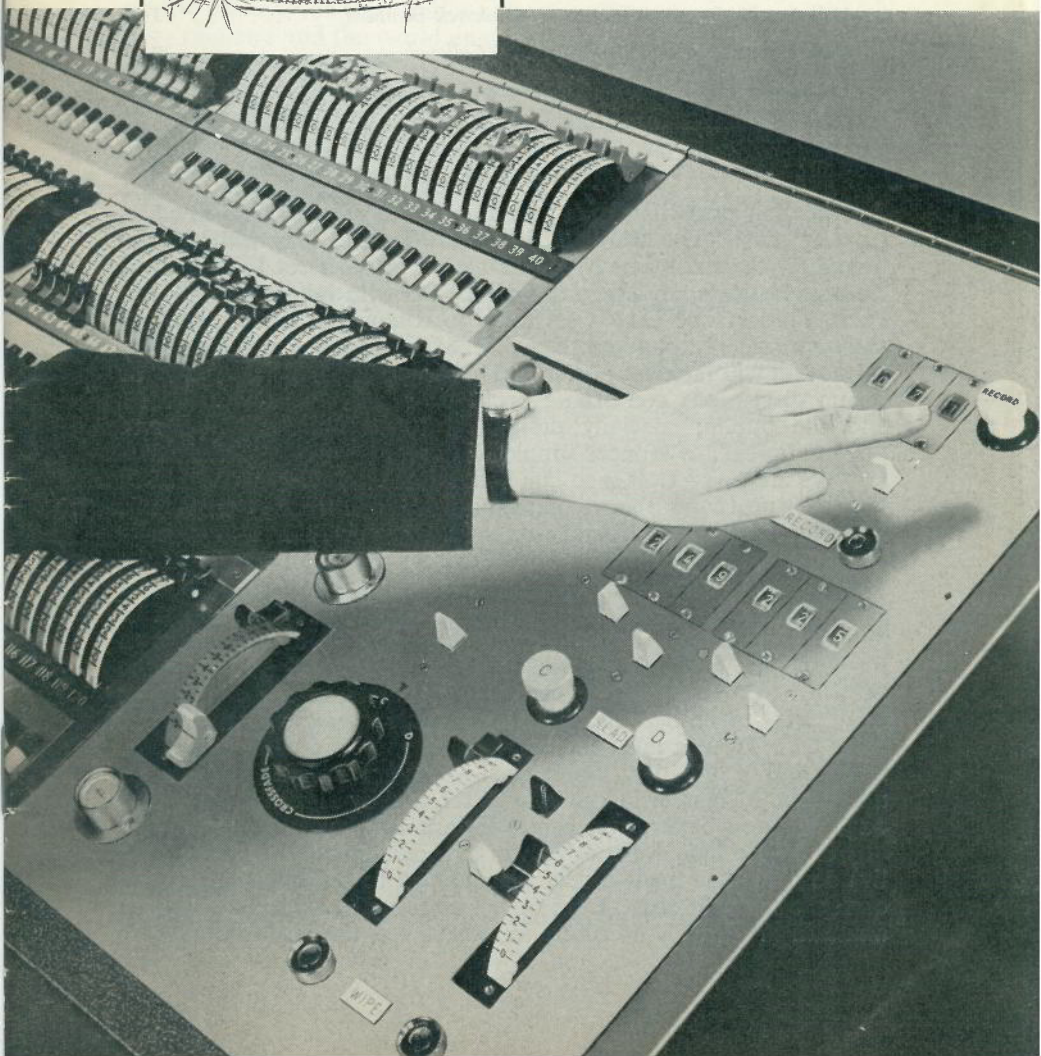


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TABS

JUNE 1967 VOL. 25 No. 2



Cover picture: Instant "Record" and "Playback" of lighting cues.
See At last or no longer a Luxury, page 15.

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Mother's or Father's Day?

A Canadian press handout "for immediate release" informed us recently that: "On March 27th, World Theatre Day will be celebrated for the sixth time by the 52-nation members of International Theatre Institute, an affiliate of UNESCO with its central office in Paris, France. The Day is set aside to commemorate *the ideals of theatre workers* throughout the world. Manifestations will take many forms and will include: poster and photograph exhibitions; panel or forum discussions concerning problems relating to the performer and the public; specially designated theatre performances and 'open houses', newspaper supplements and other related items."

We are sorry TABS is so late with this news that our readers will have to postpone their commemorative celebrations until this important day comes around next year. By the way the italics above are ours. What are "the ideals of theatre workers throughout the world" which they have in common? We suspect that they can be summarised as neatly as Noel Coward is said to have done when he replied to an actor "the motivation, dear boy, is your pay packet on Friday." The handout contains references by the Canadian Prime Minister to "those whose lives are dedicated to the performing arts". Not to be outdone, a notable theatre personality weighs in with "... Theatre must therefore be an expression of courage, of liberty and of integrity." Some such words are uttered from time to time by politicians, who know no better, and by theatre people, who ought to know better, over here; they are not peculiar to Canada.

Is it not time we theatre workers recognised that we cannot live on halos and made a determined effort to resist this attempt to change our classification from rogues and vagabonds to missionaries and saints? There is no future in either! We, the professionals, are

just another set of workers doing a job at which we hope to make a living for ourselves and our dependants. We are fortunate that we love our work, in all its theatrical branches, but we are unfortunate that in most cases the pay and conditions are very poor indeed. An Equity survey has shown that members of the acting profession are on an average among the lowest paid workers in Britain. Nor are the prospects at the moment for the trainee theatre technician any better. To the few comes fame and or fortune. Why do the rest carry on? Certainly not out of dedication nor as men and women with a message; we kid and betray ourselves if we think this. No!—work in the theatre is simply a matter of self indulgence. When bitten one cannot leave it alone. The theatre and the stimulus to ideas (not ideals) and to self display it provides, form an irresistible allure. It is fortunate for the world that the theatre-struck exist and have always existed, for their antics entertain. Thus we are there for our own pleasure and the world enjoys it with us.

Meantime what of "theatre day"? It is an excellent example of the kind of thing our Fliegendertheaterkulturman of the last TABS editorial is liable to produce at his conferences. Your editor has to confess that he feels a great deal of no-enthusiasm for Theatre Day. We had an Empire Day once upon a time which was observed each year with flags, parades and other pomp and circumstance. It did not save the British Empire or the Chiswick Empire either!

A HUNDRED YEARS OF SHAKESPEARE

by G. A. Deaton

Mr. Deaton is Second Master, Forest School, Snaresbrook, London

A recent article in *The Times* on the new season at Stratford-on-Avon, writing of Trevor Nunn, mentions that at Downing College he studied under Leavis and says in parenthesis: "who has, indirectly probably had more influence on postwar theatre than any other don". This may seem an odd statement when one thinks of so many more theatrical dons, but the significant word is, of course, "indirectly". The kind of attention that Dr. Leavis demands that a reader should bring to literature generally is no less applicable to drama than to any other form. But the conditions of theatrical playing from the Restoration to the present day have made it very difficult for audiences to respond with any sensitivity to dramatic dialogue and particularly is this so of dramatic poetry. Befuddled by spectacle they have responded often enough to "great" acting and drama has often simply meant this. Shakespeare has, above all, been the vehicle for the great actor and he, by his technique and personality, has persuaded the audience to believe in the truth of his suffering and to feel that they have experienced the high passions of drama. However, Shakespearean drama does not lie alone in the actions or speeches of the main characters but in the whole of the dramatic poem. This the post-war theatre seems to have learned and



Forest School, Snaresbrook. Architects: G. Shenstone and Partners (J. Nekanda-Trepka). View from audience with tabs open and trailer closed over cyclorama.

the attention to the details of the plays evident in recent productions at Stratford and the National Theatre and the absence of weak performances in minor parts should have made it possible for audiences to respond to Shakespeare's symphonic structures, and yet the results have been curiously disappointing: some very striking things happen, but the plays seem lesser works than they do in the study. Directors have been so possessed with their apparent duty to add significant detail, to shed fresh light, to extract maximum meaning, that suddenly the lines seem less significant than we had remembered them; the wood disappears and we are left with a number interesting if rather malformed trees.

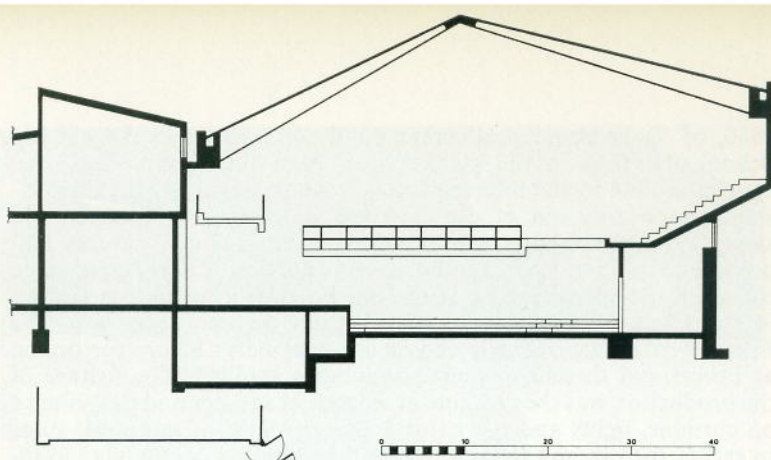
If there is any truth in this assertion (the case is necessarily stated briefly here) is it possible to find any reasons why it should be so?

The opening of a new theatre—and one in many ways highly unconventional—at Forest School may have made its small contribution to answering this question. This School has a tradition of Shakespeare productions going back over a hundred years and it has now had the courage to build not a School Hall that may sometimes masquerade as a theatre but a real theatre that will also serve other school purposes.

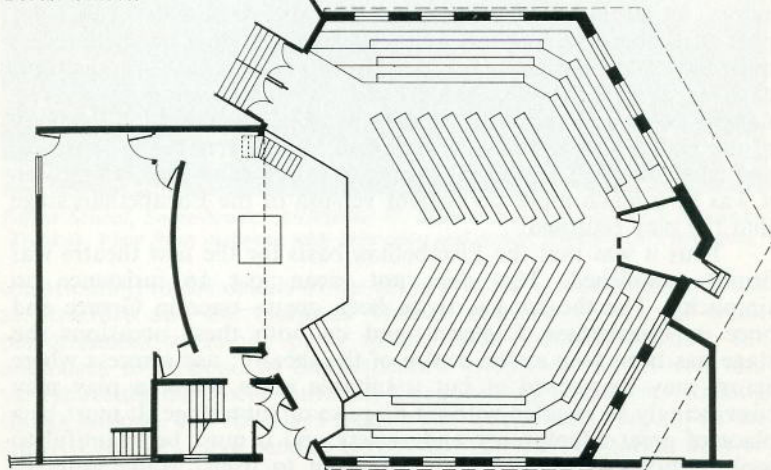
The ideas which lie behind the conception of this theatre are really twofold, and again it is necessary to go back into history to find how these ideas developed. A long tradition, reaching back to

1860, of Shakespeare production, firstly on a stage in the old Big School and then in the gigantic and barn-like Gymnasium, was broken in 1944 by the intervention of a bomb which put the Gymnasium temporarily out of use. Timbers were rescued from the old stage, volunteer labour was recruited from masters, parents and boys, and within two months a reproduction Elizabethan stage based on the specifications of the old Fortune Theatre was erected in the Dining Hall. The first production on that stage was *The Tempest*. It was deliberately chosen as a play never before performed at Forest and therefore comparisons were avoided. The feature of the production was the absolute avoidance of scenery and the reliance on curtains, lights and the natural attractiveness of the novel stage to satisfy the eye and to concentrate the attention on the play itself. The production was accounted a success but it was very difficult to persuade people why it succeeded. They were convinced that no actors, let alone schoolboys, could hold the stage without the support of scenery and would only concede that this particular cast must have been especially talented. In subsequent years productions of *King Lear*, *Macbeth*, *Antony and Cleopatra* and even *A Midsummer Night's Dream* with no stage at all (it was played in the body of the Hall with the audience sitting all round) went far to convince, and when, in 1950, it became necessary to return to the Gymnasium it was to a much more permanent version of the Elizabethan stage that the play returned.

Thus it was that the Elizabethan basis for the new theatre was firmly established. This does not mean just an insistence on simplicity. The theatre has twice been great—once in Greece and once in Elizabethan England—and on both these occasions the stage has been seen as the centre of the theatre; not a recess where actors may be peeped at but a suitable place where a play may convincingly be enacted without disguise or subterfuge. It must be a place of great adaptability and variety and it must be beautiful to look at but it must not draw attention to itself. Many years of producing in Elizabethan conditions had convinced the present author that the Elizabethans worked from below the stage, deriving this practice from earlier pageants and mountebank stages, and so the Forest Theatre started in the cellarage. This consists of a large below stage area to be used largely as a store room and several smaller rooms to accommodate the extensive wardrobe of Elizabethan costumes which the School has accumulated, small properties, etc. From the large room a stairway leads up, stage left, on to the main stage itself. This stairway can be covered in completely to increase the stage area and the trap covers are easily lifted as part of the action of the play to secure maximum variety. There are further traps in the middle of the main stage: a lifting “grave” trap and a dropping smaller trap for cauldron appearances, etc. The main stage is an open platform approached on stage right by a sub-stage, one step lower, onto which opens a main door for “processional” entries and a smaller “secret” door in the wood panelling, of which



Plan and section,
Forest School.



more later. The stage is narrower at the front than at the rear, thus concentrating on individuals and small groups as the action comes further into the audience. At the rear of this main stage is the balcony stage—a continuation of the balcony that surrounds the house. This has a simple iron balustrade and provides a good acting-area for scenes “above”. This stage has a plain arrangement of curtains to provide varied entrances and below the balcony hangs the main stage curtain of royal blue velvet cord. When this is opened two side doorways, set at an angle, are revealed and behind them a reversible traverse curtain on a continuous rail so that there may be a black or grey backing. This traverse is important as in Shakespeare productions the main curtain will be open most of the time to give the maximum depth to the stage and the greatest number of entrances. When this traverse is open the stage goes back to a solid cyclorama or this may be covered by a second grey/black traverse. This inner stage or “study” is not deep, but the cyclorama gives an impression

of depth as well as accentuating the “roundness” of the house, and there will certainly be room for “conventional” staging, using the front curtains as tabs and lowering part of the main stage to leave only a useful forestage. This front part of the main stage can be lowered to floor level, giving more seating room in the stalls for, say, Speech Day, or it can be lowered further to supply an orchestra pit. There is not a lot of “wing” space as the cellarage serves for much of this, but on stage right there is good storage for current scenery and props and above a useful part of the gallery that can be used, say, for musicians. Directly behind the cyclorama and approached by doors either side is a very good long room which is to serve the School as a meeting and minor lecture room and the stage as a splendid Green Room. From here stairs go down to the cellarage.

The intention has been all the time in planning this stage to secure adaptability and variety, but the appearance of the whole is equally important. This must be a place stimulating to the imagination and yet timeless and in some ways “place-less”: the sort of area where, in fact, children would like to play. Children and actors share a delight in multiplicity of levels and entrances and both should be very happy in this place.

Lighting is all controlled from a box at the back of the house where the operator can see the effects he is producing. This box also houses the cinema projector—for the School makes frequent use of films, and this is something for which the building will often be in use. The switchboard has twenty-four dimmed lines, controlling



Daylight view from balcony with front tabs shut.

spots from the roof (including two remote control colour wheels), from above the gallery and from the gallery balustrade. These spots supply all the main-stage lighting—there are, of course, no floats—and also the balcony lighting. Behind the front curtain is a line of floods and spots for general and selective lighting for the inner stage and the cyclorama has a three colour mix from another batten. For Shakespeare productions much of this inner stage lighting is for colour to change the appearance of the hangings.

So much for the stage and its fittings and so much for the answer to the first problem, to provide a place for drama that will not need and, indeed, will reject the embellishment of scenery, and where the play really can be the thing.

The second part of the problem has been with us all the time. It was one thing to design an Elizabethan stage but in the Dining Hall and in the Gymnasium one problem had been insoluble. Both buildings were long and narrow and actors were forced into the wrong sort of playing in the effort to reach the back of the house. This was working against every aim of this sort of stage. The Greeks, as anyone who has stood in the theatre at Epidaurus or Syracuse will know, solved the problem of audibility by the brilliant use of the amphitheatre, the Elizabethans by crowding their audience all round the stage, on the ground and in galleries. Both builders saw it as their purpose to provide a structure in which the actors could be heard. The round or multi-sided theatre must be the answer—anything in the nature of a box must almost certainly be fatal. It might then be to the point to reply to the question what has been wrong with the theatre for so long with the simple answer—it has almost always been the wrong shape.

And so the Forest Theatre is hexagonal. It might have been round but, in fact, the angles are useful and the varieties of line and angle make for interest. A gallery surrounds the house and deepens where it faces the stage to increase the accommodation. This was the only way of meeting the problem set by the smallness of the site, and it has produced a seating capacity of 450. This is rather short of the original aim of 500, but a late decision to meet the G.L.C. requirements so that the theatre can be licensed for public performances, necessitated changes that brought about some loss of seating. But, and this is the essential thing, everyone sits near the stage. There are only seven rows of stalls and then three rows of tiered seats going all the way round the house. The gallery has two rows at the sides and six at the back. Despite the nearness of the audience, in a building largely of concrete there was still a risk that audibility might not be perfect. By lining the whole theatre with a variety of woods and acoustic panels and using the window curtains to provide a band of material round the whole house not only has acoustic perfection been obtained but the whole effect is very pleasing. From the variegated timber lining of the roof to the very attractive wood block floor the whole theatre glows with the colour and grain of natural wood. The red pine lining of what in a conventional theatre would be

the proscenium is particularly beautiful, and it is here that the “secret” stage door is hidden—through which the Ghost of Hamlet’s Father has already made his way into the Queen’s Closet!

Seating in the Gallery is permanent, but the floor of the auditorium can be cleared so that it may serve as an arena for displays, as for example, of fencing and, to come to very mundane matters, so that it may serve as an examination hall.

“Acoustic perfection” was mentioned above and requires some justification. The theatre was opened officially by Princess Margaret on April 26th, but it had, in fact, already staged Forest’s 100th Annual Shakespeare production. *Hamlet* was chosen, partly because it is a play which gives superb opportunities to show off the amenities of the stage and partly because there was a boy capable of making a good showing in the name part. In the event he had a remarkable success and prompted Harold Hobson to write in *The Sunday Times* that “Hamlet took the risk of playing several scenes pianissimo. There are in London and in the provinces theatres whose acoustics are so poor that actors have difficulty in making themselves heard even when they shout. Yet not a word of Mr. Harvey’s was lost.”

In fact, “To be or not to be”, for example, was played in a meditative whisper and yet assurance came every night that not a word was lost in the back row of the gallery. For four nights the theatre was full; eighteen hundred people sat through three and a half hours of *Hamlet* played by schoolboys. Of course, the performances were not perfect and yet the most frequent comment was one of surprise that the play had been as long as the clock proved it had been and the audience spoke of the tremendous pleasure the play had given them and some expressed envy at the amount of talent that must have been available for this centenary year!

And yet in fact what had they seen? Fifty-five schoolboys, dressed attractively in Elizabeth costume, some curtains and some coloured lights, two throne chairs, two simple rostrums, a stool and a small table, one large table and some more chairs in one scene and, apart from some hand props, that was about all. But they had heard a great play, spoken, it is hoped, largely intelligently, without declamation or any other perverse distortion, and they had dwelt in their imaginations in the court of Elsinore for a brief time. What more can the theatre offer?

One more word is perhaps appropriate for schools. So many people have said, “How lucky you are to be able to have a theatre. Other schools have to make their main building serve so many purposes that it just has to be an Assembly Hall.” What nonsense! An Assembly Hall is good for assembling in and for nothing else. So often it is not even a good place for addressing the assembly—witness the microphones that so often seem to be necessary. A good theatre is a good place for people to see and hear and a place where things can happen and may be seen to happen—even Speech Day is not without its element of ritual drama!



CLIFTON COLLEGE

by John Hersee

Mr. Hersee is Master in charge of the theatre

Clifton College has a long dramatic tradition. Besides the School Play, given in the Christmas term, several other theatrical events now occur during the school year. In the Easter term each of the ten Houses produces a one-act play (or a scene from a longer play) for the House Drama Competition. Boys are entirely responsible not only for the acting but also for the production and technical sides of these plays. At the end of the same term the Modern Languages Society produces a play in French. In the Summer term the Junior Play, cast from boys in the Third and Fourth forms is produced. In addition, religious plays have been produced in the College Chapel and two plays have been toured in Denmark.

Since the war the plays have been given in the Preparatory School Hall, but the difficulties of this arrangement have been considerable. The use of the Hall by both the Preparatory School and the Upper School has meant inadequate rehearsal time, limited technical possibilities and no storage space. In addition, the hall has a flat floor; the seating is hard school chairs and from this uncomfortable auditorium few could see much of the stage, which measures

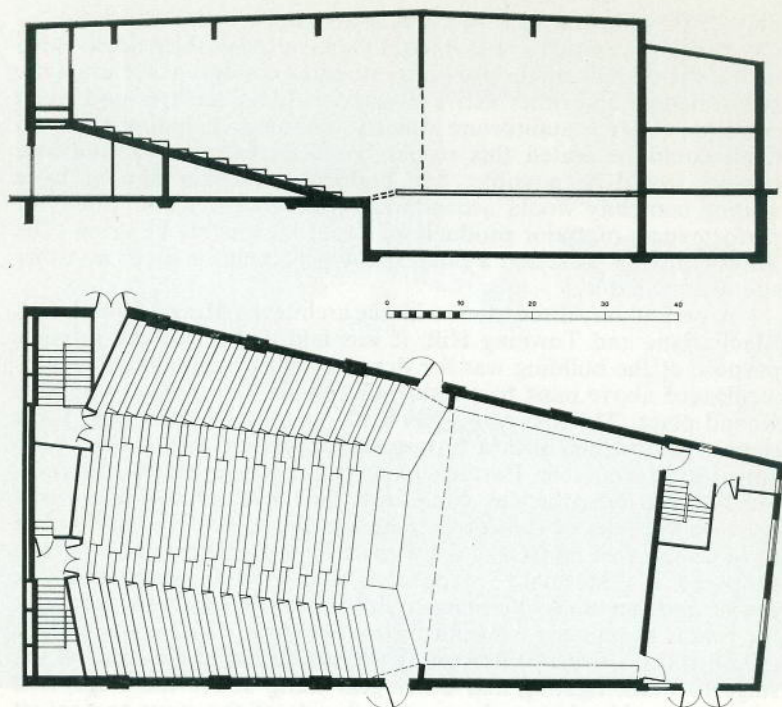
only 25 ft. wide and 12 ft. deep with no wing space.

A theatre seemed to be essential to remove the problems associated with a shared hall and to provide reasonable conditions for dramatic performances and other activities such as films, lectures and small concerts. A large auditorium was not required; if half the School (330) could be seated this would be ideal. Good actor-audience contact would be possible; two performances of a film or by a visiting company would accommodate the whole School and four performances of major productions could reasonably be given. The School already possessed a small site which could be used; no other site was available.

In preliminary discussions with the architects, Messrs. Whicheloe, MacFarlane and Towing Hill, it was laid down that the primary purpose of the building was for dramatic performances. Other uses mentioned above must be considered, but should, if necessary, take second place. The first proposals made to the architects were for a stepped auditorium with a proscenium stage but with a removable apron stage available. Further investigation suggested that this was not the best idea; the site would not allow a reasonable number of seats on the sides of the apron stage and the stage itself would need to be raised well above the front rows of seats. The architects then proposed a "Mermaid" type end-stage, raised only slightly. A simple and functional building could be built in which the roof and the beams supporting it would form the ceiling. Further discussions modified this design by deepening the roof beam at the front of the stage to mask lighting and other gear hung above the stage, and adding movable shutter doors at each side of the stage to convert the end-stage to a proscenium. There were many reasons for these changes; the end-stage gave no wing space and a front-stage width of 34 ft. It was felt that some plays would be easier to stage with a proscenium and more wing space; visiting companies might find the lack of wings difficult, and boy producers with only limited experience might find so wide a stage a problem.

The photographs and sketches give a good idea of the completed building. The external shape is dictated by the shape of the site but although one could have wished for more space at the sides of the stage, and, of course, for more storage space, this has not proved a severe limitation. The basic facilities of the building are complete, but further refinements can be added later as use dictates and finances allow.

The foyer, which is small by professional standards but adequate for School purposes, includes a cloakroom, toilets for the audience and coffee bar, and extends under the auditorium. Staircases at each side lead up to doors at the back of the auditorium. The floor of the auditorium is tiered and each of the 332 seats gives a clear view of the stage. Secondhand cinema seats, re-upholstered in a dark material with the frames matt black have been used and provide a comfortable change from school chairs. The side walls of the auditorium are of unpainted facing bricks with



Plan and section Clifton College, Bristol.

recessed joints; the timber beams supporting the roof are cased in plywood and clear varnished. The roof itself is painted dark blue and this colour is repeated on the extended beam which masks the stage lighting to give a feeling of continuity and on the moveable proscenium doors. The stage curtain is a deep orange, and this colour is also used on the acoustic boarding which forms the back wall of the auditorium. The acoustics and actor-audience contact are both very good. The house-light fittings, which were made by boys in the School, each contain two fluorescent tubes and six tungsten bulbs behind a perspex sheet. The fluorescent lights are used for lectures and lessons; for performances the tungsten bulbs, which give a lower intensity of light and which are dimmable are used.

A small orchestra pit extending partly under the stage is provided, with traps to cover the opening when not in use. This should be large enough to hold a chamber orchestra and for this purpose will require a false floor at the front. Full head room has been allowed so that entry to the front of the stage is possible by



View of auditorium from stage with house tabs raised. Window of control room can be seen in rear wall.

means of a staircase. The stage is 34 ft. deep from front to back wall and 37 ft. wide at its widest point. When in use as an end-stage the width of the opening is 34 ft., but this is reduced to 24 ft. when the proscenium shutters are in use. The stage riser is 14 in. and the height of the opening is 13 ft. 6 in. The two triangular sections at each side of the stage provide a small amount of masking and contain outlets for the hot air heating system, front-of-house loudspeakers and exit doors. The latter can also be used for entry to the stage. It was decided that flying facilities would not be provided. The size of the stage seemed adequate to permit rapid scene changing. In addition, of the many boys who would use the building few would have much experience or technical knowledge and it was felt that for safety a tower was undesirable. The building would often be used with little supervision or with non-technical supervision. For this reason galleries at each side of the stage are provided and all winches and lines are controlled from here. This has the added advantage of leaving the walls of the stage, which are painted black, clear of obstructions; a valuable feature for end-stage and "drama space" work. There is one large trap near the centre back of the acting area; in addition there is a complete row of traps right

across the stage to give access to the main storage space under the stage and to provide holes and graves for plays. The entire area under the stage is excavated to provide storage. Further storage for properties and costumes is under the auditorium, and there is a small scene dock to take tall flats.

Behind the stage are three floors connected by a staircase. The basement contains the air heating plant and is also used as a dressing room. The Green Room, also serves as a dressing room when necessary; access to the stage is via doors at each side of the back wall of the stage, each contained in its own lobby to reduce noise. There are wash basins and lavatories for the cast at this level. The top floor is the workshop, but when mixed casts are performing it provides a self-contained dressing room for the ladies. The solid wall at the back of the stage and the heavy fire-proof doors provide fair sound insulation, but some restraint by the cast is necessary!

Lighting, sound control and projection for films are from the box at the back of the auditorium. A "talk-back" system, so that the operators can hear the performance is provided. In addition to lines to the front-of-house loudspeakers, six speaker outlets are available on the stage. The switchboard is a JP30 with two presets. Each 2kW dimmer feeds a pair of sockets on a patch panel; two 5kW dimmers are included for large loads such as cyclorama lights. There are 20 outlets available front-of-house and 50 in the stage area. Of the latter 40 are in the galleries and 10 are "dips"

At the beginning of this article reference was made to the large number of plays which are produced during the College year. The four full-length and eleven one-act plays performed in the building between November 1966 and March 1967 have occupied a good deal of the time available. But a building of this kind inevitably provides a new challenge and greater opportunities for the School. Three of the performances mentioned above would not have taken place without the theatre building, and no doubt it will inspire many more "extra" performances. In the past, drama has tended to be an "occasional" activity, taking place entirely out of school and when the shared hall was available. Now it is hoped that a more consistent approach can be made through English lessons. Already many classes have made use of the building to act scenes from set texts, and other subjects, for example, Divinity and a course on Classical Drama have found it ideal for their purposes. In fact, there have been many occasions already when several people have wanted to use the theatre at the same time. It is too early yet to say exactly how the theatre will affect the School's life; the stage by itself is large enough to use, with the curtain lowered, as a "drama space"; but it is already clear that it is filling the needs which led to its being built and providing a valuable enrichment of the curriculum.

The Architects have produced a simple, attractive and functional building which is flexible and successfully serves the many purposes for which it was designed.

AT LAST OR NO LONGER A LUXURY

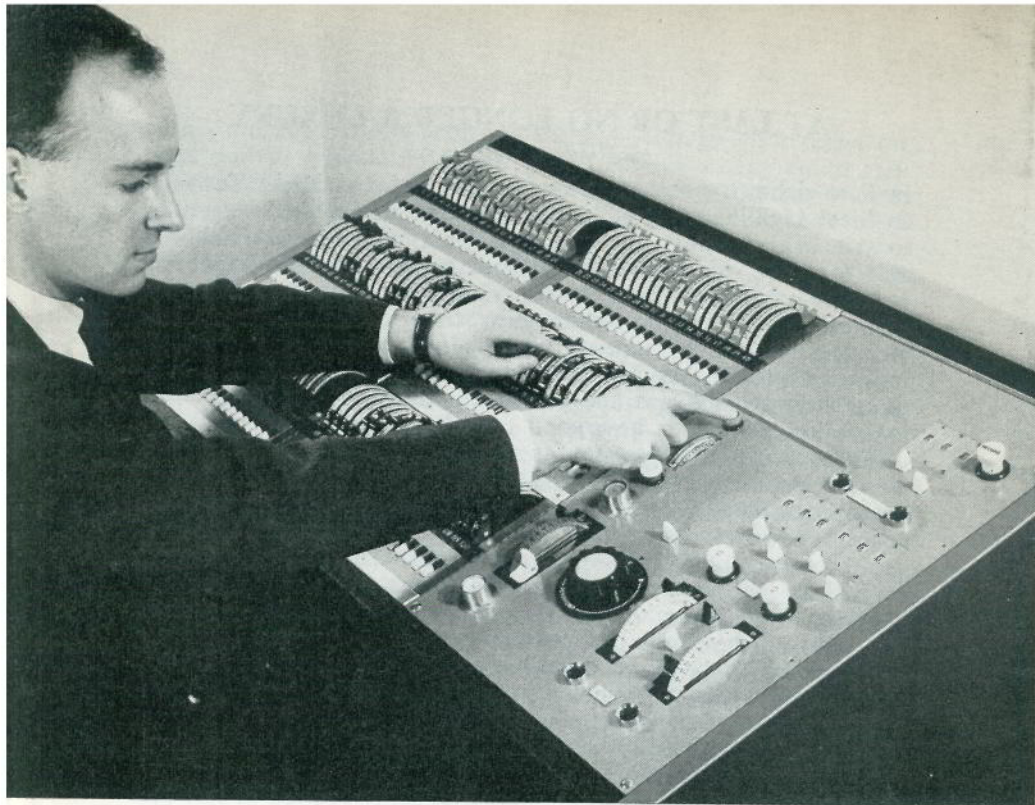
by Frederick Bentham

In TABS eighteen months ago I wrote an article* entitled "Towards an Ideal Lighting Control". It was the first article I had been able to write in all the thirty-five years I have been in the game which was able to adopt this approach. To shed completely what had been practised until now and say "away with tradition, what do we really need of a control?" This was because Strand Electric's instant dimmer memory which rendered plotting unnecessary and provided unlimited presets was just about to be launched. Until then in a sense every switchboard and control for stage lighting had been a makeshift. No matter how good the facilities and how good the operator the whole thing went for nothing when during rehearsal the words "plot it" were uttered. Then there ensued a delay during which one was absolutely convinced, usually with reason, that everything could not possibly be written down correctly. Then again, before a run-through could follow with any hope of success in a complicated show there had to be time to consider how to deploy the resources of the control to solve the various problems bound to be presented. Not least of these was accurately setting all the preset levers to correspond with the plot as it proceeded. Thereafter, at any time the director could bring the whole carefully built edifice crashing down when a change of cue or an extra cue removed or altered the shape of some of the bricks which had to interlock to produce the final masterpiece. No one who has not worked a switchboard can possibly understand the upheaval some simple request, required at just the wrong moment, can cause. Yet a minute or two later something quite colossal in the way of a lighting change may be readily possible. The truth was of course that a control which could not remove the drudgery of plotting and reproducing the positions of the dimmer levers could not approach the needs of those who were not prepared to work with the control and allow it to make the running. The usual thing was to fight the control and frayed tempers and long hours were the result.

I have always advocated one-man control during the whole of my career. The reason for this is that essentially stage lighting, however much planning has taken place on paper, is a matter of last-minute composition when all the other ingredients, including preferably the cast, are in place. Only then can the real effect be seen and much "up a little—down a little", plus changes of mind, will take place. This is no time for planning team moves. Only one man at an expressive instrument can cope. Solve the plot problem and all will be well; for the rest we have plenty of experience in designing controls to go on.

It is important to point out that recording of dimmer positions has been possible for some years using punched cards of the Hollerith or IBM type, or the like. Indeed, we had demonstrated this in public

* *Tabs*, Vol. 23, No. 4.



Instant Dimmer Memory console (type IDM|DL) for 120 channels.

in April 1959 with our system KTV. This instrument had another feature known as "Shift" to enable a large number of dimmers to be operated from a lesser number of controls*. What this system did demonstrate, to ourselves at any rate, was that just as we suspected punched cards were much too slow. Although many such systems have subsequently been installed elsewhere I remain convinced that they are too slow. Particularly in drama, actors can move surprisingly quickly. Furthermore, cards take time to shuffle even with mechanical devices, and while skipping forwards is possible but takes time going back is really difficult. What one needed was to have an automatic and instant memory of cues to move backwards and forwards, taking this and that one to revise or to combine perhaps as another lighting effect.

On March 18th last year, for the first time anywhere, all these things were demonstrated to be perfectly possible in the Strand Electric demonstration theatre. Instant Dimmer Memory relying on magnetic and electronic action with no mechanics was here, or at least it was for luxury jobs. An order for all three theatres of the Canadian National Theatre Centre at Ottawa was obtained shortly after. There followed a period to test the design in practice and revise the electronics to ensure reliability. Both of these are very important exercises and while the need for refinement of the electronic

* *Tabs, Vol. 17, No. 2.*

circuitry in these days of such rapid development may be appreciated it is not generally realised how necessary it is to try out under actual lighting conditions the operational philosophy of a control. This does not mean merely to demonstrate; it means to submit the machine to the discipline of using it to create lighting effects and reproduce lighting conceived as such and not just as so many or so few movements of the controls. A demonstration has a totally different tempo and purpose from a show. It takes its own time. In true use one can become just as vexed or pleased with the features of the design as the customer himself. If I cannot do something I want using my own design, the result can be just as annoying as if someone else created it. The designer and the operator are quite separate although caged in the one man.

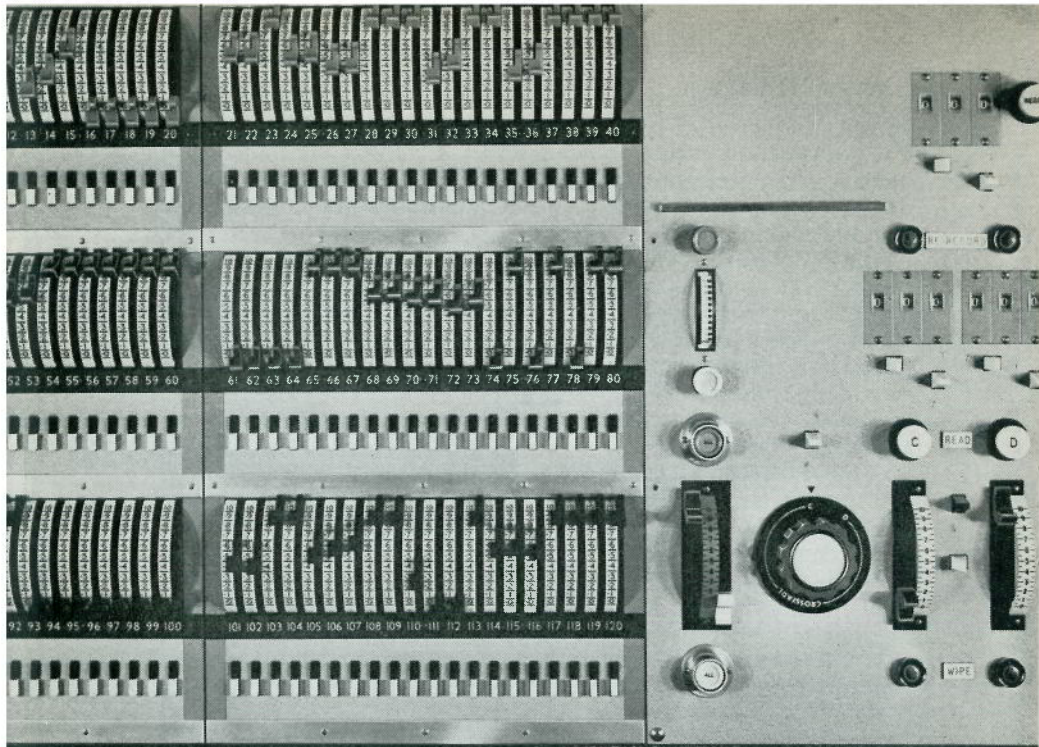
Several ideas were on trial in System IDM, as reference to my previous article will show, but I shall only deal with one here. If the machine has an exact memory of the state of the lighting is it necessary to have a complete set of channel controls or would it be sufficient to call up channels required to be modified and couple them to one or two levers adjusting them as one goes? This was the "Shift" method which we had already tried and patented in 1959. In that case one used a block of ten, twenty or perhaps thirty levers and shifted them to control different sets of channels in something of the same way that the same keys on a typewriter are used to print both lower-case and capital letters. Indeed, some portable typewriters shift again to do numerals, etc.

We did not need to try "Shift" as we had already done so, but we did need to try single lever "call-up" versus a control to every channel. If the former was sufficient then this would simplify the design and layout of the control panel, particularly for television. So both methods were fitted.

I have to report that except for one or two special purposes the single lever method drove me mad; nor was I alone in this. The fact

Instant Dimmer Memory Console (type IDM|R) with rocker tablets to each channel.





Type IDM/DL control showing dimmer levers for each channel and transfer controls; recording and playback controls for 250 presets on the extreme right.

is that when composing lighting, particularly lighting calling for any colour balance, one needs to keep all relevant channels in play all the time. A touch here may immediately call for a touch there. To restrict oneself to one at a time is to go back to the days of calling for No. 15 adjusting it, then calling for No. 99, or whatever it was, adjusting that and then going back to No. 15, and so forth. This is especially retrograde where the lighting man is working his own control, and why shouldn't he once it is really simple and in any case plots itself; the regular operator can take over afterwards. Instinctively, one wants to use all one's fingers, not just do one-finger exercises.

At the same time as controls were under close scrutiny so was the question of cost. Instant Dimmer Memory was too important to keep just for the luxury market. It had to be available for all well-equipped theatres. How to make the break-through?

Re-appraisal followed in order to reduce components and to simplify circuitry but, nevertheless, the idea that every channel had to have its own individual control lever was retained. This could not be sacrificed whatever happened, for the result of our tests had shown them to be essential for the instrument to be effectively operated. There was a further point. So long as *each channel had its own control lever* the result remained recognisably a switchboard to all. Anyone who had ever raised a dimmer on a lighting control could

understand what it was all about. There were no special techniques to learn. After all, it would be a curious anomaly if the latest control, the one which at last removed the drudgery and made it possible to concentrate on lighting was incomprehensible to theatre and other lighting people. It was quite unacceptable that the playing of lighting instead of being free would once more be confined to those who had been trained to use the particular control system. Design therefore began with dimmer channel control and it followed that if the standard Strand luminous lever were used per channel then the electronics associated with obtaining dimmer levels would be immediately replaced by a single luminous dimmer lever already made on mass production lines and the control would look like and would in fact be a switchboard. Using this means of channel control the next need is to know when the lever itself has taken control of the dimmer and when it is under playback. This is easy as the standard dimmer lever already contains red and white lamp illumination of its scale. The red can be used for the first condition and the white for the second. Such a white lamp can only give positive indication that a channel or channels are on and not at zero in playback. It cannot show precisely at what level. This information is only needed when about to modify a dimmer channel; thus it is sufficient to use the existing micro-switch, operated by the touch contact on the scale, to read this information on a master indicator dial. This is a flashback to the second touch control of the stopkeys on the original Light Console of 1935. The micro-switch can also be used for individual transfer of control from playback to lever.

It is not the object of this article to describe the various controls in detail. The appropriate literature does that. This article is introductory only. As the photograph alongside shows, here is a familiar lighting control to which an Instant Memory System has been added. In effect the operator is confronted with a perfectly normal set of levers which when they are lit in red give him absolute manual

Making the prototype in Strand Electric's Covent Garden Research Dept.



control of the lighting layout. In addition there are two push buttons to each channel to form group A and B and common channels when composing the lighting. On the instruction "plot it" the numerical selector over the record push is used to provide a cue number. Subsequently this cue can be brought back in either of two playbacks at will. This can be in any order, forwards or backwards. When played back the channels not at zero indicate in white, as had already been said. This indication can be supplemented by precise information. Modifications can be made instantly at any time and re-recorded if desired.

The operator is in the position of having a normal switchboard or rehearsal system before him while, in effect, he has at his elbow an invisible panel of two hundred and fifty automatic plotting and reproducing presets. Either of the two systems, the visible and the invisible, can be used on its own or they can be combined so that each performs the function for which it is most suited. The photograph also shows how compact the system is, although convenient finger-sized instead of miniature levers are used. The console shown is for 120 channels and this only increases by 13 inches on the width for 180 channels. It is difficult to convey how pleased we are with this system, but much of this pleasure arises from the fact that our friends the users will feel at home with our new control from the first. Also, the price is right, and as for the control facilities let me end with the answer to a notorious operational teaser, using the actual words of the instruction manual:—

23. Go back to cue "X": Select the number required, press READ and then raise the fader to full.

LIGHTING FOR TELEVISION*

by R. de B. McCullough

Superintendent of Technical Operations Department, BBC

Lighting for television is an essentially practical art like painting and can only be learned through practical experience and experiment. The following paragraphs describe a series of exercises which can be undertaken with the aid of a few television studio lanterns and a single camera and picture monitor. The aim of the exercise is to familiarise the student with the actual results of altering the position and direction of the illumination, and in particular to train him in what to look for in the television picture. It is most important to understand that these exercises are *not* recipes for lighting. A student who has properly assimilated the practical effects discerned here will be able to create his own lighting recipes, tailor-made for each programme requirement.

* This article, which will be of great interest to those who practice stage lighting, is a short extract from "Lighting and Layout for Small TV Studios" published by Strand Electric and now available free and post free on request.

We will assume for the current experiment that a subject is seated on a chair facing the camera. The chair should be placed about 4 ft. away from a wall or a plain scenic flat. Three 500 W spotlights and a soft light should be available on floor stands.

Direction of Key light

Switching off all other illumination, the spotlight should be brought as close to the camera lens as possible and directed on to the subject. The picture on the monitor will be seen to resemble a flashlight photograph—the subject lacks depth and tends to merge into the background, particularly in areas such as the shoulders and the hair, where the background and foreground tones may be very similar.

Now observe the shadows cast by the spotlight: if the spot is moved away from the camera lens there is an immediate increase in the length of the shadow cast by the subject's nose, while the main shadow of the whole subject moves away in the opposite direction to the spotlight. As the spotlight is brought towards the camera lens



Fig. 1. Frontal key light placed as near to camera lens as possible. Fig. 2. Key light moved away from lens axis.

again, the shadows begin to get shorter and nearer to the centre line of the lens. If it were possible to put the spotlight exactly on the centre line of the lens, the spotlight, the camera, the subject and the shadows would all be in the same straight line and the camera would not be able to observe any of the shadows at all. We can move away from the centre line of the lens in any direction and the shadows will increase. If we move the lamp upwards then the shadows will point downwards, if we move the lamp beneath the lens looking up towards the face, then the shadows will move upwards. In the latter position we obtain the sinister effect of light coming from beneath the face which is entirely contrary to the natural lighting of the sun and consequently always appears strange and repellent.

If we set up two sources of illumination which can be switched alternately, a very interesting effect can be seen by mounting one lamp above the lens and one below the lens and switching rapidly from under-lighting to top lighting. The whole contour of the face will appear to change.

If we raise and lower the lamp vertically we can see that as the lamp is moved upwards the shadow under eyebrows and on eyes becomes more pronounced. Eventually at a very steep angle the eyes are completely shadowed and appear like dark hollows on the monitor screen. The exact position will naturally differ with different constructions of face, but for every face there is an angle of lighting at which the structure of the face as shown by the gradations of light and shade is at an optimum. Take the lamp even slightly higher than this optimum and the eyes begin to disappear while the cheekbones become unnaturally pronounced. Conversely, taking the light source level with or underneath the lens tends to produce the flashlit or sinister effects referred to in the earlier paragraphs.



Fig. 3. Key light above lens axis.

Fig. 4. Key light below lens axis.

In a similar way the lamp can be moved away from the lens round the head of the subject. The further the lamp is moved from the lens the more pronounced the shadows become. At a certain point the nose shadow joins up with the shadow on the cheek of the unlit side of the face. Eventually the lamp is at right-angles to the centre line of the lens and only half of the face is lit. Here again we reach a position where eyes begin to become shadowed. The eyes are always the focal point of the expression in a human face and except for very fleeting changes of position must always be visible.

It must be clearly understood that from the technical point of view there is little or nothing to choose between one angle of light and another. What we are trying to do with the light is to place



Fig. 5. Key light vertically above subject. N.B. This is the actual effect of domestic room lighting.

Fig. 6. Key light at right angles to lens axis.

it in such a way that the characteristics of the subject are fully revealed to the audience viewing the screen. Whether or not this aim has been fully achieved is a subjective or artistic matter requiring a value judgement from the operator.

We can observe from these experiments that, like the lines of a drawing, shadows are immensely important in depicting shape and form on the screen. In order to have a simple and controllable pattern of shadows it is generally necessary to ensure that only one main or key light is striking the face at any one time. Any additional lights must be supplementary to this key light and must be placed in such a way that they do not create additional confusing shadows.

Fill light

Once we have decided the position of the key light we shall almost certainly feel that the picture has too much contrast and not enough detail visible in the shadows. It will spoil the "drawing" of the subject if we use any additional Fresnel spots which will inevitably cast additional shadows. We must therefore resort to the use of the soft "broad" source of light. If we now switch this on and place it on the opposite side of the camera lens to the key light we shall find that the shadows are illuminated without affecting the dominance of the key light. This second light is called the "filler". However soft the light, it can never be absolutely shadowless, and some careful positioning is required to ensure that the subject does not gain two nose shadows, one on each side of the nose—a very ugly effect, especially when the subject is in motion.

The experiment should be tried of placing the filler light quite a long way from the subject, gradually bringing it closer until its

brightness is almost equal to that of the key light, and observing on the screen the range of control of the shadow detail which one can obtain by this means.

Key versus Fill

The position of the key light and the soft light can equally well be reversed so that the key light is on the opposite side of the camera to the first series of experiments. Exactly the same range of effects can be obtained but now the shadows will point in the opposite direction. Which side should we choose?



Fig. 7. Key light without filler.

Fig. 8. Key light with filler.

When the key light is at an angle of approximately 45° to the centre line of the lens there is a pronounced nose shadow on the opposite side of the face and the line of the cheek is contoured by a shadow. Thus on the side of the face nearest to the key light we have an illuminated cheek and an illuminated ear, while on the opposite side of the face we have a shadowed cheek and a shadowed ear. The side of the face illuminated by the key light is, of course, much brighter than the side illuminated by the soft light. The key light side always appears larger in consequence. Examination of a series of faces will show that very few people have an absolutely symmetrical face. Thus in photographic portraiture the key light side will tend to be exaggerated and consequently it is desirable for the key light to be on the *smaller* side of the subject's face. It is thus possible to use the lighting to enhance the face and to correct natural defects. The traditional Hollywood star had a lighting treatment as carefully thought out as her make-up and hair style, and which became a recognised part of her screen personality. For example, the high central key light is still associated with the image of Marlene Dietrich.

Backlight

The frontal lighting of the face is now complete. However, compared with the real subject the portrait on the screen will tend to



Fig. 9. Key light and filler in reverse position to Fig. 8. N.B. The light side of the face appears larger.

Fig. 10. Effect of adding one Back light to Fig. 8.

appear flat and lacking in solidity. To some extent, an additional feeling of depth can be introduced into the picture by lighting the background behind the subject, and indeed this is essential if we wish to prevent parts of the foreground from merging into similar tones on the back wall of the scene. Yet however well this environmental lighting is done—and it is a large subject to be dealt with in more detail in a later section—the subject himself will still appear flat and rather more like a cardboard cutout than a solid figure. The reason for this is quite simple. Because the human body is constructed of cylindrical and spherical shapes, the edges of the body and the face curve away from the frontal lighting which strikes them more and more at a grazing angle. The outlines of the head and body are therefore *darker* than the main areas of the body. This is a practical example of the Cosine Law of Illumination. Now in terms of communication darkness implies lack of information. That is to say, frontal lighting tells the viewer less about the edges of the subject than about the central areas. In order to counteract this defect we need edge or rim lighting, and this is best provided by fitting lights behind the subject with their beams directed *towards* the camera lens. Such an arrangement is known as “backlighting”.

Back light can usually be very satisfactorily provided by small Fresnel spots pointing down at the subject from behind towards the camera lens. It is essential to fix barn doors to these lights and also to use a lens hood on the camera to prevent lens flare. For the purposes of experiment two 500 W Fresnel spotlights should be arranged on floor stands. Naturally, for an actual television programme these spotlights would have to be clamped to the scenery behind the subject or suspended from the ceiling.

One of the back lights should now be switched on and should be placed immediately behind the subject and directed on to the hair. An immediate increase in three-dimensional quality of the picture should be noticed, the hair acquires a sparkle and the shape of the head becomes more clearly defined. At the same time the line of the shoulders becomes illuminated, thus sharply separating the subject from the background. It is very easy to over-expose the camera with a back light since the light is bounced off the subject directly towards the lens. It is most necessary therefore either to use a dimmer or to have one or two thickness of windowlite ready to reduce the intensity.

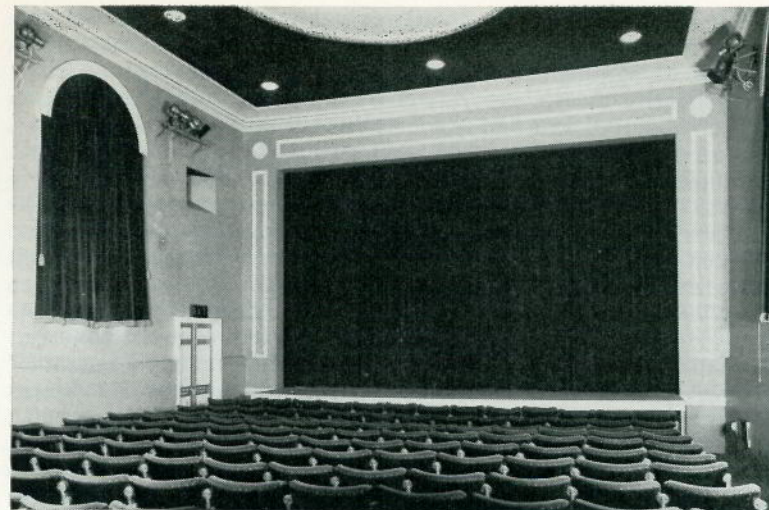
There are three basic positions for a back light. The first one is as described in the previous paragraph immediately behind the subject and on the centre line of the camera lens. If we now move this towards the key light side of the head we shall reinforce the key light from the opposite direction which tends to provide additional modelling on the side of the face but, because the two lights are added together, over-exposure may easily result. On the other hand, this arrangement is artistically useful because it creates the illusion that the lighting from the back is coming from the same direction as the key light. It is therefore an appropriate method of backlighting in a naturalistic situation where, for example, one wishes to suggest that the whole scene is illuminated by daylight coming through a window.

The third position for a back light is opposite to the key light on the shadow side of the face. The light in this position can have a very marked effect on the modelling of this side of the face since the only frontal illumination is provided by the soft light. On the other hand, the direction of the shadows can more obviously seem to contradict the key light. A back light in this position will be more acceptable to the viewer when it is used in conjunction with a night scene where the motivation for the light could appear to be a property light such as a standard lamp. It is, of course, quite natural at night to see multiple shadows and beams of light coming from different directions because artificial lighting, either indoor or in the streets, is usually provided by a number of small sources distributed about the scene.

Fig. 11. Two Back lights added to the lighting as in Fig. 8.



Fig. 12. Contre-jour effect using two back lights and soft light but no key.



THE KENTON THEATRE, HENLEY-ON-THAMES

by Iain Mackintosh

Administrator, Prospect Productions Ltd.

The Kenton Theatre, Henley-on-Thames, was reopened in March with a visit from the Oxford Playhouse of Frank Hauser's production of *Amphitryon 38*. The policy of the theatre is both to provide a stage for Henley and Oxfordshire amateur societies and to invite professional productions to a town that is now a large centre of population with no theatre for many miles—Oxford to the north, Windsor to the east and Farnham in the south (there is still no professional theatre in nearby Reading, population 124,000).

The Kenton then is the latest of a particular category of regional theatre, part amateur part professional, which is growing in number faster than any other type of playhouse: Little Theatre, Middlesbrough (1957); Theatre at Rosehill, Cumberland (1959); Rotherham Civic Theatre (1960); Georgian Theatre, Richmond, Yorkshire (1963); Swan Theatre, Worcester (1965); Theatre Royal, Bury St. Edmunds (1965); Corby Civic (1965) and Adeline Genée Theatre, East Grinstead (1967).* None of these are full-time resident professional theatres though the managements of some may be contemplating short seasons of their own in the near future. All of them have emphasised in their fund-raising appeals that the theatres are to be

* All these are in *Tabs*, Vol. 24, No. 2 except Adeline Genée which was in Vol. 25, No. 1.

equipped to professional standards—and to these professional standards have been attributed a rise in costs as committees realise that modern lighting and stage equipment are as necessary for a truly comprehensive theatre programme as is a comfortable auditorium and well-equipped bars and foyer. In this respect Henley is no exception: an original estimate of £15,000 when the appeal was launched two-and-a-half years ago has since risen to £25,000, itself an unreal figure as much of the work in fitting out the theatre has been done by volunteers. £32,000 has been quoted as the true cost had the whole job been done at commercial rates. At either figure this seems to represent very good value.

The new Kenton theatre retains the shell of an earlier playhouse of 1805, which makes it the fourth oldest theatre in the country. But unlike Richmond and Bury St. Edmunds nothing recognisable remains of the old interior. There is a gallery which probably belongs to the 'seventies when the theatre was a chapel or meeting hall. The last professional theatre, the "rep" of the 'thirties and 'forties had been remodelled in the early 'fifties by John Piper and some other Henley residents with their own hands. This theatre was closed by the Fire Officer in 1963 and remained dark until the Henley people decided at a public meeting to reopen the theatre with funds raised locally.

The architect, David Tapp of Maurice R. Day and Associates, had no precise brief. The committee did indicate that a fly tower was desirable, also 300 seats as a target. It was not possible to acquire any more land to left or right. It is these two factors that determine the rather odd dimensions of the new stage. The new auditorium is the same as that of the closed theatre, 56 ft. by 30 ft., 200 seats now in a single block in the stalls and 85 in the gallery. The uncompromising rectangular shape of the auditorium has been cleverly minimized by painting all walls the same flat mid grey. There is warmth in the blue seating and red ceiling oval with central chandelier. The old stage was 30 ft. wide by 18 ft. deep with an 18 ft. proscenium opening 13 ft. high. Now the stage has been extended six feet on actors' Right with height to stack 14 ft. flats. The stage is now 17 ft. deep from the inside of the proscenium to the white rendered back wall. The opening is 25 ft. wide and 14 ft. 6 in. high. The effect from the auditorium is of an open end stage behind a 2 ft. 6 in. wide functional arch painted the same colour as the rest of the auditorium. Back stage the wings are 2 ft. 6 in. wide actors' Left, narrowed to 1 ft. 9 in. by the presence of a cleat rail and all the hemp lines from the 32 ft. high grid, and 8 ft. 6 in. actors' Right. There is a cross-over behind the back wall and the door to this upstage Left comes 1 ft. 6 in. onstage of the proscenium line. Downstage there is an orchestra pit (8 players) quickly adapted to a forestage which increases the front-to-back depth to 23 ft.

There are four excellent dressing rooms, two of which are very large, a props and stage manager's room (there is a resident stage manager) and generous provision of lavatories. The odd shape of the

site allows for eventual rebuilding of the large existing workshop area to the rear of the theatre building.

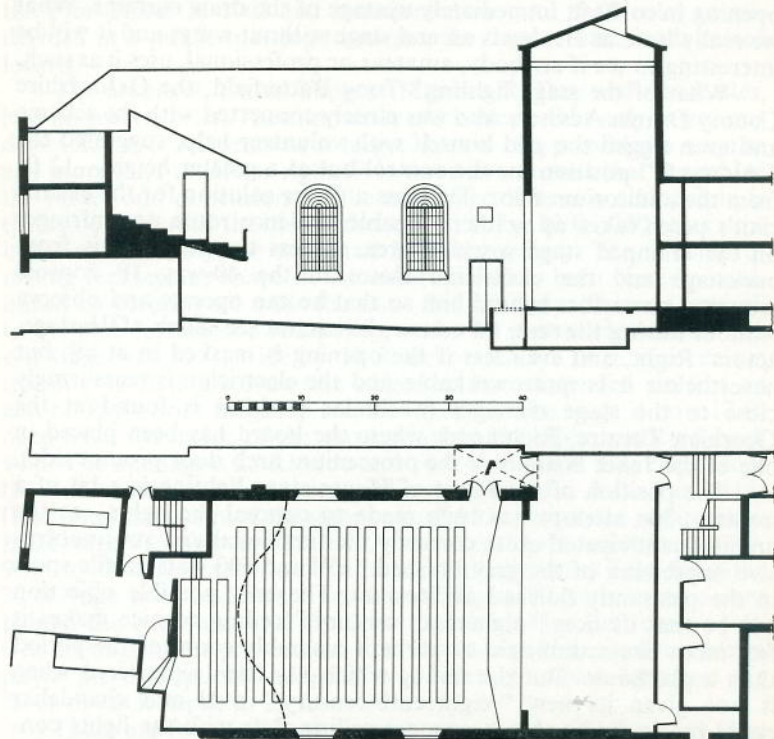
The presence of a fly tower, itself the costliest part of the scheme, is the surprise. The stage could have been 7 ft. deeper and still allowed for a cross-over behind the back wall, but then the dressing room area would have been slightly further from the stage, though no great distances are involved. The Architect explains that a fly tower which both spanned a larger stage area and was high enough to fly out 15 ft. deep cloths would have been too expensive. One imagines that the demands of the local amateur societies who like to stage complex traditional musicals, such as *The Pajama Game* and *Annie Get Your Gun*, determined the choice of a slender tower as opposed to a larger area with less height over it. The architect himself was Flyman for the opening amateur production (could this practice be extended?—readers can write their own imaginary dialogues backstage at some recently built theatres). He claims, and he should know, that it was possible to operate the hems in 2 ft. 6 in. and still allow passage for the actors with straight "on and off" masking. But the director and designer of *Amphitryon 38* masked the prosc. opening in to 19 ft. immediately upstage of the draw curtains. What we really have at Henley is an end stage without wings and it will be interesting to see if anybody, amateur or professional, uses it as such.

What of the stage lighting? Tony Butterfield, the Oxfordshire County Drama Adviser, who was closely connected with the scheme and even rigged the grid himself with volunteer help, suggested the "Aldwych" position for the control but at a greater height—12 ft. from the auditorium floor. This was a clever solution for the electrician's perch takes up neither valuable audience room nor infringes on the cramped stage working area. Access to the perch is from backstage and the electrician closes in the 40-way JP console mounted on castors behind him so that he can operate and observe without raising the seat. Of course, he cannot see much of the stage, actors' Right, and even less if the opening is masked in at all, but nevertheless it is quite workable and the electrician is reassuringly close to the stage manager (a similar position is found at the Georgian Theatre, Richmond, where the board has been placed in one of the Juliet boxes over the proscenium arch door prompt side).

The position of the Front of House stage lighting is a bit of a mystery. No attempt has been made to conceal the lights—as the architect anticipated quite correctly the functional and yet unobtrusive impression of the grey finished 1 kW and 500-watt profile spots in the pleasantly finished auditorium. The only possible objection can be that its new "eighteenth century" ceiling cornice makes it feel more like a domestic or perhaps assembly room of the period than a playhouse. But the ceiling which has been replastered when it was given its new "eighteenth-century" oval and chandelier could have contained one or more ceiling slots with the lights concealed and allowed access to them by catwalk through the trusses in the manner of either the Oxford Playhouse or the Theatre at

Rosehill. As it is, ladders must be placed in the auditorium and the actors be lit from the side walls which are 30 ft. apart. The two positions range from as close as 6 ft. and as far as 20 ft. from the front of the forestage and about 9 ft. above the level of the actors head. The lack of overhead front lighting is particularly important when the spot bar hangs 2 ft. 6 in. upstage of the proscenium opening (there is a safety curtain, drenchers, draw tabs and a header) and a mere 12 ft. downstage of the cyclorama batten if this is brailled to within 2 ft. 6 in. of the back wall.

To the audience this is a comfortable theatre with good sight lines except in the back four rows of the circle which have not been raised, although the ceiling would allow clear vision tiering. There would appear to be a conventional proscenium arch the same size as, say, the Cambridge Arts Theatre. For the amateur there is a good lighting board and a fly tower big enough to hold a full set of cloths for a musical, and excellent dressing rooms. It is only the professional who will run into difficulties unless both set and production are either of the kind that can be fitted up anywhere or are planned specifically for the theatre.



Plan and section, Kenton Theatre, Henley. The lighting control room is over the exit passage from the front stalls.



View of auditorium.

To such a complaint there are two obvious objections. First it can be said that the professional user comes last when planning such a theatre and this is a perfectly reasonable, though sad answer. The second is more sophisticated: the professional is asked why he needs much scenery to serve these theatres. It is suggested that simple productions should be offered. But here it must be stated both that a simple production from a larger theatre will seem "big" when placed on such a tiny working area and that most modern simple productions depend on neutral backings which are difficult to light on a stage where the back wall is 13 ft. from the lenses on the spot bar. Most difficult of all to anybody who has tried to tour anything more than a standing set around two or more of these theatres, is that the physical limitations of these theatres vary enormously and a few feet is much more critical at this scale than ten or fifteen feet at No. 1 dates. Example: Rosehill (which may be rebuilt soon to give greater depth and better Front of House stage lighting) has a 17 ft. opening and 17 ft. depth to the back wall, Richmond, Yorkshire, a 16 ft. opening and 24 ft. depth to the back wall plus a fore-stage, 5 ft. deep, with direct entrances on to it.

Remembering that most of these theatres all seating between 200 and 400 are severely limited by the site, could not the simplest set of minimum requirements be drafted by the ABTT for theatres who intend to invite professional productions and may ultimately be subsidised out of public funds to do this? My own suggestions—

all of which could have been met within the limitations of the Henley scheme—would be:

1. Maximum stage width the site allows.
2. Wing space of a minimum 8 ft. on a symmetrical site or 5 ft. and 10 ft. if it is asymmetrical.
3. Minimum stage depth of 24 ft. excluding the forestage.
4. Height overstage where counterweighted grid impossible of [at least 22 ft. overall.
5. A scene dock and furniture store off the stage area.
6. Four large dressing rooms.
7. A 40-way lighting control with preset.
8. Two Front of House lighting positions in the roof with own access, with room for 12 lanterns in addition to wall position, and in position to light both forestage and front 8 ft. of the stage itself.

While Henley meets all except 2, 3 and 8 and is a most pleasant theatre for audience and actor, the absence of wing space, a deep stage and good Front of House lighting positions could deter visiting professional companies who would prefer to avoid costly alterations to most sets and who would like to see their actors well lit. Is this too harsh a comment on an otherwise pleasant plan achieved at a staggeringly low cost?

Lighting at Kenton Theatre, Henley-on-Thames

Only 20 dimmers have been installed at present though forty circuits are wired. Normal usage is:

No. 1 Spot Bar:

10 circuits reached from the electrician's perch.

Perches:

3 circuits each side.

Cyclorama Bar:

12×500 W floods 3 circuits.

Stage level:

4 circuits actors' Right in a short front-to-back trough 4 ft. off-stage of the proscenium line.

3 circuits actors' Left in a stage dip 1 ft. onstage of the proscenium line in a position which could easily be covered by the stage cloth.

Front of House:

14 circuits high, 7 on each side of the auditorium wall in two groups of 4 and 3.