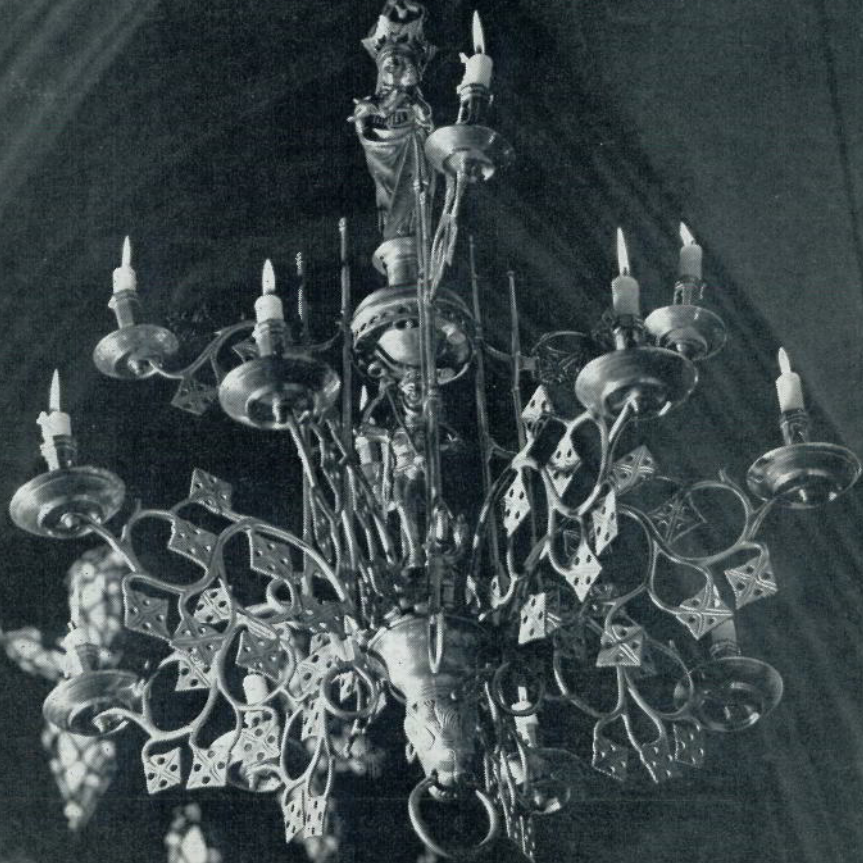




# TABS

MARCH 1969 VOL. 27 No. 1





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*Cover picture: Candelabra dated about 1460.  
The property of the Temple Church, now in  
Bristol Cathedral.*

### Self Preservation

Considerable concern attaches to the future of the larger theatres in the provinces. The kind of house that immediately comes to mind at the mention of the name "Howard & Wyndham". Not that they possess them all. Like certain parts of our railway system these houses cannot present an economic proposition and yet we cannot do without them. These houses when built were not built as a charity but as a business proposition born of a love for the theatre. According to Sir William Emrys Williams\* "there are . . . thirty-three . . . commercial, unsubsidised theatres . . . operating outside London". Nine have already come under municipal support which leaves 24 to worry about—at any rate last November. The biggest worry are the big houses, the ones capable of putting on tours of the National companies and big musicals in something approaching their full London glory. This is going to be increasingly difficult at the stage end when one day these (D.A.L.T.A.) companies get their new stages in their new theatres. At least at the moment they tour from like to like, Matcham to Matcham shall we say.

\*Speaking at the "Theatre 68" conference in the City of London; also see page 6.

Stage deficiencies would not in a number of cases be difficult to remedy were it not for the auditorium. Theatre people always begin their thinking at the stage end and theatre architects in the auditorium. (That is why we need the A.B.T.T. where they both talk to each other.)

The architect knows his new building will be judged by the audience's ability to see and hear. He also knows that people have been growing taller, they have longer legs. He doubts whether future generations will turn up regularly without being able to sit in comfort and drink, perhaps even eat, in comfort; nor is he alone in this thought. Thus when the preservation of some theatre, excellent in terms of the past, comes up there are head shakings. New foyers and other amenities can be added, but those auditoriums were built in the days of the first, second and third class citizens. The tight packed benches of the distant gallery were perfectly in key with the discomfort of third-class railway travel of the time or the draughty bus or tram, but after arriving at the theatre in your own comfortable car, are another matter. However, for special occasions most of us will tolerate almost anything. We will become footsore in the pushing crowds of an exhibition, or stand or queue for hours to watch a procession or to get into the last night of the "Proms". Look at what football fans will put up with in the bitter cold and wet. It is against a background something like this that the preservation of our larger theatres may have to be seen.

Only these old theatres offer any hope of holding sufficient crowds both to satisfy them and the box office when Sir Laurence plays Othello, or Fonteyn and Nureyev dance. Tear these theatres down and not only are we faced with an endless prospect of waiting till we can "afford" the money to build new ones but also we do not know enough as yet to formulate a brief for the architect with any confidence. The trouble is that even the most optimistic cannot today expect to keep 1,500 or more seats filled night after night with the kind of theatre production appropriate to 1,500 or more seats. Other theatre, usually conceived of as "rep", for the rest of the year in such a house is inconceivable. That needs its own very comfortable theatre of say 700 seats or just under which attracts a patronage whose regular second home it becomes. Our big theatre whether ancient or modern, which—like the Royal Albert Hall—we must have for those "occasions", relies first and last on "the draw" itself and needs to look elsewhere to ensure a cash flow in the right direction at other times. This may well have to be "Bingo"—"What! Bingo?" "Yes, Bingo (whatever that may be), why not?" It was Mecca ballroom dancing, which we opera lovers resented in the hallowed precincts, that helped keep our Covent Garden Opera House standing ready for its present all-the-year-round Royal Opera and Royal Ballet glories!



## Minutiae

We hope our readers in the U.K. have enjoyed the TABS Compendium that arrived as a supplement along with this issue. For the sake of readers outside the U.K. we should explain that this diminutive volume of 32 pages 3 × 4 in. contains, we hope, just the information that everyone in the remotest way connected with stage lighting should have at his or her finger tips, plus some mini-articles about Lighting the Stage, Optical and Electrical Control of Light and a piece on the use of Colour. The most generally used equipment is listed with beam angles and weights also prices for sale and hire. It is the prices that prevent the issue overseas—at any rate at the moment. After all these must be included to make the compendium serviceable. What good is it deciding on a particular spotlight for a job if later on one finds one cannot afford it or perhaps the cost of replacing its lamp?

It is hoped to issue a revised version each year and any suggestions would be welcomed as to the ways it could be improved. Where did the idea come from? It would be churlish not to acknowledge the British Rail Inter-City timetable. It was the fact that your editor always has one of these in his wallet but never has a Strand catalogue which provided the size clue. Often at lectures members of the audience sidle up to floor him with questions on the price of this, that or the other—especially for hire. Questions technical and artistic can be answered with gay abandon, but the hire for a slider dimmer or the weight of Patt. 293 is another matter. So there began the notion of a postcard covered with the facts of light, so to say, vital statistics, phone numbers and all. Idiosyncratic the compendium may be, but what else would you expect of TABS? Prices are not like us, but we do want to sell something sometime and hoped you would not mind so long as they did not appear in TABS itself. Lastly, pray do not shake the head knowingly and blame this commercial outlook on the Rank influence—the exercise was begun before they came on the scene in this case, but we look forward to enlarging the list of local “rep” telephone numbers before long with their aid.

## Ambassador-at-large

by J. D. H. Sheridan

On Friday, December 13, 1968, a Reception and Dinner Party took place at the Charing Cross Hotel. The occasion was the retirement, after over 45 years of service with the Strand Electric Group, of Stanley Eric Earnshaw.

He had been a Director since 1935 and Joint Managing Director since 1945, but such board room titles do not create for me the best image of a man who has been a personal friend for as long as I can remember and who was a close business colleague for nearly 38 years.

Neither do I consider that they create a characteristic image of him for the host of other people, particularly (but by no means exclusively) of the theatre and entertainment worlds, who knew him well and of whom so many have come to regard him as their confidant and friend. Stanley played a unique role in that unique enterprise which grew with him into the Strand Electric of today.

Those who have read the Golden Jubilee issue of TABS will know that Strand Electric was founded in 1914 by two theatre electricians, our respective fathers. It was obviously impossible for either Stanley or I to be unaware of Strand Electric even at a very early age, but Stanley as the elder was the first to be engulfed. He joined the firm in 1923, nine years after it was founded and has been



an integral part of it ever since. He got to know all the various jobs by the process of doing them and, in much the same way, got to know all the theatre people by the process of going and meeting and working with them. He was always around and about in the theatre so that when, in 1936, fate ordained that he and I had to carry on the Strand Electric tradition for ourselves, he was able to take over the “outside” while I looked after the “inside”.

During the war Stanley was active, touring, lighting shows and generally serving the theatre. Our factories being on war work, new equipment was hard to come by but, with the aid of Jack Madre and the Hire Department, near miracles were achieved.

In latter years, his mobility was reduced but not his activity. Possibly our telephone bills soared, but that was a small price to pay, bearing in mind the fact that it enabled Stanley to continue the functions in which he had always excelled, those of Strand Electric’s ambassador-at-large and trouble-shooter-in-chief.

But now the inseparable “S.E.’s”, Strand Electric and Stanley Earnshaw have had to part, as health makes it inadvisable for him to continue beyond normal retirement age. Nevertheless, we know that he intends to maintain his close ties with Strand Electric and, as an inveterate first-nighter, with his theatre friends.

We assure him of our respect and high regard and we wish him and his wife many years of happy retirement.



### THREE CONFERENCES

The year 1968 produced less than the usual crop of conferences of the regular kind, the almost totally useless because the same people go to them—the closed circle so to speak. However, there were two quite unusual once-offs in settings “Ancient and Modern”, and one regular worth reporting. Last October there was staged by the T.M.A. in the City of London’s Guildhall something called “Theatre ’68”. It was a splendid thing to see row upon row of civic and commercial theatre delegates, managers and the like facing a great dais with the high altar surmounted by six gold candlesticks.

A hush descended and one eyed the stone floor of this gothic cathedral nervously with the thought that it looked as if it was going to be awful hard to kneel upon. There entered left a solemn procession, the absence of music suggesting that the organist had gone on strike. The altar turned out to be a table, covered with green baize of course, and the candlesticks the mikes upon their silver gilt, or was it polished brass, pedestals.

The proceedings have been published not only in full but verbatim exactly as given\* from the platform and the floor.

The afternoon session centred around Peter Moro on Theatre Design, and Sir William Emrys Williams on the Arts Council Enquiry of which he is chairman. Mr. Moro’s views on his subject are already well known to TABS readers and Sir William provoked our leader “Self Preservation”, so we confine ourselves to the statistical information he gave.

“... The professional theatre today, as I see it, falls into two sections. One of them is the category of subsidised theatres, the other the unsubsidised or commercial theatres; that is to say, the subsidised sheep and the profit-seeking goats, although they do not seem to succeed in finding such agreeable pastures as they used to do. The subsidised theatre evidently is the more favourably placed, largely because Miss Jennie Lee and the Chairman of the Arts Council have toiled so successfully to raise them to a reasonable subsistence level, and they receive some support too, as we know, from some municipalities. There are about 50 sheep at present in the Arts Council fold....

“The commercial, unsubsidised theatres are a larger group. Although they are not always continuously open, there are about 40 in the West End and 33 operating outside London. Now, it is with the commercial theatres in the provinces, or, as we have to say in these days, in the regions, that the Enquiry has so far been most closely concerned, for they really are in considerable jeopardy. These 33, as you know, consist of the old Number One theatres plus a few other of the large touring theatres, and these 33 fall into three groups. First there are the theatres owned and run by the two big circuits, Moss Empires and Howard and Wyndham, and

of these there are, or were yesterday—you never know!—ten. The second group are former commercial theatres which have recently modified their status in that they are now owned, leased or supported by municipalities.



*A Frank Matcham theatre of 1891: 800 seats, 24 ft. 6 in. wide proscenium and 30 ft. deep stage. Formerly the Opera House, it was purchased by the Cheltenham Corporation when it closed in 1955, who ran it themselves for a couple of years. In 1960 it was refurbished to become the Everyman and leased to a company enjoying financial support from the Arts Council and a wide area around.*

\* Theatre '68 Report, copies obtainable from the T.M.A., 19 Charing Cross Road, London, W.C.1. 10s. 6d.



They are, as you may say, goats which are beginning to look like sheep although they are not yet in the Arts Council fold. Of these there are nine, many of which, as you again know, are booked by a commercial management. Now, if these nine had not been taken into protective custody by local authorities they would almost certainly have been closed by now: and it is said, incidentally, that both Moss Empires and Howard and Wyndham are more than ready to sell their theatres either to local authorities or to property developers. The third group of commercial theatres—I think 14 in all—remain in private ownership and private management, some of them run by faithful old theatrical families and most of them receiving little, if any, profit from their diligent exertions . . .”

There were sixteen speakers from platform and floor in the morning, but perhaps the most unexpected remark was that of Mr. Stanley Holmes, Town Clerk of Liverpool, when he said:

“ . . . I come from a city which has a fairly strong tradition of helping the arts; underwriting music, underwriting the visual arts, dragging Glyndebourne up to Liverpool in the fifties. However, never, until four years ago, had it given a penny to the theatre. If this sounds a criticism of my authority, the answer is very simple—it had never been asked for it and there is no evidence that it had ever needed it. All in four years, these things have happened. The repertory theatre of the city—the oldest in Great Britain—the home of the Diana Wynyards and the Robert Donats, as we are always delighted to remind everybody else—turned to the city because it wished to expand in physical terms and it wanted help. The city responded, in my view, not ungenerously and very quickly . . .”

It is no reflection on the value of the other contributors that we confine ourselves to quoting from Lord Goodman’s\* summing up of the morning. This was an extempore *coup du théâtre* which perfectly mirrors the form taken.

“ . . . I think that the first thing that one might say about this morning’s very interesting discussion is that what was implied in what was said is rather more significant than what was actually said, although much of very great importance and great cogence was said. What I observed was this. No one has suggested, even as a remote possibility, the building of a new commercial theatre. Those concerned with the commercial theatre are dealing with the matter on the basis of preserving what little may survive. Where the question arises of building a new theatre, it does not enter anyone’s head that, at this moment of time, it can be anything but a municipal or a state project. . . .”

“ . . . I do not agree that it is difficult to sell the arts case and that it is a question of whether you need sewage or symphonies. With the greatest respect, I do not think that that is the question. I think that in a civilised society you need sewage and symphonies. I do not think that they can be posed as alternatives. I think that those of us whose job it is to provide symphonies, should work diligently and wholeheartedly to provide symphonies and I hope that those whose job it is to provide sewage will work with equal zeal and interest in the provision of sewage! I think that it would be a very unfortunate thing indeed if either side were to abate their efforts in the belief that there is some conflict in these particular choices.

\* Chairman of the Arts Council

I have often said that the most important growth industry in the country at the moment is the subsidised arts. . . .

“ . . . I think that, in the end, you may agree that the theatre must be run by men of the theatre. Theatres cannot be run by local authorities. The theatre must be run—run in the sense of having administrative and artistic control—by people who are acquainted with the theatre. One of the things that has infuriated me more than anything, since I have come to the Arts Council, is the belief that there is no specialisation in the arts or the humanities and that everybody knows everything about them. If you get a scientific question, we will all defer to anyone who displays the most elementary knowledge of science. Find a man who can give you the chemical formula for water and you go down on one knee to him and say ‘he is an expert’ . . .”

“ . . . When you get questions on drama and art and literature, we all take the view that we are self-appointed experts and that there are no experts. This, if I may say so, is great nonsense. There are theatrical experts. The way to run a theatre is to consult theatrical experts. You want to keep, of course, an overriding authority, to see that they do not go galloping away with the rates. You want to see that a good relationship exists and that sensible financial and budgetary conditions exist. However, the theatres will only be run by individuals who have an intimate and skilful, lifelong passion for the theatre. They will not be run by anybody else. There is no committee that could be established anywhere, unacquainted previously with the theatre, that will run a successful theatre. . . .”

“ . . . I do not think that we wish to live in a community where the state has the responsibility or the duty of subsidising entirely, any art form. It is for that reason that I think the commercial theatre must survive. I hope that in my lifetime, and for long after, we shall see the English theatre flourishing as a partnership between state subsidy and private enterprise. This I earnestly hope.”

The second conference was held by the B.B.C. at the White City Television Centre to celebrate their first year of Colour. The affair was run by Richard Levin, Head of Television Design, and lasted five days. Delegates from 22 countries attended and not only were there talks and discussions but there was the great advantage of being able to see the work done thanks to video tape. On the day we were there a direct comparison could be made between Japanese and B.B.C. colour. There could be no doubt that Japan automatically uses thin colour whereas the B.B.C. has been exploring many styles. The sheer variety of what can be (i.e. has been) done represented by the B.B.C.’s hour-long video tape was staggering. This against the very practical background that colour had to take no longer to stage than black and white and had to look right on existing sets. In Mr. Richard Levin’s words:

“ As soon as the date for the beginning of Colour on BBC-2 was established, I found myself, perhaps not unnaturally, in a very hot seat indeed—between the ‘forces of evil’ on one side—by that of course I mean Management and the Planners; and on the other side the ‘forces of goodness and light’—and by that of course I mean all the Scenic and





Where it all started. BBC Riverside Television Studios. Lighting Supervisor using Strand system C control. (Photo by courtesy BBC.) The two Riverside Studios were pilots which determined the form those in the T|V centre were later to take.

Costume Designers, the Make-up Artists, even I suppose friends in Lighting!

“The clarion call went out: the BBC is going into Colour—across the board—time scale and cost to be the same as Monochrome. . . .

“ . . . Simplicity was to be the keynote. The action of the first play in Colour took place under a table by the light of a candle. The second took place in outer space, with so many special effects that we couldn’t have done it in black and white, and so on. . . .

“ . . . We have been careful not to introduce any single responsibility for Colour below the Director. The Colour is initially the responsibility of the team as a whole—that is, if it is to be a team. Ultimately, of course, the responsibility is that of the Director.

“In Colour, then, when we talk of the Design contribution to a programme, we mean the work of the team as a whole.

“The actual practice of Colour has, to my mind, thrown up some very interesting side lights. For years now all Design Group staff who were engaged were tested for colour blindness. What we failed to do at that time was to test them for colour experience, and as we drew on people with very diverse training and experience many of them had none in Colour.

“Costume Designers and Make-up Artists naturally have colour experience; but amongst Designers, Lighters and Directors experience is uneven and there will be a time lag while experience is gained. . . .

“ . . . Soon after we began our regular colour transmissions, I wrote an article for our house magazine *Ariel*. I called this article ‘How to succeed in Colour without trying too hard’. In that article I said that if I were asked by anyone going into studios with their first colour production

for my advice, I thought it would be something like this:

*Think in colour—but before you commit yourself, think in black and white.*

*Let everyone working with you know what you are doing. Your work will affect theirs.*

*Keep it all restrained. It’s easier, quicker and more effective to add colour than to take it out.*

*Don’t work at colour—make colour work for you. In other words, keep it sparse and make it significant and not irrelevant to the performance”.*

Technically the B.B.C. video tape suggested mastery—all those things said to be impossible were there happening. The decisions have to be those of the artist—at home in the disciplines of his medium. The inclusion of “Lighting by . . .” among the credits which roll by at the end of the show is but right and proper—these men are important. Lastly, one could not help reflecting on the unique role of the B.B.C. as a technical training ground, a development area—a university for the strange crafts that put a television picture on the air. It is to be hoped that the American “efficiency” experts examining the B.B.C. will realise that they are not working for a shareholders’ balance sheet. If we the nation do not allow the B.B.C. to do the job, far more of this kind of thing will be thrown on universities and technical colleges where it will cost more. This would be a pity for this ties in with Lord Goodman’s remarks earlier about theatre people must run theatre. In much the same way television techniques belong to practising professional television men working against a background of the putting on of a regular programme of shows. These techniques must not be taught just by teachers of television techniques. In this conference and such enterprises as the Woodstock Grove overseas training studios\* the B.B.C. are doing a job they get no public credit for.

The last conference was so much the last that it was scarcely in 1968 at all. This was the National Student Drama Festival sponsored by the *Sunday Times*. To get an appropriate report your editor dispatched his secretary, Barbara Jameson, whose university was Leeds, and that not long ago. She writes:

“At Exeter I was again conscious that with all the money which Universities have to lavish on the arts there is nevertheless no suitable collection of buildings to contain a Festival of this kind. This is not to decry Exeter itself—nor yet its University. The campus, situated in the extensive grounds of an old country house is a delightful locale, while in the Northcott, Exeter University can boast a main theatre that ranks far above the assembly and dance halls which serve that purpose in other provincial seats of learning. The Northcott has in fact already been reviewed in TABS.†

\* See p. 4 Layout and Lighting for Small TV Studios. Published Strand Electric.

† Vol. 25, No. 4.



"It houses a resident repertory company and the students do not normally play there. On this occasion a happy balance between over-supervision and helpful advice seemed miraculously achieved by the Northcott staff under the very trying conditions of mounting eight student productions specially for this festival—two of them twice—within a single week.

"A less cheering proposition were the supporting theatres—two of them and each a perfect example of its type. The first was the acme of the village hall. Long and lanky with its smells of the gymnasium and its flat rows of canvas seats, its lighting facilities boosted from 24 circuits to a full 36 by ranks of Strand slider dimmers hired for the occasion and occupying most of the 4 ft. wing space stage left. Six feet of flying room with nothing resembling a grid and a platform imperfectly screened by inadequate masking completed the picture. It was an atrocity and yet unbelievably out of it came some of the most remarkable moments of the

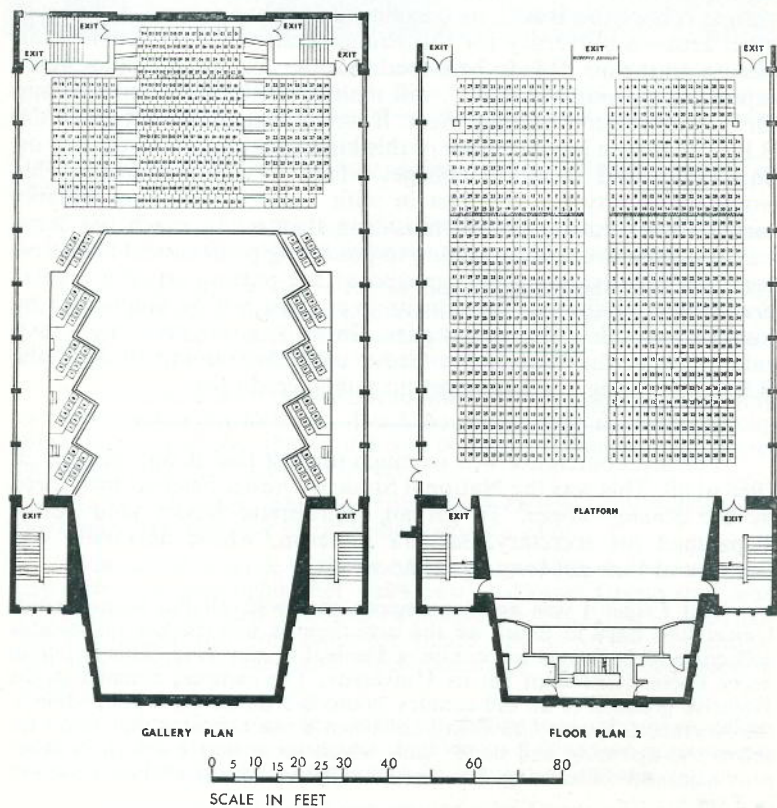
festival. There was always a sense of working against tremendous odds and yet the obstacles seemed there only to be overcome.

"One of the more interesting achievements was the effective use of the stroboscope in serious drama—during a documentary on Black Power. The mimed sequence on final negro degradation in the 1930s with its alcohol and prostitution took on the quality of a narcotic nightmare under the flickering red light. Normally, however, the old rule applied and success was greatest where technicalities were least in evidence. This was underlined by a production of Euripides' *Cyclops* translated inappropriately enough by Shelley and embellished with every technical device which the twentieth century could provide. The lighting was a riotous mixture of strong colours tossed indiscriminately across actors and set alike and only occasionally reflected to good effect from a huge silver puddle on the floor. The sound effects were excessive and distorted, and both combined to destroy the tight-knit simplicity of the play. This Durham chose to present in Exeter's third theatre—the Great Hall.

"This is a pleasant concert hall, seating 1,385, but a vast and impossible theatre. Its proscenium recedes into the far distance at the rear of the concert platform which is embellished with a 1 ft. riser extending across its entire width. The lighting control stage right—an SR—offers only 18 circuits with outlets arranged for platform lighting and had to be supplanted by a portable preset model on the front of the balcony. This with a forest of stands ruined the view from the tiered seats on the balcony while the flat floor of the main body of the hall, combined with a 5 ft. high stage, made attempts to actually see the play rather futile. Acoustics—for drama—were non-existent. The inevitable happened. A second 'stage' was erected in front of the first, a false proscenium arose and yet the actors, in the *Cyclops* production at least, remained inaudible even when using hand microphones.

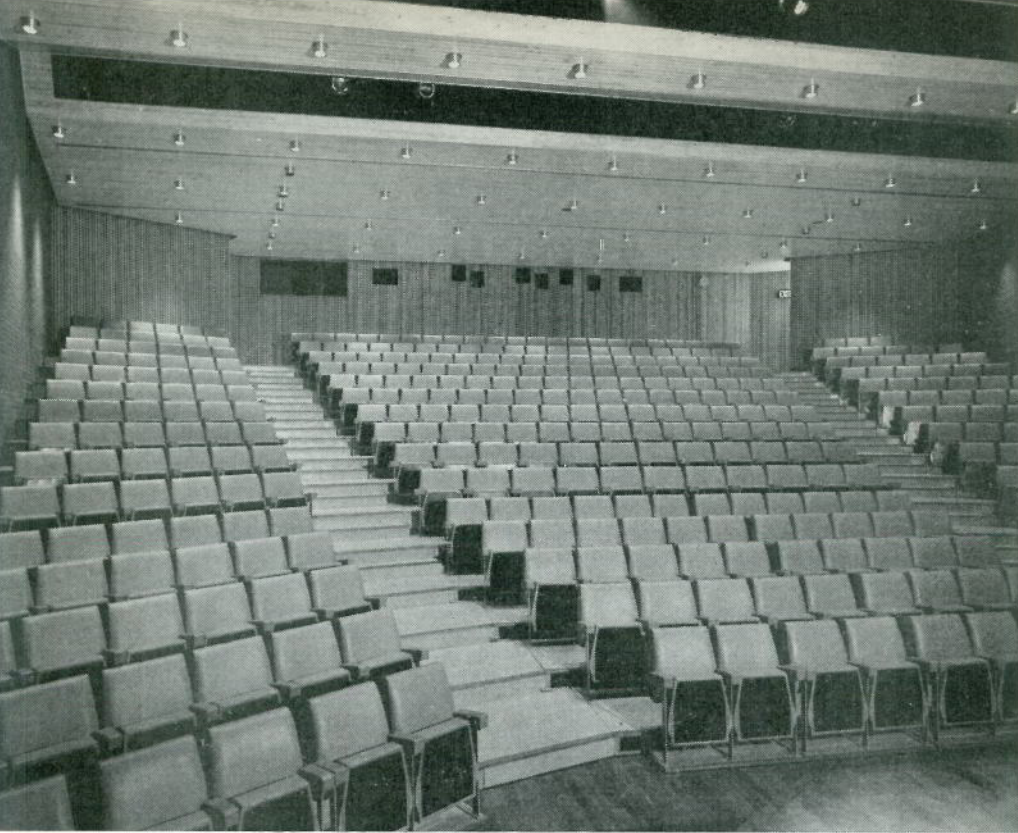
"Most disappointing of all the events held here were the workshop sessions in the mornings. These were potentially one of the highlights of the festival with Charles Marowitz, Charles Savage, Robert Stephens, Jane Howell or Terry Hands taking a scene or a problem from the previous evening's play and working it over in public with the cast. This essentially intimate exercise was plunged into the echoing vault of the concert hall shattering the relationship of director to actor and rendering the whole inaudible to the audience. Again it was remarkable how much was achieved in the face of such odds and the varying methods of approach emerged with some clarity.

"As the upshot of difficulties in a series of halls of this kind a Festival Technical Committee has been formed—consisting alas completely of students—but it is hoped that next year this committee will have some say in the choice of venue and it is rumoured that two Universities have already offered themselves to its scrutiny. Dare one hope that the *Sunday Times*, which is prepared to spend money on professional critics for the festival, might also invest in a professional theatre consultant to give this committee the benefit of his advice?"



University of Exeter, Great Hall, concert seating plan.





## ETON COLLEGE : NEW HALL

*by Francis Reid*

As a former stage manager of Arts Council one-night stand tours, I inevitably approach school stages with some trepidation. But the New Hall at Eton is a fine example of the clear thinking which has begun to characterise so much of our theatre building in the 1960s.

After all, in 1933, an Eton science master was the architect of probably the most successful theatre building to rise in that darkest hour of English theatre architecture; and I am sure that John Christie would have approved of this new theatre at Eton.\*

Any theatre building can only be as good as its architect's brief and this is particularly so in the case of a multi-purpose building where priorities must be established by an analysis of estimated usage rather than by the pressure exerted by the lobbying of the various users.

\*A reference to Glyndebourne which opened in 1934. Mr. Reid himself has particular associations with that opera house.

At Eton, the following table of estimated usage frequencies was drawn up:

<i>Activity</i>	<i>Estimated usage frequency marked from 0 to 10</i>
Drama (mainly proscenium or end stage) .. .. .	10
Musical comedy .. .. .	1
Revue .. .. .	2
Concerts (mainly chamber) ..	6
Opera .. .. .	2
Cinema .. .. .	10
Television projection ..	8
Lectures .. .. .	6
Speeches .. .. .	4

Although the initial brief required the option of a proscenium or end stage, with or without apron, and a thrust stage with 180 degree encirclement, this table of estimated usage indicated that there would be a preponderance of activities requiring a one-directional audience. The proscenium or end-stage layout was therefore given priority, although a respectable thrust-stage can be achieved in something of the order of 30 boy/hours.





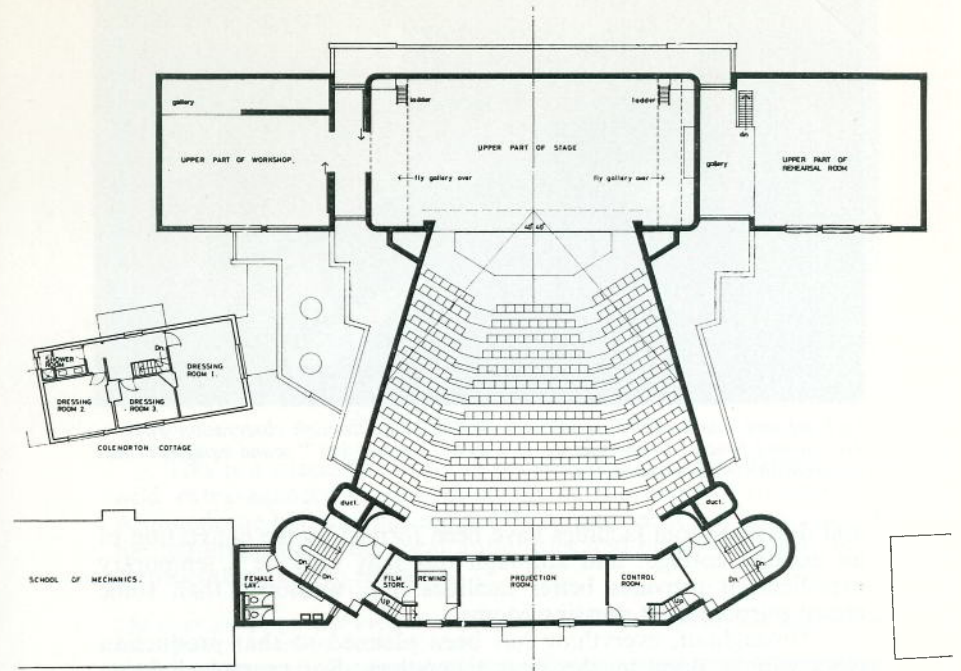
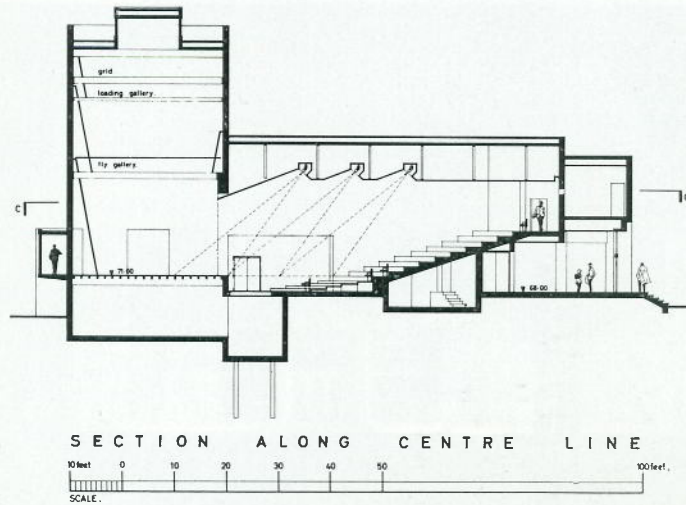
There is no picture-frame to the stage: the proscenium is formed by the termination of the natural lines of the auditorium walls and ceiling to give an opening of 37 ft. 6 in., with a height variable between 15 ft. and 17 ft. This variable height is achieved by winching the forward portion of the ceiling, the lower (and normal) height relating to the proscenium height required to fly scenery without revealing vast areas of masking borders. The upper limit then allows two-storey settings to be used—particularly in conjunction with a peninsular stage.

Wing space is adequate rather than generous and is linked to the workshop by sensibly sized doors. There are fly galleries on both sides and a proper grid with 15 counterweight sets and 11 hemp sets.

A motor-operated orchestra lift sinks to form a pit in conjunction with a section of understage area and a Mozart-sized orchestra should be able to bow and blow in comfort. In its maximum raised position at stage level, it forms an apron which can be extended into a full peninsular stage by means of sectional units.

These units are brought to the surface from the understage storage space by means of the orchestra lift which is also used to remove the centre seating block of five rows. The side seating blocks are moved into side areas revealed when sections of the auditorium walls (shown dotted on the lower plan right) are slid away on tracks by one man. This layout reduces the seating of 401 to 357.

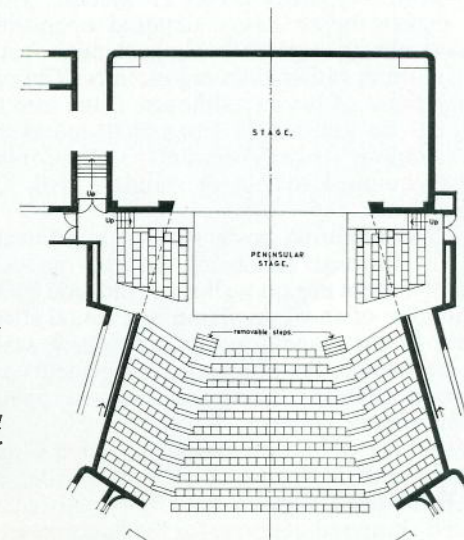
Provision has been made for a future dressing room area to open off the backstage corridor, but for the time being green-room



Plan at level c-c  
(proscenium stage)  
110 movable seats—  
front 5 rows  
291 fixed seats—  
back 10 rows  
Total 401 seats

Plan at level c-c  
(peninsular stage)  
68 seats at sides  
289 seats in main block  
Total 357 seats

Eton College Hew Hall  
Architects: A. M. Gear  
and Associates.  
Architect in charge:  
P. W. White-Gaze  
FRIBA







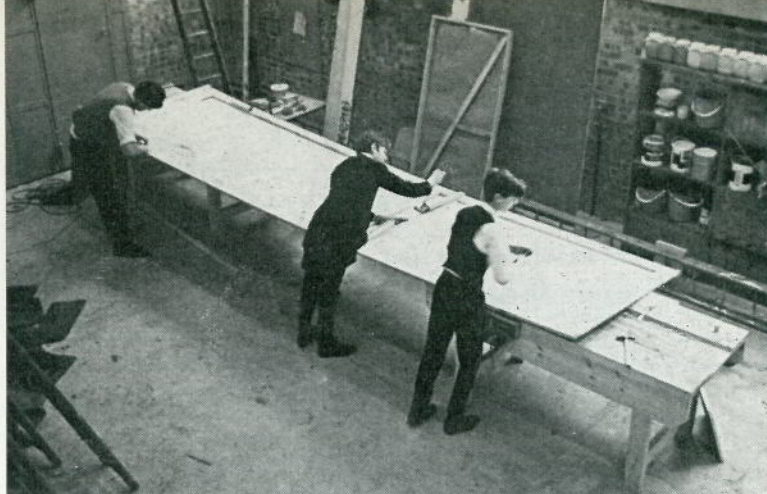
*Lighting and sound control room with view of stage through observation window. The Strand control in the picture is a JP60 3-preset but "sound equipment has captured the window space."*

and dressing-room facilities have been formed by the conversion of an existing cottage: and although this may only be a temporary expedient, it provides better facilities (e.g. windows) than some recent purpose-built dressing rooms.

Throughout, everything has been planned so that production work can be done by the boys themselves. For example lighting control is by a 60-way, three-preset JP system, whose absence of cockpit drill makes for an easily acquired operational technique, **although I have always regarded this** particular vertical desk as a triumph of economics rather than ergonomics. The control room is spacious to the point of luxury, although I am sure that the editor of TABS will not be amused to learn that sound equipment has captured the window space. Adjacent to the control room is a projection box equipped to a high standard with 35 mm, 16 mm, and other visual aids.

There are three lighting bridges in the auditorium ceiling with good access, the farthest one being suitable for peninsular stage only. Regrettably, there are no wall slots and side F.O.H. lighting is limited to a number of short one-lamp horizontal stirrups. I suspect that as the use of the stage develops, these side walls will sprout vertical bars. Backstage, the plugging arrangements are in line with A.B.T.T. recommendations. There are three internally-wired barrels and a useful number of lanterns.

Most finishes are of natural materials, which with the exception of the Maltings Hall at Snape, I personally find anti-theatrical. However, at Eton these finishes have been carried out so well—the rough-board-shuttered-concrete for the first time in my experience appears to have been executed by an artist-carpenter with appropriate wood—that the empty building seemed very exciting on a wet January afternoon.



*The workshop at New Hall, Eton.*

This is a successful building because it is *in scale*: there are no wild extravagances in one direction at the expense of another. Although the building has not yet been licensed, it has been built to the requirements of the local authorities and could obviously be a considerable asset to the area.

*The clear gangways and excellent rake to the seating can be seen in this picture taken from the back of the auditorium.*





But in its primary capacity as a school theatre, it should provide an appropriate environment for those who—if past statistics are anything to go by—will have much of the ministerial control of future state spending on theatre building.

### Eton College New Hall

#### Stage Lighting Circuits

<i>Control</i>	FOH	20
JP/60 3 preset	Flys	25
37 × 2 kW dimmers	Dips	15
23 × 1 kW dimmers		—
97 kW 240 volts		60
Only 50 dimmers fitted	No Patch	

## LIGHT AND LIGHTING

by Frederick Bentham

I propose to talk about Light. Not as a physicist which I am not nor as an illuminating engineer, which I suppose I am, but as an individual—a member of the Art Workers Guild\* I believe we do not take sufficient account of the stuff—at any rate as a collective body.

No one would dispute the enormous visual component in the arts and crafts we represent—some are wholly visual. Yet too often it is forgotten that this does not begin with the eye but outside it at the source and nature of the light in which we are working at the time. When looking at a Dutch interior for example this light comes in twice. There is the light at the time De Hooch painted it and the light by which we see that painting 300 years or so later. When it is projected as a transparency then light comes in twice more, firstly in its effect in making the photographic transparency and secondly the effect of the light from the projector itself on the screen.

There are many so-called white lights as two projectors side by side on a screen can readily show. Every photographer working in colour knows that there is a difference between daylight and artificial light and even between one artificial light and another for which allowance has to be made.

The knowledge that there is more than one white light is very old, hence in the past the time-honoured insistence on north daylight

\* The author is the 82nd master of The Art Workers Guild—a product of the arts and crafts movement of the last part of the nineteenth century—a reaction against the machine made. By a coincidence he is an illuminating engineer. It was appropriate in this year of the Illuminating Engineering Society's Diamond Jubilee therefore that he took Lighting as the subject of his address. It has been revised somewhat, for the wider audience represented by TABS. (Ed.)

in artists' studios. There is more to light however than its colour. North daylight has a depressive psychological effect due to its cold even nature. So we see there may be a tendency to produce works in the studio which are reflective perhaps even downright melancholic. Only at night when the candles or lamps were lit could the studio become the gay wild place that fiction, at any rate, finds it. Is it easier to write a farce in sunlight and a tragedy on one of "those days" grey with cloud? Was the reason for the bunching of virtually all Shakespeare's tragedies in his third period due to a series of "that was summer that was" years from 1599 rather than the fact that he was not feeling as young as he was? After 1608 he turned once more to comedy—did the weather buck up or did he now have a sunny room once more?

To say "sunny room" is to turn light into lighting. The moment man builds himself a house he has to practice the art of lighting even if no artificial light is used. The placing of a window or of any opening in relation to the sky or to the passage of the sun is lighting. Outdoors nature provides light while indoors man turns it into lighting.

Even before he built himself a house man could choose a north-facing or south-facing cave dwelling and the estate agents of the day no doubt extolled the virtues of both but with about as much conviction as they can bring now to describing as "desirable" a ribbon development semi-detached houselet of the inter-war years.

Before we leave the caves however we should remind ourselves that the remarkable cave paintings were produced under artificial light. This artificial light must have been decidedly yellow and constantly on the move. Draughts may have come in causing the light to flare and flicker. Then again lighting may have come from a fire which died down and the artist had to ask someone to shove another lump on. This could have been another log or branch or even a sausage roll left over from a committee meeting of that time. The character of the light, its intensity and colour, could have changed completely at that moment.

To return to the light of day: we all of us know from direct experience that this is far from the same everywhere, even in a tiny country like Britain. Quite a short journey will prove the point and we can get further afield than that quite easily. Even if we could not, then a visit to say, only the National Gallery could prove it for us. Both space and time travelling is possible in such a gallery. If we notice the difference in light away from the town, how much greater must have been the contrast in Dickens' day. A matter of minutes in the sun at the seaside gives us sunburn which is beyond the powers of hours in the London sun. This is, of course, ultra-violet—invisible light—at work but its neighbour the blue end of the spectrum is nearly as much attenuated.

Smoke in the town atmosphere was responsible for the pea-soupers which seemed so prevalent to a schoolboy of the twenties. The last real one it seems to me was the great smog of 1952. The



light grey mist one has nowadays is by no means the same thing. What about the queer brown light when the fog used to ascend for an hour or two either side of noon before descending once again as evening fell. Smoke causes fog of this kind and will one day be a curse eliminated from the land, but meantime who is not better for a glimpse of Durham Cathedral riding above the smoke drifting chimneys on a winter's afternoon as seen from the railway train window?

This is another experience a man seems to thrive on—the variety of his experience. Nowhere is this more certain than with light, because nowadays when it is possible to flood factory and office with good intensities of well distributed glare-free light the result as far as the occupants are concerned seems far from happy. Vast surveys are undertaken which prove, what anyone knows from his own experience before they start, that monotony is the enemy. This applies to the whole gamut of what is called “Environmental Engineering”. Beware the unchanging light, the even temperature and the hushed purified air. Surely the super office ventilation system must be capable of introducing at just the right time a sniff of fish and chips or bacon and eggs to induce anticipation of good things for lunch. To stimulate the digestion even if the product itself fails, as canteen food always does, to live up to the promise. Afterwards a gentle waft of boiled mutton or cabbage water through the office would make the staff thankful lunch was over and they were back at work.

Let us now consider a room with daylight entering the window. **Not only is the size of the window important but even more important is the amount of sky the window “sees”.** The presence of this great diffused source enlarges a window and in consequence a small window may be effective whereas a large one enjoying a near view of tall trees may not. The great coloured window by John Piper at Coventry Cathedral owes much to the fact that it “sees”, though we do not, so much sky. A skyscraper tower carelessly erected nearby could ruin it.

In the reaching for the sky with very tall buildings a new effect is encountered. Leaving aside the disastrous effect of direct sunlight in these glasshouses, which may make it essential to use some sort of Venetian blind, it still becomes necessary to switch on the electric lights on a fine day. This at a time when the occupants of a humbler building way down on the ground below would not dream of doing so in spite of the fact that they enjoy much less sky.

The reason for this is the high contrast between the small amount of light that arrives on the work desk of all except the lucky few by the glass wall windows and the intensity of the sky which all see beyond. In a less “advanced” design of past ages those further into the room would not see the sky anyway. Therefore the subconscious judgment of the light level they have on their work would be adequate in comparison with the brightness of things lower down—the trees and bushes just outside or the wall of the building opposite.

Since the human eye is adaptable to such a wide range of intensity\* its owner is pretty hopeless at judging intensities of light except by direct comparison or by experiencing acute discomfort as with glare. Daylight outdoors will involve levels of around 10,000 ft. candles whereas indoors at night we are accustomed to see quite easily with 10 ft. candles. The human being is also I fear equally poor at judging colour of light unless presented with a standard to judge it by. We also cannot see in colour at very low levels.

When one thinks of it man has until recently been quite chary of using large clear windows—walls of sheet glass—for his buildings. **Was this pure chance or was it the absence of Chance or Pilkington**—that is to say, technological development? Or was it quite deliberate with full knowledge of what would happen otherwise? To live within or take part in activity within a building one must not be drawn by the light outside. It is difficult to make oneself stay indoors on a fine sunny day in this country, although in other countries indoors in the shade may be the one place one longs to be in the high noon with blazing hot sun outside. Small windows, even shuttered, are the order of the day—only a lunatic would build himself a glass house or glass office block in those parts. However, these glasshouses do seem to be spreading to those countries. This is the same march of civilisation which was responsible for dressing for dinner in the jungle and apparently ensured that Australians would for all time eat Christmas pudding in high summer.

There is the role of stained glass in our churches. Why is it **stained glass, even quite poor glass, suits the Gothic cathedral but is out of place in St. Paul's? Why cannot classic architecture take stained glass by day if it thrives on crystal chandeliers at night?**

Too much sky should not be forced upon us perhaps. Except in our perambulators—we seldom actively look at it. In reality we tend to look down not up most of the time. The neck does not take very kindly to the process of sky gazing—just as well for we must never ever look at the sun directly when it is up there. The moon is another matter, everyone looks at the moon and moonlight is another matter too. Firstly moonlight is only .02 ft. candles yet it can appear quite bright thanks again to our accommodating eyes. On a clear moonlight night there is little difficulty in seeing except in the shadows. These shadows are sharp and hard because there is no diffusing component at work up there in the sky on a clear night. Diffuse reflection makes the great difference between the use of artificial light outdoors and indoors. Hold an ordinary electric torch above one's head outside on a dark night and point it skywards and **it will be impossible to tell whether it is alight or not.** Do the same thing indoors and there is light all over the room—the ceiling reflects the light and diffuses it. A stage lighting designer should take account of the fact that there is a great diffused component to the lighting of

\* Eight to one by the immediate process of closing the iris and half a million to one taking into account the further longer process associated with the bleaching of the visual purple.



exteriors by day and none by night in order to convey the correct impression. While indoors diffusion is present both by day and by night, but at night the sources themselves may be many but of local influence. At any rate they had to be many while they were as feeble as a candle, a large wax candle gave little if any more light than a small one though it lasted longer.

Some idea of the constancy of a candle is given by the fact that all illumination engineering is tied back to it in much the same way that **mechanical engineering depends on horsepower**. An electric motor produces so many horsepower and an electric lamp so many candlepower—even though they are now **camouflaged** as “candelas”. The foot candle referred to earlier is of course the amount of light falling on one foot square at one foot distance. In these metric days one substitutes the metre in each case and calls the result one “lux” but the candle source idea remains unchanged.

If a super candle was not possible, at least nowadays man need not rely on a multiplicity of small sources but can have a super lamp should he so wish. What then should he do? Leave that for the moment and let us ask “What did he do?” Take a look into history. We need not consider the horrors of wicks floating in oil or stuck in tallow except to remark that there cannot have been much light about. A gothic corona or even a splendid multi-branch Georgian chandelier like that in St. Martin’s, Ludgate Hill, can only boast of 15 candles. A single 25-watt electric lamp, the kind of thing used in a passage, can claim to be the equivalent of many more candles. There can be no doubt as to which is the more splendid sight, however.

The elaboration of lighting fittings during the centuries has arisen from the urge to make them things of beauty. They seem until recent times to have provided artist and craftsman with an irresistible urge. Such creations were made to be enjoyed *by day*.

If the early sources did not give much light they had one advantage which a lot of modern lights do not have, namely portability. A candlestick could be carried around and placed on a table—it did not have to be tethered to a power supply.

When more light was required then a multi-source candelabra could be carried in. Though a dignified and Jeeves-like tread would be necessary to ensure they did not blow out. Candles spread their light in all directions except the one place where it was most needed, the table below. We often see the painter George De la Tour demonstrating the simplest reflector of all—the hand. Joseph Wright, another painter inspired by artificial light shows how simple reflectors and lenses were used to collect light that would otherwise be wasted and re-direct it usefully. Sometimes the reflector and/or lens housing could do a double job and protect the source from being blown out as in a coaching lamp or the dark lantern whose “smell of hot metal remained to assure us,\* that the light was still there, ready to flash out at a moment’s notice”.

\* *Sherlock Holmes and Doctor Watson*, The Red Headed League, circa 1895.

In the multi-candle days one must have thought twice before deciding to have fixed sources on the wall or a hanging candelabra. Obviously the higher up the light sources the less shadowy the room but the more awkward to get at for snuffing and other ministrations. To hang the candles from the ceiling meant that the candelabra must be high enough not to be banged into, great clusters of candles aloft meant some means of lowering them in and needed many servants, and that is just what there were. Though even so it must be stressed again there was still not much light as we would understand it. Further, what there was would be decidedly yellow—flame-coloured is of course an exact description, and the hundreds of flames would be alive with movement. This is how we should visualize the great rooms at night.

When not entertaining perhaps the great candelabra were not lit and light would be very localised with dark shadows in the corners of the big room. The journey upstairs with a guttering candle ensured an awful lot of dreadful dark. Both words are used intentionally for their original connection with awe and dread. Many of us remember as children the ordeal of the dark when carrying the candle upstairs. Those shadows as the flame moved to and fro. Then if you moved too fast the candle nearly went out. Children who have been brought up in the electric light age where darkness is banished in advance by the touch of a switch do not know what it is like to be every night on spine-chilling intimacy with ghosts.

Oil lamps were developed to give a brighter light and two or three did **quite well by the average room**. These were still **portable** lights, cleaned filled and lit outside and carried in by the maid for the most part, though there were elaborate floor standing contraptions. Really bright oil lamps were late developers and by that time gas and electric light had staked their better claims. The oil lamps we are talking about were local lights. One had to take a lamp to the work or vice versa rather than sit anywhere in the room.

The arrival of gas on the scene around 1800 meant brighter sources but these were still flame sources, depending on the bat’s-wing or fish-tail burner. Really bright gas lighting had to await the notion of using a flame to heat a suitable surface to incandescence—as in the Welsbach gas mantle invented in 1866 or the theatre’s lime-light (1816). What gas lighting did begin was the notion that lights in the room were fixed and immovable. The freedom of candle and oil was bartered for brighter light from fixed sources. Often a room would have only one and this hanging from the ceiling in the centre.

There was a good reason for this; it was much easier to lay the cumbersome gas pipes under the floor of the room above than to chase them into the walls. The house where I was born, built about 1900, had centre gas pendants in all rooms downstairs but a single bracket to each bedroom near the window. This served for the dressing table which stood in the window, but must have been most unsatisfactory for reading in bed—which we nevertheless did. Because



this one point had to serve all the room, shades to mask the glare or localise the light were minimal and the result was a harsh revealing illumination of walls and ceiling. To feel cosy and friendly artificial light has to be localised in pools—provided always the shadows are not deep enough for ghosts to lurk in.

To get something of this effect in the best room—the drawing room—an extraordinary semi-mobile pendant fitting was used. The vertical gas pipe sprouted from a circular plaster acanthus leaf extravaganza on the ceiling and terminated in a kind of seesaw. At one end of which was the gas fitting and at the other a counter-balance. The two inverted gas mantles and its clear cylindrical globe had a handle below and a large flat reflector-cum-diffuser of opal glass (always cracked) above. Around the outer edge was a veritable castle of terraces and promontories of pleated material from which depended an inner and outer layer of flouncy silk—all in a deep red. Goodness knows how this was kept clean!

As a lighting machine however, it showed a grain of inspiration. **The opal reflector both cast light down to soften the direct light and allowed some to be diffused upwards so the ceiling was not completely dark.** The handle allowed the thing to be pulled up or down to the required height and the long arm on the pivot enabled the fitting to be centred over table or fireside to give a pool of light. The red silk flounces masked the direct glare and were considered pretty or opulent by the standards of the time. Pulled-down low one tended to **forget and establish contact with one's head** to send the thing flying ceiling-wards. Once up there, however, the floor could be cleared for dancing—all risk of collision being removed and the pool of light spread further afield by the added height.

Gas lighting established the centre fitting tyranny even in the most magnificent rooms, and one can see most elaborate cluster fittings in that position in the state-rooms of the Royal Pavilion, Brighton. The larger the area the more gas jets collected together and some sort of funnel was needed to remove fumes and heat. It was natural to make a merit of this necessity and design an outsize overdecorated lantern contraption. This was the way of it in theatre auditoriums and a dome with the centre fitting resulted. It had been discovered how to light up remotely with a pilot flame or an electric spark.

**The remarkable thing about electric light is how long it took for it to become true to itself.** The year 1881 is a good electric light date to remember, since that was when the Savoy became the first theatre to be lighted throughout by this means but in its positioning it is likely that it might have well been gas. Even the strings of fairy lights outdoors had had a counterpart in the wax nightlights placed in coloured jars. **A form of display—very pretty because of the flicker—**which stayed in the central gardens at Bournemouth up to the Second World War. Gas jet displays and flares had been very fine for festival occasions as a kind of non-dying firework set-piece. I remember this outside our local Gas Light and Coke Company for the armistice day celebration as a little boy.

Indoors, electricity aped the gas lighting whose tubing it sometimes borrowed. The centre pendant with perhaps one plug point by the fireside was all that was considered necessary for lighting in most between-war speculative building. In the bedrooms a pendant point in the window over the dressing table carried on the intent of the old gas bracket. There was one improvement—a plug on the skirting to feed a light for reading in bed, even if the plug was bound to be smashed when the bed was pulled out past it for cleaning.

Such simple provision was soon found to be inadequate and necessity provided the adaptor. The one that fitted in the B.C. lampholder overhead being quite illegitimate. The flex feeding the original pendant was not suited to the extra load. As I write there comes to mind a picture of mother ironing while the pool of light spun around under the influence of the flex which borrowed the supply. On the skirting boards castles were built as one adaptor was plugged into another to take flexes here there and everywhere. Amazing networks of floorbound and therefore potentially dangerous leads wandered around to feed extra lights—table lamps, floor standards, radio, even the clock, and worst of all an electric fire.

In the multiplication of lights Mr. Everyman was showing an appreciation of the nature of electric lighting and a stubborn refusal to be tied to the solitary pendant—after all why should he?

Things have greatly improved in these ring-main days, but all too often there are still not enough points. It is not that in today's relatively small rooms one may want to use a dozen or more separate lighting positions at a time, but that if electricity is to allow us the freedom of moving our lights about like we did with the candle or oil lamp then there must be sufficient **points on hand to ensure that** only a short length of flex is needed to feed it. Long flexes get tangled with chair legs or trodden on.

In factory or giant open office floors or in a school or college there can be little doubt that **the long lines of fluorescent lamps have** brought plenty of light in a form representing a vast improvement on the rows of open lamps in conical opal shades and blends in well when it is called on to supplement failing daylight. Fluorescent tubes like all lighting need proper maintenance; people expect to clean windows regularly but seldom give a thought to the source of artificial light except when a lamp goes. Prior to fluorescent lamps, in the grander surroundings a complete opal globe, originally in a variety of Mrs. Beeton jelly mould or pie dish shapes, held sway. They mean Banks and Whiteleys between wars to me. Some of these are still current in a cleaned-up (Bauhaus influence?) form. This was no way to use electricity to light. There is no glare it is true, but there is no sparkle either—a flat overall slop of light everywhere and over everything.

I think the long popularity of the reproduction period fitting with candle lamps springs from an instinctive reaction against even lighting from large sources. The opal globe diffused and alabaster dish indirect lighting school and the later conealed lighting in



cornices and laylights had its origin in the glare of the electric lamp when used on its own even when internally frosted and called pearl. I well remember in 1929 Oliver Bernard\* declaiming against the 100-watt bulb and introducing a long *single ended* opal tubular lamp which he had persuaded, albeit with much difficulty, the G.E.C. to make.

Oliver Bernard had then just made a hit with his marble décor and lighting for the Tottenham Court Road Lyons Corner House (May 1928)—only closed in the last two or three years. Early environmental engineering if you like for the wall fitting design included room ventilation arrangements. A piece of Bernard lighting which still remains is the entrance to the Strand Palace Hotel with its Lalique moulded glass revolving door and display frames.† The canopy lighting has however been simplified.

Today man has an immense variety of artificial lighting sources at his disposal. It is electricity that is responsible, of course, but he can still go back to the candle, real or artificial, should he so wish. Even when out of reach of the electricity mains there are Calor gas lamps and lanterns to banish the darkness. In his power to abolish darkness one can say man has achieved a mastery denied to him in other physical fields. Furthermore good lighting is relatively cheap, it is not difficult to afford it. What are the rules of personal lighting? Should there be rules? Why is it that at a time when almost anything is possible the displays of lighting fittings in the big stores are still so depressing? Yet that this need not be so was shown by the lighting display at the Design Centre last autumn. Electric fires, irons, radios, cookers and washing machines are positively elegant in their styling, but a home full of these suburban amenities will be lit by a lot of junky muck!

It is not just the fitting itself at home that is so repulsive or so unimaginative but the light shed that is so dreary. Yet all the tricks of the trade are deployed for these people when they go out to eat, to be entertained. Far more effort and originality goes into décor and lighting than goes into maintaining the quality of the food. This began with the espresso coffee bars. Faced with a machine which produced exactly the same coffee in the same glass cup and saucers everywhere, unique décor and lighting were the only way of giving each place an identity.

Earlier I described how the incineration of a left-over sausage roll may have provided light for the artist to complete his wall paintings. Now we are at the opposite pole, wall paintings and lighting are essential to get us to eat modern food, the apotheosis of which is the modern sausage roll—the wimpey with musak and reconstituted onions.

\* A scene designer who pioneered lighting and décor for non-theatrical purposes see *TABS*, Vol. 22, No. 1.

† This, about to be demolished, is reported to be going to find a home in the Victoria & Albert Museum.



## MAN OF LA MANCHA AT THE PICCADILLY THEATRE

by Ian B. Albery

The requirements for staging *Man of La Mancha* were somewhat difficult as the acting area had effectively to be isolated in space, not only laterally but also vertically. The original American production had been at the Anta Theatre in Washington Square,\* which having a wide fan-shaped auditorium without any proscenium frame made this effect easy to obtain. The National touring production which I saw at the National Theatre in Washington was a somewhat unhappy compromise and there was little feeling of the isolation of the prison area and even less of the cells underneath.

For London, the designer, Howard Bay, was very direct and to the point and stated flatly that the only really effective form of presentation would be to remove the entire stage, including the fore-stage and proscenium wall. The Piccadilly Theatre happened to be suitable for this treatment, and with the co-operation of Mr. Eric Jordan and the Greater London Council Theatre Architects Department, the detail of the structural alterations and the construction of the scenery were satisfactorily resolved; and for the first time in over 60 years a waiver to the requirement for the safety curtain to be used in a West End proscenium theatre, was granted by the Lord Chamberlain, the safety curtain being permanently chained up to the grid for the run of the production.

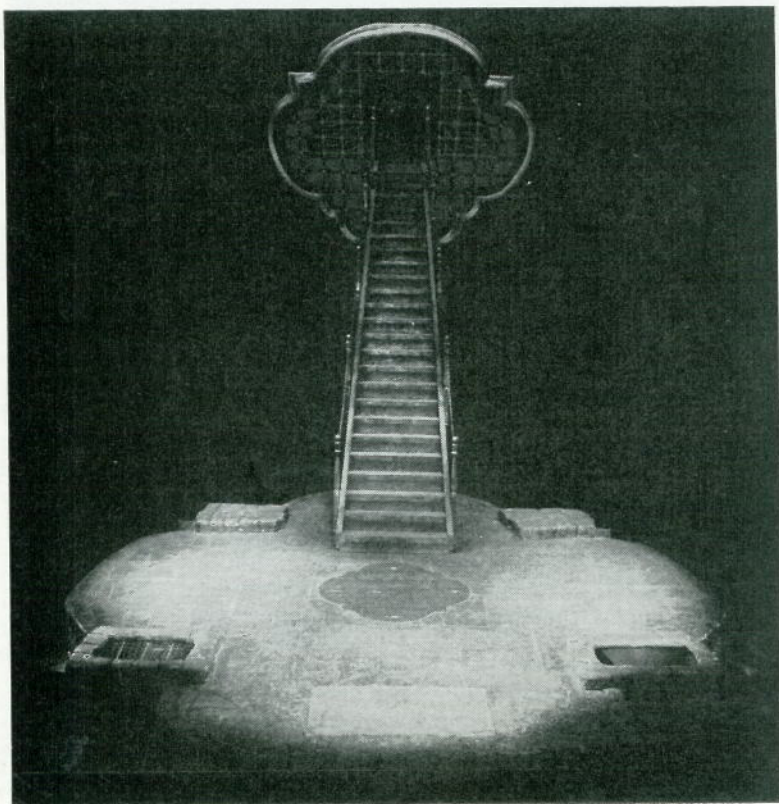
Effectively, the stage floor was now the basement 10 ft. below the original stage level, with a steeply-raked quatrefoil shaped island

\**Tabs* Vol. 22 No. 2.



built up in the middle, forming the acting area, with a wrap-round black noile silk 95 ft. × 57 ft. cyclorama. This left us with the very difficult problem of finding a means of setting and servicing spot bars which had to be deaded at about 45 ft. above the basement stage level. In America and on the Continent frequent use is made of lighting bridges, either permanent or specially rigged for this purpose, but this solution seemed cumbersome and expensive as we had five full-length spot bars to service and, in any case, access to the bridges would have been extremely difficult with the enveloping cyclorama. The natural line of thought from bosuns' chairs was to a more effective type of travelling cradle. Economically, standard heavy-gauge tab tracks seemed to offer a possible solution if a sufficiently lightweight cradle could be devised.

Mr. Clifford of Hall Stage Equipment Ltd., designed, to our specification, an extremely lightweight cradle which could either be hooked direct to any counterweight barrel or by the use of a separate skate travel on a standard heavy-duty tab track. As the counterweight system was double-purchase, counterbalancing might have



*This shows the special cradle running on a heavy duty tab track for focusing and maintenance of the spot bars. Note the counter weights in the bottom of the cradle which are removed after the electrician has stepped into it.*

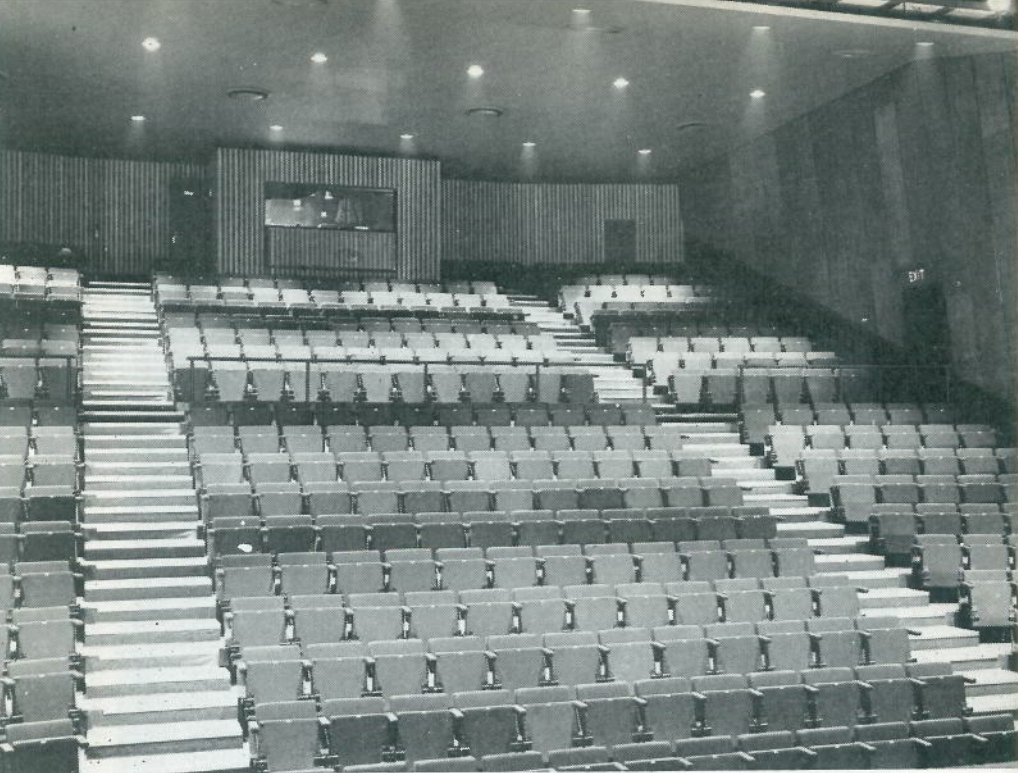
been a problem but this was overcome by the use of four standard 30 lb. lead counterweights which were placed in the tray of the cradle and unloaded after the electrician had stepped into it, and reloaded again before he vacated the cradle. This provided a safe balance for single-handed working of the counterweight set, so that only two men were required for focusing and maintenance of the spot bars, there being ample room in the cradle for spare lamps, colours, barn-doors and tools.

Needless to say, the above is only an outline of the system installed, and does not elaborate on the many minor precautions which had to be taken in manufacture and operation.

For this production we also installed what I believe to be the first variable-speed thyristor counterweight hoist, complete with 2 ft. analogue-type limit box, which was designed by Hall Stage Equipment Ltd., to couple up to any of the existing 40 counterweight sets in the theatre, giving a speed range of from 8 ft. to 64 ft. per minute. This proved entirely satisfactory, even with the varying weight loads of from say 400 to 800 lb. imposed by picking up the end of the pivoting bridge\*, with limit setting accurate to under  $\frac{1}{8}$  in. By altering the sprockets the speeds of the unit can be considerably increased or decreased according to the requirements of different productions. Although the motorised unit was on the grid, full provision was made for an electrically-interlocked release clutch at fly gallery level, for emergency hand-working, with the controller in the prompt corner operated by the stage manager.

\*Seen as a flight of steps in the photograph opposite.





## CHESTER'S GATEWAY

by Percy Corry

This former Roman citadel whose celebrated "Rows" anticipated by a century or two what we would now pompously refer to as a shopping precinct has not been theatrically conspicuous in recent years save for periodic amateur revivals of the Chester Cycle of Mystery Plays. It is recorded that when the plays were originally performed on pageants drawn through the streets of the medieval city "they first beganne at ye Abbaye gates" which seems good enough reason why Chester's new theatre should be named the Gateway. It is also appropriate that modern "developers" should have been induced to emulate the old trade guilds: the theatre is an integral part of a new shopping complex, a fact that is boldly announced in architectural terms by a dominant external canopy formed by the rear portion of the raked auditorium above.

It is inevitable in such a project that the facilities of the theatre should be restrained by spatial demands of the shopping areas. There have been many alterations to the architect's original plans, dictated no doubt by economic considerations.

The auditorium seats some 500 people in 19 tiered rows divided by two gangways into three blocks. A cross gangway between rows

10 and 11 gives access at one end to the refreshment foyer and at the other end to a small exhibition hall and other ancillary accommodation. The rows of seats are at 2 ft. 8 in. centres, rather better than the 2 ft. 6 in. that was fairly universal not so very long ago, but still less than generous to those of us whose long legs are a liability that could be mitigated by an extra inch or two. It is sometimes argued by theatre people who should know better that it is a bad thing for audiences to be made too comfortable. Shaw's dictum that the English are disposed to equate discomfort with morality still has some validity. There are theatre enthusiasts whose tense evangelism ignores the basic fact that a theatre's main purpose should be to provide civilised entertainment in congenial surroundings, a process that demands consideration for the well-being of the customers. No matter how generously a theatre may be subsidised its social and artistic success must depend on making large numbers of the citizenry eager to pay at the box office and not on the response of a faithful few to impassioned appeals to "support the live theatre".

This parenthetic diatribe has no particular reference to Chester. It is merely a release of an accumulated head of steam. The Gateway is an attractive theatre although one would have welcomed a little more gaiety of environment. There is a rather subdued combination of restrained colours with a preponderance of brown. Also the general lighting of the auditorium is patchy, due partly to the lamps being deeply recessed in the ceiling.

The stage is 3 ft. high and as the seating tiers have risers of 1 ft. sight lines from all seats must be well-nigh perfect except from those on the cross gangway where extra width should be countered by extra height. The two rear rows of the centre block of seats have been sacrificed to provide a lighting and sound control room that is barely adequate in size for the equipment installed. Access to this control room is through the auditorium.

The ceiling apertures for the F.O.H. spots are adequate in size but as has happened in some other new theatres the fixings have not been sufficiently precise in relating bridges and barrels to the apertures so that the lanterns stick out. It can and does happen that during construction the actual positions of structural beams and other impedimenta necessarily sited in the ceiling void can conflict with the planned positions for bridges and equipment. Adjustments should be carefully checked on site before it is too late to rectify any such error.

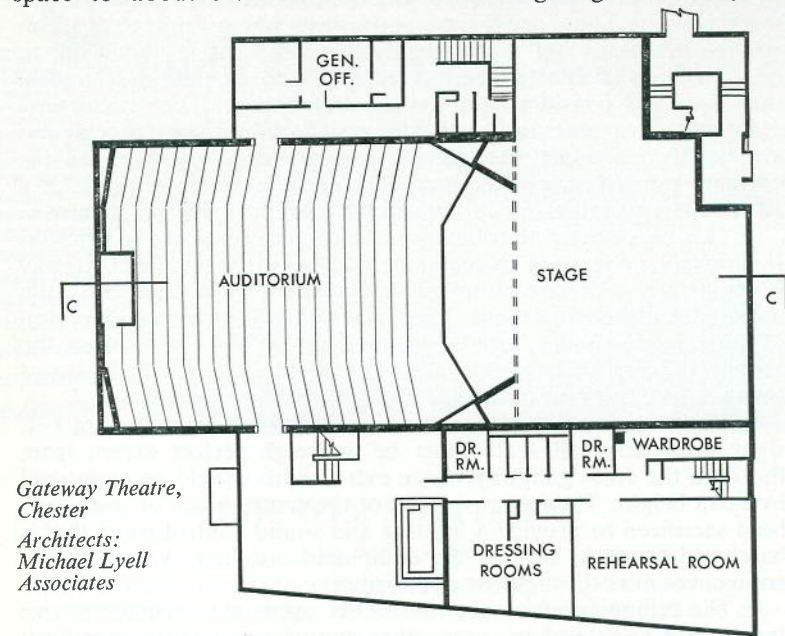
There are wall slots in the side walls, fitted with hinged panels, presumably to simplify construction and to preserve an unbroken surface of the side walls when, if ever, the spots behind the panels are not to be available for use. It would probably have been less obtrusive had the spots been candidly exposed on wall brackets if permanent masking of the slots was not permitted. Audiences are now well used to the functional display of spot lanterns.

The theatre has an exceptionally large orchestra pit which extends 9 ft. 6 in. into the auditorium with a further depth of 4 ft. 6 in.



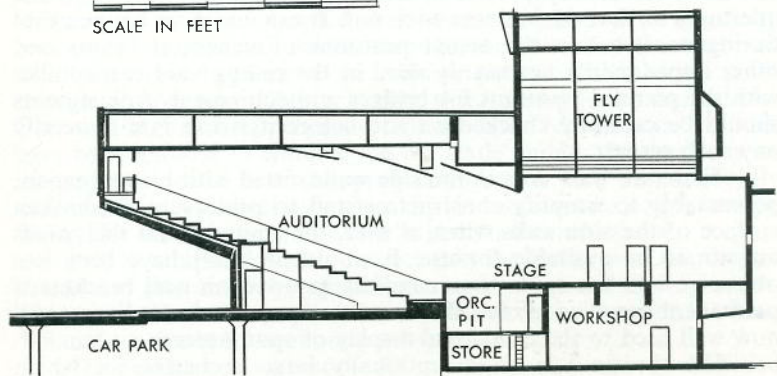
underneath the stage. It is understood that this was demanded to accommodate large orchestras if and when ballet and opera were presented. The initial policy of the theatre is to maintain a resident repertory theatre and the pit can be covered by a manually erected apron stage.

The side walls of the auditorium are partially splayed to create a 32 ft. wide proscenium opening which is 15 ft. 6 in. high. Stage and auditorium are within the same basic rectangle which restricts wing space to about 9 ft. on each side. On stage right there is, as



Gateway Theatre,  
Chester  
Architects:  
Michael Lyell  
Associates

0 5 10 20 30 40 50  
SCALE IN FEET



SECTION CC



the plan shows, dock space off but the overhead clearance is reduced by the bottoms of the 40 double purchase counterweight frames. There is a depth of 32 ft. 6 in. from the proscenium wall, plus a permanent apron of 3 ft. and a rear alcove 8 ft. 6 in. deep and 16 ft. high. The grid is 40 ft. above stage level.

Below stage is a scenery workshop with entrance at outside ground level. Although the height of this workshop is less than desirable the level of the stage floor above is too high for easy transfer of scenery, furniture, props, etc., between stage and road vehicles; it has been necessary to install a hoist. Scenery from the workshop is passed to stage level through a trap. There is no paint-frame but cloths can be painted on stage by the use of two sets of lines.

There is a single-piece safety curtain and the main tabs may be either flown or drawn on and off. A complete set of black draperies can form a neutral background to free-standing scenery which could of course, be of restricted height. The lighting equipment consists of Profile and Fresnel spots for the F.O.H. and acting area positions with a battery of 500-watt floods for cyclorama lighting.

Many people in Chester have long agitated for a new theatre. One can remember discussing schemes as far back as 1947. There is now the possibility of making Chester theatrically lively and significant. A welcome addition to the growing number of community theatres.

#### Chester Gateway

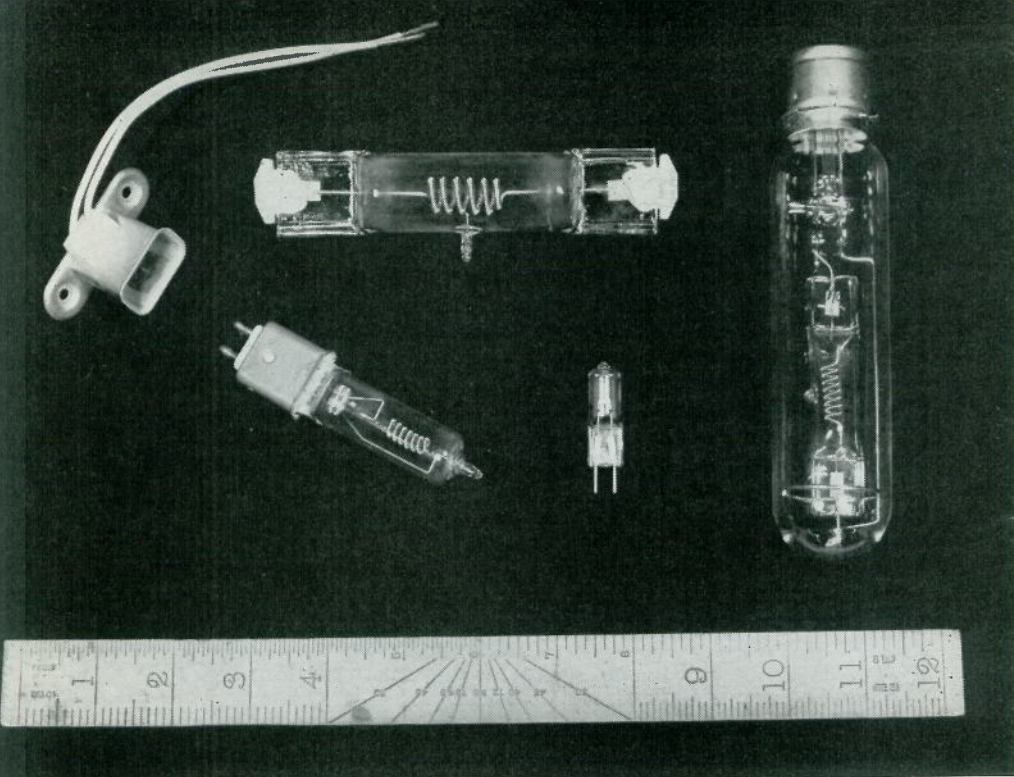
#### Stage Lighting Circuits

#### Control

SP/60 3 preset  
4 × 5 kW dimmers  
56 × 2 kW dimmers  
128 kW 240 volts

FOH	18
Flys	31
Dips	11
	—
	60
No Patch	





## TUNGSTEN HALOGEN OR QUARTZ IODINE

Every now and then a magic word arises; "fluorescent" and "electronics" are two of a decade or so back. Then we had "silicones" and "automation"; and "quartz" and "computer" are two of today. Such words become catch phrases applied with as little meaning and force as the four-letter words used so liberally in the Covent Garden market **outside this office**. **Back projection** has become synonymous for projected scenery although 95 per cent of the examples are front projection in the technical sense.

The cult of the quartz lamp which has been the rage in America is now spreading over here. What is it and has it anything to offer the theatre? One of the things it is, if shoved into hastily contrived or converted lanterns, is a means of providing a streaky and uneven field of light; bright in places, dull in others and with a penchant for burning holes in colour mediums! However, in purpose-designed equipment tungsten halogen lamps are the biggest shot in the arm for stage lanterns since the first projector lamps came into being some fifty years ago. The reason for this lies in what is known as the halogen cycle.

For normal tungsten lamps to become efficient the filaments must be run at the highest temperature possible. Even so they can hardly be called efficient since over 90 per cent of the energy becomes unwanted heat. When a lamp filament is heated it tends to evaporate and deposit itself on the walls of the bulb. Therefore, not only is oxygen excluded to prevent combustion but the bulb is filled with an inert gas to impede the deposit on its walls. However, the process cannot be stopped completely and the light output drops steadily towards the sere and yellow during the whole of the lamp's burning life. This is where iodine comes in, or rather some other halogen, for a cycle takes place at high temperature in which the evaporating filament is returned from wall to filament. Bulb blackening does not take place and, in consequence, light output is maintained throughout life. However, life expectancy is not unlimited for the return of the evaporation to filament does not coincide exactly with each point of departure—the filament weakens and the lamp ultimately dies.

In America there has been a lot of development of these new lamps and in the case of projector lamps which is the class which particularly concerns theatre they have been aided by a voltage of half that in Britain and Europe. This enables them to use shorter, thicker filaments. However, several lamp manufacturers over here are working on this problem and it is reasonable to expect that a year or so from now will see the principal Strand spots using the new lamps. Indeed, at this moment, such Strand spotlights are already available in America and are identified by the initial Q in front of their pattern number; for example Patt. Q23 or Patt. Q263. Where such a number is used it means that the unit is of a modified type designed to take the tungsten halogen lamp in the most efficient way. Examples of these lamps appear to the left of our picture and all use new forms of lampholders. Particularly interesting is the two-pin holder, top left, with tails protruding from it. This takes a 500- or 1,000-watt lamp (the latter is shown) of remarkable compactness and which can burn in any position. This holder appears the most likely to become standard for stage spotlight use and it is this that is fitted to the Patt. Q263 just referred to. Lamps using this holder can burn in any position, a fact that is going to take some getting used to after fifty years of prohibition and grudging concessions that you can tilt a projector lamp in one place only and through a strictly limited angle only.

Many tungsten halogen lamps in America are available in a choice of two or three burning lives. A very long life such as 2,000 hours means low light output, and a very high light output means a life of only 50 hours. A convenient figure for theatre would seem to be 200 minimum and 500 maximum, by which time the lamp would need cleaning anyway.

To cover lamp replacement in existing spotlights, a second type of tungsten halogen lamp is supplied. This is shown on the right and close examination shows that the special quartz tube is enclosed in an ordinary glass bulb; in this case that of the T4 (U.S. T12)



cap-up burning 1,000-watt lamp for which it is a direct replacement. Such an arrangement may be less efficient, but it is convenient and makes the maintenance of performance through life feature of tungsten halogen lamps available to those who have existing models.

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## BOOK REVIEWS

“**Sound in Educational Television**”, Glyn Alkin. Published C.E.T.O. 1968, 5s. 43 pp. Illustrated. C.E.T.O., The Studio, Nuffield Lodge, Regent’s Park, London, N.W.1.

The title of this, the latest C.E.T.O. booklet, “**Sound in Educational Television**”, is something of a misnomer; it is rather an introduction to television sound in a more general sense. It should be compulsory reading for anyone embarking on any aspect of sound in this, or indeed any other, medium. As the author states in his opening paragraph, “it is all too easy to think of the sound aspect as relatively simple”; the thought is not, alas, unique to television.

With only 40 pages at his disposal Mr. Alkin has confined himself almost entirely to the field of television studio microphone technique, one on which he can, and does, write with authority. There are some rather vague references to the acoustic treatment of studios, and none at all to the use—and problems—of recording and recorded material, fold-back or talk-back, so that the book’s usefulness to theatre sound technicians (for whom of course it wasn’t written) is rather limited. And even after 40 pages, with so much compressed into them, an index would have been useful.

I was disappointed to find very little acknowledgment of the shortages of space, equipment and cash which one fears will be the almost inevitable lot of so many of the readers to whom the book is directed; a chapter on “making do” could have replaced some of the photographs with advantage.

But these are really very minor criticisms of a work which as a whole is logically written, understandable and exceedingly useful; no one with even a little experience in the studio will have any difficulty in steering whatever middle course is dictated by his facilities or his budget between the desirable and the feasible. And should he be faced with a situation for the first time Glyn Alkin’s booklet will reliably point him in the right direction.

Particularly useful is the section on microphone balance of solo musical instruments, with an appropriate emphasis on the piano. (As an aside, let me add that the harpsichord—or at any rate the modern instrument so described—sometimes calls for the reverse treatment of that recommended for the piano; putting the microphone under the treble end of the soundboard will frequently reduce action noise. But beware of pedal noise, which can be worse even than the rattling of plastic jacks.) Earlier in the booklet a couple of pages are devoted to that most useful device in ETV, the lavalier microphone, with due warning given of the distortion and bass-heaviness that can result with some microphones and some people. It goes without saying that the “curve-bending” required to minimise such effects is fully described.

Glyn Alkin’s final words are worth quoting: “It is worth taking care.”

BERNARD BIBBY

“**The Lost Theatres of London**”—Raymond Mander and Joe Mitchenson. Rupert Hart-Davis. £6 6s. 576 pp. Illustrated.

The origins and highlights of the present-day London theatres have been collected in *The Theatres of London* by the same authors who now cover the central London theatres that have been lost, but not necessarily forgotten. Many of us are too young to know at first-hand theatres such as either of the Gaiety’s, Astleys, the Alhambra, the Olympic or the Opera Comique, but nevertheless we instantly recognise these names because of their association with

personalities and productions of the past. In all, 28 theatres are dealt with in considerable detail, both the physical building and the principal events. The numerous changes of title and the not infrequent rebuilding after destruction by fire are included under the last used name. The majority of the descriptive material is in the form of long quotations from contemporary newspapers and magazines such as *The Era* and *The Theatre*.

It is not surprising to find that some features hailed as new and exciting at one period are later described as inconveniences replaced in some subsequent refurbishing. There is one theme, nowadays unusual, common to the descriptions of all the theatres built in the last decades of the last century; that is the proclamation of the safety features, a safety curtain installed was a positive merit, not a near-obscene word, and the addition of an extra exit stairway was an asset to be broadcast to the public. After the tragedies at Vienna and Exeter the public, not just authority, demanded reassurance or exercised right to stay away.

Then, as now, not all theatres were built for the purest of motives, a profitable speculation was then to build a theatre on a site likely to be needed for road widening. Other theatres had more humble origins including the Gate Theatre which was housed “on the top floor of a ramshackle warehouse” in Floral Street. That warehouse was then the principal premises of Strand Electric!

Each theatre is illustrated at two or more moments in its history, though the 108 illustrations are unhappily collected together in the centre of the book. Appendices include an alphabetical list of the theatre architects and maps showing the location of the theatres, but for these you need to know London well, as neither the orientation nor the scale is constant. In their introduction the authors make much of the inaccuracies in other works—a gentle hint would certainly not be amiss, but they are not blameless as the architects of the Tivoli were Bertie Crewe and Gunton & Gunton, not any of the different versions and combinations that they include! However, the authors deserve congratulations on collating so much material from various sources into one authoritative book. They have been ill-served by their publishers on the presentation of the illustrations especially in view of the high price of the book. Could it be that a reasonably priced paperback edition is planned as happened with their previous book from the same publishers?

BRIAN LEGGE

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## CORRESPONDENCE

### *Inaccurate Observers*

It is a pity that critics of the standing of Ronald Bryden should allow their enthusiasm to run away with them. Almost anything is legitimate to convey enthusiasm a particular critic feels, in this case for Sean Kenny’s *Gulliver*, except distortion of fact. In the *Observer* of December 29th the following appeared:

“Brilliant and radical landmark in theatrical technology . . . opening such limitless possibilities for drama as to place the theatre on the threshold of a revolution as fundamental as Appia’s introduction of electric lighting.”

This caused Norman Marshall to ring me but I had to let the matter pass through sheer lack of time. However, when a further instalment “repeating the above” turned up the following week as caption under a 5½-inch triple column illustration I was provoked to write:

“Repetition of Ronald Bryden’s . . . ‘a revolution as fundamental as Appia’s introduction of electric lighting’ this time as a bold caption cannot go unchallenged. This is nonsense, what Appia mainly did was to use the pen on behalf of stage lighting. What he advocated could have just as well been carried out with gas lighting, probably more easily as the gas tap was a better and more readily available dimmer control at that time. Further, while not wishing to deny the merit of *Gulliver* in its combination of live action and film, ‘Laterna Magica’ provided all the clues to pick up some years ago. But there again one has to take account of Piscator earlier still.



It is a common mistake to name people as inventors; development is a general process in which there are occasional slight promontories. It so happens that these have a way of catching the limelight."

The editor of the *Observer* did not find room for this but did for the following: "It is rather surprising that nobody has corrected Mr. Ronald Bryden's statement that it was Appia who introduced electric lighting into the theatre. Before that precocious gentleman was even born electricity had been installed in the Paris Opera, though gas was installed to supplement it. And here in London the Savoy was the first theatre to be lit entirely by electricity . . . and Mr. Appia was still only in his teens."

Well done, Mr. Johnson, and bang on the important technical points, but it will be noticed that my letter was more interested in artistic innovation. As something of an inventor in both fields myself I do feel that we ingenious ones can be given too much credit (even if never enough money!) One does things in the technical artistic climate of the time. Innovation is not a solo. George Stephenson was better at what he did than others who were trying to do the same things. Stanislavsky was more successful at, but not the only one to attempt, stanislavskying.

FREDERICK BENTHAM

*A new life of Appia has just been published and will be reviewed by Norman Marshall in the next issue of Drama. Technical aspects of Appia's work will be dealt with by Mr. Marshall in our next issue—Editor.*

**Light and Lighting Vol. 62 No. 2** published by the Illuminating Engineering Society, York House, Westminster Bridge Road, London S.E.1. To celebrate the Society's Diamond Jubilee a special issue of its journal *Light and Lighting* contains rather more of interest than usual for those who take an artist's rather than an engineer's view of light. This particularly applies to an illustrated article on The Painter's Vision of Light.

### General Move or Remainder Dim?

*Brian Legge of Publications Department writes:*

Operators of our Console-Presets and the few remaining Light Consoles will recognise our title as the names of master controls, always used in conjunction with another master, to initiate a wholesale change. Or rather they should recognise either one, or the other, for they are alternative titles, for the same thing—a fact not appreciated by one West End theatre who sent us a valuable order to fit the Remainder Dim facility; we obliged by changing the label free of charge.

General Move aptly describes the changes of addresses of Strand Electric organisations overseas. Strand Electric (Australia) Pty. Ltd. have moved to new premises at 19 Trent Street, Burwood, Victoria, 3125, and in Toronto, Strand Electric Limited have moved up the road from 261 to 105 Davenport Road. Strand Electric—Hessenbruch G.m.b.H. have moved into new purpose-built offices and factory, but their address remains 3301 Salzdahlum, Arn Salzburg. Not to be outdone Strand Electric (Asia) Limited have a change of address though they have not in fact moved; their office block has been renamed and therefore the address is now 1618 Star House, 3 Salisbury Road, Tsimshatsui, Kowloon, Hong Kong. Strand Electric Inc. remain resident at 3201 North Highway 100, Minneapolis, Minnesota 55422.