TABS

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Alec Shanks

Alec Shanks, whose authoritative article on Gauzes appears on page 4, claims to be the first and only Britisher to design scenes for the famous Folies Bergère. It was natural that the late George Black should call him to London to bring taste and glamour to the Palladium and Hippodrome productions. Later he entrusted him with producing Strike It Again and Piccadilly Hayride with Sid Fields.

Add to this the continuous ten-year success of the Crazy Gang Shows, and eleven of the most elaborate Revues outside Paris, at the Opera House, Blackpool, with two Royal Command Performances at the Coliseum, and Alec Shanks stands as an unrivalled combination of Producer and Designer on a large scale. He has also devised the lighting of half the English versions of American musicals, from Kiss Me Kate to Kismet.

Dr. Richard Southern

Dr. Southern, whose article "A Beginner's Guide to Adaptable Theatres" appears on page 10 of this issue, is the author of several books on theatre technique and its history which are well known, and have grown into the category of standard works. He has not only studied the problems of designing theatres, both orthodox and adaptable, for many years, but he has the distinction of planning the first adaptable theatre in Great Britain, for the first British University to have its own Department of Drama, namely Bristol. At present his work as theatre consultant is carried on in the Department of Theatre Planning in the British Centre of the International Theatre Institute, London, where he is Director of the Department. His office (which houses his unrivalled collection of theatre plans and pictures) is a Mecca to those who face the problems of building, adapting or equipping theatres.

A New Name in Lights

Fig. 3 in F. P. B.'s article on Lighting Control is of particular interest. It is published by courtesy of the *Radio Times* and was in fact used to publicise the Television *Saturday Night Out* visit backstage to Drury Lane. We imagine it is the first time a switchboard has been starred and has had its photograph displayed in preference to all other attractions. The same picture was also used as a trailer the night before.

THE ART OF THE GAUZE

by Alec Shanks.

It is hard to say exactly which English production was the first to use cotton gauze, as opposed to the silk transparencies which had been used for magical effects ever since the introduction of painted scenery in the seventeenth century. But it is on record that in "Telemachus" at the Olympic, London, in 1834, a scene entitled "Calypso's Vision" began with the lowering of a gauze giving the impression of mist and clouds.

There would seem to be a natural connection between the introduction of the "lime-light" as a means of side-lighting from off-stage perches and the use which Charles Kean (in his day the greatest innovator among actor-producers) made of gauzes at the Princess's Theatre in the 1850's. One sensational effect was the apparition of a flight of angels to the dying Queen in "Henry VIII," apparently suspended in a diagonal shaft of white light from a "lime" in the flys, and seen through what had appeared to be a solid backing of tapestry. Gauzes were used frequently after this, in Romantic Ballets, and in some of Henry Irving's productions, but never where comedians were involved, as they then (as always) refused to play with the front of the stage darkened.

With the general development of electric lighting and dimmers from the 'eighties onwards, we see an increased realization of the possibilities of gauzes, and during the last few years, producers of "straight" plays have made frequent use of them to show simultaneous action beyond or outside the actual scene, or events taking place at some other period in time (as in the cinematographic "flash-back"), as well as phenomena of the "vision" type.

A few words about the types of gauze and methods of makingup may be of interest, before considering their various uses and possibilities.

The English gauze as manufactured over the last hundred years is a cotton net, the mesh about $\frac{1}{16}$ in., woven in lengths of 55–65 yds. by 24 ft. wide, so that a single piece can make a seamless "cloth" or running tabs, to the dimensions of any stage.

Continental gauzes are rather heavier in weave, the advantage to the scene-painter being that the painted subject shows up much more clearly when front-lit, the drawback being that the material is much narrower, and care has to be taken in the positioning of seams. American designers use a thicker, stronger gauze of the "filet" type with a larger, elongated mesh woven with a double thread. This is called Hanson gauze, after its inventor, and is now manufactured in England, in lengths of 65 to 70 yds. by 24 ft. wide. With this type, an opaque effect can be achieved by painting thickly over parts of the gauze, the paint filling up the holes. Hanson gauze can often be used without a backing, and is almost indistinguishable from painted canvas until lit from behind, when one is still aware of the presence of the gauze. In certain circumstances this is exactly what the director wants. Gauze is sold in white, black and grey, and Hanson gauze in "natural" colour.

As all gauzes are comparatively fragile, they should be sewn to a heading of canvas or webbing, which takes the tape "tyers" that attach them to the top batten or bar. The bottom edge should be weighted by a chain run through a canvas pocket, to avoid "floating" caused by draughts, and to prevent fouling other hangings as it is dropped in.

This applies also to any backing which hangs immediately behind it, as the suction of air can cause the backing to stick to the gauze, and drag it up as the backing flies out. Always see that the gauze is made a few feet wider than the opening it is intended to fill because the sides tend to "drop in" with the weight of the chain.

Although in this article we are considering the gauze as a means of creating some kind of illusion, it can be of great value used as material in other ways. For instance, a plain gauze tightly stretched immediately in front of a sky cloth gives a very atmospheric effect, and conceals all those creases and seams which overhead lighting tends to accentuate.

Pieces of gauze let into the painting of cloud strata, mountains or water, help to achieve special light effects, and several layers added to the bottom of borders soften hard edges.

The general principle of "working" a gauze is this: whether the gauze is painted, or is plain-coloured with a subject projected on it from the front, it is backed by a dark (usually black) backing of the same dimensions, which hangs on a separate bar, and can fly independently of the gauze, or open on a Tab-track. The gauze has now all the appearance of a cloth, and is lit with normal front lighting.

When it is desired to fade-through to a scene already set behind the backing, all light up-stage of the backing (including those treacherous pilots!) must be blacked out. The first flys-cue is to

Photo-sequence of 12-second Transformation taken during performance at the Victoria Palace.



Fig. 1. Three seconds. Gauze with backing in place. Footlights half.



Fig. 2. Six seconds. Gauze with backing almost away, footlights almost OUT, upstage spots fading IN. Now both the gauze-picture and the "still picture" on stage are visible.



Fig. 3. Nine seconds. Gauze starts to rise. Back-lighting is FULL. NOW only the chained edge of the gauze is visible.

During the remaining three seconds the gauze will be away, footlights FULL and F. O. H. added.

take away the BACKING, but as it is obvious that the less front lighting that hits directly on to the gauze, the less risk there is of the back scene being seen prematurely, an opportunity must be found to kill footlights and balcony-rail spots before giving the flys-cue. Overhead and side spots can remain on if required.

When the backing is, say, two-thirds up, you can begin to fade in the lights behind the gauze (spots having been focused on to special parts you wish to high-light, and care being taken that no light strikes across the gauze itself). If no backing is used, then the operation becomes a CROSS-FADE, the back light coming UP as the front goes down, and can be timed to the exact number of seconds required. As soon as there is a stronger light behind the gauze than in front of it, the gauze picture vanishes. The synchronization of the CROSS-FADE is all-important, and with a manually operated board, the electrician will require a little time and practice to complete the operation in the given time.

You can now fly the GAUZE itself, and proceed with the scene, adding whatever front-lighting you require once the GAUZE is away, or the whole scene can be played with the GAUZE IN, and the down-stage lighting still DOWN. If you are using F. O. H. projections on the gauze during a scene-change, both BACKING and GAUZE go away before the back lighting comes UP, which kills the effect of the projection, which is then switched off.

To go back to the original picture at the end of the scene, the operation is reversed.

In Covent Garden's recent production of *The Ring*, one whole act was played behind a vast dark grey gauze stretching the width of the proscenium, with projections of stylized painted effects from the auditorium, alternatively and sometimes simultaneously with stage-lighting illuminating the action, behind the gauze.

A similar principle is used for a short scene in *Under Milk Wood* at the New Theatre, with a ripple effect from an effects lantern in the footlights, while symbolic figures are dimly seen through the gauze.

A point to remember, when playing a musical scene behind a gauze, is that the performers cannot see the conductor's baton, which in this case must carry a small light.



Fig. 4. Gauze for the Adelphi Theatre, London, designed by the author.

At the Criterion in Peter Hall's production of *Waltz of the Toreadors*, one half of the back wall of the set, although apparently solid, contains a large gauze panel behind which is a complete bedroom, revealed or blacked-out as required, which communicates by a door with the main set.

In serious plays there could be a danger of gauze effects becoming a producer's "gimmick," but in musical plays and spectacular

revues, the fading through from one scene to another not only helps the continuity of the action by obviating blackouts, but with subtle light changes can greatly enhance the mood and atmosphere created by the music.

In revues and pantomimes a popular, if unsophisticated effect, is the fade-through illustrated here from *These Foolish Kings*, the current "Crazy Gang" Show. Unfortunately, it is by its nature a difficult effect to photograph.

The gauze is painted with the representation of some real object (it could be a tapestry or a well-known painting). In this case (Fig. 1) it is a blue and white Delft platter, which is shown for a few seconds with front-lighting, and then gradually, as the light comes up behind it, and fades in front (Fig. 2), the actual gauze entirely vanishes, and we see a Dutch scene (Fig. 3), painted in the same style and colour, but peopled with live characters in porcelain-like costumes, in completely still positions until the fade-through is complete, when they become animated. If, instead of a chain being used to weight the hem of the gauze, the bottom of the gauze had been cut into "scallops" with small lead weights at intervals, the gauze would have risen quite unnoticed.

A more elaborate variation on the same idea was staged by the writer (Adelphi Theatre, 1954). The subject was a painting of an Old English coach, complete with outside passengers and postilions, set in a realistic picture-frame. Behind this a practical replica of the coach and background was constructed, and the actors placed at exactly the same height as those on the gauze. Here the problem was to condense the depth of the set so as to leave as little space as possible between the furthest-away actors and their painted counterparts, in order to reduce the "double image" effect likely to occur during the cross-fade. Once the gauze was away, all kinds of lighting effects were possible with the transparent linen backcloth, and at the end of the tableau, the gauze came in again, and the scene finished with the painted picture, as it had begun.

If these notes have been enough to give the reader an idea of some of the ways to use gauzes, it must be equally clear from them that the closest co-operation is required between director and designer on the one hand, and stage-manager and electrician on the other.

The effective use of gauzes is inseparable from good lighting, and a great deal of irritation and loss of time can be caused if the working-out of gauze effects is left till the last rehearsals. All this can be avoided if the technicians are given in advance a clear knowledge of the director's aims, and if director and designer understand the technical problems involved, and all collaborate in "The Art of the Gauze."

A BEGINNER'S GUIDE TO ADAPTABLE THEATRES

by Dr. Richard Southern

People just now frequently use the term "adaptable theatre." Some say adaptable theatres are the cure for all ills; some say they can only be a compromise from the beginning. Without taking either side in the dispute, we may be able to understand them a little better if we can decide (always provided we are willing to discuss them at all) what is meant by an adaptable theatre.

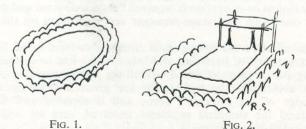
It is briefly a theatre that you can change from one shape to another. Or, speaking a little more strictly, it is a theatre whose stage you can change from one shape to another, in order to permit various styles of presentation—but if you alter the shape of a stage you generally require to alter the shape of the auditorium to suit it, so that it comes to the same thing; the whole theatre—stage and auditorium—must be adaptable from one shape to another.

Now we can ask the root question of the whole matter, which is: From what shape to how many other shapes ought a stage to be adaptable?

How many possible shapes of stages are there anyway? When we get down to it we shall find, perhaps to our surprise, that there are fundamentally only three. I agree that two of these can be combined to give what I may call one "sub-variety," and the other two to give a second sub-variety. But once we have understood these five, we are in a pretty good position to grasp the whole subject of the forms of the theatre.

The Three Essential Stage Shapes

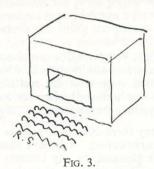
The first is the *centre stage*, or arena. The second is the *open stage*, which is also sometimes called (though less clearly) the plat-



10

form stage. The third is the *picture-frame stage*, or scenic stage, or *scène-boîte* in French—which means "box stage"—or *Guckkasten-bühne* in German—which means "peepshow stage."

Here they are diagrammatically illustrated in Figs. 1, 2 and 3. I have deliberately shown them simply because to elaborate their details too early is to risk confusing their essentials. Let us examine them.

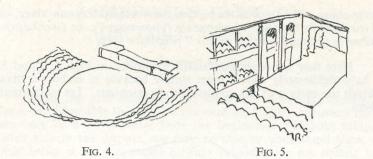


In Fig. 1 you have the simplest thing in the world—just an area. Maybe it is not even a raised-up area, but merely a space marked out. It may be circular or, when a raised, built stage is used, it can be rectangular like a boxing "ring." It has not, or need not have, any addition whatever. The actor may theoretically enter it at any point, though in practice a specific point or points will generally be settled. The audience surrounds it.

In Fig. 2 we have essential differences. There is nearly always a raised stage. It is generally rectangular. Directly at the back of it there must be some sort of wall or building—a stretch of curtains, a booth or a house—for the actors to enter from, and this must be provided with some sort of opening, or openings, for their entrance. The audience is disposed round only three sides.

In Fig. 3 we also have a raised stage, but now *fronted* with a wall in which an opening has been cut so that the stage is framed behind it. The audience, therefore, can only sit directly (or almost directly) in front.

(You might at this point feel that a truly unbiased observer would exclaim, having followed us so far—"What a funny stage! I don't like that! It seems very limited; how much better the other two were! What is the wall between the stage and audience for, anyway?" We can answer him thus: With this form of stage an important addition is possible; with a picture-frame stage you



can use scenery. In fact, you have got to use scenery, whether you want it or not! You are committed to it. No one has ever yet invented a picture-frame stage that did not demand a picture to frame. "Ah," says our unbiased observer meekly, "now I see the advantage of the picture-frame stage. . . .").

These, then, are my three essential varieties of stage. I do not believe this is over-simplification. I believe that you really cannot find in normal theatre practice, in any country, or at any period, any really essential type beyond these, though you can play certain variations upon their theme as we shall now go on to see.

The Two Main Sub-varieties of Stage Shape

You can combine the circular arena of Type 1 with the "house" of Type 2, and you get, the Greek theatre (Fig. 4). You can combine the open stage of Type 2 with the picture stage of Type 3, and (maybe unexpectedly) you get the Restoration theatre (Fig. 5).

And there you have the whole essence of stage plans in a nut-shell.

I may add a few notes. It seems generally true that these last two sub-varieties are for very particular usages and not always easy

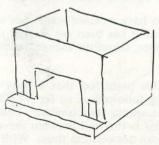


Fig. 6.

Again, it may be remarked that I have not included among the essential stage forms the picture-stage fronted with an ineffectually projecting apron stage—the kind of thing I might illustrate as in Fig. 6. This is because it seems to me that so far as theatre procedure is concerned the form is useless. It may be alright as offering a sort of intrusive platform for prize-giving to a school stage, but for theatre work it presents too indefinite a forward area for genuine forestage acting; it does not bring the player in any sense into the audience but leaves him just as uncomfortably in front of it; and it involves a mixture of two styles when some scenes are played on it before a curtain, and some on the full stage with scenery—as, alas, so many Elizabethan plays are now presented. It may have some attraction in opera, but I hesitate even here. Finally, it inserts a palpable barrier between the audience and any picture-frame scene. Avoid it altogether!

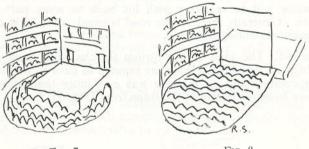


Fig. 7.

Fig. 8.

Perhaps a word ought to be added here about "queer" stages. By this I mean freaks like the stage which surrounds, or partly surrounds, the audience, or like the tripartite stage with three proscenium openings. But though such things have been designed in the past, no one has to my knowledge made much use of them, therefore I do not think they should be added to any scheme for an adaptable theatre.

In my opinion it is unwise to make provision in an adaptable theatre for any form which is odd, just because you think it might be fun. You must have a very clear idea of what kind of work you can do with each form, and that you want to do just that particular kind of work. If you are a genuine innovator, and wish to try out something entirely unusual, you have a perfect right to do so, but then you must think out very clearly beforehand what you want to

present, and how, and see that the man who designs your theatre is minutely briefed by you in respect of exactly what you want to do.

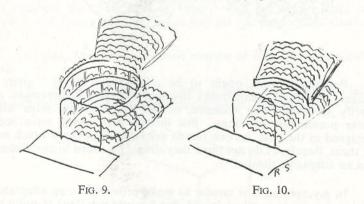
Because of the above consideration you may, then, if you wish add a third sub-variety, which we can label X, to our list so as to cover such unknown possibilities, but naturally I am not in a position to draw an illustration of it.

The Problems of the Auditorium

Having discussed the varieties of stage, the next (and very tricky) problem of the adaptable theatre is how to make the arrangement of the audience variable so as to suit the form of stage. Can we classify these various arrangements of auditorium? I think we can.

First: The kind of auditorium that has been found most useful for the centre stage is the bowl type. But when the audience is all round the stage you cannot allow many rows of seats, because every actor will be speaking with his back to some part of the audience. Generally three to five rows is usual, while eight or nine rows seems the outside limit.

Second: The kind of auditorium for the open stage can be much bigger. The Elizabethans are reputed to have accommodated 2,000 spectators and no member was ever more than about fifty feet away from the centre of the stage front (Fig. 7).



Third: Push the stage out backwards through the wall, and squeeze the circle of the auditorium to an oval, and you have the principle of the Italian Opera House, with its picture-frame stage (Fig. 8). Extend the pit backwards under the boxes and add a gallery, and you get the Regency-Victorian theatre (Fig. 9). But

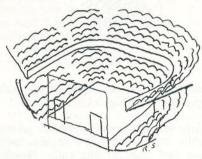


Fig. 11.

Such then are the varied forms a designer will have to reconcile if he wishes to plan a fully adaptable theatre, and you can well realize that it becomes a specialist job.

Before, however, we involve ourselves in the large undertaking of working out a full, new, adaptable theatre, there are some essays in compromise with certain existing buildings that can be attempted, and may be very instructive to us on the way.

To begin with you may try over a version of what is shown in Fig. 12. This is an oblong hall with a gallery at one end. It can be arranged as is shown so as to allow some quite extensive experiment in open-stage work. The productions at the Theatre Centre, under Brian Way, at St. John's Wood, were in a hall of this nature and they well illustrated the possibilities. Sometimes the acting-area was at the end shown, and sometimes in the middle, or at the other end incorporating the balcony, and the seats were arranged accordingly.

In some squarer halls, a development of open-stage work can be very usefully made on a stage of the shape shown in Fig. 13. This illustration is not offered as an example of an adaptable arrangement as such, but simply of a stage-shape which in practice proved valuable to work upon. It was this shape, in fact, which was used as the starting point of the design of the Dramatic Studio at the University of Bristol. This particular scheme as shown in

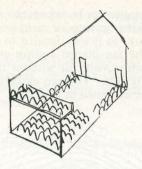
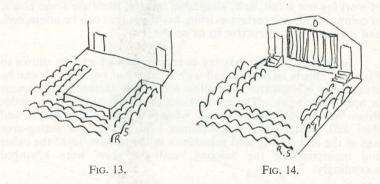


Fig. 12.

the figure leads us straight on to a simple essay in adaptable theatre which we can represent as in Fig. 14.

In Fig. 14 we have that typical bête-noire of our theatrical life, a plain, flat, public hall, fitted more or less indifferently with a simple proscenium and stage at one end. Nearly all the advantages of Fig. 13 can be preserved in such a hall by keeping the proscenium curtains closed, ignoring the stage and playing on the floor-space in front with the chairs set out as shown. On just such a plan the presentations of the Cockpit Theatre Club were staged in Westminster under Anne Jellicoe. Rearrangement of chairs makes it, of course, possible to use the orthodox stage in the usual picture-frame manner when desired.



All these are adaptations of existing buildings. For a new theatre specially planned, much of the experience gained in the Studio at Bristol University, to which allusion has been made, and which has been in uninterrupted use now for six years, may be suggestive. We refer readers to the article in *World Theatre*, mentioned in the list of articles and books below, for description and illustrations.

But, of course, all this is really quite obvious, since progress consists in men who want to do something finding a way in which it can be done. What is, however, the basic question is: Do we really want to use one, or any, of these "other" stage forms?

There are three answers.

The first is very simple: "We do not. We are quite satisfied with the orthodox picture-frame stage and we don't want to change it. It not only suits all our requirements, but suits them very well." Such people will not have to worry about adaptable theatres.

The second is quite the reverse. It is: "We certainly do want one of these new forms. We are not satisfied with the picture-frame stage. It is a worn-out form and doesn't suit what we want to do. What we do want is . . ."; and they specify one of the alternative types of stage. Such people, also, know what they want—and they may not want an adaptable theatre any more than the first group.

But to stand on the threshold of a new era of development with such single-mindedness is somewhat rare; it argues either an unusual clear-sightedness, or a much-too-usual failure to appreciate alternatives. And so we are brought to the third answer, which is: "We might very well want to use one or more of the other stage forms, but because (1) we think some forms suit some shows best, and other forms other shows, and/or because (2) we ourselves would like to learn from practice before we stake all on one form, we should like an adaptable theatre for the time being."

To this last group, what have we to say? We can suggest to

them six practical steps towards achieving their desire:

Step One. Select from stage types 1 to 5 the ones you wish to work with. If you find yourself unpreventably prompted to add a

further form, then plot out its requirements as type X.

Step Two. See what forms of auditorium you are involved with in each form of stage you choose. Decide whether any of these is ruled out by the nature of your site or any other reason; and if so accept the fact that you must abandon or modify the stage-type that goes with it.

Step Three. State your final requirements clearly, preferably to a professional theatre consultant, so that a scheme can be sketch-planned which will reconcile the various characteristics of the stage forms and the auditorium forms you require, and which will show clearly how that reconciliation is to be effected in detail.

Step Four. Lay the sketch-scheme before an architect for

detailed drafting.

Step Five. Receive estimate of the expense of the proposed building—and this estimate, it should be very strongly emphasized, can never be arrived at until proper plans are drawn.

Step Six. Be prepared to settle all the bills for this preliminary work up to date, and then go on afresh and set yourself to collect

the money with which to begin the building proper.

There are two, rather saturnine, last thoughts. Before you can decide which of these varieties of stage form you wish to plan your theatre to be adaptable to, you must, of course, understand what kinds of work are most suitable to each form, or conversely, what limitations upon your work are imposed by each form. And you must have a company of actors trained in such a way that they can work in that form. One could write a book on these two thoughts, but I wonder if it would be really much good? If you have not yourself studied such problems enough to be yourself able to realize what you are up against, I am not sure that you ought to be setting out to put up an adaptable theatre—or any sort of theatre—at all.

Articles and Books that May Help

John Andrews, "Arena Theatre," Theatre in Education, Vol. 5, No. 26, 1951.

F. P. B., "Lighting the Open Stage," *Tabs*, Vol. 12, No. 3, 1954. Walden P. Boyle, *Central and Flexible Staging*, Univ. California, 1956.

Cecil Clarke, "An Open Stage at Stratford-on-Avon, Ontario,"

Tabs, Vol. 12, No. 1, 1954.

W. S. Hattrell and Partners, "Plans for a New Theatre to be built by The Questors Theatre, Ealing, London," World Theatre, Vol. 4, No. 3, 1955. (See also the pamphlet published by this theatre.)

Margo Jones, Theatre-in-the-Round, New York, 1951.

Norman Marshall and Others. "Principles for Building the Theatres of the Future," World Theatre, Vol. 4, No. 3, 1955. This refers to comments on the adaptable theatre problem from thirty-three designers in thirteen countries.

Jack Mitchley, "Some Problems of 'Arena' Presentation," Tabs,

Vol. 12, No. 3, 1954.

Richard Southern, The Open Stage, Faber, 1953.

Richard Southern, "The Dramatic Studio of the University of Bristol," World Theatre, Vol. 4, No. 3, 1955.

A LAST NIGHT SPEECH

Given at Stratford-on-Avon by Emlyn Williams

Once more the Swan of Avon folds his wing To hibernate until the Stratford spring. And to me falls the task to thank and praise You—multitudes who (nights and matinees) Have thronged our playhouse. Now, with all our heart, I speak for everyone who played a part— But full as much for those who worked unseen. First, that tough army in the wings—I mean The squadron known as "Stage Staff". Pundits say That Rome was not constructed in a day: But these have built, in half that time—no more— Venice, Vienna, Navarre and Elsinore. I speak for those whose magic mystic tricks Turned night to day, and day to night-Electrics! For those who prompted, called, and came and went, With Bell, and book, and prop-Stage Management: Wardrobe, who cut, and pinned, and hemmed, and sighed, Who stitched, and snipped, and have (for Stratford) dyed: For Stage Design, whose work was to betwitch-Tagg, Bailey, Northen, Motley, Moiseiwitsch: Publicity, who beat the bardic drums: Box-Office, golden galaxy good at sums: For Music, live—thank Jove—not canned at all: For five directors—Langham, Webster, Hall, Fourth Byam Shaw, our counsellor and friend. The fifth—alas—hath now his reign to end: And the Swan-with Shaw, Hume, Donnell at his tail-The Swan bids grateful Godspeed to the Quayle. And last, the Players. Not only those who spake, But all the maids and lads who helped to make Our scene alive with song, dance, battle bloody, Bow, curtsey, mutter, mime and understudy. I speak for all who spake, with beard or wig on 'em: For Nicholls, Hoskins, Faulds, and Howe, and Dignam-For all of us who play as d'rectors drill us-King Harry, Hamlet's twain (Badel and Dilys); Three female swans, peerless in grace of manner, The Johnston, the McEwan, the Diana: For cygnets twain, one fair, one dark—Scales, Starke . . . For all I speak. Once more the Swan of Avon folds his wing To hibernate until the Ashcroft spring.

LIGHTING CONTROL-III

In our last issue we discussed the numbers of dimmers, whether they were necessary, and came to the conclusion that it was essential to be able to provide control for any number of dimmers up to 200 or more. We found that even with 56 dimmers, as at Stratfordon-Avon in 1932, the direct operated form of switchboard could be of very large dimensions. On the Continent this problem has not existed because it has been the practice right from the beginning to operate the dimmers remotely by means of tracker wires. Such an arrangement might be known as "mechanical remote control," and of course carries the advantage that the distances between the dimmers' levers need not be imposed by the size of the dimmers themselves. By the time switchboards in this country became so large that remote control was essential all-electric methods existed. and therefore the tracker wire has not been used here, except in the days of the old liquid dimmers. The first electrical method was electro-magnetic and involved the use of a pair of clutches per dimmer way. These clutches were mounted on a common shaft and, depending on which of each pair of clutches was energized, a dimmer could travel up or down though the shaft continued to revolve in one direction only.

The earliest large remote control in this country was that in Covent Garden Opera House in 1934. This employed a pair of magnetic clutches to each of the 120 dimmers and manually driven shafts operated from wheels on the remote switchboard. Each dimmer was provided with a two-way-and-off switch which gave "raise" in the top position, "dim" in the bottom and "stop" in the middle. Above each switch was a dial which indicated the position of the dimmer whether in fact the dimmer itself was live or not. The mechanical nature of this manual drive made it impossible both to drive and connect circuits at the same time. The practice was therefore to set the dimmers to travel in the direction required and then turn the handwheel. Certain master switches could de-energize largish groups of clutches, but nevertheless the board remained slow to operate. For Opera this has not proved unduly serious as lighting changes tend to be gradual. However, this veteran is now overdue to be replaced by something giving more flexible control and a much larger number of dimmers.

The next switchboard of importance was the writer's own Light Console introduced by the Strand Electric in 1935. This attempted to simplify the locking-on or -off of magnetic clutches. Thus the main aim was, in effect, to overcome the disadvantage of the Grand Master Board, e.g. that as the Master Wheel was turned, one had to leave it, to lock on or off, the dimmers which had to travel a limited amount. Likewise, it endeavoured to improve on the Covent Garden board in respect of speed and to replace the manually operated wheel by a motor drive. Nevertheless it must

be remembered that the Console was invented before Covent Garden was conceived and the most direct comparison is therefore between it and a Grand Master switchboard (see Fig. 1). The figure shows that instead of each dimmer handle each dimmer is represented by an organ type stopkey, and instead of the master wheel we have a series of manual keys forming a keyboard. The dimmers are locked

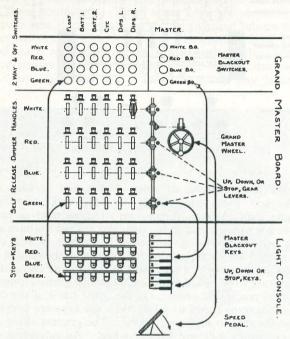


Fig. 1. A comparison of the controls of a Grand Master Switchboard and a Light Console.

on to the master for movement by putting down the stopkeys and they are released therefrom by lifting up the stopkeys. Putting down the stopkeys on their own, or working the master keyboard without any stopkeys down produces no effect whatever. Once dimmers have been moved, if their controls are put off, they (the dimmers) will remain at the same position until they are required to do something else. This is a valuable principle that we shall find occurring later on. The basic controls of a Light Console appear in Fig. 2.

As the dimmer is represented by a stopkey only there is a draw-back in the fact that one cannot tell the state of dim of a circuit. To overcome this, a few master dials are provided, and whenever a stopkey is pushed right through against a heavy spring to "second touch" that particular dimmer position registers on a dial, thereby

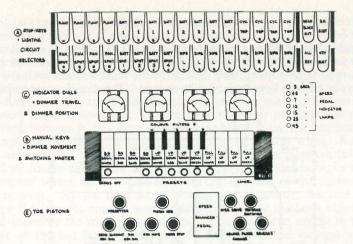


Fig. 2. Basic controls of a Light Console Control.

avoiding the large amount of space that a dial to each dimmer would take up. Every time the master dimmer keys are pressed, the selfsame dials register the amount of movement given to the dimmers as a whole, instead of in particular. Thus we have a means of finding out, for plotting, where each dimmer is and a means using the same dials for registering the amount of movement applied to dimmers as a group. This leads to a kind of calculation. If dimmers at 0 are to be raised to ½ the keys will be pressed long enough for the dial to reach that point. On the other hand, if the dimmers are at \frac{1}{2} and have to travel to \frac{3}{4} full, then the keys are pressed long enough for the dial to register \(\frac{1}{4} \) travel. The general effect is much the same as turning a Grand Master wheel. As individual dimmer handles move so they are unlocked at the various intermediate positions. Instead of turning the Master handle with one hand and unlocking individual dimmer handles with the other or getting some assistant to do so, as the positions are reached, the Console operator can use one hand on the keyboard and the other hand for flipping the stopkeys on or off appropriately.

Where a large number of stopkeys have to be moved at one time, the buttons under the keyboard known as "combination pistons" (or memory presets) are used. It is a feature of these buttons that they can be made to memorize any combination of stopkeys and thus a large amount of hand work is avoided. It should be pointed out, however, that the stopkeys are gracious and present quite a different touch to that normally encountered in a switch. A sweep of the hand and a group can be put on, or one stopkey can be put on with one finger while a neighbouring one is knocked off with another finger and so forth.

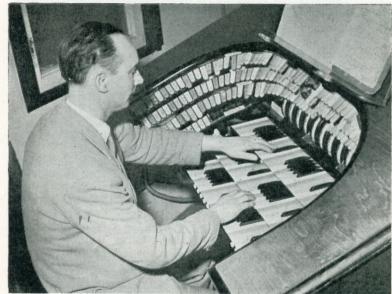


Fig. 3. Drury Lane Light Console Control (photo by courtesy of "Radio Times."

remote colour change mechanism. The master keys appear as black notes and bring four filters or white into action, without the need for extra switches at the console desk.

The console manual or keyboard set-up repeats every time the number of circuits exceeds about forty. Fig. 2 shows a diagram of the standard controls for a group of 32–44 circuits. At Drury Lane, where there are 216 circuits, this group repeats six times and the console looks like Fig. 3.

Each time a lighting change has taken place the hands can be

taken off the keys, or the stopkeys can be put off and the board reset for the next lighting change. Certain common changes are permanently preset, e.g. all dimmers can be run down by putting the foot on one toe piston. This is very useful. For example, once the last change of the scene has taken place the stopkeys can be set for the next big change and the general fadeout at the end of the scene merely takes place by using the foot. Immediately the fadeout is finished, the hands can be put on the keyboard and the new change can come up. Many other devices have been incorporated in the course of the years that the console has been in use. For example, it is possible to select circuits required and ignore the rest. When the "general move" button is pressed those selected will come up and all the remainder will dim out. Also, automatic switching of the memory presets, while the indicator dial moves. greatly facilitates the knocking off or on at intermediate positions: the operator no longer has to watch the dial closely—the instrument will do the job for him.

The big disadvantage of the console lies in the need to move dimmers in terms of distance rather than position, as calculation for this could at times be very complicated. However, provided the "lighting designer" has taken the trouble to understand the instrument, the console can be regarded as very flexible and capable of a large number of changes on varying lighting groups rapidly one after the other. This is shown in its ultimate form when, as often has been the case, the instrument has been used to play lighting—solo lighting—commonly known as colour music.

In recent years, however, methods have been devised which allow a dimmer to be moved, or moved in effect, from a miniature lever. One method is to use what is known as a servo mechanism in conjunction with the magnetic clutch. When the lever is moved the remote dimmer will travel to a corresponding position although the two are only joined by one electric wire. We shall return to this method and its possibilities later on. Other methods employ direct electric circuits and do not involve any mechanical movement whatever except that of the original dimmer lever. These methods are known as saturable reactor, indirect electronic, direct electronic, or magnetic amplifier. As this is not intended to be a technical article the circuitry will have to look after itself, but the general effect is a dimmer giving varying degrees of remote control facility.

Needless to say, the degree of facility is associated with cost and the cheapest method can only be used with comparatively simple circuits and one set of dimmer levers. Fig. 4 shows a typical choke dimmer control and Fig. 5 a typical dimmer bank. Both of these Strand units are in the Peacock Theatre, Helsinki. The dimmers levers can be seen in three rows and each lever mounts at 11 in. horizontal centres and 7 in. vertical. Each is provided with a clear scale and a knob convenient for finger operation. (No remote control knob is any use unless it allows for finger operation. Mere smallness is not sufficient—a rotary knob will need all the

fingers to turn it whereas knobs as those in the photograph can be operated five at a time using each finger.) Above each dimmer lever is a three-position switch and when this switch is in the top position the individual dimmer is connected to the master dimmer wheel on the left, when in the bottom position to that shown on the right.

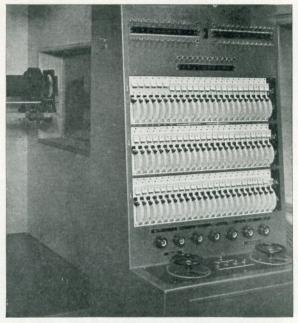


Fig. 4. Control Cabinet installed in the Projection Room at the Peacock Theatre, Helsinki.

The master dimmers are purely electrical and do not move the individual dimmer levers. What happens is that, as a master is used, so a proportional cut is applied to all the individual dimmers. In the control in the photograph, one group of lighting could be dimmed while another group could be raised, each group being made up of individual dimmers at intermediate and varying levels. Thus the question of dropping the dimmers off at levels does not arise since the levers can be set before the master dimmer is operated. Similarly a fadeout does not upset the dimmer positions if we wish to return to the same effect.

The arrangement in the photograph allows, as has already been said, two groups of lighting to cross each other using the two masters. In actual fact it is often desirable to keep some lighting static while two groups cross in front of it. For this a live centre position to the dimmer switch which makes the circuit independent of both master dimmers is essential. Later models of this control

for 54 or 72 ways are always provided with a second three-position switch for selection of switching only. Thus, immediately above the dimmer switch in Fig. 4 will be seen a second switch whose top position goes to left blackout master and bottom position to the right blackout master. The centre position switches off the circuit. Using these two switches the bottom one now is exclusively for selection to either of the master dimmers or "permanent live," i.e. independent of both. The flexibility is greatly increased by this arrangement as may be imagined, and in point of fact, apart from the use already hinted at, it does allow us to set up four groups of lighting, each separately mastered, and yet have other circuits independent of these groups.

What has just been described will take us a long way in control, for we have an extremely compact switchboard compared to the Stratford-on-Avon control shown in our last issue. The 56 dimmer ways of that particular board could now be housed on a panel no more than 3 ft. wide and, as part of a floor mounting unit, no more than 6 ft. high. However, although this represents a great advance,



Fig. 5. Reactor choke racks at the Peacock Theatre, Helsinki.

because spotlights with individual dimmers have now come to be used more and more, we find that this type of board—good though it is—nevertheless presents several handicaps. A particular example would be a lighting change involving one set of dimmers at various levels which merges into another set of dimmers at various levels. So long as these two groups of dimmers are entirely different we could select these on the two master dimmers as already described; but if, as so often happens, certain of the circuits are common to both groups then this switchboard will present no convenient way of carrying out the cue. For example, a change of lighting which represents the switching off of some lights in a room may involve taking out some dimmers but merely reducing the levels of the other dimmers. Or another common cue will be that in which, as soon as the preceding scene ends, a new set of levels are required on the same dimmers to indicate a change of time of day. Thus, a night scene with artificial light may be immediately followed by a day scene with a quite different set-up of dimmer positions and there will be no time between scenes to change, say, 54 or 72 dimmer levers to their new positions.

What is needed is a duplicate lever or some means so that we can "hold" the lighting in use while presetting the switchboard for the next change; a means similar to that provided by the Light Console but adapted to give us precise intermediate dimmer positioning.

There are various dimmers which lend themselves to the "preset" control treatment. Several of these are in fact fully electrical and involve no moving parts other than the control levers. Another way is to employ an electro-mechanical drive for a resistance or transformer dimmer similar to that used for the Light Console and for Covent Garden which preceded it. This method involves the use of what is nowadays described as a "servo" which causes the dimmer to move to a position corresponding with the position of the control dimmer lever. Earlier models of this kind of servo in other countries have employed individual electric motors to each dimmer and proved unsatisfactory owing to the momentum of the motor, which tends to carry it past the stopping point. The dimmer then has to hunt back and forth until it finally locates itself correctly.

The system adopted by Strand in recent years is based on an improved version of the magnetic clutch; consequently the servo has only to de-energize the particular clutch and the dimmer will stop dead. Fig. 6 shows an autotransformer dimmer with clutch drive, and at the top will be seen the polarized relay and dimmer potentiometer which form this part of the servo. Whenever the remote lever is moved, the bridge circuit is put out of balance and the polarized relay turns to one side or the other to bring in the up- or down-clutch. The dimmer then moves at whatever speed is imparted to the driving shaft until the dimmer potentiometer is in exactly the same position as the control potentiometer, where-

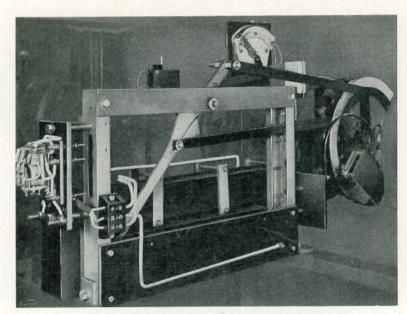


Fig. 6. Autotransformer dimmer with clutch drive.

upon the polarized relay regains its normal centre stable position and the clutch releases, thereby stopping the dimmer dead in its tracks.

The importance of a servo such as this is that all types of dimmer whether electronic valves, direct or indirect, magnetic amplifiers, or mechanically driven resistances or transformers can be driven from an exactly similar lever and provide more or less the same facilities. It thus becomes possible to consider the design of the switchboard quite independently of the form of dimmer employed. All have remote compact dimmer knobs operating via a single wire. There is, however, one great difference between the electro-mechanical and the fully electric dimmers which we shall find exercises great effect when we consider more recent forms of Strand preset board made in this country. This difference is that whereas the truly electrical dimmers always require to be energized to hold their station, the electro-mechanical remote operated dimmers will remain at whatever position they were last driven to. This in point of fact allows of the same effect as was described under the Light Console, namely, that the switchboard need not be used to hold the lighting in use, and consequently its levers can be released for the next change. However, for the moment it will be better to ignore this particular effect and concentrate on the pros and cons of presetting as applied to all electric dimmers; but space compels us to hold this tantalizing subject over until our next issue. F.P.B.

The Beggar's Opera is probably the best-known joke in theatre history. Written by Gay in 1728 to "take off" the absurdities of Italian opera of the day; its prince is a highwayman, its courtiers crooks, and its dialogue mockery. It is kept perennially fresh by the popular airs he chose, and by the lightheartedness of the whole conception. "We know this is a nothing," Gay wrote: but it drove away the Operas it guyed for a season, and has drawn audiences ever since.

Hinrichson's have newly published *The Ninth Music Book* by Geoffrey Handley-Taylor and Frank Granville Barker, in their series of Musical Research, devoted to *John Gay and the Ballad Opera* (12s. 6d.). Designed as a permanent work of reference, the book itself is crowded with facts. The quality of the information perhaps deserves a better format; however, the subject defies its restrictions. The origin of the play and its music, a selected bibliography and a list of the major productions between 1920 and 1955 take up a major portion of the book.

Congreve thought, on being shown a copy, that "it would either take greatly or be damned confoundedly." The last section of 130 illustrations, some published for the first time in a hundred years, shows how enthusiastic the public have been: playing cards engraved with airs, playbills, pictures of leading ladies, and other "reliques," beside a good many sheets of music show that publicity is not exclusively a product of the twentieth century.

This is a book which would interest the theatre-lover, but will be bought

chiefly by addicts of the Beggar's Opera.

L. T.

TWO AMATEUR STAGE HANDBOOKS

Plays of 1955-6. (Stacey Publications. 4s.)

Any experienced member of a plays selection committee knows that the strain of trying to select say half-a-dozen different plays to make up a season's balanced programme can become well-nigh intolerable. It involves the reading of dozens of plays and one of the greatest hazards is in the compilation of the list of plays that are to be read. Roy Stacey has offered invaluable assistance. His classified guide to the plays published and released in 1955 and 1956 provides a précis of each of some 450 plays, which can simplify enormously the preparation of the reading list. The comments are intelligently helpful and give sufficient details to enable the reader to judge the suitability of any play to his particular need. The guide separates the comedies from dramas, the full-length from one-acts, mixed casts from all women, and separately lists religious plays, plays for young people, pantomimes, sketches and miscellaneous selections. It is a necessary investment for any dramatic society or repertory company. Unlike the seedsman's catalogue, this book is intended to guide, not to beguile. Its reviews of the plays included are dispassionately critical: although it is clear that some of the plays included would not be Stacey's personal choice, there is no smug suggestion that your particular cup of tea should be sweetened to his taste.

Stage Management. (Stacey Publications. 2s.)

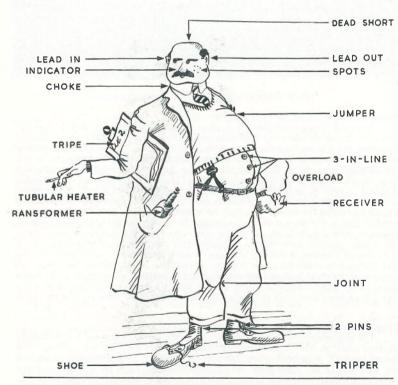
The importance of stage management in the amateur theatre is consistently under-estimated, and invariably appreciated at less than its true value. The recruitment of stage-staff often depends on a subtle combination of guile and the methods of the press-gang but curiously enough, once the victim is cajoled or coerced into becoming a member of the black squad, he soon loses any resistance and becomes an enthusiast. He is then quite likely to entice other unsuspecting victims into the net. The tame elephants enjoy capturing the wild ones!

The back-stage organization is, all too frequently, rather haphazard: an optimistic reliance on hit-and-miss methods induce last-minute panics that would

be avoided if this informative booklet were carefully studied and its precepts adopted. There is wisdom and experience behind the detailed survey of the duties of stage managers, the conduct of rehearsals, prompting and the like and a good deal of practical information on the making of props. and various accessories, and the creation of numerous visual effects and "noises off." There are also helpful hints on the making of stage flowers and about costumes and wigs, whether made or hired.

When the booklet is reprinted, as it most surely will be, it might, with advantage include a section on the planning and handling of scenery. Obviously, the design and making of scenery is outside the scope of the book, but the organization of the supply, setting and changing of scenery is very much the concern of the stage manager, and the detail involved should be dealt with, even though it may necessitate an expansion of the book and an increase in its very modest cost. As it is now published it is very good value for money and should be read by all producers as well as by all others who are interested in stage management.

P.C.



ELECTRICIAN-REGRETTABLE TYPE

Drawn by Brian Benn, a member of the Sadler's Wells Theatre staff.

AN EPISODE WITH GAS

DEAR SIR,

Further to the various articles that have appeared in Tabs regarding the use of gas as an illuminant in theatres, the following may be of interest. It occurred at Theatre Royal, Drury Lane, about the year 1884. It was the custom in those days to take apprentices to the various trades employed at the stage end of the building, and about that time the famous producer Arthur Collins was pupilled to the resident scenic artist, who, if my memory of the information told to me by my father is correct, was Henry Emden.

Apprenticed to the Master Gasman were Frank Parker (who eventually rose to Stage Manager under Sir Augustus Harris, the great impresario of the period at the Lane, and who was eventually Equestrian Ring Master at the London Hippodrome when it was a circus): also my father, George Alfred Applebee, who for many years was Chief Lighting Technician to the late George Edwardes at the Gaiety and other theatres.

Lighting and ventilation of the auditorium in theatres in those days was by the sunburners described in the last issue of TABS. It was the custom for the two gas apprentices to take it in turn to ignite the gas jets in the centre fitting at Drury Lane. This fitting was a very large crystal design, illuminated internally by a very large number of "fishtail" gas jets. (The gas mantle had not made its appearance in 1884.) The system of lighting was that the apprentice would climb down into the fitting from the roof void above and light the pilot burners with his methylated torch, and then climb back into the void, reach into the fitting and turn on the main valve which was lever operated, and thus allow the pilot to ignite the main jets.

Frank Parker nearly lost his life during one of his turns of duty; his foot caught the valve lever as he was lowering himself into the fitting, with the result that the main jets all became ignited. Parker would probably have been roasted alive, but fortunately the Master Gasman happened to be on the stage with the curtain up, and observing what had happened, rushed to the main gas plate which was on the prompt corner, and shut off the main valve.

Yours, etc.,

L. G. APPLEBEE.

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The Strand Electric and Engineering Co., Ltd.

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Alec Shanks

Alec Shanks, whose authoritative article on Gauzes appears on page 4, claims to be the first and only Britisher to design scenes for the famous Folies Bergère. It was natural that the late George Black should call him to London to bring taste and glamour to the Palladium and Hippodrome productions. Later he entrusted him with producing Strike It Again and Piccadilly Hayride with Sid Fields.

Add to this the continuous ten-year success of the Crazy Gang Shows, and eleven of the most elaborate Revues outside Paris, at the Opera House, Blackpool, with two Royal Command Performances at the Coliseum, and Alec Shanks stands as an unrivalled combination of Producer and Designer on a large scale. He has also devised the lighting of half the English versions of American musicals, from Kiss Me Kate to Kismet.

Dr. Richard Southern

Dr. Southern, whose article "A Beginner's Guide to Adaptable Theatres" appears on page 10 of this issue, is the author of several books on theatre technique and its history which are well known, and have grown into the category of standard works. He has not only studied the problems of designing theatres, both orthodox and adaptable, for many years, but he has the distinction of planning the first adaptable theatre in Great Britain, for the first British University to have its own Department of Drama, namely Bristol. At present his work as theatre consultant is carried on in the Department of Theatre Planning in the British Centre of the International Theatre Institute, London, where he is Director of the Department. His office (which houses his unrivalled collection of theatre plans and pictures) is a Mecca to those who face the problems of building, adapting or equipping theatres.

A New Name in Lights

Fig. 3 in F. P. B.'s article on Lighting Control is of particular interest. It is published by courtesy of the Radio Times and was in fact used to publicise the Television Saturday Night Out visit backstage to Drury Lane. We imagine it is the first time a switchboard has been starred and has had its photograph displayed in preference to all other attractions. The same picture was also used as a trailer the night before.