high temperature and shock. The rugged construction is proved by the quality of some of the television shows Redheads are forced to witness and yet survive intact. The Mini Redhead uses a 650 Watt 220 or 240 volt lamp, 600 Watt 120 volt lamp and 250 Watt 30 volt lamp for use with batteries.

Motorised Spotlights

Remote control motorised pan tilt focus and barndoor operation is now available on Pollux, Castor, Polaris and Kahouteck spotlights. Operation is by three independent 12 volt D.C. motors with reduction gears and clutches. Panning is up to 350° and tilt angle of 90°. It only takes a minute for a full pan and 20 seconds for a full tilt, while only 6 seconds are needed for full travel from spot to flood.

At special request other lanterns in the Quartzcolor Ianiro range can also be motorised.

So, once again it was time for our stand to be dismembered. At least at this show we had not had too much drama in putting it up. There was the year when the sink didn't arrive. "Sink?" you ask — why, for washing glasses of course! On another occasion no one was allowed to work after 6.30 p.m., and that on the last evening before the opening, because Franz Joseph Strauss was coming round the exhibition. After that I certainly wouldn't have voted for him anyway.

So, once again into the Volvo, set the speed control to 90 m.p.h., the air conditioning to 68°F, and off back along the E5 we go. Fifteen cups of coffee, and 10 hours later, we arrived back at Hereford, ready to start on Photokina '82.

MINI REDHEAD

GALAXY

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.

Twelve months ago he was further promoted to the marketing role he now holds, where he is responsible for all new product development in Strand.

WHEN one visits a major exhibition of television and theatre lighting equipment nowadays, the familiar pattern is one of serried ranks of well defined products, lighting units with ever more handsome appearance and more convenient facilities arranged in well defined product groups according to their use or their function; manufacturers offering similar products with small specialist specification differences and corresponding price changes, offering the customer in what one might call a sensible way the selection of any piece of equipment related to lighting use. In the last few years this clearly defined product range has had one unfortunately confused area and that has been in Memory Control Systems.

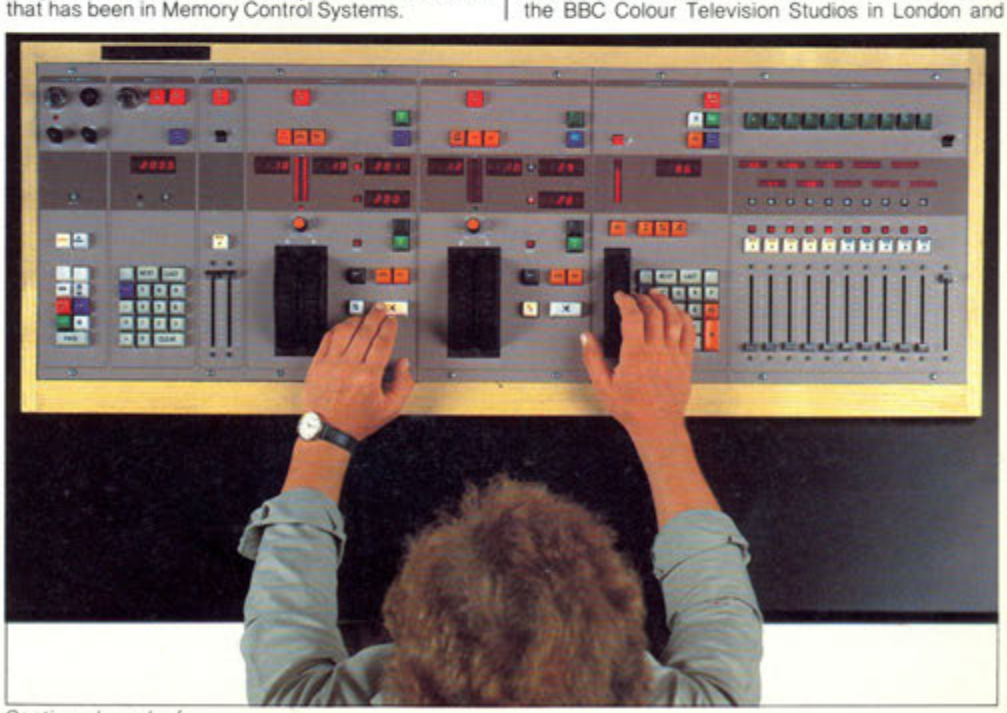
At all the major exhibitions over the last three or four years the one product group which has shown phenomenal development has been that of intensity level memory lighting control systems. They have developed to the point where total confusion could really be the only impression gleaned by the casual, albeit informed, observer. Different approaches, different levels of cost, different types of technology all conflict with each other to do the same job. Systems which have been in the market place for many years offer well proven although sometimes expensive operator facilities, while the newcomers to the market with exciting revolutionary approaches to traditional problems, seem to offer a risk factor of a different order to that traditionally expected of professional equipment.

The problem is one which is probably brought more acutely to the knowledge of traditional manufacturers of such products than it is even to the most discerning customer. By definition the manufacturer who is critically aware of his own position in the market place will constantly have demonstrated to him the difficulties of the customer's decision making process with regard to the particular product which is currently causing confusion amongst the buying sector of the market. It follows that it is of no advantage to the customer or to the reputable manufacturer to allow a situation of total confusion about a product area to exist. This was the pressure which forced Strand, several months ago, to re-appraise the whole situation regarding memory systems.

The best method to resolve the apparent conflict of desires amongst customers as well as between customers and suppliers, seemed to me to ask the customers what they wanted! Consequently, we embarked on a lengthy and reasonably detailed exercise of market research in order to find out what it was that the serious broadcasting user as well as the theatrical lighting designer required from lighting memory control systems. It quickly became clear that many wanted features had early in the history of memory systems been defined and provided by suppliers in the market. It was also evident that some of these facilities had been far too expensive in the past; and even more critical, a number of the operator requirements were not met at all, let alone a combination of them within one system.

Having ascertained what the concensus of customer opinion dictated was required in a memory lighting system, Strand turned their attentions to the technology available to produce equipment which would meet these requirements. Strand were however able to design a system subsequently known as Galaxy, which offered the complete portfolio of identified customer requirements while being based upon the very latest electronic techniques with all the consequent savings in costs and complexity.

The resultant Galaxy system which is now being introduced to the world wide lighting markets is well illustrated in the pictures accompanying this article. The initial systems being installed in Australia and Germany followed closely by several within the United Kingdom, demonstrate from the range of problems which they are solving the flexibility of the system which has resulted, combined with its cost effective pricing. The three theatres at the Victoria Arts Centre in Australia, the Schau-Buehne in Berlin, and the BBC Colour Television Studios in London and



Continued overleaf:

WHY ANOTHER M

Glasgow represent a wide spectrum of lighting control problems all of which Galaxy has been able to solve at a price level previously unthought of for a system providing the customised facilities required in projects of this nature.

To describe the Galaxy system it is first necessary to realise the physical way in which it has been packaged, and the advantages which this offers to both end users and consultants and architects in building planning. The active end of the control system, "the desk", if you like, in fact consists of a series of panels packaged in a smart wooden and sheet metal box which Strand call a "pod". Into this pod may be fitted, to the customer's choice, a mixture of the various panels. These panels comprise facilities such as playback, channel control, submasters, and various other operating facilities which are all fully detailed in the sales literature available from Strand. The pod is designed to drop into a desk of very simple construction which may be supplied by the customer or by Strand. The pod houses no electronics other than the minimal interface and coding electronics required for the panel operations plus a power supply to drive the displays on the panels. It is connected by a simple four wire data cable to a very small piece of 19" rack mounted electronics where all of the operating part of the system is housed. This is a crate which may be either fitted into a 19 inch rack in a television studio central technical area, or housed in a small, approximately 12 inch high case, placed wherever required by the customer. It is from this rack that the dimmer outputs are generated and it is to this rack that other peripheral equipment such as printers or floppy disc units are connected. Thus if the rack is placed near the dimmers the amount of electrical contracting in interconnecting the control system and the dimmers is reduced very considerably.

The rack houses a power supply and power distribution unit and a number of plug in electronic printed circuit boards. Three of these boards are fitted as standard in every system. These are the actual micro processor card, an interface card for the desk(s), and a VDU drive card to drive the monitor which acts as the channel level display. The remainder of the slots are taken up by 48-channel output cards, and memory cards, which may be intermixed as required by the job to provide the number of channels and the amount of memory specified by any particular customer. The system will operate up to more than 750 channels and provide a huge number of memories if required.

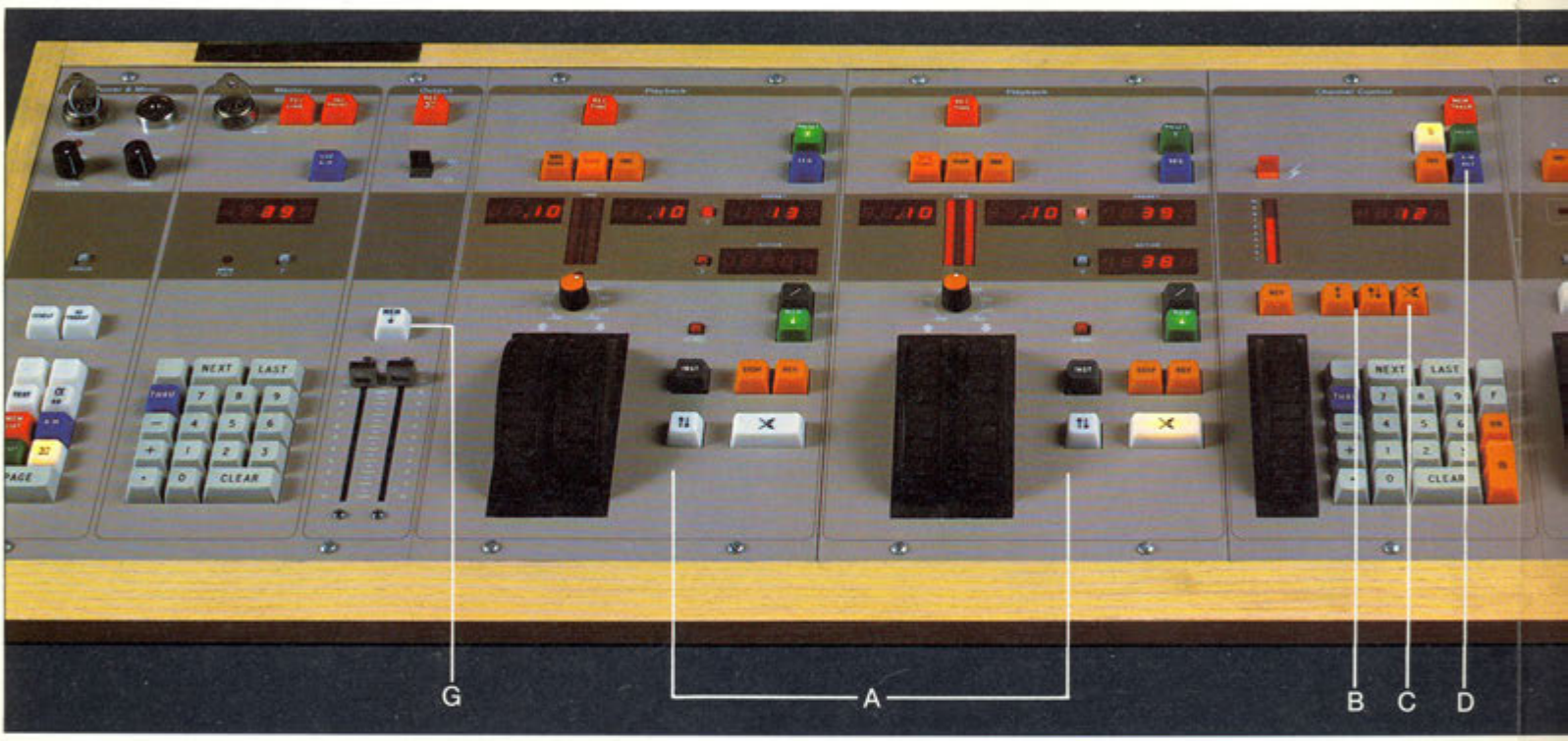
It is interesting to note that the actual cost of supplying memory storage space in the system is much lower than previously as the system does not record channels at zero or allocate space in the memory for unused cue numbers. This means that any number between 0.1 and 999.9 is available for recording at any time, and that the amount of memory used by a recording action depends only upon the number of active channels recorded in that cue. Thus if only a small number of channels are used in each cue, a very large number of memories is available to the operator, and a real cost saving is made on supplying the amount of CMOS memory provided. The memory is fully backed up on the cards by soldered-in batteries and is secure for a period of at least one month without power supply. For very long term storage, a floppy disc unit is available to copy out all or part of the memory of the system on to a standard computer type floppy disc for re-entry later.

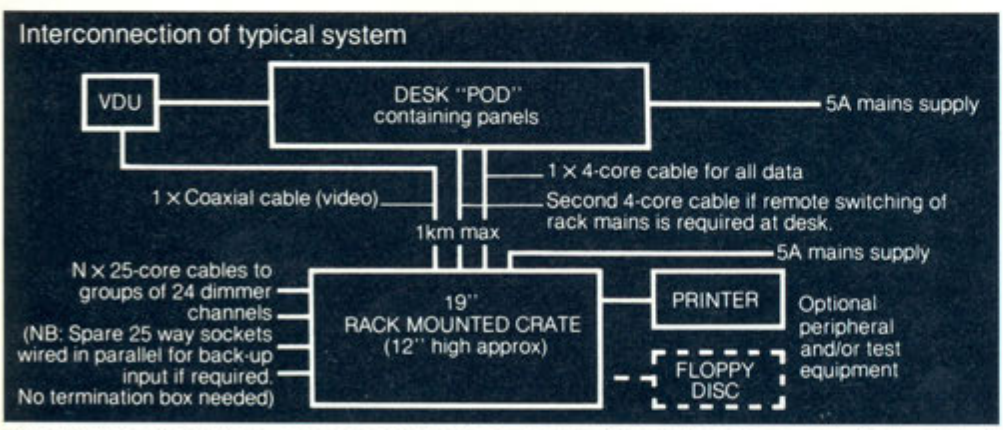
For the technically interested, the microprocessors used in the system are the MC 6809. There is one executive processor on the processor card referred to above, and a further one on each of the 48-channel output cards. The pod interface incorporates a further processor, in order to handle the serial data link between crate and pod. The memory cards each provide 32K of storage (CMOS), or a half populated card can provide 16K. Video output from the VDU drive p.c.b. is standard video suitable for standard monitor inputs (1V composite sync), or an alternative colour video output is available (producing RGB 1V video, sync on G). The two power supplies (Pod and Crate) are switching triple supplies (+5V, +15V, −15V), the crate supply plugging into the front of the crate, that in the pod being mounted on a chassis below the panels together with the mains input and output plugs, etc.

The diagram left shows the interconnections between the basic parts of the system, and anyone who has been involved in planning a studio or theatre building with a large number of dimmers will appreciate how the Galaxy philosophy reduces the costs of the electrical interconnections.

This article is not intended to act as an operator's guide to the system. Strand issue publications which fulfil this role much more readily than can an article of this nature but it may be interesting to mention briefly facilities which are available upon the control panels.

The memory number selector panel incorporates a method of allocating memory numbers to information to be recorded, and recalling those recorded memories, while at the same time housing the controls for routing the monitor which displays the channel level information, and also providing a grand master, blackout switch, and record buttons for system operation. It may be worth just commenting on the monitor (V.D.U.) at this point, although the system panels provide sufficient information for





MEMORY SYSTEM?

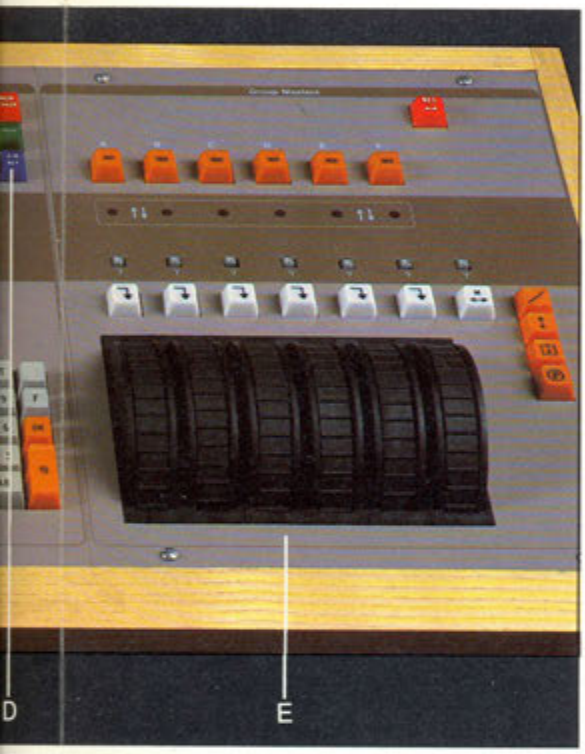
most operators. The monitor can display up to 200 channels and for systems with more than 200 channels either extra monitors are provided or the paging button on the system allows each page of 200 channels to be displayed in rotation. The display shows either all the channels in a dim format with those in use illuminated brightly with their level as a percentage next to them, or only those channels which are active at any one time. The display may be formatted to omit channels which are not in use through a certain series of recorded memories thus greatly reducing the amount of display space needed for any one particular production. The monitor can also be used to interrogate the contents of various preset stalls around the system and to display such operator's

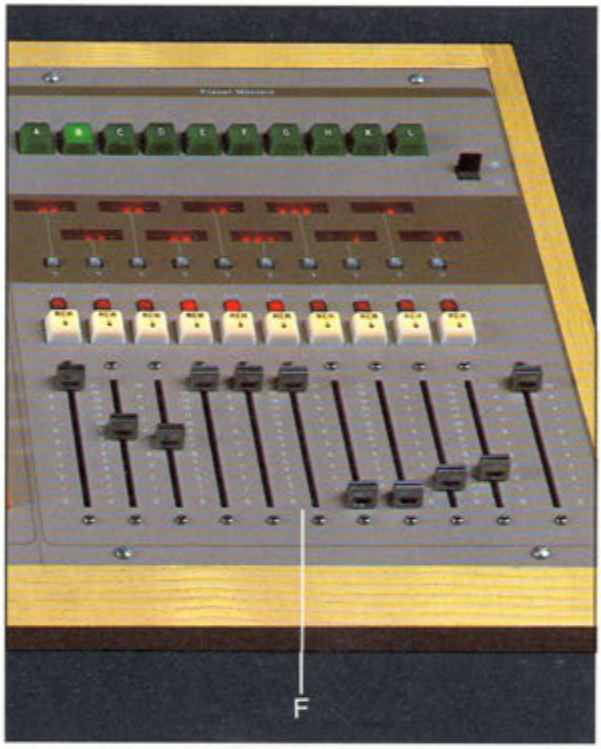
The operator always achieves his goal and the result is the logically expected one — Galaxy imposes no rules on its users. This, perhaps, is the best single result of "chips with everything" micro-electronics!

Two optional panels complete the current range of facilities available. These are a preset masters panel and a group masters panel. The preset masters provides ten fader levers, each one capable of controlling one or more pre-recorded memories which can be faded up and down directly under the control of the individual fader lever. A grand master and blackout switch are provided for the output of this panel only. The group masters panel, which is best regarded as an extension of a channel control, provides a sophisticated manner of balancing groups of

even perhaps the effects of a spilt temperance beverage!

The facilities of the system may be extended by the addition of an alpha numeric keyboard which allows the more esoteric functions such as control to dimmer channel patching, and dimmer curve look up to be easily added to the system by the operator; the keyboard also allows the recording as part of any cue of clear language text in addition to the channel levels and fade time information which will normally be recorded. This means that in a touring show an operator can send notes on the forthcoming cues to his opposite number in the next theatre, and these may be read on the VDU as part of the normal cue playback.





A Sophisticated Playback(s) up to 4 in a system.
Each capable of handling a large number of similar move fades.
Manual or automatic fades for "move" or "crossfade" with instant control of optional prerecorded time, and ability to change "mood" by delaying start of up or down parts of a fade.

B In addition to normal channel control functions, memories may be manipulated with or without reference to the recorded channel levels, using the channel control wheel in this panel.

C Crossfades may be performed manually on the channel controls.

D "Auto-mod" allows substitution by any channel(s) for a faulty channel(s).

E Optional Group Masters. Six wheels to extend Channel Control for multi group balancing of circuits.
Allocation of channels to wheels is recordable.

F Optional Preset Masters. Ten memory stores with fades and mastering.

G Simple facility to cut a memory to output directly.

ready use facilities such as auto mod., recorded memory lists, and other useful data bases retained within the system structure.

The Channel Control Panel allows the setting of lights or the modifying of recalled memories. At any time a channel or group of channels may be controlled by the wheel. Access is by key pad providing single or multiple channels, sequential or non sequential groups, digital level setting, as well as wheel control and many other facilities to simplify the operator's task. Auto modification, including the replacement of channel(s) by other channel(s) can be made using the keyboard. Memories may be used by the Channel Control to provide building blocks of light when creating new memories, and previous recorded balances may be referred to or not at the operator's will.

Playbacks allow crossfade and move fade actions to be performed with single or multiple memories. Fades may be automatic (with pre-recorded or manually set times, split between up and down parts) or manual. Wheels allow the operator instant override of any timed fades, either running or preset. Recording of times on to memories is performed from the playback panels, and can range from 60 minutes to instant, or be a "manual" time for the operator to perform the cue by hand. All conventional sequential and dipless facilities are present and a simple playback can perform many fades simultaneously. Throughout the system, it is the latest action performed which takes precedence: thus a crossfade performed at any part of the system will replace the lighting by the incoming memory — no complications arise with common channels failing to move or some "old" channels becoming "parked".

lights against each other prior to recording them, and then recording the complete lighting effect if required plus the allocation of the individual groupings of the channels so that when the cue is played back, modifications may rapidly be made by means of the six wheels provided.

The resulting system built up from the selection of various panels provides a system giving exactly the facilities a customer requires. The "latest action takes precedence philosophy", rather than a "highest level takes precedence" philosophy, means that a completely straightforward operating logic is provided at all times. If a duplicate channel control is provided at the stage manager's position, for example for use during rehearsals or at other times, that channel controller will work in exactly the same way as the main channel controller in the control room and have access to any channel at any time; the last person who asks a channel to perform a certain action will see that result carried out and this simple straightforward logic is a hallmark of Galaxy operation.

Undoubtedly future development of the system will lead to continuing development of panels becoming available in the same way that MMS modules continued to become available long after the main frame MMS development programme was completed. At the present time the special effects unit to allow disco type lighting effects to be introduced to the system is under development as is a backup system to allow cues to be replayed from a special floppy disc unit even when the main frame of the electronics has been taken out of service for maintenance, or due to a disastrous fault being caused by a fire, or

Space does not allow a full description of all the facilities in detail but it is hoped that the exciting philosophy of this very sophisticated control system which is so simple that most people learn to operate it within one hour of sitting down at the desk, may at least have been touched upon in the above remarks.

There is little doubt that in looking at the ranges of equipment offered at television and theatre lighting exhibitions during the 1980's it will be Galaxy that shows a way through the minefield of the complexities of memory lighting control systems.

Looking at Galaxy left to right, Andrew Dightam of Cue magazine, Len Greenwood of Carr & Angier Associates, Jerry Godden of Theatre Projects Consultants and representatives of the TV and Theatre technical press examine Galaxy at its UK launch at Brentford on 28th October.

Saving Current Costs

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.

ONE of the surprising facts about the growth in the use of theatre technical equipment is that it has always been the West End commercial managements that have led the way in using the latest theatre technology, rather than the subsidised theatre as our readers might suppose.

The very first M.M.S. lighting memory system to go into a theatre anywhere was installed in the Stoll Moss owned Birmingham Hippodrome, while the Albery Theatres, which comprise The Criterion, The Piccadilly, Wyndhams and The Albery itself have all followed quickly with M.M.S. installations.

As many Tabs readers will know, there are two alternative commercial electricity tariffs which are usually used in Britain. The first and the system in force at the Albery Theatre is known as the Installed Load Tariff. This is based on a standing three month charge assessed on the connected potential load plus a charge per unit up to an agreed maximum total demand.

There is also a Maximum Demand Tariff under which charges for all units consumed are increased should the consumption go above the maximum for more than a strictly limited grace period which is allowed by the supply authority.

The purpose of these arrangements is that the electricity supply people seek to ensure that demand in any particular large building will not exceed a certain load so that firstly they do not need to install mains and equipment beyond a fixed capacity, and secondly to hold to a predetermined level their own total maximum demand for their area so far as they can.

Traditionally a simple audible and flashing light type of equipment gives warning to the user once the maximum load has been exceeded, but for the Albery and Wyndhams theatres, Strand designed and installed some very special equipment that ensures that the maximum loads cannot be exceeded for more than ten seconds.

The Strand Maximum Demand Limiter works by measuring the load on each phase of the three phase supply. Should the load approach the pre-set maximum, then the dimmers are automatically taken down, on a highest-reduced-first principle, so that the maximum cannot be exceeded, while ensuring that the stage lighting remains unaffected so far as the audience is concerned — this is partly because the cutback is gradual, taking up to 30 seconds, and partly because this phenomena can only occur when the stage lighting is in a "full up" state, and as with all visual matters, brightness is only perceived in contrast to darkness.

This system has several very real advantages for theatres whether the installed load or maximum demand tariff is applied. They can take advantage of the best possible supply tariff, bearing in mind that they are fitting in with the supply authorities most closely cherished aim, i.e. to limit the necessity to provide for sudden and infrequent demands. The theatre is also of course, protecting itself automatically against any over enthusiastic lighting that art may demand, even if commerce would deplore. Thus, automatically, and without argument or creative emotions being called into play, Strand silently and discretely protects its customer's interest.

Ian Albery, the West End Producer and Managing Director of Wyndhams Theatres, says:—
"The Strand Load Limiter will pay for its capital cost within three years of installation in reduced current consumption, and the savings in running costs we have passed on to the producers in our threatres as each installation was brought into use."
He firmly believes that it is the cost effective theatres that will survive, hence his investment for example, in dual gas/oil heating boilers, to take advantage of the fluctuating fuel market and his investment in Strand's M.M.S. in its earliest days to save lighting rehearsal time in each of the four theatres he controls, plus his latest investment in Strand Load Limiters.

View of the M.M.S. fault mimic and load limiter warning panel at the Albery Theatre. The fault mimic, a widely specified Strand option, indicates by a tell tale lamp if no current is passing in a circuit. Thus a blown lamp, fuse, or a dimmer fault or indeed any temporary disconnection can immediately be spotted by the operator.

Rank Strand Load Limiter as installed at Wyndhams Theatre. There is a control which sets the load at which the device automatically comes into action, and the fault corrected or the stage lighting varied as compensation by use of the M.M.S. auto mod facility.

Now Follow That!

by D. C. Martin

FOLLOW SPOTS are perhaps the only lanterns that generate the same sort of passion as control systems. This is understandable because they are the only lanterns which a dedicated operator uses as an instrument during a performance.

It is often said by old hands in the industry and old Strand employees that the Sun Spot was the best follow spot that has ever been produced. Times have changed of course and the obvious drawbacks of carbon arcs on the early models might make them less popular if they were on sale today. It is also no longer economic to hand build products which are only likely to sell between 10 and 20 units a year — at to-day's cost a Sun Spot would probably have to be listed at about £6,000!

We have been considering the need for a modern follow spot for the Sun Spot market to supplement the 765's and 818's that Strand manufactures today.

It is worth stressing the success of the U.K. produced follow spots where production has generally limited sales rather then demand. Most readers will be familiar with the 765 so it is not intended to say a great deal about this, though the new Thorn C.I.D. Lamp* enables the unit to produce light with a colour temperature of 5600°K which makes it look brighter and whiter than the 1000 watt CSI lamp. Not only does the 765 offer remarkable value for money at £825, it uses a robust and relatively inexpensive discharge lamp.

For a long time the 293/793 was the profile and halogen follow spot in the Strand range. When it was decided to replace the 793 with a more compact unit, we decided to produce two different lanterns, a profile and a follow spot. The 818 had lengthy birth pangs partly due to the different views on what constitutes a good follow spot. The lantern offers a tilt balancing pivot to allow good handling, with a sensible, adjustable handle at the rear and another balancing handle in the front of the lantern. The Iris diaphragm with black out discs and horizontal stripping shutters are standard features, as well as a manual colour magazine. The new folding telescopic stand also makes the lanterns much easier to move when touring.

New lamp developments enable substantial performance improvements to be achieved, with the performance now almost half that of the 765 with its discharge lamp.

For the professionals who need, and can afford the best, at higher prices although at equally good value, we offer two winners.

Pani were the first firm that we turned to. Their 1200 watt HMI Follow Spot has been very successful with many users. The lantern is very compact with a punchy beam of light from the 1200 watt HMI lamp. It includes the facility for a manual dimmer which works on the principal of a venetian blind with a beautifully quiet and smooth action given by a series of intermeshed nylon gears. Included are four beam shaping shutters and an Iris with a separate black out disc. The unit is very popular with hire companies and touring groups and in any situation where space is at a premium.

Where space limitations are not so important, and for television who specifically want a flat and even beam, we offer another contender.

PANI 1200W HMI

The products of the German firm, Emil Niethammer, are ideal to complement the Pani and Strand products. Since many users will be familiar with the Pani lanterns, the Niethammer product is described in more detail. The most interesting Follow Spot again uses a 1200 watt HMI lamp but this time the optical system uses aspheric condensers. Two versions give a choice of 8° or 13° beam angles. This makes it similar to a very large slide projector giving a very clear and even beam with hard edges. This Follow Spot is particularly suitable for projecting Gobos. For those who do not like hard edges, a de-focusing device is available to soften the beam. One of these units was on our stand at the last A.B.T.T. Trade Show.

One of the outstanding features of these follow spots is the sprung and damped head and pivot adjusting mechanism which allows an especially smooth pan and tilt. Beam shaping is available by four shutters plus a separate black out shutter.

Two Irises are provided, one with black out disc. This enables hard focusing on one Iris and soft focusing on the other.

There is provision for two slide carriers, the rearmost of these would then be used for projecting Gobos. Glass slides can be used in these shutters instead of the conventional metal Gobo and patterned or reeded glass will produce most interesting special effects. An accessory available to fit the front shutters allows only UV light to pass forward producing a UV Follow Spot, an interesting and novel feature.

The optional dimming shutter is a very special device that fits on the front of the lantern rather like a large Iris and it produces sensitive dimming to black out, without any flicker. If you want the really de luxe version, it can be electrically operated.

The manual colour change which can be fitted to the front of the lantern, as well as the dimming device, is an unusually versatile unit. In addition to the four manually operated semaphore frames, which work through a series of levers from the lamp housing, a manual wheel can be added, enabling a wider range of colours to be shown, colour mixing to be carried out or, for a special effect, the wheel can be spun at high speed.

We feel if there is a unit which matches or even surpasses the old Sun Spot, the Niethammer 1200 watt HMI is this unit, offering just about every imaginable facility, as well as the weight and precision feel of its illustrious predecessor.

Both the Pani and Niethammer spots described are available for inspection and demonstration either at Brentford or Lowton, or by arrangement at customer's own studio or theatre. Full spares and service back-up is available from Strand and its Service Agents.

NIETHAMMER
1200W HMI

Reflector and condenser system of the Niethammer followspot. Get that rigid construction! Note the interlock safety switch.

"IT'S A COLOURFUL WORLD"

THE EDITOR GOES TO SEE CINEMOID MANUFACTURED

I CAN guess every reader of Tabs has used Cinemoid for as long as he has been involved in stage or television lighting. It thus seemed to me high time that I found out how it was made.

On a very pleasant day last August I got out my 1953 eleventh edition Newnes Motorist's Gazeteer and Book of Touring Maps. This is the ideal motorist's map for me as it was produced before the first load of English motorway concrete was poured, and thus ensures that all my car journeys are on old roads and are thus relaxed and interesting.

My destination was Spondon in Derbyshire, where British Celanese manufacture Cinemoid especially and exclusively for Strand.

I travelled via the excellent town of Lichfield, pausing briefly to consume tea and scones and to examine Dr Johnson's birthplace. Incidentally, why have all historic houses come out in a rash of track mounted spots and downlighters — what on earth is wrong with electrifying fittings contemporary with the building to be lit?

I spent a night in a Hotel which, to quote Agate, featured good sporting prints and bad sporting waiters, one of whom passed a fallen bread roll to a colleague with a brilliant shot practically from the instep of his right boot! I took toast.

The next morning I presented myself at the formidable gates of the Celanese factory, in a small section of which Cinemoid is produced. The whole place is most impressive with standard gauge railway tracks passing through the 364 acre site on which 6,000 Spondonians labour. Its size and complexity would make wonderful exteriors for the Undershaft Armaments Works in a T.V. production of Major Barbara.

Whether it is a long connection of the firm with Strand and thus drama, or simple fire precautions I don't know, but before even being allowed out of the reception building one is very sternly eyed and told to hand over any matches or cigarette lighters.

Having taken the oath as a non-smoker, the very friendly Geoff Baines, the Production Manager took me into the first building where the whole process is begun. First impressions were of a very pungent bakery! I soon realised that this was because the giant Banbury Mixers are not unlike dough mixing machines, while the pungent atmosphere was caused by acetate vapour.

What machines these are! The celluloe di-acetate, plus plasticisers, flame retardant and acetone together with pigments and dyestuffs form a material the consistency of plasticine on Christmas morning — so thick that the mixers are driven very slowly by 50 h.p. motors and have to be cooled with constant mains water. This mixing goes on for four hours, during which samples are taken, checked against standards and dye added as necessary.

If any reader is writing a detective story, an original way to dispose of the victim might be to wait until No.6 is being produced and then pop him in.

During this mixing, acetone is given off as vapour much of which is recovered and re-used.

The next process is even more dramatic. This is the filtering of the "dough". Remembering the very stiff and heavy consistency, remove any idea from your mind of easily running liquids and filter papers! This filtering is real man's work! The material is driven down 6" diameter pipes by hydraulic pressure, and through lint-free cotton filters. 2,500 lbs. per square inch pressure is needed for this job, provided by other 50 h.p. electric motors driving hydraulic pumps in an adjacent engine house. All this part of the process is very impressive, fairly noisy and hellishly hot.

After the filtering, the acetate is processed again to reduce the acetone content from about 35% to 10% by rolling the material on heated stainless steel drums for about an hour. After this the material is drawn off in "hides" about 5ft by 2ft and about ¾" thick. Eight hides of the same mix are then laid on a steel base which has 3/8" deep × 1" wide grooves in it. The purpose of these grooves shortly becomes apparent! The hides are then welded together by heat and pressure, about 110°C and 1,500 lbs. per square inch respectively. This process takes a full twelve hours, followed by the same period for cooling.

The Cinemoid is now a solid block 5ft × 2ft and 6 inches thick. It struck me, following my Hitchockian musings at the Banbury Mixers, that one of these blocks made of No.25 would make a superb tombstone, to complete the story.

The block, or tombstone, is now ready for slicing and the need for the deep grooves locating it on the steel bed becomes obvious. This whole completely solid block weighing 140 kilogrammes is now moved back and forth every few seconds and planed into 10 thou. sheets by a gigantic version of a carpenter's plane! At each movement a sheet is sliced off. Sometimes a small air bubble can be trapped in one of the blocks and this means that twenty or thirty sheets have to be scrapped. Even after these massages and saunas the luckless material has not finished its journey. Each sheet has to be hung in a heated seasoning room for a week so that the last of the acetone can evaporate. I went into this room, which must have been at about 90°F and contained enough free acetone to make breathing something to be postponed as long as possible.

The last part of the process is now carried out. This is called polishing. Although it does put a polished surface on the material, no polishing as Sunday morning car cleaners would understand the term is used. The polished surface is achieved by each sheet of Cinemoid being laid between two mirror finished nickel chromed brass sheets which are perfectly flat and perfectly smooth. These sheets incidentally cost £140 each and last only two to three months.

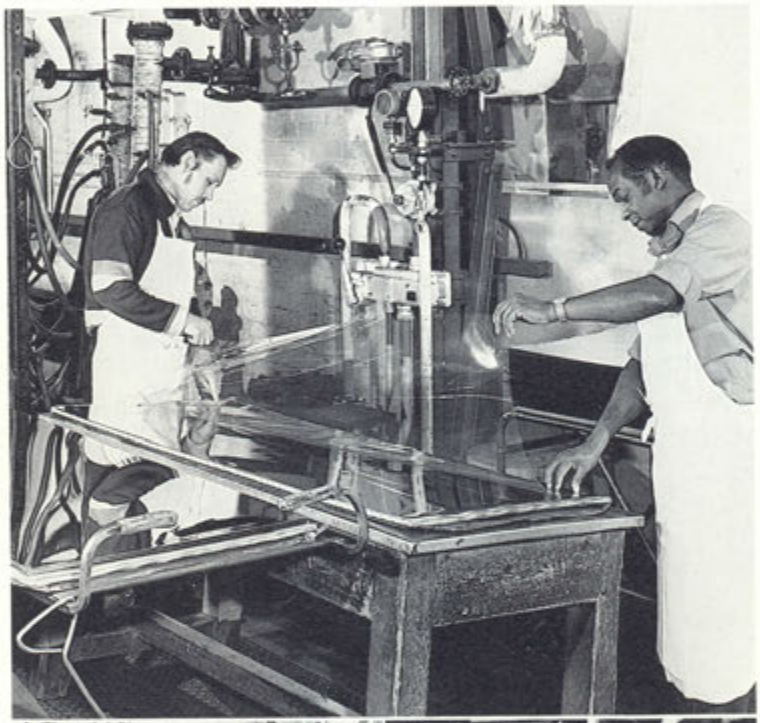
The brass sheets are first hand cleaned, then interleaved with the Cinemoid. When 64 sheets are ready they are put into another press. This is heated by circulated high temperature steam, which causes the surface of the sheet to melt very slightly and thus take on the finish of the perfect metal sheet with which it is having such a very close relationship.

The sheets are then finally checked for thickness, spot checked for colour by using a Unicam Spectometer to analyse the transmission curve, interleaved with special acid free tissue paper, boxed and despatched to Strand depots and agents around the world.

Forty-four people work with Geoff Baines on the production of Cinemoid, and I hope this fairly brief description shows that it is a fairly intensive and complex process.

One could ask, why do it this way, why not, like some competitors, take a standard commercial film material, spray it with colour and then spray it with a flame retardant? Firstly, because safety in use must, by the nature of a product used so often either with an audience gathered or in a school, be absolutely the first consideration. Sprayed on flame retardants can be abraded or degraded both in storage and in use. Secondly, we believe that Cinemoid can be justly proud of its worldwide reputation for heat stability, colour consistency and light fastness — qualities that give the dyed-in-the-mass product material a huge edge over its coated competitors.

Lastly, Derby is only three miles from Spondon, and the statue of Sir Henry Royce in the Arboretum must surely spread its influence in favour of quality manufacture above all else over the surrounding landscape!



Top:

A polished sheet of sliced cellulose acetate being removed from the mirror finished metal polishing plate.

Above:

A sheet being sliced from the large block of compressed cellulose acetate from which some of the acetone has already been recovered.

Left:

Cellulose acetate dough leaving the Banbury mixer. It has a high acetone content much of which is recovered.

"...OF SWITCHBOARDS AND SWITCHBOARD OPERATORS"

by Philip L. Edwards

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.

SEATED one day at the switchboard — or to be more precise, perched on a stool on the house board at Buxton during the festival performance of Lelio and the Symphonie Fantastique, I started thinking about boards and operators in general and some boards in particular. I only had the house lights and tab dressing to look after on that board so I had a reasonable amount of free time to think about other things. The thoughts were prompted by the way in which over the years the columns of the theatre press have been ruffled by letters about the subject and the recent correspondence in The Stage newspaper and the ABTT Newsletter that perhaps boards have started getting a bit too sophisticated and that we should consider the operator's enjoyment a bit more.

Now the show at Buxton was actually being operated on a Duet which is a pretty simple memory board as they go. When I operated that Board I enjoyed it in a simple sort of way, to quote another former Lightset operator, I evolved a "cockpit drill". A routine way of doing the straightforward cues which meant that I could devote my thoughts entirely to the more complex ones.

Now the first reaction to this is perhaps to suggest that if the board itself were more complex, it would sort out the more complex cues and I would have only had to push a button, (and presumably spend the evening getting bored stiff or spending a fortune out of my inadequate fee buying paperbacks).

For the operator the virtue of the memory board must surely be that it takes the tedious labour out of operating. Setting up presets in a hurry and spinning round to poke the masters then back to the presets is no way either to spend an evening or to operate lighting whether or not it gives you a sense of achievement at the end of the show.

For the lighting designer, on the other hand, the memory board should ensure that his lighting states are reproduced accurately every night and that the transitions between them are as he requires. But, and this I think is the important bit. Surely the lighting designer requires a human element in his lighting? I know I do. Just as a composer produces a piece of music which is interpreted by the conductor through the orchestra, so the form of lighting changes are specified by the designer and interpreted by the operator.

I know that there are dangerous extensions of this analogy but at the face value I think it's about right, (remembering the way some conductors murder music and some operators murder lighting changes, perhaps the analogy is more apt than I had originally thought). Theatre is about live artists and live performances so surely the peripheral activities, lighting and sound operation and so on, should be live as well. Performances alter slightly from day to day, not just the exact moment of blowing out the candle but more subtly in the pace and tempo of the acting.

The good operator responds to these variations and in his handling of his controls automatically adjusts the lighting changes to them. To reduce this art or craft, whichever it be, to a button pushing level is akin, and again I quote, to replacing the piano player with a player piano.

So where do today's boards fit in with all this? The Duet fits pretty well, particularly with the submaster option. It takes away the labour of setting up and allows the operator to concentrate on timing the cues. It suffers in one major respect. You cannot split the timed cross fader, so long (operatic?) cues become either a series of nudges on the manual controls, dip alarmingly on the timed fader, or go through s series of bleed memories.

How about a Duet de Luxe (at Duet price of course!) with a split timed crossfader, submasters and a remainder dim button (which perhaps shows the generation of remote controls that I grew up on).

The mention of dipping cross fades brings me to another point. Virtually all memory boards and a fair selection of manual boards have what is described as a "Dipless Cross Fader". The inexperienced operator reads the instruction book, takes the knob(s) lovingly in his hand and moves it gently from A to B. At the same time, the lighting fades almost to black and then builds to state B. The designer, producer and cast complain bitterly to the operator who in turns complains bitterly to the manufacturers' representative that the crossfader is not dipless — Trades Descriptions Act and so on.

The miracles of electronics hold constant channels at the same level throughout the cross fades but if, as is quite likely, the constant channels are those for the cyc. and all the acting area circuits change level then the chances are that the acting area will dip alarmingly and the chances also are that the area which dips worst will be occupied by the local equivalent of Placido Domingo in full flight.

The key word here would be "visually". Lighting, and for that matter, most aspects of theatre, are concerned with what the audience sees (and, of course, hears). To this end, the operator should be watching the stage and not the mimic and one thus assumes that the design of the control desk will be such that the first object of attention will be the stage. A VDU is useful, a view of the stage essential. The good board operator watches the stage and moves his knobs in such a way that the dip doesn't happen. Given an average sort of cue it is perfectly possible to do a dipless cross fade on two preset masters. If you can't, then you are not quite such a good operator as you might be.

Having said that I must also say that the feel and layout of the controls is all important. Not too stiff and not too loose. Nice knobs, big enough to get hold of and positioned to fall comfortably under the hands. You can, if you wish, call this ergonomics. I would like to feel that it is also common sense.

Now this is not to say that the Duet level of board is all that is ever needed. There is a higher level (and a lower level). Perhaps the bigger the theatre and the grander the production then the more comprehensive the board must be in its facilities. But comprehensive facilities must not mean reduction of operating to button pushing without art or craft. The electronics must be made to serve the operator, not rule him. There are too many boards which are advertised as carrying out changes automatically but "with instant operator override". This is surely the wrong way round. The operator must be in control of the board. Extend the electronics and the facilities by all means, but it is probably better to extend the operator once in a while as well.

It is very easy for the engineer in his workshop to add another chip and at a stroke add another facility (and several hundred pounds). Whether this facility is either necessary or desirable is another matter.

"Lovable" is a term that was thrown around a few years back to describe what was then the latest in memory boards. Whether this is a good term I don't know, but I came across it again recently in a motoring column. Perhaps the analogy with cars is quite good. The vast majority of boards are easy enough to work and the vast majority of cars are easy enough to drive. But just as some cars — and perhaps motor cycles, lorries and railways engines as well — are a positive pleasure to drive, so some boards are a pleasure to operate. This is not the place to make lists but every operator will have his own list of veteran, vintage and modern models.

All lighting is eventually in the hands of the operator even if he only presses the button on cue. A good operator makes the lighting designer's job easier in rehearsal and the audience's enjoyment greater in performance. The concept of the virtuoso operator must not be lost in a welter of technology. Lighting controls must be made to help the operator and operators must be encouraged to develop their skills. The operator, though, is not just an assistant to the designer but an integral part of the accompaniment to the show and must be recognised and treated as such.

This idea applies both to the operator handling lighting designed by another and also to the designer-operator into both of which classes I fall. There is an enjoyment, which cannot be explained, in performing changes accurately as an accompaniment to a performance. This is one of the two reasons for being an operator. (The other, and usually lesser, reason is the money.) Most people in the business are there because they have been bitten by the bug and it seems a pity in the case of operators that those who design the equipment that we use often seem to have little idea of "working a show" — lighting as an accompaniment to a performance but only of the task of memorising and combining sets of numbers.

The numbers are necessary but only as a means to an end. Lighting is not about 116, 120, 121-123, 4 3½ F and is certainly not about "256 discrete steps from 0 to full" and even less about "eight bit fade processing". Lighting is about patterns of light and shade wrapped round performances and altered to assist those performances. The board operator is the artist/craftsman who should ensure that the lighting does this and the control should assist him to do this with the greatest ease.

Now for the ringing tones! "Manufacturers look closely at your products, ask operators how much they enjoy working your boards. Don't ask how easy they are to work, the two are not the same thing. Examine the facilities they offer, are they needed or are they simply answers looking for problems? Concentrate less perhaps on sophisticated timing systems and devices to remember them and more on the provision of submasters and simple means of niggling with states. Pay less attention to sophisticated displays and more to making the knobs nice to work and panel layouts which position the controls where they are easily and comfortably operated."

Having said all that, I must now say, equally grandly: "Operators, remember that you are artists and craftsmen and all that". You don't need a super sophisticated board to perform sophisticated lighting changes. What you do need is method and a sense of timing and rhythm. Remember that the most sensitive infinitely variable speed control with both negative and positive feedback is formed by a human operator watching the stage and moving controls with his hands and feet.

"Duet — a pretty simple memory board as they go".

"DOTTING THE EYES"

by Graham Walne

Graham Walne combines a career as managing director of Leisureplan Theatre Consultants with work as a designer and author. He has designed the lighting for nearly 300 productions which includes nine royal galas and seasons for the Royal Academy of Dramatic Art and the Royal Academy of Music. His first book 'Sound for Theatres' will be published this autumn.

WHATEVER else it may be, theatre is most certainly a tableau vivant, a constantly changing composition of movement, sounds and pictures. The aim of the composition is to ensure that the audience leave the theatre happy, thoughtful or disturbed. Whatever the message, the name of the game is communication and the currency of communication is the word.

Most actors would tell you that their most important tool is their voice. This is their means of expression just as a dancer uses his agility to communicate with his body. But for any performer, visibility must play a part too; we are often told that an unlit actor cannot be heard. Taken literally this is clearly nonsense since there is no interdependance between the images which eye and ear send to the brain. Certainly an unlit actor unnerves an audience since they require a focus for their attention, without that focus their attention wanders and the words might just as well stay in the darkness.

So a lighting man must light the performance. But how? Are we to consider that merely to establish his shape is sufficient? Is it enough to locate him in the context of the scenery that surrounds him? No, an actor should not be treated as though he was just another piece of scenery, albeit one that moves about. An actor has life, is giving life to the author's words, and the lighting man must give him some life too. We need to ensure that the audience can see the actor's eyes; they need to see that sparkle that cuts down the distances of the theatre and makes each member of the audience feel that for that precise moment the actor was talking to them alone. I call this process 'dotting the eyes'.

All spotlights should be very carefully aimed, a haphazard focusing session produces haphazard results, and whilst it is possible to achieve good results from impromptu focusing since all three dimensional elements are present, some two dimensional work on the drawing board beforehand is an essential insurance policy. Light will only get into the actor's eyes if it is aimed properly, in general the angle of light to the horizontal needs to be closer to the horizontal than to the vertical, say at an angle of at most 35°, beyond this the steeper angles tend to lose the eyes and dark shadows appear. I think this is a task which is becoming more and more difficult since sets appear to be getting more and more cavernous and do not afford the lighting man ideal positions. Some new theatres suffer from the same problem.

Whatever the angle of the light, some of it will pass beyond the actor and hit either floor, scenery or wings. If these are light in colour both the stray light and the actor's shadow might be disturbing to an audience so the lighting man has to compromise on his angles to cut down this distraction. Set designers please note. It is an unfortunate habit of our profession that the lighting man is usually engaged after the set has been designed and so he is presented with the set model as a fait accompli. If the lighting man could be involved in the early stages of the set's creation then the overall picture has to benefit. Of course some lucky lighting men are involved from stage one and can command almost unlimited resources; these people are the flagships of our profession and respect rather than jealously should be our response. But some recognition is also due to those who, by comparison, have hardly any equipment. For these people every spotlight has to count. Let us look at ways in which two or three spotlights can really dot the eyes.

The first step of course, is to divide the stage into acting areas. Each area should be man-sized. I like to think in terms of 6' × 6' modules which tends to be the area of stage most spots will light when best placed. If the set has furniture then the areas will relate to the locations of the furniture with other areas for the connecting spaces. If there is no actual set or anchor for our attention then the stage is divided into the neat modules each 6' × 6'.

We do not attempt to light the whole stage at once, but rather treat each area one at a time. The approach to all the areas, in as much as direction of the light and colour are concerned, is the same so that the overall picture has some consistency and relates to the mood we are trying to create. We calculate the best angles of light for each area and mark the locations of the spots down on the plan, then repeat the process for the next area. Inevitably some compromises have to be made, perhaps the best angle cannot be achieved everywhere because the positions are just not available. Perhaps some areas have to make do with fewer spots because there just aren't that many available; in these cases try and position these areas to the sides and rear of the stage where the action is unlikely to be vital.

Establish the focus of theatre at the eye — nothing else we possess can communicate so much, so quickly, so directly.

FIG 1

FIG 2

FIG 3

FIG 4

FIG 5

FIG 6

FIG 7

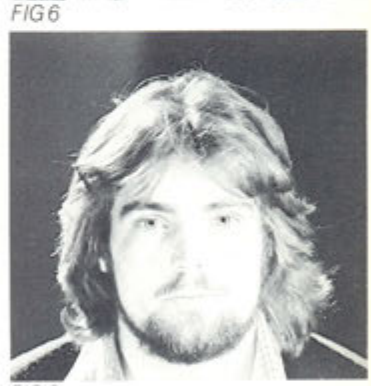


FIG 8

FIG ONE
Here the actor is lit by two spotlights about 45° either side of the centre line and about 45° elevation from the horizontal. This is a good basic position but the light is at too steep an angle for the actor's eyes to be clearly seen. In order to achieve this it is necessary to lower the lights to a shallower angle as shown in the next photo.

FIG TWO
Here the same two 23's are still at 45° either side of the centre line but now they have been lowered to about 35° elevation from the horizontal. The eyes can now be clearly seen. Of course the shallower the angle, the more light passes beyond the actor onto the set, if this is undesirable then some compromise must be reached.

FIG THREE
In this photograph the two spotlights have been left at an angle of 35° to the horizontal but now they have been moved round to the side of the actor so that they actually face each other. This is known as crosslight and it is the best way to light any kind of movement on stage since the whole figure is very crisply lit. For ballet several tiers of crosslights are used, one for the face, one for the body and another for the feet. But again the light continues beyond the actor and it is vital here that the sides of the stage are masked with black or at least very dark, material and positioned on and off stage so that the light disappears into the wings. This light is very dramatic and the actor's eyes are still visible but for some uses the dark line down the centre of the face would be unsatisfactory.

FIG FOUR
Here the set-up is exactly as for photograph three but a third 23 has now been added in front on the centre line at 35° to the horizontal. This adds light to kill the dark centre line on the actors face; this kind of light is known as fill light.

It is important to appreciate that all the spotlights here are at full intensity, a wide variety of effects can be achieved with some dimming.

certainly the centre fill light could be lower so that the dark patch was still not a problem but so that the crosslights still provided a good crisp figure. More interest can be added with the provision of different colours from different directions. In photos three and four a 17 steel blue is hitting the actor's left and a 3 straw is hitting his right. The contrast need not be so dramatic but could be two warm colours or two cold colours dependant upon what the play needs.

FIG FIVE

In this photograph the two main spots are back in their position of photo two, 45° either side of centre and 35° elevation from the horizontal, one difference from photo two is that the spots are now coloured, 17 steel blue from actor's left and 3 straw from actor's right, the contrast can be clearly seen on the face. But the main feature of this photograph by comparison with the others is the addition of a light from behind the actor pointing towards the stage front, this is known as backlight and it is clear how it can provide a crisp outline and bring the actor out from his background.

FIG SIX

The colour of the backlight is important. Cool colours tend to recede whilst warm colours project so that the contrast of the backlight colour to the face colour can create a different ambience if it is changed from a blue (17 steel) as in photo five, to a warm, 47 apricot, as in photo six.

As in all these cases the light continues beyond the actor, in the case of backlight, onto the floor and this needs to be taken into account. A shallow angle to the backlight would hit more people but might spill into the audience whereas a steeper angle would be more confined and more overhead. Fresnels like the 743 are very useful for backlight since their wide beam angle allows them to cover much of the stage with light. This is useful if spotlights are scarce and specific backlights cannot be afforded.

FIG SEVEN

These photos are posed of course, and actors rarely stand straight on to the audience. This photo shows the effectiveness of angling the backlight diagonally across the stage so that the actor can turn into it. In this case the backlight is dealing with the actor's right side so that the only other light on him here is the front left light. If desired the front right light could be dimmed so that that side of his face would not be in total darkness once he turned back to the front again. The colour balance here suggests that the moon is upstage right and his left side is lit by the warm light of a lantern or spill from a nearby house.

FIG EIGHT

The lights here are basically as in photo seven, a backlight from actor's right and a front light from actor's left. But another spot is added from the front right, this time a small spot concealed in the footlight trough or in the orchestra pit. Footlights are not popular but some small and low light from below, aimed here by a spot, can be helpful in overcoming deep shadows and making the eyes clearly visible. This is especially useful where the actor is working with lights on tables from candles or other practicals. The footlight position is often forgotten but it can still be useful if care is taken with the angle, again the stray light carries on up into the flys, and with the level of the light.

Photograph of Graham Walne by Peter Simkin, photographs of Chris Stevens by Guy Dickens

by Percy Corry

Percy Corry, as well as having been for many years Strand's Northern Manager, was Managing Director of Watts & Corry, the Manchester scenic manufacturing company now part of Trident Television. For many years he was a very active amateur actor and producer, with an especial knowledge of, and interest in the plays of George Bernard Shaw.

He has been a contributor to Tabs since its inception in 1937, and it would have been unthinkable to restart our magazine without his contribution.

Looking Backwards

IN the sere and yellow period Stevenson's suggestion that to travel hopefully is better than to arrive has a chastening significance. Deteriorated vision has then contracted the horizon unless, of course, one is optimistic about what, if anything, may be a vista beyond the veil. To the doubter looking backwards becomes compulsive, irritating to those associates who are still young enough to be eager to explore distant peaks.

The reincarnation of TABS, now more glossy and colourful, produced for an extended audience, provokes nostalgic recollection of its progression from infancy in 1937 to the middle age of 1974 when Fred Bentham retired and TABS changed in size, costume and identity but not in name or purpose. When it was born the professional theatre was suffering from its loss to the cinema of its function of entertaining the masses. Hundreds of old provincial theatres had either closed down completely or had installed film projectors and screens to delay the *coup de grace* delivered by the purpose-built and sumptuously furnished Super Cinemas. But, as we know, old soldiers never die: when ubiquitous theatre faded away the deprived lovers of live entertainment created their own amateur companies in increasing numbers. Strand Electric, with a sound social and commercial instinct, decided that the amateurs needed some expert guidance. TABS was created with the proclaimed purpose of promoting the interests of the amateurs who welcomed the journal with a flood of applications for the free copies offered. In 1957 when Hugh Cotterill vacated the editorial chair for occupation by Fred Bentham the circulation per issue had passed the ten thousand mark and was subsequently more than doubled: overseas distribution became quite considerable.

Publication was suspended in 1939 because of world events: it returned seven years later after peace broke out. The first post-war issue (Vol.4 No.1 September 1946) included a two-page description of one of the projects in which we had adapted theatre lighting techniques in the design of special trainers for Royal Navy and Royal Air Force personnel. It was a grateful deliverance, after years of arduous concentration on the processes of mass destruction, again to tackle creative problems of mass entertainment. In the resurgent TABS Hugh Cotterill said in his editorial: "The journal is published primarily for the amateur groups and we shall give news of developments in stage lighting and technique with occasional glimpses of past history. To widen the appeal, however, we propose to include items of interest connected with the Theatre generally but not necessarily concerning with lighting". Curiously enough it was not until the issue of December 1959 (Vol.17 No.3) that the word amateur was omitted from the statement "Published by Strand Electric in the interests of the Amateur Theatre". By that time the rejuvenated professional theatre was demanding much greater attention. Even when the Western world had been convinced that Britain was due for a drubbing there was in this country a deal of optimistic planning for the brave new world with its numerous community theatres that would emerge after our victory.

During the war there had been a significant revolution in the relationships of the establishment to the entertainment business. In the 1914/18 war there had been officially organised morale-boosting entertainment for the troops but not for the less directly involved civilians who were then well catered for by the commercial theatre. In 1939/45 the civilians were also candidates for the boosting of morale. The Council for the Encouragement of Music and the Arts (CEMA for short) was created and subsidised. Training Camps and industrial canteens had to provide equipped stages for organised visits of entertainers. Touring companies were subsidised, enabling them to visit cities, towns and villages all over the country. When the guns were silent and bombs ceased to fall C.E.M.A. had achieved some permanence of purpose and became the Arts Council of Great Britain for the existence of which contemporary professional theatre has cause to be grateful.

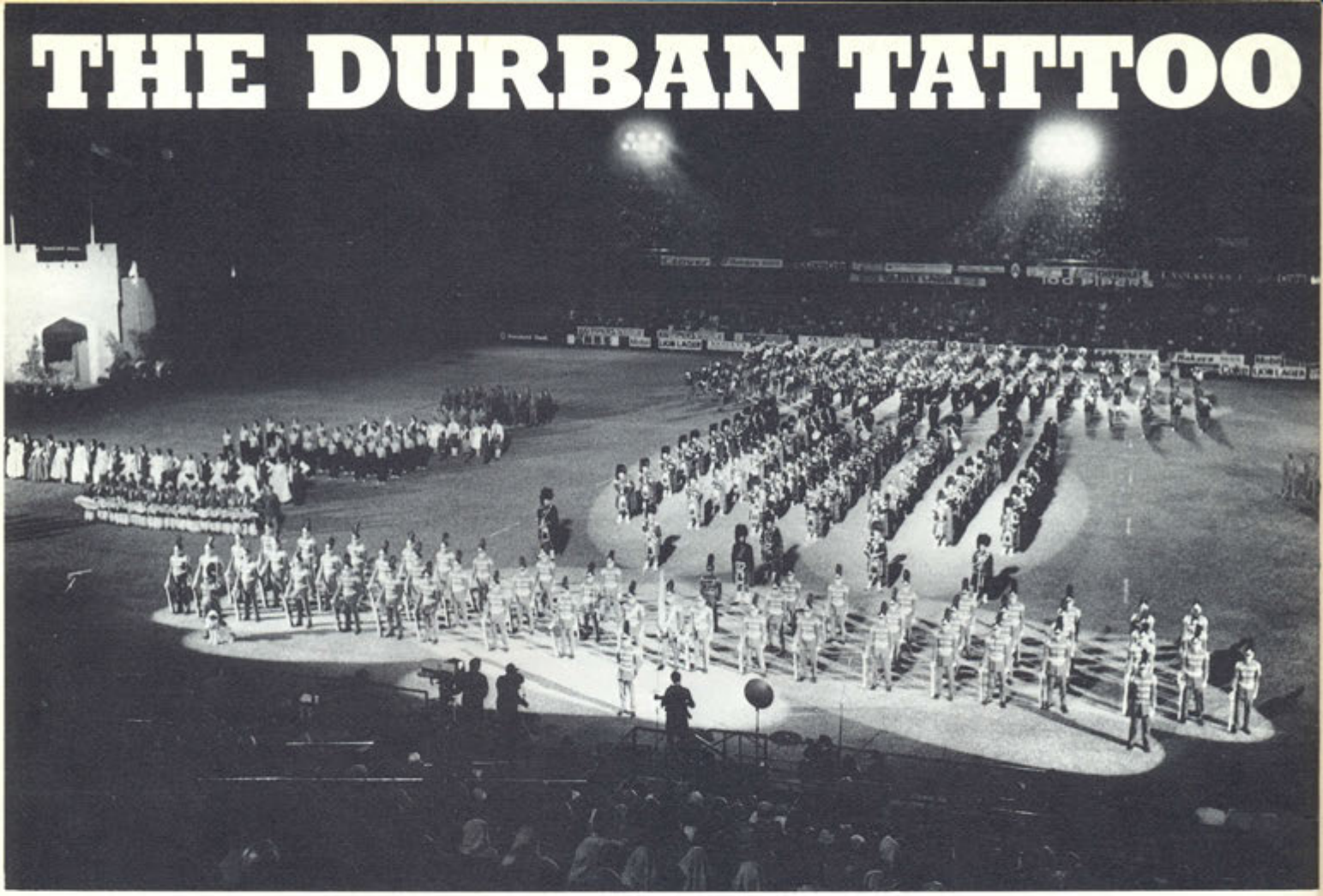
For several years after the war any building of new theatres had to be delayed: houses and schools had precedence in the use of scarce materials and money. It had become official policy to provide stages in new schools but most of the architects and others responsible for the planning had little, if any, knowledge of the facilities required. This was too big a subject to be explored in TABS but it was agreed with the editor that it should be dealt with separately and comprehensively. In 1949 we published a hard-backed book of 112 pages entitled STAGE PLANNING. Three thousand copies were printed and issued free to architects and other officials engaged in the planning of schools etc: the limited remainder copies were sold at five shillings each. In reviewing the book the Architects Journal said: "It is an interesting commentary on the literature of the subject that the booklet is not merely the best of its kind but one of the very few books obtainable". An abridged version of 28 pages was subsequently issued free to all applicants. When a revised seventh edition was published in 1965 over 60,000 copies had been circulated. This TABS ancillary was followed by many others including SOME ADVICE ON STAGE LIGHTING, STAGE LIGHTING ON A SHOESTRING, and PLANNING FOR NEW FORMS OF THEATRE. In 1964 the Jubilee of Strand Electric was celebrated by a special issue of TABS which gave a potted history of the firm in 119 pages. In 1970 another special issue, a profusely illustrated summary of seventy-eight NEW THEATRES IN BRITAIN with a 24 page typically Bentham discourse on Designing a Theatre.

Inevitably the quality, form and scope of theatre are reflections of the period of existence and TABS, always an expression of theatre of changing time, has been appropriately versatile. There have been considerable changes since 1937. Then, the proscenium stage was almost universal: now there is much variation of form and size, open and enclosed. Then, a theatre built and maintained by the community was a rarity in this country: now it is commonplace. Then, a stage lighting installation was quite typical if it had four compartment battens and half-a-dozen F.O.H. spots: now the battens have all but disappeared and the number of spots installed could be a hundred or two. Then, chips were merely a succulent adjunct to fried battered fish (or possibly gambling tokens): now they are a miraculous miniature menace to many laborious activities, permitting compression of lighting control with finger-tip operation of group variations of light intensities from numerous lanterns (all right, luminaires if you insist). Then, the TABS readership was rather parochial: now it is extensively international. Then, television was a laboratory dream: now it is firmly established as being *inter alia* a universal form of theatre, recognised as such by TABS, which will certainly continue to be a faithful servant of theatre in all its forms.

The current A4 size, much favoured by some, is personally regretted. The original intimate size adapted perfectly to binding into the eight volumes that fit snugly into my bookcase, readily available for random reference. If the A4 size ever achieves bound volume status it would have to be a product for the coffee table, perhaps more decoratively impressive but less lovable and less of a temptation to such a collector as Ed Kook of New York who warmed the hearts of Fred Bentham and me when we visited America in 1961 by proudly displaying his neatly bound volumes of all the earlier issues of TABS.

As an erstwhile hopeful traveller who has had a lot of pleasure in helping to transport TABS, making many good friends en route but now, alas, resting by the wayside, I shall watch its future conducted tours with avuncular pride modified, of course, by critical appraisal. Maybe Stevenson should have stressed that when travel is a communal affair individuals will often be passed on the road and arrival may be permanently distant: the milestones (definitely not kilometric tablets) merely record the pilgrims' collective progress.

THE DURBAN TATTOO



STRAND SOUND

by John Davies,
Manager,
Rank Strand Sound

THROUGHOUT the history of technical Theatre good communications has been one of the important factors in any successful production.

This was rather more easily achieved when all technical operations were carried out backstage. The Stage Manager could talk to the Switchboard Operator, usually next to him or above him, who in turn could communicate with the Flyman, or signal by various means to the other members of the crew.

As greater sophistication in lighting and sound came into being, the control desks are usually re-sited to the Front of House.

As techniques, facilities and the increase in the complexity of today's productions continue the one aspect of communication which has not always been given the same consideration as other areas is the Stage Manager's Talk Back system.

It is not uncommon to find Theatres with very good lighting, sound and flying equipment but which still use very crude means of technical communications which could result in the performance being affected.

It can be argued that a good crew can follow plots with only a cue light system, or cue light and paging speaker. This is true until something unexpected happens and the instant audio communication is not available.

The use of a Talk Back system should obviously not be considered only when something "goes wrong". Many theatres find uses for the system they had not even considered before it was installed.

For example, when trimming dimmers, the Board Operator sitting in the Control Room can instruct the person in the Dimmer Room who wears a Headset/Boom microphone and Belt Pack thus leaving "hands free" operation. Communication between the Lighting Director and Lighting Controller during technical rehearsals is extremely important with modern day productions.

Obviously the type of talk back units vary depending on their application and typical uses. Types available from us are as follows:

Master Station.

MASTER STATION

This Dual Channel unit can be free standing or rack mounted and enables the Stage Manager to communicate with either or both Channels.

The unit also allows for a separate signal, such as the output from the Show Relay Amplifier or Sound Console to be blended with the communications.

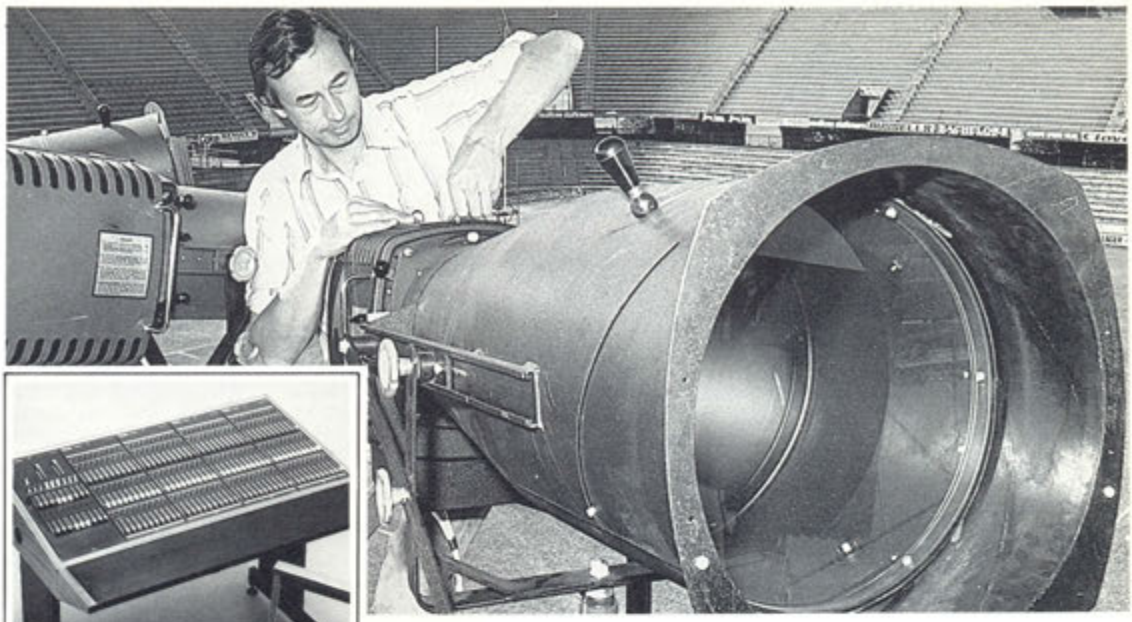
This is particularly useful where Control Rooms are sealed off from the direct auditorium sound.

OUTSTATIONS

As many Sound Control Rooms are open to the Auditorium a Headset unit is more commonly used. Where the Control Room can be used either 'open' or 'sealed', then the headset type of system is the obvious choice.

However, other units are available which enables the intercom signal to be mixed into the Mixer Monitoring System and heard on the Control Room monitor loudspeakers or

by Ron Knight,
Regional Manager for Natal,
A.C.F. Merchandise



Inset: A 40-way AMC desk — a big brother of the control referred to by Ron Knight.

THE Rothman's July Handicap, South Africa's Derby, has always marked the start of South Africa's mid-winter holiday. Thousands of holidaymakers trek from the cold Transvaal highveld winter to the relative warmth of the Natal Coast. The Durban Publicity Association promotes a wide variety of entertainments including a surfing competition and an arts festival to attract tourists during this period, filling the hotels and benefiting business generally.

Last year saw the launching of a major new enterprise in the shape of the first Durban Military Tattoo and Rank Strand was there. The Tattoo was staged at King's Park Rugby Stadium where most of Natal's home provincial matches are played. With one end blanked off by a castle backdrop, this left a seating capacity of 17,500.

The area to be lit was considerably larger than that of the Edinburgh Tattoo on which the Durban Tattoo was inevitably modelled. In fact, Douglas Spratt and a small team from the Edinburgh Tattoo came over to assist in producing the first shows. For the opening season, spotlighting consisted of fourteen Pattern 765's and four narrow beam 765N's operated by army signallers whose skill improved with every performance. Area lighting was provided by thirty 5000W Pollux spotlights and the castle was lit by sixty Par 38's all controlled by a 30 channel AMC which, did the job perfectly.

The 1979 Tattoo programme included massed pipes and drums, a mock terrorist battle, Zulu and Highland dancing, drill and P.T. displays and a field gun exercise, concluding with an inspiring display by one of the largest massed bands ever assembled anywhere. The Tattoo was such a success that there were immediate offers by other South African cities to stage the next one.

However, the Durban Publicity Association had already decided to establish the Tattoo as an annual event for the Durban July season.

For this year's Tattoo, an additional four 765's, and two 765N's and four Polluxs were added to complete the full complement and give that extra punch to the lighting. The first overseas item, the 74 strong British Columbia Beefeater Band from Vancouver, Canada, was introduced in another varied programme which also included an outstanding display of precision P.T. by the Hammarskrall South African Police Team.

Throughout the Tattoo a technician from Strand's local agents, A.C.F. Merchandise, stood by, but the lighting equipment proved very reliable and his duties were largely limited to changing a few CSI's — the 5000W CP29's seem to go on forever!

The Durban Tattoo looks set to become an established annual event with increasing international participation. The lighting, so essentail to the spectacle, has opened another display window for Rank Strand products in Natal.

Neville Oosthuizen, one of ACF's lighting engineers, assembles and checks one of the mighty 765N's at Kings Park, Durban.

D TALKS BACK

COMMUNICATION IN THEATRES

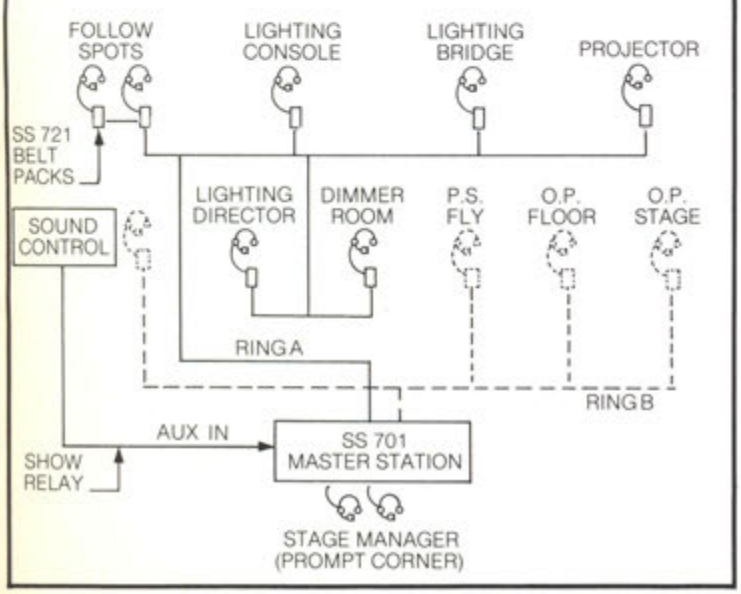
monitor headsets. This consequently reduces the number of headsets required in the Control Room.

Where the lighting control position is Front of House a good talk back system can prove invaluable.

A number of Board Operators frown on the constant use of headsets through long productions so that a loudspeaker unit with headset socket is usually the best choice. Two way communication can still be achieved by placing the headset strategically on the desk without the need for a Push to Talk button.

Similar units can also be used in the fly floor and front of house follow spot and projection room position.

BLOCK DIAGRAM
OF POSSIBLE
STRAND SOUND INTERCOM SYSTEM



TYPE OF EQUIPMENT AVAILABLE

Cost effectiveness has been the prime consideration when designing the Strandsound Intercom System, and this has extended to the type of cable required to interconnect the various units.

We now standardise on Twin Screen microphone cable which offers these advantages:

The existing microphone runs can be used to "patch" the Intercom to various parts of the building.

The cable is relatively inexpensive and most Auditoria have adequate supply of extension cables.

Installation costs are kept to a minimum and can be carried out by most Theatre Operators.

I hope this very brief note on some of the factors which surround the choice of a theatre communication system gives an idea of the range and variety of the products offered by Strandsound. Obviously, we are always delighted to discuss any particular project, at home or overseas.

We offer intercom systems which range from the sophistication and scope of the Strandsound installation currently under manufacture at Brentford for the Barbican to the smallest and best value off-the-shelf village hall systems. They are all designed for their particular purpose, and are all backed by Strandsound service and spares.

Stage Manager's Desk, Pavillion Theatre, Sandown, I.O.W.

20 YEARS ON

A REVIEW OF THE ABTT BY ITS CHAIRMAN

by Anthony Easterbrook

Born 1923 and educated at St. Andrews and Union College, Shenectady and at the Old Vic Theatre School. Served in many regional theatres, when they were known as Reps. Company Manager of Sadler's Wells Theatre Ballet: Stage Manager at Sadler's Wells Opera and later Production Manager and Stage Director there for 13 years. General Manager of the National Theatre for six years during the construction and planning of the South Bank Theatres. Now a partner in John Wyckham Associates, Theatre Consultants. Has done much work on the restoration of the late Nineteenth Century theatres in the U.K. — Grand Blackpool, Grand Opera House Belfast, Palace Manchester, as well as a number of new ones — Eden Court Inverness, Festival Theatre Pitlochry, Civic Hall Dartford, together with a number of smaller multi purpose centres — Sutton, Epson, Redhill, Omagh, Enniskillen. Currently at work on a new theatre for Londonderry and the restoration and updating of H.M. Theatre, Aberdeen. Honorary Secretary of the Society of Theatre Consultants. Chairman of the Association of British Theatre Technicians.

IT was in the old King Street offices of Strand whence came the earlier numbers of Tabs, that the A.B.T.T. first saw light of day. Both Tabs and the A.B.T.T. had the same basic idea, that of informing the technician in the theatre. Formed in 1961 it had from its inception the principle that it was to be an association of those whose job it was to serve the actor from a technical point of view. It is a principle from which the Association has never deviated. Now nearly twenty years old, the A.B.T.T. has grown immensely in numbers from the select few who first decided that such a body was needed in British theatre. In growing it has increased its power and is now highly regarded as an organisation to be consulted on almost any facet of a technical nature in the theatre. It took a major step forward in 1975 when it became incorporated as a non-profit distributing company limited by guarantee of its members and it is currently examining the whole nature of its membership so as to ensure that in the years to come it will be regarded as important in the theatrical profession as the R.I.B.A. and other similar bodies are in their particular fields.

Recently the Association acquired its own premises in Great Pulteney Street in Soho, London. These premises contain a small lecture theatre, offices, the library of the A.B.T.T., a printing room and sundry other delights. The achievement of such premises was a cause of great satisfaction among many members for, since the loss of the Strand theatre in King Street in which all the important meetings of the A.B.T.T. had taken place since 1961, it had become very difficult indeed to hold meetings of the Association with any certainty of continuity. Redecorated and altered by a small body of members and furnished and equipped by a large number of theatrical contractors, Gt. Pulteney Street has now become a very satisfactory headquarters of the organisation and the place where most of its committees can meet and where its frequent members meetings are easily contained.

What does the Association do, and how does it work? In a word, it educates. It educates the technician in the theatre, it hopes to educate the public in the technical side of the theatre and it trains people to enter the theatre on the technical side. It operates through a number of technical committees, each dealing with a particular aspect of the theatre. The biggest spender of these committees is the Training Committee.

This is a body of A.B.T.T. members who plan and organise training for those who wish to enter the theatre or further training for those already working in the theatre. It carries out its work with the aid of a grant from the Arts Council of Great Britain (which supports the A.B.T.T. generally) and the training work it does is done on behalf of the Arts Council. One of the earliest courses or series of courses was for theatre electricians. Many other courses now take place, both full time and part time, both long courses and short ones. Almost any subject of theatrical technique is encompassed and it is possible to arrange special one off courses of almost any duration in specialised subjects. It is only necessary for the need to be stated and some form of education can be arranged. Some of this training is, of course, carried out in recognised colleges and polytechnics but always the theatre is at the heart of the training. Some courses rely on the trainees spending all their time in a particular theatre in which they can study their chosen subject, in others the work is done both in theatres and in schools. The intention is to combine the theoretical and the practical. A number of bursaries are almost always available which can be given to individuals to enable them to pursue a special study away from home, indeed even out of the country. It is fair to say that there is almost no part of theatrical technique which cannot be the subject of training by the A.B.T.T. and the examination of a typical years training would reveal that almost all subjects are covered in one way or another. It should be made clear also, that training is not confined to members of the Association. It is open to any who desire it and who can pass the very simple basic requirements. The A.B.T.T. will arrange that technicians from small theatres can visit, work and study in larger theatres if necessary, thus allowing the larger theatres (who very often have superior equipment and staffing levels) to pass on some of their expertise to the smaller ones. The whole object of the Training Committee is to improve the standard of the technician in British theatre and, thereby, improve the theatre as a whole.

There are committees dealing with Lighting, Sound, Materials and Safety; with Management, Theatre Archeology and Publications. Each examines continually the state of theatre in its specialised field and comments and informs in that field. Codes of practice are drawn up leading to improved and safer techniques in the uses of, for example, pyrotechnics and electrical musical instruments. Recommendations are made regarding wiring for sound equipment, for the levels of illumination in working areas backstage and for many other items.

Perhaps one of the most well known committees is also one of the oldest. The Theatre Planning Committee meets from time to time to examine plans of proposed new theatres or conversions of existing ones. It looks at suggestions made to convert churches into theatres or halls into arts centres. It is quite certain that meetings of this committee, at many of which the architects of the schemes are present, produce speaking as plain and as forceful as can be heard anywhere. It is equally certain that such plain speaking has frequently prevented a theatrical disaster or encouraged and improved a good scheme to the benefit of the community as a whole. The early days of this committee gave birth to the idea of publishing a sort of manual of planning for theatres. Theatre Planning is one of the most used books within the profession and has set standards of theatre building which are universally respected.

Of course not all the Association's members are in the London area. Over the years regional branches of the A.B.T.T. have come into existence. Each region pursues its own pattern of meetings, operating on the loosest of control reins from Gt. Pulteney Street and each region helps to strengthen the ties between technicians in its own region and between the region and London. One of the most important duties of the Association is to keep in touch with its members for many of them will be unable to attend any meetings, either in London or elsewhere. To that end the A.B.T.T. publishes a Newsletter about every other month and a larger journal — Sightline — twice each year. The Newsletter is exactly what its name implies. It provides a news service for the benefit of members, it lists training opportunities, it comments on items of particular interest to technicians and reports on new products and processes. It is the principal means whereby the members of the Association are kept in touch with each other and though it rarely seems to attract much correspondence arising out of its articles, it is undoubtedly widely read throughout the country. Sightline is avowedly different from the Newsletter. The latter is determinedly ephemeral whereas Sightline is intended to comment in greater depth on matters theatrical. It reviews new or refurbished theatres, it contains learned articles by eminent practitioners of theatre and less learned ones by jesters. It is intended to be read, marked and inwardly digested and, above all, kept. It is both instructive and interesting to read, not only when newly issued but to return to after a few years have passed. It is the Journal of the Association.

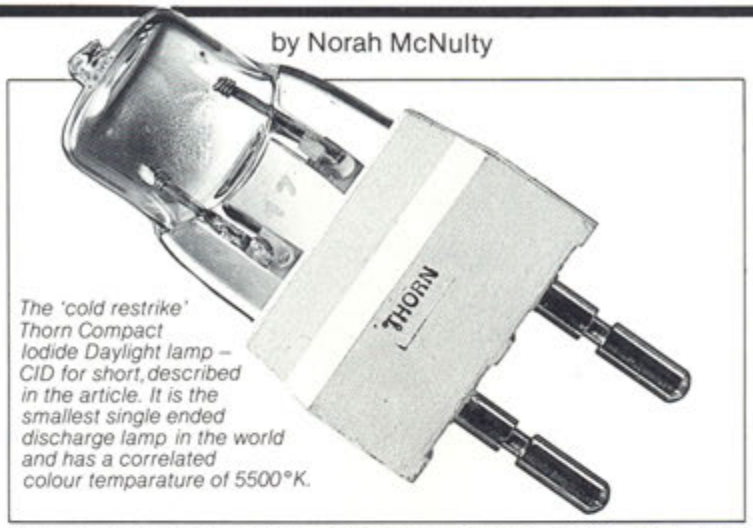
Lastly, it is worthwhile commenting on the regular members' meetings. Usually held in London on the last Friday of each month they vary enormously in content and, dare we say, in interest. Sometimes a learned evening on the subject of Acoustics and Noise Control in theatres, sometimes on developments in Sound or Lighting technology, sometimes again, on visits to foreign parts by members or groups. Some occasions have been provided by the Society of British Theatre Designers, a Society which is affiliated to the A.B.T.T. such that its members are also A.B.T.T. members. Some of the discussions at the end of a meeting organised by the designers have brought forth all the old mistrusts evident between technician and designer: but each side educates the other and each side seeks to serve the actor and improve the theatre and no-one leaves such a meeting with his prejudices completely intact. Some meetings, we dare reveal, are purely social for one of the delights which Gt. Pulteney Street contains is a bar fondly named 'B's bar' in memory of one who so capably looked after such important matters in the early days of the A.B.T.T. in King Street.

This, then is the Association. A complex, growing, group, insistent in its intention to drag the theatre to its technical feet, resolute in its desire to inform and educate, steadfast in its wish to remain a force which holds together that fabric of theatre which serves the actor in the pursuit of his art.

Oh, yes, you can join the A.B.T.T. The subscription is not ridiculous (unless ridiculously low). Write to The Executive Secretary, 4/7 Great Pulteney Street, London W1R 3DF and ask for details.

THE NEW THORN CID LAMP

by Norah McNulty



The 'cold restrike' Thorn Compact Iodide Daylight lamp – CID for short, described in the article. It is the smallest single ended discharge lamp in the world and has a correlated colour temparature of 5500°K.

THORN Lighting have recently introduced a new 1kW discharge lamp — the C.I.D. — which has application for both theatre and television use.

Firstly a little bit of background for readers. Some years ago I remember visiting a south coast theatre to witness a demonstration of a C.S.I. lamped Strand 765 Follow Spot. Alan Luxford their young local rep, Tubby Martin the local manager and Richard Harris struggled manfully to carry this fairly large lantern up to the projection room from where follow spots were operated — a trip that involved a vertical steel ladder twelve feet in height. Tubby and Richard looked at the problem and solved it by loading the lantern on to Alan's back!

After all this effort they turned on the 765 and the Pavillion electrician struck up his Stelmar High Intensity Arc follow spot, a grand machine of 1930 vintage.

They demonstrated by means of a light meter that the 765, running off a 13 amp cleaner's wall socket, was actually producing as much light on the stage as the Stelmar which, like all arcs, hissed, smoked like a bonfire and consumed 60 amps! However, the theatre technical staff took the view that because C.S.I. light was a 3,000 kelvin and the light from the arc was approximately 6,000 kelvin, the 765 "didn't look like a follow spot".

Thus the theatre continued with the cost of carbons, plus heavy electric current costs, and the need for skilled operators, while the C.S.I. 765 would have shown an operating saving on at least the first two of these.

Well, Thorn has now come up with the C.I.D. lamp, which has the effect of correcting the colour from your Strand Follow Spot, while keeping all the advantages of a discharge lamp compared to a carbon arc.

THE LAMP DESIGN

The C.I.D. lamp closely resembles the C.S.I. in appearance and is as inherently robust. The arc tube, which has a silica body, uses a single pinch to position the electrodes 14mm apart. It is filled with a combination of mercury with tin and indium halides, chosen to produce a spectrum closely resembling that of daylight at 5,500K. The halide dose is completely evaporated during lamp operations and this results in the electrical and photometric characteristics of the lamp being much less dependent on the temperature of the arc tube than is the case in lamps which use a saturated vapour pressure, as for example rare earth halide lamps.

Earlier attempts to produce a tin halide lamp have mainly concentrated on a lamp suitable for interior lighting with a large gap between the electrodes. Such lamps have suffered from arc bowing when operated in the horizontal position and arc instability or "snaking" when burnt vertically.

Earlier work has also shown that the tin halide lamp is sensitive to trace quantities of oxygen and hydrogen. However, as a result of the effort that has been concentrated on tin halide lamps over the past decade, improved processing techniques are used in the new range of C.I.D. lamps overcoming the problems of lamp construction.

CLAMP CONSTRUCTION

The lamp is housed in an unglazed ceramic cap with a Bi Pin base. This construction, of course, makes the lamp a direct replacement for the C.S.I. which was formerly the only lamp available for the Strand 765.

The C.I.D. stocked by Strand has the G.22 base and is known as the "Cold Start" lamp. This means that a time interval of two minutes needs to be left from the lamp being turned out to it being possible for it to restrike.

LUMEN MAINTENANCE AND COLOUR STABILITY

The nominal efficiency of the 1kW C.I.D. lamp is 70 lumens per Watt, and the maintenance throughout life is better than 90%.

When visiting the CISCO Exhibition of theatre equipment in Paris a few months ago I found a venerable 765 on Thorn's stand to demonstrate the new blue whitener effect from the C.I.D. lamp.

I was interested to see it used for this purpose but, dear Thorn, isn't it time you bought a new 765 as your demonstrator?

The new C.I.D. 1kW lamp is stocked at Strand U.K. depots list price of £82.78 while the C.S.I. also continues in stock list price of £52.68.

TABS TIPS

by Brian Legge

Brian Legge has been with Strand for many years. He can also boast a wealth of practical experience, both professional and amateur. He was, for example, an electrician at the London Coliseum for the run of 'Annie Get Your Gun' and can recall topping up the liquid dimmers, live, in the interval. Today he is deeply involved in the practical details of the next generation of luminaires.

Brian will be contributing a series of practical comments and tips on the theory and practise of entertainment lighting. These are primarily aimed at the amateur, but the professional may well find the odd bit of stimulation from reading them!

COLOUR MIXING

FOR 3-colour mixing the three primary colours of light are represented by Cinemoid No.6 Red, No.20 Deep Blue and No.39 Primary Green. The equivalents in high temperature Chromoid are Nos.106, 93 and 124. All of these primary colour filters have a low percentage transmission so most of the light from the three light sources never gets beyond the colour frame. In practical terms No.19 Dark Blue is usually substituted for Cinemoid No.20 so that only double wattage is necessary for the blue circuit; if high performance luminaires are used it is prudent to substitute No.24 Dark Green as Cinemoid No.39 passes no infra-red.

More practical colour filters for colour mixing all with much higher percentage transmission, are best described as desaturated primaries represented by Cinemoid No.64 Medium Red, No.32 Medium Blue, and No.22 Moss Green. Nos.164, 91 Middle Blue and 122 are the equivalents in Chromoid.

When mixing either primary or desaturated primary colours from the lighting control watch the red circuit very carefully as a very small change in intensity level will produce a significant change in the colour mix.

There are many other possible 3-colour combinations and many 2-colour combinations capable of considerable variety. For 2-colour mixing a pair of complementary colours are required — some of these are predictable but the subtle ones can be difficult to identify — one way is to look at tungsten light source (not daylight or fluorescent tube) through one colour in a reference book and interpose other colours in line of sight until what you see tends to grey or black.

PLUGTOPS AND FLEX-SOCKETS

REMEMBER that four, not three, connections are necessary to a 3-pin plugtop or flex-socket. There are three electrical connections Live, Neutral and Earth but equally important is the mechanical grip provided to secure the other sheath of the flexible cable to the body. If either the plug or flex-socket is rubberclad you should have threaded the cable through the cover first!

For Stage and Studio work always choose a flexible cable at least one conductor size greater than necessary for the current rating — the cost difference is negligible but the greater strength of both the insulation and the sheath is well worth having.

GOBO PROJECTION

THE textured light obtained by using a metallic pattern mask in the gate runners of a Profile Spot can be greatly enhanced by using a split colour filter, i.e. two different colours side by side, or one above the other, in the same colour frame.

LAMP REPLACEMENT

NEVER, but never, replace a lamp in a stage or studio luminaire without personally isolating the supply local to the luminaire, and remember that any lamp, but in particular Tungsten Halogen lamps, remain far too hot to handle for some minutes after failure.

COLOUR CALL

by Joe Davis

Joe Davis is the doyen of British theatre lighting designers, with a career which spans from 1926 up to today. He joined Strand Electric in 1926 and in 1932 he moved to C.B. Cochrane and Julian Wylie as Production Electrician. In 1935 he joined the H.M. Tennent organisation, receiving his first lighting credit for 'Blackbirds' in 1936.

He was Founder Chairman of the Society of British Theatre Lighting Designers, who after 10 years elected him as their Life President. He was elected first chairman of the newly formed A.B.T.T. Lighting Committee. This Committee, comprising the foremost lighting designers in the country, did valuable work probing the problems of equipment, and its use in the theatre, producing a basic lighting design and layout as a general guide for use in theatre lighting.

For 22 years he was personal lighting designer to Marlene Dietrich, travelling with her to most of the world's leading cities. His credits include 'Gypsy', 'Godspell', and the current London production of 'My Fair Lady' and over five hundred major productions, including Opera, classics, exhibitions and pageants. He is at present working on a new production of the National Theatre of 'Man & Superman' at the Olivier.
Mr Davis is a Director of T.S.L. Services Ltd.

GREEK Amphitheatre stages were sited to obtain the maximum dramatic impact for the climax of their tragedies. The sunsets and late evening light providing the colours, shadows, atmosphere and tragic mood the plays demanded. Great painters of the past with their genius and skills used paint and colour to create the masterpieces held in such respect today. In the modern theatre, colour and lighting instruments are used to continue and extend the painter's brush, enhancing the visual quality and emotional feeling of a scene.

My own introduction to colour was rather unorthodox, with little, if any reference to lighting the stage, or the spectrum of colour mixing. On joining Strand Electric in 1926, I reported for work to the tinsmith's shop, situated in Covent Garden on the top floor of No. 24 Floral Street. Bill Buckle was the shop foreman. A first-class craftsman and typical of the type of employee Strand were so fortunate to recruit in their formative years. He put me to work making metal colour frames for use with the Sunray battens and floats and for a limited range of spots and floods being manufactured at the time. Later, I was to graduate to help make the Patt.43, 1kW focus lantern, some of which are still around today.

Before the development and production of metal colour frames, linen bound millboard frames were supplied for most of the lighting apparatus in use at the time, except, perhaps, for the semi-circular "Panorama" flood which had special runners to accommodate either gelatine or coloured glass mediums. The Patt.24 500/1000 Watt stage flood had a similar arrangement, although millboard frames were also available for these lanterns.

The Sunray batten and floats had been designed and manufactured by Strand Electric around 1922 for Adrian Samoiloff, and, due to the attention and publicity the Samoiloff lighting effects aroused, Strand made use of it to advertise them and sell their new product. The Samoiloff effects were created by using complementary colours on specially painted sets and costumes. The artistes were also carefully made up to respond to the colours to be used in the show. It was possible to change the visual identity of an entire scene, and caused quite a sensation at the time. For too many years, a length of floats with four or five Sunray battens, and twelve Patt.43 or 45's (500 Watt version) as No.1 spot bar, and up to three or four perch spots a side became the standard rig replacing the open type dipped lamp battens and floats.

Before the innovation of the compartment type units, open type floats and battens were normally in use. The lamps for these battens and floats had to be dipped in a lacquer, to get the colour required. The method was to wash off the old lacquer in hot water, with either an acid solution or a strong solution of soda added. When clean and dry they were lamped into a long B.C. batten length, switched on and re-dipped. The whole procedure used to play havoc with the hands, as it was impossible to avoid some contact with the cleaning fluid.

The lamps in general use at the time were vacuum type. The temperature of which, when lit, was low enough to allow the lacquer to take, harden and not flake. With the introduction of the gas filled type lamp, the heat generated when lit caused the lacquer to flake and crack very quickly. Around 1928, the gelatine colour chart boasted about thirty colours, almost as many colours as were available in lacquer.

During a production, or change over period, the smell of the glue pot or size, on a gas ring usually under the stage, permeated the stage area. This was the era of hemp sets, the drum and shaft for lifting heavy french flats, dead front or open type switchboards, some of which controlled liquid pot dimmers. Intercom systems were almost non-existent; the method used to communicate when running a show was normally a light cue system. On a production the town cryer type voice-over was used, so on entering the stage door, the voice of command was heard over the noise of sawing wood and persistent hammering completing the production symphony. Then, as now, the two most difficult things to achieve in the theatre were and are a blackout and silence; communication has certainly improved, although I think theory and practice have not yet completely married.

Before the introduction of the comaprtment batten, a touring production would send it's colour call ahead to the next date, where it was normal practice for the electrical staff in that theatre to be paid four hours overtime to dip the lamps as per the company's call. This also helped to supplement the low basic wages paid to staff and technicians in those days in the provincial theatres.

In the 20's and early 30's there was little directional lighting. Usually the colours chosen for the battens and floats were selected to complement the colours that the scene painter had used on the sets, cloths, or gauzes. In more recent years the use of dyed or painted translucent cloths and the reversing of the battens, so that they become back lighting, added depth while giving real dramatic quality. For instance, Oliver Smith's designs for 'West Side Story'. This was, after all, basically the rediscovery of the early use of battens back to front.

The sets in those days were canvas covered and painted with great skill by the scenic artists of the day, to produce the set designer's wishes and ideas from models or painted sketches, Sky, sunlight, moonlight, day, night, shadows and the seasons, doors, cornices, and beams all painted in perspective looked real enough for the audience to feel they only had to reach out to touch them. It was difficult to discern the painted from the three dimensionally constructed part of a set.

In the post war period many new directors and designers rejected the painted canvas sets as old fashioned. By using new materials as they became available, metals or plastics and synthetic mouldings they introduced a fresh concept to the style of presentation in the design field. With this new trend the use of colour was rejected by some directors and lighting designers. Using some white light and very pale pastel shades they greatly enhanced the new style of design and brought into favour the multi-lantern rigs that we know today. The use of three dimensional sets changed the entire concept of theatre design, and presented the lighting designer with a challenge to use his skills to create exciting stage pictures, while the use of back lighting added depth and shape to these new design concepts.

In my early days as production electrician for Julian Wylie, who produced 'The Good Companions', 'The Gay Hussar' (I bet they wouldn't use this title today! Ed.), and the great C. B. Cochrane who gave us 'Evergreen' and 'Blackbirds', and with Komisarjevsky who designed 'Anthony & Cleopatra' and 'The Boy David', colour played an important part. Julian Wylie's favourite colour was No.17 Steel Blue; the Cochrane shows seemed to call for a lot of No.36 Surprise Pink, and 7-10 or 11 for the ladies. Strangely enough, quite a good deal of No.3 Straw for general lighting as daylight, both interior and exterior, and No.18 Blue was the favourite for moonlight. Komisarjevsky was very colour conscious, and perhaps bearing in mind the locations of the plays I did with him, he used primaries and mixed his colours with great skill, if perhaps over enthusiastically!

I believe that, as in every other profession, no matter how long one has been working, in any facet of the theatre one never stops learning, and the use of colour provides a constant challenge to the lighting designer. In later years, I had the good fortune to meet and work on many productions with that great American practitioner Jo Mielziner. He was a brilliant designer, and a gifted and warm person.

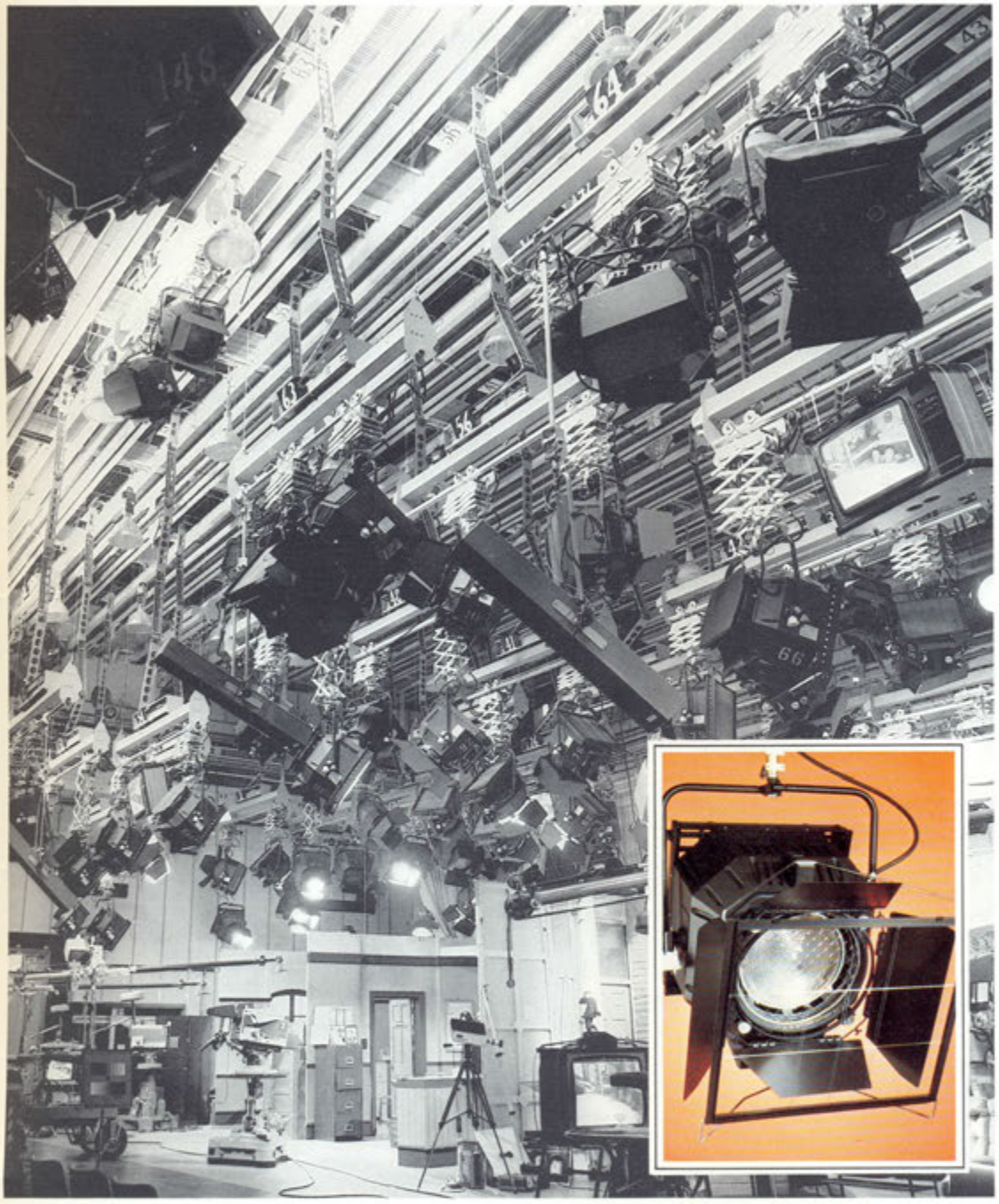
Jo was the first scene designer I worked with who, in his designs, always included detailed light plans, indicating the instruments and colours to be used. This was an integral part of his design; he spent many hours in his studio testing and selecting his colours; sometimes painting his design under the exact colours he intended to use finally in the theatre, and whenever possible, preferred to have complete artistic control of the production, sets designs, dresses and lighting.

I do not think it is possible to apply definite formulae for the use of colour in a production; it is too intangible a subject. So many varied factors and conditions influence the colours finally selected. Whenever possible, I spend time with the director and designer, trying various colours on the model, discussing the play and production and selecting the appropriate Cinemoid. Those selected reflect the style and key of the production; for instance, high key for comedy, cool tones to provide the atmosphere for drama or tragedy, while a musical requires a mixed palette. Time and care spent learning and understanding the production will be amply rewarded at the lighting rehearsal. A material will change its identity under stage lighting. That silver or gold dress will suddenly turn puce in the last rays of the setting sun. Normally, a cool tint, possibly No.17 or No.36, will help correct this disaster. A similar problem can occur with high intensity arc or C.S.I. follow spots. I usually select a neutralizing filter, say No.52, to soften the unflattering light these units produce, and then add colours as required. The neutralizer can be removed if using the blue range.

Whenever I worked with the late Miss Diana Wynyard, I had to go to her flat with a few baby spots before the production. She would try on all her stage dresses and make up, and agree the colours to be used to form the basis for the production. When working with the Lunts, on every Monday morning of a tour Alfred Lunt would call a special rehearsal to check the lighting for Miss Fontanne. She would walk through every position she used in the play while he sat in the front centre stalls. It was, for me, a nerve racking experience but it serves to indicate how careful the lighting designer has to be in choosing his colours. Marlene Dietrich was also inclined to be a little critical over this problem. I explained in an article in Tabs 1976, how I always lit her.

If colours are selected with care and understanding, and are used correctly the results can be very rewarding. They add to the visual impact of the scene and create the mood required. This principle applies whether the production has a multi-rig, or those twelve old Patt.43's. As with the painters of the past, know your palette, and I am not referring to a certain control system . . .

KAHOUTECK SEEN OVER CARDIFF



by the Editor

THANKS to the kind permission of the BBC, we are able to give you this very interesting and detailed photograph showing the new lighting rig installed in the BBC Cardiff Studios.

To many amateur theatre readers, the sheer volume and complexity of the rig will be amazing, while some continental television lighting director readers will say "What, no remote pan tilt and focus?" Styles do differ in lighting rigs around the world, and, these same lighting designers who turn to the item on page 11 showing the Quartzcolor remote P.T.F. luminaires used recently at Bayreuth will see that we do offer this facility.

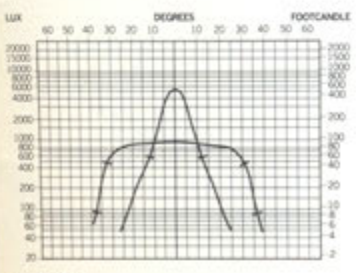
To return to Welsh Wales, the contract illustrated covered the following Strand equipment:

- 57 Strand QGR4 Groundrow Cyclorama Units
- 18 Strand QGR2 Groundrow Cyclorama Units
- 2 Strand 765 Follow Spots
- 10 Pollux 2.5/5kW pole operated Spotlights
- 30 Polaris 1kW pole operated Spotlights
- 10 Antares 2.5/5kW pole operated Spotlights
- 2 Vega 10kW pole operated Spotlights
- 180 Kahouteck 2.5/5kW Dual Source pole operated Luminaires.

The last unit on this list is the very latest weapon in the formidable armoury available to the lighting designer from the Strand/Quartzcolor arsenal.

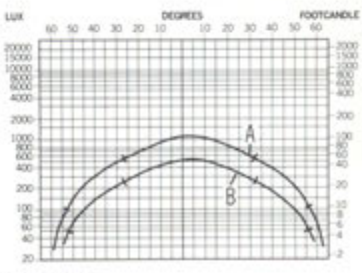
Kahouteck is the dual purpose luminaire which offers both a fresnel spot and soft light from one light source. This source is a twin filament lamp, which can be 1250/1250 Watts or 2500/2500 Watts available in voltages to suit world wide supplies. Either filament, or both together can be on. The switch as well as the pan tilt and focus controls are pole operated in this particular installation.

Kahouteck Performance Characteristics



Spot Side
Photocell distance: 10m
Lamp type: CP32, 2.5/5Kw, 3200K
Lens type: 350mm dia.

Spot:	LUX	5500—50%—11°
	F.C.	511—10%—22°
Flood:	LUX	750—50%—60°
	F.C.	84—10%—70°



Soft Side
With Egg Crate and Diffusion Scrim
Photocell distance: 5m
Lamp type: Cp32, 2.5/5Kw, 3200K

(A) Full Power:	LUX 650—50%—50°	
	F.C. 60—10%—110°	
(B) Half Power:	LUX 320—50%—50°	
	F.C. 29—10%—110°	

SPOTLIGHT Full Spot

Throw M.	Peak Intensity F.C.	LUX	Beam Diameter M.
6.1	1374	14781	1.07
9.14	612	6584	1.60
12.2	343	3695	2.14
15.24	220	2368	2.67
18.28	153	1646	3.20

SPOTLIGHT Full Flood

Throw M.	Peak Intensity F.C.	LUX	Beam Diameter M.
3.05	749	8064	3.52
4.57	334	8592	5.28
6.1	187	2016	7.04
7.62	120	1292	8.80
9.14	83	898	10.55

SOFTLIGHT Full Power with Scrim and Egg Crate

Throw M.	Peak Intensity F.C.	LUX	Beam Diameter M.
3.05	162	1747	2.84
4.88	63	680	4.55
6.1	41	437	5.69

SOFTLIGHT Half Power with Scrim and Egg Crate

Throw M.	Peak Intensity F.C.	LUX	Beam Diameter M.
3.05	80	860	2.84
4.88	31	335	4.55
6.1	20	215	5.69

Note: Increase of 30% in Softlight output is obtained without diffusion scrim.

EYE TO EYE EXHIBITION

NATIONAL PORTRAIT GALLERY EDINBURGH

by Peter Julien

Mauritian born designer Peter Julien commenced his design career as a set designer with BBC Television in London, where he worked on a wide variety of shows for eight years — everything from 'Top of the Pops' to Grand Opera.

There he met illustrator Sandra Archibald, his wife and partner and formed Julien Archibald Associates. Prior to 1974, when they moved to Edinburgh Peter had worked with various international companies, including Conran Associates.

The practice has undertaken design for hotels, offices and restaurants as well as their exhibition work, and the Hairdressing Salon illustrated on this page.

Peter says: "We like to give a personal and individual touch to all our projects and to match style to the client, the location and not least, the budget!"

SIX weeks before the start of the 1980 Edinburgh International Festival, I was approached by the National Portrait Gallery of Scotland (part of the National Galleries of Scotland) to design their new exhibition.

The exhibition had to open in time for the Festival on 17th August 1980 and last for the next ten months and would display their collection of portraits from the 15th century to the present day.

The exhibition, free to the public, consisted of 50 or so paintings including a priceless Gainsborough portrait of the Duke of Argyll together with some very old photographs. Entitled 'Eye to Eye' it illustrated the way people saw themselves, how they wanted to be portrayed — and how they really looked to the Artist and in the photographs.

The commercial application made of some well-known portraits i.e. Robert Burns used as a brand name for beer by Dryboroughs is one example.

Last, but not least, an everyman use of portraits in our domestic environment; Graduation photographs and portraits of friends etc . . .

The emphasis, therefore was clearly on the portraits which, given the budget, the shortage of time to design and realise the project, presented me with a challenge and I undertook the commission.

After my first site visit, where I was shown the space of 150 square metres, my heart sank. The National Portrait Gallery in Queen Street, Edinburgh, although designed originally as an Art Gallery, bore a great similarity to St. Pancras Station. It was built in the Gothic vogue of the day in red sandstone and had not only more gothic arches than I have ever seen outside a Dracula movie, but was positively Transylvanian — with 25ft high ceilings to boot. The first problem would be to see the paintings and hide the architecture. (Shame! St Pancras is the second finest building in London! Editor.)

Fortunately, by closing the curtains and stopping the daylight, one was then able to control the atmosphere.

The next problem was to provide sufficient wall-space to take the exhibits. In order to achieve this I had to disregard the existing wall spaces; all made to 10ft high and going at the most incredible angles. I decided to surround the room in a series of bays which could be adequately lit and would provide (as the exhibition consisted of a comparative look) the viewer with enough of a pause to take in the paintings and text.

The lighting then became of prime importance — and having used Rank Strand lighting previously and most effectively in the Irvine Rusk Hairdressing Salon in West Nile Street, Glasgow, I approached Arthur Rowley of Rank Strand in Glasgow for a similar installation on a grid of scaffolding tubes.

The tubes were internally wired, so as to give maximum impact to the paintings. We decided on the Patt.23 with tungsten halogen bulbs as the lights would be permanently dimmed . . . anyway the life of the bulbs would be greatly extended and therefore would save expense and inconvenience.

The added bonus was to discover the facilities of the Patt.23 with its internal iris and shutters . . . to be able to focus on the painting without featuring too much of the picture's frame.

I specified that the text should be read in ambient and refracted light. The print had to be large type; 25mm instead of the usual miniscule typewritten text that only the strong sighted can read.

This text was located on a 45 degree plinth which ran right round the exhibition which served as a directional and visual aid and more importantly, was seen by children who are too often neglected in exhibitions.

Matt black walls and a black carpet on the floor helped to complete the feeling of infinity. The interesting result was that the viewers actually commented on the pictures which, although they had exhibited in other parts of the gallery upstairs, had not until then been seen quite so prominently.

Pictured above is the Irving Rusk Hairdressing Salon in Hamilton, Lanarkshire. The specially white finished 123's make a very effective method of lighting. They have been fitted with PAR lamps, and observant readers will also note the special coiled cable to the units.

Photograph reproduced by courtesy of Mr Irvine Rusk and Mr Peter Julien.

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