

TABBS

THIS BOOK IS THE PROPERTY OF
THE STRAND ELECTRIC & ENGINEERING CO. LTD.
24 FLORAL STREET LONDON, W.C.2.

DATE PURCHASED

IT IS TO BE RETURNED TO
HEAD OFFICE

INDEX No.

TABS

Published by The Strand Electric and Engineering Co., Ltd.
in the interests of the Amateur Theatre

CONTENTS

	PAGE		PAGE
Editorial	2	All at Sea	20
Critics Must Criticise	5	Portrait of Her Majesty the Queen	21
Colour in the Theatre No. 6	8	Not Strictly Theatrical	22
About Arcs	11	The Ideal Theatre Switchboard... ..	23
Obligations, or Some Light on Advice	15	International Commission on Illumination—Paris, 1948	26
A Customer	16		
The Curse of "Efficiency"	17		

EDITORIAL

A note in the programme of the Old Vic Theatre School to the effect that the lighting was operated by students made us consider as to the maximum and minimum ages, sex and so on of the people who have to deal with our equipment. On the professional side, one West End, London, and two Scottish Theatres have their switchboards controlled by the fair sex, and on the amateur side we recently came across a young lady of fourteen years of age working her lighting cues with the best of them. In the words of the daily press, "Is this a record"??

* * *

The author of "The Curse of Efficiency" (see p. 17) apparently expects to arouse a storm of controversy. As far as we personally (Editorially) are concerned we are in agreement with much of what he writes. Supposing Portia, instead of:—

"How far that little candle throws his beams!
So shines a good deed in a naughty world!"
had had to utter:—

"The lumen output of yon lamp
Is worthy, surely, of a Nobel prize."

2

Or again imagine Lorenzo, instead of:—

"How sweet the moonlight sleeps upon this bank!
Here will we sit, and let the sound of music
Creep in our ears;

having to quote:—

"How well that lampost lights the kerb!
Here will we park, and let the radio
Blare in our ears;"

But we are, perhaps, being unfair in translating Shakespeare into modern technical dress. Maybe. But read the article and decide for yourselves.

* * *

It was with great regret that we learnt of the death of Hubert Tannar only a few weeks after the appearance (in our last issue) of his article on the Royal Pantomimes at Windsor Castle. Mr. Tannar must have been most gratified—as indeed were we—that Her Majesty the Queen should have expressed her own and Princess Margaret's delight and that Princess Elizabeth should also have written of her own enjoyment and how the article brought back such happy memories.

* * *

Not so long ago we published a brochure entitled "Some Advice on Stage Lighting". This has proved a best seller and at the time of writing we are completely out of stock. We are having the booklet reprinted and hope to be in a position to supply requirements by the time this paragraph reaches our readers. We had some ideas about enlarging the scope of this booklet before reprinting it, but the number of urgent requests has led us to reprint it as it stands.

* * *

We have in mind producing a new illustrated catalogue of our Decorative Hire Fittings. In addition to wall brackets candelabra, standard lamps, etc., this will include such other "props" as gas and electric fires, telephones, bell sets and so on. It will, of course, only be possible to indicate the various types and styles of fittings available, as a comprehensive catalogue would involve literally hundreds of photographs. Nevertheless, the new list should be a great asset to all who cannot visit us personally just at the critical moment. Incidentally, decorative fittings can usually be reserved in advance—a wise precaution seeing that some of the "specials" are not always too readily available. As soon as the new catalogue is ready it will be announced in "TABS". Until then, please don't ask for it.

3

The following is reprinted, with grateful acknowledgement, from "Stage Door", the monthly magazine of that very much alive Brighton & Hove Operatic Society:—

BACK STAGE
(With apologies to Lewis Carroll)

*The Star was standing on the stage,
Singing with all her might.
Around her was a great display
Of pink and amber light;
And this was odd, because it was
The middle of the night.*

*The Stage Hand and the Carpenter
Were standing in the wings,
Discussing cues and drapes and flats,
And many other things;
When suddenly one of them said:
"How wonderfully she sings!"*

*"If seven maids with seven men
Came on and did a dance,
Do you suppose," the Stage Hand said,
"That they would stand a chance?"
"I doubt it," said the Carpenter,
After a second glance.*

*"'Electricians' come and drink with us,"
The Stage Hand did entreat;
"A pleasant chat on this and that
Is very hard to beat."
The Carpenter said nothing but
"I'll have a brandy—neat."*

* * * * *

The only one of our publications for which we have made any charge—our Glossary of Technical Theatrical Terms—has, we are glad to say, enabled us to send a cheque for £100 to the Actors' Orphanage. Copies are still available from us. Price 2/- each, post free.

* * * * *

In our next issue there will be news of a scheme whereby small switchboards can virtually be bought by instalments. This will form part of a 2-issue article on switchboard developments.

CRITICS MUST CRITICISE

Criticism should be the considered opinion of an informed observer. The word to note is "opinion". Printer's ink often has a mesmeric effect and opinions are mistaken for facts when stated in "black and white".

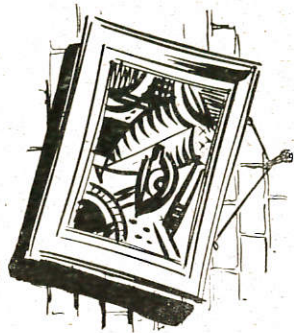
Criticism that is anonymous is usually valueless. It is sometimes valueless (and even priceless!) when it is *not* anonymous, but it has the virtue of personal responsibility. And criticism is something intensely personal. The critic's "impartiality" cannot exclude his personal beliefs, emotions, ideas and prejudices; his likes and dislikes. He might, for instance, hate the sight and sound of crooners; or, strange as it seems, he could be one who is provoked to sublime ecstasy by those who hiccup their frustrated passions into a microphone. In either case, his opinion of the current week's show at the local Snappydrome, the smash-hit revuesical musical, "Monotony Sound-box", is bound to be affected. If of the former type and his need for bread and butter were pressing he might try to avoid unpleasantness by saying: "If this is the sort of thing you like, you'll like this sort of thing"; but as a regular contributor to dramatic criticism it has limitations easily recognised by an editor, whose fear of faulty circulation would probably compel him to prefer the junior reporter's indiscriminate approval.



...hiccup their frustrated passions into a microphone...

The activity of the amateur theatre has a certain news value and most leading societies invite the Press to send critics to their performances. The result is sometimes pleasant and sometimes painful. The popular attitude of the criticised is to protest to high heaven that he welcomes "constructive" criticism, but deeply deplores the wantonly *destructive* criticism of the "Rate-payers' Weekly" if it says that his performance was pathetic—or words to that effect. This attitude shows a lack of understanding of the real function of the critic. He is, or should be, a person whose standard of appreciation has a background of theatre experience and who is able to express his critical judgment in a manner interesting to the readers. The critic is not a publicity agent. When he usurps that function he fails to be effective as a critic. There are few things more nauseating than the Press report which hands out its cliché-ridden verbal bouquets with the recklessness of a parliamentary candidate trying to book a passage to Westminster. Such reports may be due to the editor's mistaken kindness, the critic's inability to criticise or the advertising manager's cupidity. It gives most

people something of a thrill to see their names in print and the thrill is a pleasant one if what is said is flattering. It is easy to believe it to be true. Few people enjoy adverse criticism of themselves. Not many are able to take it gracefully, but the actor who is serious



"... should be, and occasionally is, a work of art..."

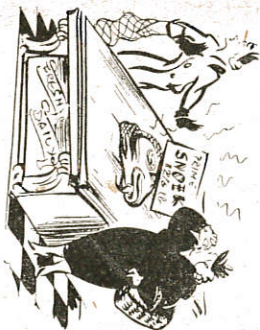
about his job—whether paid or unpaid—must learn to take it without wincing. The critic isn't necessarily right; but he represents the customers and has, therefore, the divine right not to be considered wrong. He has a heavy responsibility. He must be prepared to express his opinion without malice or mercy. He must, therefore, be certain he has an opinion to express and must have enough knowledge, experience and critical faculty to make that opinion worth having. He must have standards of achievement by which he is able to judge any stage performance. If his criticism is to be of value it must not be concerned with either amateur or professional status. He is expected to judge what should be (and occasionally is) a work of art. Whether it is good, bad or indifferent, he must be courageous enough to tell what he regards as the truth. Only then will his criticism be valued and valuable. Because the majority of people in the provinces have so little opportunity of seeing productions of the highest quality, the general standard of appreciation is lamentably low. Earnest endeavour is frequently applauded as artistic achievement because the inspiration of theatrical richness is outside popular experience. The critic should be ahead of popular judgment and taste. That is why his opinion should be sought. If he is not ahead, he should not be a critic.

Criticism is itself an art; without artistic integrity it is useless except as reporting. It must have integral style and colourful phrase, but it must also have sincerity. It must be allowed the emphasis of exaggeration and if it has a deft touch of humour so much the better. (What a loss to the theatre is the cinema's gain of C. A. Lejeune!). The critic must not be deterred by the clamour of victims for "constructive" criticism. He is neither a spare producer nor a festival adjudicator. He is passing an opinion on something offered for public purchase.



"... should be ahead of popular judgment..."

If the victims do not like it they must lump it—or suspend invitations to the critic. They must learn that in issuing such invitations they are asking for his opinion and are not entitled to expect instruction; if they get instruction also it is a privilege, not a right.



"... something offered for public purchase..."

The critic who has to judge amateur productions often has an ungrateful task. He probably knows that the cast and stage staff have spent all their leisure hours for weeks in preparation, often overcoming appalling difficulties and he is probably disposed to moderate the bitter blast of truth into a gentle zephyr of polite persiflage. To do so might reflect credit on his humanity but it debases his art. The amateur theatre is better served by naked truth than by tolerance in fancy dress.

The amateur theatre rightly takes itself very seriously. Its greatest danger is complacency in mediocrity. It is the critic's job to shatter complacency by exposing the mediocre and recording approval of real achievement. The critic who does the job ably will not be popular but his opinions will be respected.



"... being violently explosive..."

The printed comment which betrays a critic's immaturity and lack of theatre sense can be infuriating. The experienced producer or actor who has given much time and thought to his job may be forgiven for being violently explosive when he reads, as he often must, a patronising condemnation written by some adolescent critic who has just acquired his journalistic long-trousers. The temptation to protest vigorously to the Editor is natural but dangerous. It must be remembered that in a democracy even the immature are still entitled to have and to express opinions—and anybody's criticism is only an opinion; and it isn't compulsory to buy or read it. Before dashing into defensive dialectic, the victim should pause to consider whether the critic's opinion—mature or otherwise—is quite as wrong as he would like it to be. There is acknowledged authority for not regarding babes and sucklings as absolutely numb. But they—and adolescents—can be very tiresome.

COLOUR IN THE THEATRE No. 6

We have considered in a general way the principles of colour lighting in the earlier articles of this series. It is now high time to investigate how to apply these principles to the representation of natural phenomena. To speak plainly, the question is: "How do we paint our stage with light for a fine day, for moonlight and so on"? Placing realism first on the list may provoke a howl that this is the reactionary approach. Personally, my preference is for abstract lighting, the message being obtained by what the lighting is rather than what it represents. But naturalistic drawing or painting from life is an essential part of an artist's training, whether his medium is oil, pastel or egg tempera or what you will. Stage lighting is just another medium for the artist and the same rules apply.

Another medium for the artist—that is the trouble. No one would expect to draw or paint and give a *public exhibition of their work* without having carefully fostered their natural genius with a long training and discipline. Yet, in the theatre, professional or amateur, anyone will undertake to "do the lighting"—that is to paint a picture for public exhibition without any specialised training whatever.

Stage Lighting is not a matter of throwing a few pools of lighting in the various locations where the principal acting business takes place, and then throwing a beam of light in through the window because the script says it is a fine day. The lighting of the stage must be subject to a dominant idea which will influence the placing and colouring of every lantern, be they two or two hundred in number. This fine day—how does it strike the characters on the stage—do they revel in it or is it merely an irritation by its contrast to their own confined situation?

It is remarkable to me that so few scene designers take up stage lighting, for it is the logical extension of their art. I suppose the awful word "electricity" scares them off though it is surprising how little electricity enters into the practice of this art. I should like to see the scene designer take to the switchboard, although I must admit most switchboards in design and position (out of sight of the stage) scarcely encourage this.

Where is the producer in all this?—where he always was, directing and trying to infuse his idea of the play into all at work upon it. The main difference is that the man who has to translate his wishes into light is not a man whose horizon is bounded by kilowatts and cables, but a man who has many times before brought his critical artist's eye to bear upon many a fine day *outside the theatre*.

All this is but another way of saying that while I *have found*

it very easy to write these articles to date, it is now going to be incredibly difficult.

Let's begin with a simple exterior, backed by a plain sky cloth or cyclorama. It is a fine day, the sun is shining and there is not a cloud in the sky. What colours are to be used? For this effect we have to muster the maximum lighting on the acting area and the maximum on the cyclorama, and the two must interfere as little as possible with each other. Provided there is sufficient intensity, white light will be best on the acting area, the white light being warmed by contrast with the sky. Unfortunately, there seldom is sufficient white light and the effect will appear washed out and drab—excitement comes as the intensity rises. Most theatres are terribly underlit, in my opinion.

The missing interest has to be put in by pale filters such as 52 Pale Gold and 50 Pale Yellow for the direct sun's rays, which is very sad when one considers that electric light (filament lamps) is already very yellow and warm in spectral composition when compared to sunlight.

The cyclorama will also require that every lantern of its bank projects a blue of some sort. Unless the installation were a giant one, the three primary colours would be hopeless; if the special colours 5A Orange, 16 Blue-green and 20 Deep Blue are used then the last two circuits will be full on and the 5A at about half. If, however, the colour changes in the rest of the play are slight (or the lanterns are accessible during the interval) all blue would be suitable, half the lanterns in 40 Pale Blue and the other half in 32 Medium Blue. Make sure the cyclorama lanterns are clean and the lamps, especially in deeper blue circuits, are not old and yellow. The rated life of the flooding lamp is a 1,000 hours and after that time its light output in blue, already poor, gets poorer and poorer.

It is as well to err on the side of making the cyclorama lighting too blue as this will by contrast warm the acting area lighting. A mixture of 18 Light Blue and 17 Steel tends to be too grey. A grey cyclorama looks cold, though in fact outside the theatre a grey-blue betokens heat. If there is bottom lighting to the cyclorama the effect of shading from the blue to a hot white (straw No. 3) is suggestive even if not correct.

The actual colour of the cyclorama or the backcloth before ever it is lit is a vexed question. When there is any doubt it is better to use plain white. The trouble with most painted colours in pale blue is that they tend to be rather poor reflectors of blue itself. Therefore, it is probable that if a 32 Blue is thrown on a white cloth and a pale blue-grey cloth, the former will appear more exciting. The tinted cloth is advantageous in a negative way, it lessens reflection of white light scattered from the stage floor.

On a shallow stage an acting area lit bright white will cause considerable scatter on to the cyclorama from the stage floor and in other ways. It is not just a matter of keeping the main beams of light clear of the backcloth.

Nevertheless, I still think my vote would go for the white cyclorama though there is much controversy and plenty of pale blue cycloramas to be found.

Plain evenly lit cyclorama skies are sometimes quite hostile to the foreground and simply cry out for a cloud or two to relieve their monotony. These clouds need not move, in fact it is often better that they should not, but their projection can none the less be rather troublesome.

An optical lantern can be hired quite reasonably, particularly if a stationary mica slide is used, but placing it will be difficult on a small stage and the expenditure may rob the stage of more valuable light sources. The enthusiastic reader is advised to try the light leak method. This is a matter of blanking out the front of a baby flood with cardboard or brown paper, and cutting away a very small piece at a time so that a distorted wisp version of the filament shape is projected. The baby flood will give sufficient light for a moonlight sky, but for day a larger flood will be needed and the effect reproduced in tin. A clear lamp and no reflector is essential. It is amazing what can be produced, but it is also amazing what patience is needed to produce it. However, I have produced clouds this way myself and so I know it can be done. The shape of the cloud streak is not solely dependent on the mask-cutting, but is also governed by the angle of projection, an acute side projection close to the cyclorama being better. It is just this projection that most amateurs are forced to use.

F.P.B.

A note from our Hire Dept. reminds us that they are continuing to remain open through the Lunch Hour (Monday to Friday) for the benefit of those who can't get along during normal business hours. Saturdays 9 o'clock to 12.30 as usual. They also inform us that they have started receiving orders for equipment for the Xmas period, so to avoid disappointment make your order one of the early ones.

ABOUT ARCS

So far as many of our readers are concerned considerable mystery seems to surround the genus arc. Let us endeavour, therefore, to throw a little light on the subject.

In the first place why use an arc at all—that is in preference to an ordinary spotlight with a projector lamp?

For a lantern of given size the arc produces a greater intensity of light and the source from which that light emanates is smaller and more compact than the spotlight lamp filament. These factors mean a more intense and more clearly defined beam—both great assets for long throw spot work, also, of course, for the projection of such optical effects as clouds, sea waves and so on. Then again the control of the beam makes possible the use of an iris diaphragm or shutter on front-of-house spotting lanterns so that either an individual actor can be lit, or complete areas of the stage.

So far so good, but where are the snags? Right here. Firstly, the arc is positively human in certain respects. It dislikes being left alone unattended or it will quickly indulge in a blackout; and without some steady influence it becomes very temperamental and unstable.

Before elaborating on these snags we'd better have a quick look at the arc's internal workings. The heart of the matter consists of an arc movement of which there are many types depending on the number of adjustments and refinements fitted, and whether the supply is alternating or direct current. Both have their points as we shall see later, but let us for the moment examine the very simple movement illustrated in fig. 1.

The flat plate at the bottom slides in grooves in the base of the lantern housing to permit focusing in the usual way. At the back (right) on an insulated block are two terminals which carry current to the carbons through asbestos-covered heat-resisting cable via the carbon holders. Fixed to the centre of the base is a square pillar up and down which a carriage supporting the rest of the movement can slide, adjustment being by means of the lowest handle. This is for centring the light sources with the lens in the vertical plane.

Pivoted to this carriage so that it can swing backwards is a second square pillar—this time hollow. This tilting arrangement is to permit the arc being used to best advantage as we shall see later. Sliding on the second (upper) square pillar are two arms carrying the carbon clamps or jaws, the distance between them being varied by rotation of the middle handle on the right. This is for "feeding"

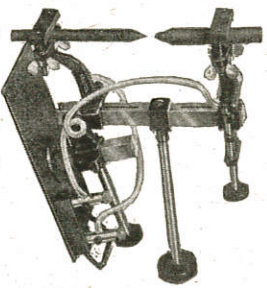


Fig. 1.

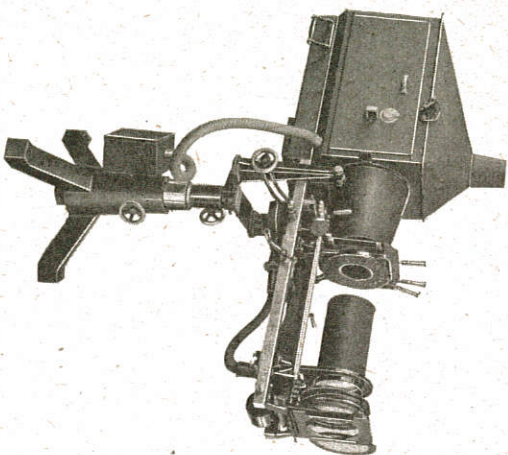


FIG. 2. The Strand "Sunspot" Arc.

view, but also to ensure good electrical contact between each jaw and its carbon, since it is thereby the current travels.

In its simplest form a carbon is a rod of processed compressed carbon dust, the chemical and other features of which we won't go into, but which has the property of carrying current and becoming incandescent or white hot under certain conditions.

Now how does an arc function? The two carbons are closed together (by the centre handle) until they touch and current passes between them. They are then separated by the same handle and provided the air gap between them is not too great current will continue to flow, the tips of the upper and lower carbons (positive and negative respectively in the case of D.C.) becoming white hot in the process. The actual arc or electric spark between the carbons gives little or no light.*

When burning, the arc causes a crater to form in the positive carbon and it is this crater which is used as a light source. The tilting movement mentioned above allows the best use to be made of this white hot crater. In A.C. arcs a crater is formed in both carbons (as they are alternately positive) either of which may be used as the light source.

But to return to D.C., it will be remembered that adjustment is provided for moving the positive carbon backwards away from the negative. This is to cause the current to pass slantingly between the two carbons, to make the crater of the positive on the side facing

the lens. Thus we aim to have a single light source and one clearly defined beam, instead of two sources plus a less sharp result. It will be noted that the positive carbon illustrated is considerably thicker than the negative. This is to compensate for the fact that the former burns away quicker than the latter.

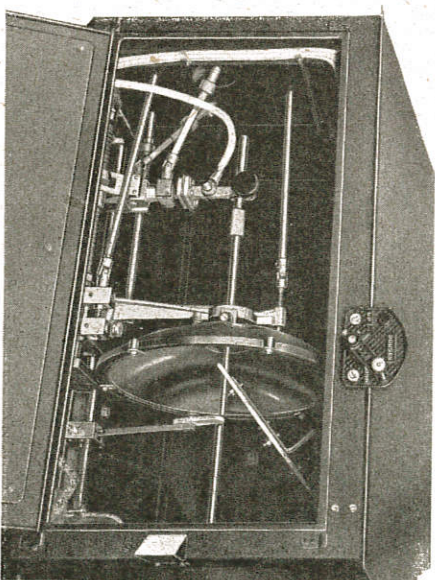
Arising from the arc itself is a flame, the result of the combustion of the carbons. On simple movements the normal adjustments are sufficient to prevent the flame from damaging the lens systems, but on more elaborate arc movements either mechanical or even electro-magnetic means are employed, the flame is susceptible to magnetic attraction—to safeguard the optical system. The burning away of the carbons means, of course, the continuous lengthening of the arc gap between the carbons, and in order to keep a steady silent light the carbons must be constantly fed together (middle handle), or else the resistance of the gap becomes too great and the arc will splutter and go out. Hence our reference at the beginning of this article to an arc requiring an escort at all times. Strictly speaking this is not quite accurate as some arcs, e.g., film projectors have an automatic motor feed fitted, but even so hand adjustment is necessary from time to time.

Then, too, carbons require renewal. The length of time of a "trim" as it is called, varies according to the size and type of carbons used. Cinema carbons (high-intensity type) are designed to last out a reel of film. Stage carbons (low-intensity type) are usually designed to last to an interval between acts—say 1½ hours of continuous burning before requiring replacement.

There, then, is snag one. An arc requires a whole-time operator even though the colour, direction, size and intensity of the beam remain fixed. Now for snag number two (and remember, please, that we are still dealing with a Direct Current Arc). Like many humans an arc yields over-easily to external influence—in this case to electrical pressure or voltage. If connected direct to a D.C. mains

supply of 200/240 volts it loses all control. Far too much current passes, the carbons shatter, the circuit fuses blow and all is confusion.

FIG. 3. Including focusing, masking and colouring, there are 19 controls on this Strand "Sunspot" Arc.



* The following are approximate relative heats:—
The Sun 6,500 degrees K. High Intensity Arc, e.g., Film Projector 5,500 degrees K.
Stage arc 3,700 degrees K. Metal filament lamps 2800—3000 degrees K.

Some kind of electrical "chaperon" must therefore be introduced to safeguard the arc's inner workings from the vagaries of Villain Volt, and so we find a ballast resistance, as it is called, inserted in the circuit as a buffer between the arc and the outside electrical world.

It is one of the features of carbons that they function most satisfactorily at somewhere around 50 volts, so that when working on a 200v. D.C. mains supply we have to dispose of the surplus 150 volts in the resistance. Suppose the arc takes, say, 40 amps., then it is turning 40×50 (approx.) watts into light for us, but is actually taking 40×200 watts from the main, and that, mark you, is what you pay for. The difference—in this case 40×150 watts—is dissipated in the form of heat in the resistance. When fed from ordinary lighting mains voltage the arc is, therefore, quite an extravagant piece of goods.

In professional circles where arcs are permanently installed, it is usual to feed them from a D.C. supply of about 100 volts, thereby only having to lose one-third as much wattage in the resistance as in the example above. Why, then, you may say, why not supply the arc with what it wants in the first place, *i.e.* about 50 volts.

What we want from an arc is a steady light, *i.e.* a steady flow of amperes. Unfortunately, as the arc burns the gap increases, and with it the voltage required to maintain these amperes. Consequently it would be very difficult to maintain a steady arc by hand control alone.

If the supply voltage is only enough to push the requisite amps across the correct arc gap we shall be in trouble every time the gap gets a shade too long and its resistance a trifle too high. In other words, it is no good having a motor scooter with only enough horse power to jog along the level. You want that little something extra to take you up the hills. Ergo, we want some power in hand. Furthermore, when the arc is lit or "struck" the two carbons are touching, and without a resistance to regulate the flow of current we shall be in trouble again, so on this score too we want a resistance. Having inserted a resistance we must increase the supply voltage beyond that required for running the arc to compensate.

Hence the apparent compromise. The arc thrives on a supply of about 50 volts and we deliberately provide it without about 100 volts for preference, but if need be it can be made to function on a supply within the 200-volt range provided it is used with the requisite sedative or nightcap in the shape of the correct resistance. As we all know some nightcaps cost much more than others, and so it is in this case.

There we must leave arcs for the time being. We have not touched on the different kinds of resistances available, on how to control an arc once it is under way, nor on the A.C. arc and its appropriate control gear. We must leave a future issue to take care of that.

OBLIGATIONS,

OR

SOME LIGHT ON ADVICE

"One who advises," wrote Hazlitt, "should change places with us to see what is best to be done in the given circumstances instead of looking at the question from his point of view and acting in such a manner as to please himself." Quoting the old adage that one man's meat is another man's poison, he continues: "It is therefore not strange that the art of giving and taking advice is little better than a game of cross purposes."

For some time now we have set out to give advice on whatever scale it is required, and we wish to consider how far we have succeeded and how far failed. We have admitted that our offers of advice are obviously not completely altruistic, but we are not pleased with a large hire order unless the equipment is used to advantage. If you study our advice you will find a consistent emphasis on the general questions rather than the particular, our aim being to give you the arguments on which you must decide.

We will cite a recent experience which seems to us to be pertinent.

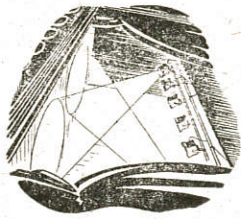
In two numbers of "TABS" and again in our booklet "Some Advice on Stage Lighting" we have discussed the use of Footlights. We are NOT against them as such, but we have opined that when the stage is small better results will often be had from the use of spots in the auditorium.

The reason is that on a small stage actors are forced to play right down stage and the footlights then light only their feet. Consequently there is no balance between Top and Bottom lighting. Again we have pointed out that often the Top Lighting is too far up stage to be effective until the actor is some five to six feet up stage and the change of directional light from top to bottom as he moves down stage is ugly and false.

Lately we saw a production where everything conspired to amplify these faults. It was a small stage: it was a Victorian piece with large crinolines, and footlights were hired. The result was that the dresses were overlit at the bottom, and to make matters worse, the colours chosen were Red, Blue and Green, giving a kaleidoscope effect of changing colours. Now apart from the faults of colour and of choice of equipment think of the economics. Four sections of footlight were used for which the hire charge is £5, four dimmers were hired at 18/-. Colours had to be purchased costing 17/4d., and brackets had to be made locally to fix the equipment. So probably £8 was spent. The lighting of the production would, in this case, without a doubt have been better using two spots on stands on convenient window ledges in the hall which would have meant an expenditure of £2. 5s. 0d., including dimmers and several colours.

It may be thought that we are ungrateful in biting so the hand that feeds us, and returning to Hazlitt we find he ends his essay "On the Spirit of Obligations" in a pessimistic vein; he suggests that "instead of being delighted with proofs of excellence and the admiration paid to it, we are mortified with it, thrive only by the defeat of others and live on the carcase of a mangled reputation". We deny this, and publish our disappointment in this production purposely to show that our offers of advice often spring from good nature and good will rather than a desire to make you use more than you need.

B. B.



A CUSTOMER

The following (which is not original by the way) was recently circulated amongst members of the Strand Electric staff:—

A customer is the most important person in this establishment, in person, by mail or by telephone.

A customer is not dependent on us—we are dependent upon him.

A customer is not an interruption of our work—he is the purpose of it. We are not doing him a favour by serving him, he is doing us a favour by giving us the opportunity to do so.

A customer is not someone to argue or match wits with. Nobody ever won an argument with a customer.

A customer is a person who brings us his wants. It is our job to handle them profitably to him and to ourselves.

That is what a customer is—in our business.

* * *

This brought forth the following unsolicited testimonial from our Manchester Branch, which we publish without comment:—

A customer is the person who is justified in expecting the impossible. Who requires yesterday what cannot possibly be delivered until tomorrow;

who when he has received 95% of what would have been quite impossible except for a curious miracle, is quite without gratitude and can never forget the 5% that defied natural and supernatural effort;

who isn't always right but must never be allowed to suspect that he could be wrong.

THE CURSE OF "EFFICIENCY"

To avoid an editorial disclaimer of responsibility for individual opinions, let it be stated at once that this is a personal protest, a still small voice crying without any great hope of support. It is also a plea for some mitigation of the human suffering unwittingly caused by well-meaning experts operating under the direction of misguided scientists.

Science is the Moloch of our civilisation. To its arch-priests (direct descendants of the witch-doctors) we accord abject obedience and obeisance. The scientist is the superman who is constantly seeking—and finding—"better" ways of ordering human existence; who despises the crude simplicity of adherence to Nature's laws. Nature is slow; its tempo and rhythm are leisurely. The scientist is a busybody with an insatiable curiosity, which leads him to indulge in every sort of interference with natural rhythms in order to gain some assumed advantage. But nature, though slow, is very sure and inevitably exacts a penalty. The scientist does not humbly acknowledge his error but gets busy with test tube and bunsen burner to devise some synthetic palliative, thus involving further interference with Nature's immutable laws, with further consequent punishment, followed by further palliatives and so on, *ad nauseum*. It isn't entirely the fault of the scientist, of course; he just works for the fun of it and to satisfy his curiosity, but he entrusts the exploitation of his discoveries to us ordinary human beings who haven't sense enough to use them with restraint, with the result that we destroy the living soil, contract incurable diseases, create sooty slums and rush about the world at incredible speeds, making desperate endeavours to avoid pestilence, famine and an imminent annihilation, by atomic explosion.

Let us consider the comparatively minor problem of lighting. Nature has decreed a rhythmic alternation of light and darkness. All men and most beasts are obviously intended to use the hours of darkness for the restoration of their energies. But man has gradually encroached on the hours of darkness for his periods of activity and has created artificial substitutes for the sunlight to aid him. For something like 4,000 years he was modest and was content with such simple substitutes as rushlights, candles and oil lamps. In the 18th century A.D., the scientists discovered coal-gas and men jumped at the chance of saving that part of their fat rations they had been burning and found that gas would give bigger and better lights. In the 19th century, the scientists showed how



it was possible to generate and distribute electricity. The lighting experts then really got the bit between their teeth. With the production of the electric lamp, started a struggle between gas and electricity for supremacy. Mass distribution of electricity and mass production of the filament lamp put paid to the gas jet. So far, the quality of light from the various sources was not appreciably different ; the difference was mainly one of intensity and operation.

But the 20th century, with its utilitarian disregard for taste, for the aesthetic refinements of life, began to supplant the filament lamp with the repulsive but more "efficient" discharge tube—the mercury and sodium lamps installed in many factories and more highways. As we have all good reason to know, the lighting from such sources transforms comparatively good looking people into haggard ghouls in an advanced stage of some pestilential disease and debases all the familiar colours of the spectrum. Yet we are assured by the author of an officially sponsored booklet, "Darkness and Daylight," that "In street lighting, colour is not of great importance." Not greatly important, that we are all subjected to the inevitable emotional reaction to distorted ugliness ; not greatly important, that Truth is a mangled casualty !

Of course, the scientist dismisses anything he cannot reduce to a formula. Yet he knows that vision is a sensation which is dependent on light ; he knows that the sensation of vision is also dependent on shadow and colour ; he knows, or ought to know, that not only is perception affected by the balance of light, shade and colour, but that the emotional reaction to the sensation is profoundly affected by variations of all three. Every theatrical producer knows it and is constantly trying to provoke emotional response by controlling the intensity and the quality of the visual sensations. True, the artist does not work by mathematical formula but by a human instinct that has in it the essential quality of truth, no matter



"...works by human instinct..."

how emphatic or exaggerated may be the expression of his art. The scientist who dismisses colour in street lighting, or anywhere else, as unimportant, is cooking the facts to prove his case and ignoring established human standards. It is not sufficient to claim the super-efficiency of 34 or 57 lumens per watt, if what is seen more clearly, is so distorted, that it would be better not seen at all.

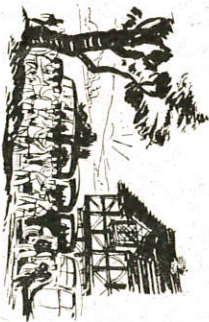
The conscience of the scientist will probably be undisturbed until it is possible to produce actual data to prove that owing to the use of discharge lighting, there has been an increase in the incidence of neurasthenia, in the optical defects requiring treatment, in

domestic irritation and strife and all the other effects that can result from emotional disturbances. That there are emotional disturbances resulting from spectral distortion cannot be doubted, yet it is claimed that "...the disparity in efficiency must soon outweigh other factors in which the metal filament lamp may still retain a transitory advantage." The days of the filament lamp are, we are assured, numbered but until the substitutes can produce a light of at least an equally pleasing quality, the experts are doing a disservice to the community in judging its desirability merely on grounds of intensity and/or economy.

The fluorescent tubes now used so extensively for interior lighting are, of course, a considerable improvement on the sodium and mercury lighting, by comparison with which almost anything would be a relief. It is, in fact, argued by some experts that the spectral distortion from the best fluorescent tubes is less than from the tungsten filament lamp. This might be true if judged quantitatively, but it will be admitted by anybody giving an impartial judgment that the light from most fluorescent tubes is very much less *pleasing* than that from most tungsten lamps. It is perfectly true that neither has the spectral quality of daylight ; it is also true that the emotional reactions are very different and the difference is in favour of tungsten.

It is safe to assume that the scientists' will, in time, correct the colour distortions of fluorescent lighting, but will they also overcome the physical distress it causes to many people ? Its "shadowless" lighting is greeted as a beneficial achievement, yet a sense of form is only created by the incidence of shadow. Imagine a British countryside, in the early evening of high summer, lit by a setting sun ; and imagine what it would be if the sun were foolish enough to emulate the scientists with their shadowless lighting. Compare the emotional response from the cold, flat, shadowless lighting of fluorescent tubes with that from softly shaded and well dispersed tungsten lighting. Too often the virtues of the new lighting are judged by an inadequate use of the old. Because an excess of shadow can be a vice it is not sensible or safe to assume that all shadow is wrong.

We of the theatre know that colour and shadow are just as vital as light in the creation of pictures which will provoke the required emotional response. Our pictures are exaggerated reality, because we need the strength of emotional reaction. But that reaction is constant ; the human emotions are always susceptible, no matter whether the human beings are in the street, the factory, the office or the theatre. And emotions have definite physical results.



"...British countryside, in the early evening of high summer..."

We ignore these facts at our collective peril. "Efficiency" is a fatal will o' the wisp when it is based merely on so-called utilitarian values. The world is suffering as much from emotional sickness as



"... emotions have definite physical results ..."

The scientists have a tremendous influence on our lives. They must use their powers with much greater regard for human values or our civilisation will disintegrate and decay in a welter of universal distortion.

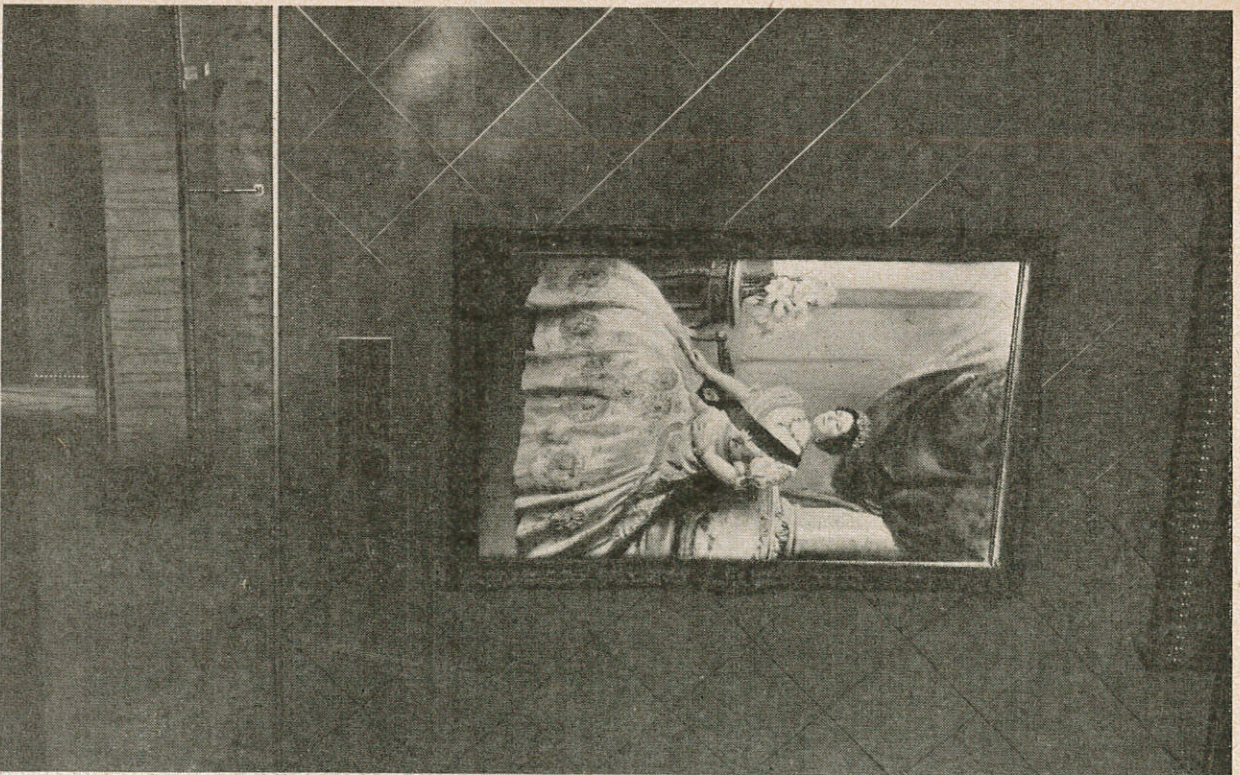
* * *

ALL AT SEA

The above title is not intended to convey that we are drifting aimlessly while afloat, but to indicate that the Oceans of the World contain navigable craft where our products are giving satisfactory service.

The portrait of Her Majesty the Queen—by Capt. Oswald Birley, M.C., R.O.I.—on the opposite page, is reproduced by kind permission of The Cunard White Star, Limited. The picture, which is in oils, measures 6 ft. by 9 ft. high, and the problem was to light it from above in such a way that the picture was well lit while the frame and surrounding walls were left unilluminated. Another important condition was that there should be no reflection from the picture into the eyes of anyone looking at the portrait. We were able to execute this job very satisfactorily using perfectly standard equipment—a Pat. 73 Mirror Spot.

Amongst other recent installations is the Stage Lighting on the newly-constructed Cinema adjoining the 1st Class Lounge in the R.M.S. "Queen Mary". Owing to space difficulties it was necessary for the equipment to be electrically controlled from the Operating Box. This was arranged by remote control and the installation of the Dimmer Bank in one of the Ventilation Rooms on the Sun Deck immediately over the Cinema. A four-colour lighting system has been installed. Automatic colour-change dimmers have also been fitted for control of the Salon Lighting and dimmer control for the Long Gallery.



The equipment is specially designed for shipping, taking into consideration climatic conditions, special fixings, vibration and other important items.

The installation is additional to the complete Stage Lighting equipment which we installed in the ship when she was first built.

We have also supplied to the Cunard White Star Company Stage and other equipment, including Curtain Tracks and Electrical Control Gear for use in their latest luxury liner, the R.M.S. "Caronia", at present under construction at Messrs. John Brown & Company's Clydebank Shipyard. This vessel is due to sail before the end of the year on a dollar-earning cruise to many parts of the world. The dimmer bank controls the Stage, Jardiniere and House Lighting, and is installed in a compartment adjacent to the Operating Box. The actual operating handles for raising and lowering the dimmers are situated in the Box. It enables the operator to see the Stage and Auditorium and to regulate his lighting as he so desires. This method of fixing keeps within the regulations—as all resistances of this size are forbidden in the Projector and Winding Rooms, in cinemas and theatres ashore or afloat.

A similar type of equipment was supplied to the R.M.S. "Alcantara", at present under re-construction at Southampton, for The Royal Mail Shipping Company. In addition to the Stage Installation, three-colour motor-driven magnetic clutch type of dimmer is included for the control of the Ballroom Feature Lighting. It is arranged to give an individual control of each circuit on a colour cycle over the three circuits and continuous colour change when the room is in use for Dancing, etc. Stage Wing Floods and Front-of-House Spotting Lanterns have also been supplied and the dimmers for the general lighting of the room are included on the Stage Dimmer Bank.

NOT STRICTLY THEATRICAL

One of the Olympic races not reported in detail by the Press was the scramble to have all the electrical work ready on the day. Among other things, we carried out the special floodlighting for the fencing—about 46 kws. being involved. We were also responsible for the electrical installation work for photo-finish equipment at the Empire Stadium (Athletics), Herne Hill (Cycling) and Windsor Great Park (Cycling).

We also carried out the electrical work for the Ladies' (Athletic) Dressing Rooms at the Empire Stadium, Wembley, in addition to a number of odd jobs, such as immersion water heaters and so on.

* * *

Strand Stage floods were recently put to a new use too. Situated inside the windows of a first-floor room, two illuminate a helicopter landing ground in the garden of a well known film personality.

THE IDEAL THEATRE SWITCHBOARD

An interview with Mr. George Devine, producer, and a Director of the Old Vic Theatre Centre, who has devoted a considerable amount of his professional career to lighting problems.

Editor : "In a recent article in *New Theatre*, entitled 'Lighting and the Modern Theatre,' you stated... 'we continue to be dependent upon cumbersome apparatus, standardised equipment and crude methods of control—the crude methods of driving an Under-what should be an orchestration to the level of driving an Under-ground train. This is in no way meant to be a slight upon the manufacturers, who supply very efficiently to meet the demands made on them. It is an observation upon the poor state of invention which makes those very demands.' Will you comment upon this lack of ingenuity by indicating to us what you would require of an 'ideal' theatre switchboard, assuming that you were financially interested in the erection and running of the theatre concerned?"

Devine : "This is a large subject and I could go on for ages. Where shall we start?"

Editor : "Well, to take general matters first, in the article just referred to you express a preference for remote control or, to quote your article again, for a system which can be 'placed in front of the house in a position from which the stage can be seen, and whose compactness puts it at the command of one operator who has to be neither an acrobat nor a weight-lifter by physique and temperament.' Can you develop this statement?"

Devine : "There are two sides to it. Ability to see the stage should allow more precision and subtlety in operation as well as accuracy of timing. Such control will call for an operator with more than just the ability to carry out mathematical instructions; but I do not visualise a long-haired genius 'playing the lights' just as his feelings take-him. On the contrary, the setting of the lighting will be even more precise and strict, and will require in its execution a combination of sensitivity and meticulousness. A compact system of control should reduce the number of operators to one (an economic advantage) and allow the operator to use his brains (an artistic advantage)."

Editor : "Do you anticipate confusion over cue-giving by the Stage Manager, particularly if the operator has a better view of the stage than the Stage Manager?"

Devine : "The problem of cueing will need careful working out, and undoubtedly mistakes would occur until a system had been proved by practice. I imagine the Stage Manager giving warnings for all cues by signal lamp, and also the 'go,' but the operator relying on his vision for the timing and detailed operation of the cue, particularly if it was broken up, as so many cues in the 'straight' theatre are, into a succession of small interlocking parts. We must remember that the operator can hear as well as see. There will, of course, be some cues which depend on neither vision nor hearing

(e.g. the rise of the curtain) and in these cases the operator will function 'blind' as he more or less does at present."

Editor : "Do you think the operator will feel out of touch with his apparatus? How will he be sure that what he does at his control point is actually taking place, particularly when the curtain is down?"

Devine : "Another potential snag. I agree, but I still think it does not over-rule the advantages. I suggest that the Chief Electrician should be on the stage, with his number two as operator. There will be two-way communication between them. It will be the function of the Chief to see that the plugging is correct at the stage end, and to test for faults, check fuses, etc. The fuse board should be at the stage end. He will also have to check the settings when the operator cannot see because the curtain is down (I am not so bold as to propose a periscope!) The operator should also have a type of board which will have miniature dimmer handles, so that he can tell the state of his circuits at a glance, as on an ordinary direct control type."

Editor : "So much for location, intercommunication and personnel. What about lay-out? Would you wish to deviate from the present practice of arranging switches and dimmers in rows?"

Devine : "No. For reasons of identification and grouping for collective operation, I think that the present practice would work."

Editor : "How many such rows do you require, bearing in mind that the larger hand-operated board has in effect five (four 'colours' and 'independents')."

Devine : "I consider that a very fast ball! However—you must remember that none of my circuits end in fixed apparatus, only plugs. I therefore tend to divide my plugs into areas—say, front of house, proscenium, flies, and backcloth, and stage. These main areas I would either sub-divide into prompt and O.P., or have a 'mixed bag' of two groups in each area. This leads me to ask for eight rows."

Editor : "Should each circuit switch be beside its dimmer, or should all switches be on one panel and all dimmer controls on another?"

Devine : "They should be together, if space permits."

Editor : "Do you advocate any form of plugging system, like a telephone switchboard, at the control end, so that any circuit can be connected to any dimmer?"

Devine : "The serious disadvantage here is that the normal voltage cables would have to be carried through to the remote control position, a heavy addition of cost. I would, on the other hand, propose to have a plug at the stage end of all the circuits, with no type of apparatus permanently connected. This would already give a deal of flexibility. In addition, I suggest that a certain number of circuits should feed two different plugs, the

selection being made at a special switch panel on the stage. For example, circuit number 30 would feed a plug in the flies (say, plug 30A) or a plug in the front of the house (say plug 30B). It will be likely that the selection will be made at the beginning of the show, but should there be a change during a show, this would be done by an electrician on the stage. This system will require all the dimmers to be capable of a variable load."

Editor : "What do you require of individual circuit switches?"

Devine : "Three positions: OFF, ON through row or group master, and ON independent of row or group master. Switches should be as silent as possible."

Editor : "What will you require of the row or group master switches?"

Devine : "Three positions: OFF, ON through Blackout switch, and ON independent of Blackout switch."

Editor : "What about individual dimmers?"

Devine : "I should like finger strength control, as close grouping as possible, and finely graduated scales. For collective control, I would advocate electrical mastering. Mechanical mastering results, on a dim, in the circuits at the lowest intensity reaching the 'off' position first, and this is more often than not the reverse of what one wants. Furthermore, electrical mastering gives proportional dimming—much more useful. I do not think there would be any need for both types of collective control."

Editor : "Do you want hand or assisted (motor) control for master dimming—for reasons of speed, not physical effort?"

Devine : "Hand control. It would be good to have the alternative of motor control for dims of 15 seconds to, say, 7 minutes, but if I had to give up anything for reasons of economy, I would probably sacrifice this motor control first, as the necessary mechanism for controlling the speeds of the changes would probably be elaborate and add to the cost. It is also unusual to require a change of even rhythm."

Editor : "Do you require any form of pre-setting? Your cues may come quickly and be complicated, and you have only one operator."

Devine : "Yes, I would like to have pre-setting possibilities for major cues, so that, by one operation, selected circuits dim or brighten to pre-determined positions. The pre-setting must be for dimmers as well as switches, of course."

Editor : "How many pre-sets do you consider necessary?"

Devine : "I consider four ideal for 'straight' plays; three or even two would be better than none."

Editor : "Thank you very much. That certainly clears the air."

Devine : "Does it? I suppose you will tell me I am asking the impossible."

Editor : "No, certainly not. Our console control fulfils many of your requirements, and our new electronic control the others. Experience will show what sort of combination is best for your requirements."

Devine : "The console, of course, I know. When can I see your electronic control?"

Editor : A prototype, very soon. Perhaps even before this interview appears in print."

* * *

INTERNATIONAL COMMISSION ON ILLUMINATION—PARIS 1948

This issue of "Tabs" should have contained a report on the above. Circumstances have made this impossible, which is regrettable. This international conference of Those Who Know All About Lighting was attended by Mr. L. G. Applebee (Director and Manager of our London Theatre Lighting Section) and Mr. J. Wood (of our Manchester branch).

Mr. Applebee was chairman of the Stage Lighting Committee—a tribute to this country, himself and, we venture to hope, ourselves. It may be of interest to readers to know that M. Boski, of Clemençon, France, and Mr. H. Kliegl, of Kliegl Bros., U.S.A., were amongst those present.

* * *

GETTING BACK TO NORMAL

We hope to have good news regarding our own demonstration theatre soon. Our application to rebuild (we had two direct hits in one night in 1941) is making good progress, we hear. Meanwhile we have to "make do" with a room where most of our range of lighting equipment can be shown, but not, unfortunately, to advantage, and seldom under anything really approaching stage working conditions.

* * *

With the exception of a few rather uninteresting items such as telescopic stands and what our tailor calls "bespoke" articles like battens, footlights, switchboards and so on, we are glad to report that we now hold stocks of the majority of our range of equipment. Export still takes priority, however.