

The Position Now

THE STRAND ELECTRIC and Engineering Company issues this booklet as a guide to the apparatus now available and the apparatus likely to be developed in the near future. It is thought that such guidance will be particularly welcome in view of the present scarcity and the rumours current, hinting at tremendous developments in electrical and lighting equipment the result of our war-time research. No one wishes to purchase a lot of apparatus only to find that in a year's time it has been supplanted by some entirely new and better system.

In stage lighting, as in other fields, experience in modern design and manufacturing technique applied to large-scale production for war purposes, has brought its lessons. Furthermore, certain basic principles, prior to the war only in the experimental or luxury class, are now a commercial proposition. In consequence, Strand Electric has come to regard some of its pre-war models as out of date.

Of necessity, experimental and design work, except for direct war purposes, has been impossible until quite recently. Nevertheless, a range of new standard magazine equipment, and a new soft-edge spot, are now in production (listed on pages 5 and 8). In these examples, though the optical systems have in fact been improved, the emphasis is on the new methods of construction using pressings, arc welding and all the resources of up-to-date sheet-metal technique.

In the new standard dimmer (page 12) it is the rational construction based on a simple die-cast frame which is largely responsible for the new clean design. This dimmer has just passed its tests and will form the nucleus of a new series of direct-operated boards where new basic principles will be employed. Invariably, the new designs are more compact and weigh less than their predecessors; for instance, the weight of the new dimmer has been almost halved.

It is suggested that customers read this booklet and note where new designs are imminent. Until these designs can be put into production, existing types of apparatus, considered to be "the last word" in 1939, are being manufactured. Strand Electric will carry out customers' orders as far as the limitations of material and labour permit. But it will be helpful if, for the present, customers would confine their orders for immediate delivery to desperate needs only. The years 1946 and 1947 should bring better apparatus well worth the wait.

How to get the best from existing lanterns

It is worth bearing in mind after these years of labour shortage that the lanterns of existing installations may be in a sorry state physically. Many lanterns will take on a new lease of life after a *thorough clean* and the fitting of a *new lamp*. Filament lamps have a life of 1,000, 800 or, in the case of tubular projector lamps, 100 hours only; after this time less and less light is emitted though the lamp may not fail for some years. Lantern reflectors, which may have been in use for three to six years or more, naturally derive considerable benefit from *re-silvering*. Even where the silvering is still good a skin of dirt is deposited on lamp, lens and reflector, which will need a wash in soap and water (at the least) to remove.

These facts should be borne in mind when a newly-groomed lantern straight from the showroom is offered up in comparison with, for example, a Mirror Spot already installed some years. Hidden away in its circle front housing, after six years of war the existing lantern is certain to be devoid of silvering, and probably lens and lamp are covered with a thick film of dust. Add to this a lamp, yellow with age, and the wonder is that any light is emitted. Any lantern salesman, by such an unscrupulous comparison, may lead a customer to spend a large sum in time of scarcity, when a few shillings and a new lamp is all that is required.

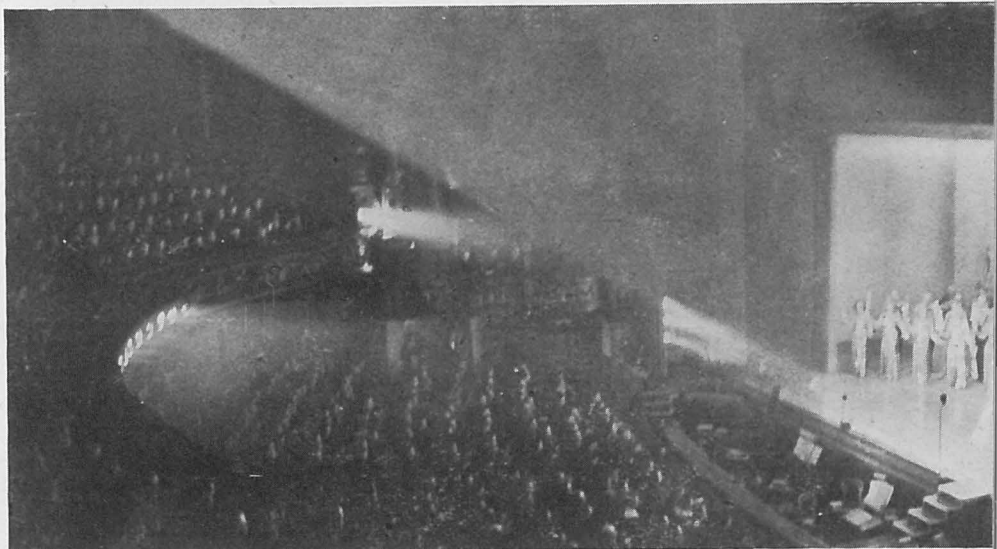
NATIONAL OPERA
S'CARLOS
LISBON, PORTUGAL

Strand stage lighting
installation with Light
Console control. See
also cover of this
booklet



LONDON
PALLADIUM

View from the Strand
Light Console control
situated at the end of
the Grand Circle

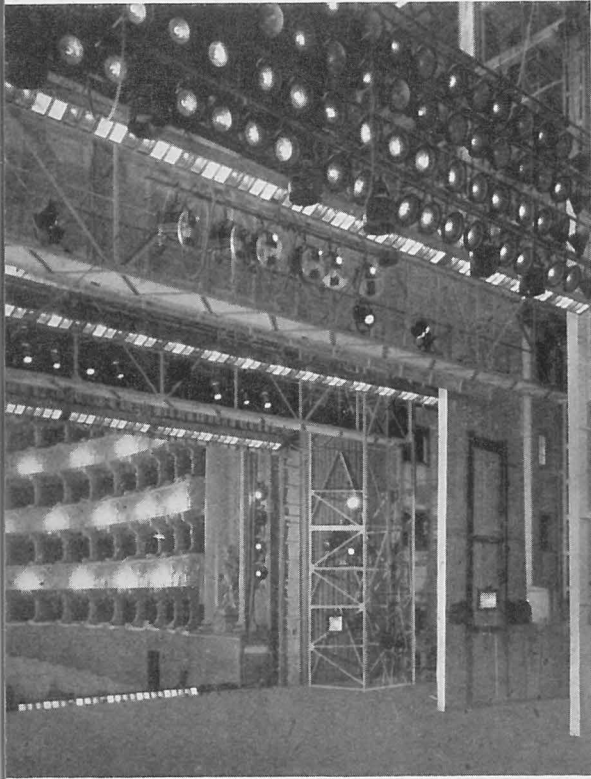


ROYAL ALBERT
HALL, LONDON

Strand lighting of plat-
form and arena for
concerts and pageants ;
also boxing ring light-
ing



Strand Electric in the War



For the past six years customers' enquiries for new equipment have been countered with the information that the works have been engaged exclusively on work that carried the Government's blessing. Therefore, it may be of interest to touch briefly on some of those activities.

It was only to be expected that a large percentage of the equipment manufactured for the Services was lighting equipment where very fine beam and cut-off control was required. Such gear has little interest outside the Services, but such is not the case in the application of stage effects to what were known as synthetic trainers.

Here all the wiles of the stage-lighting engineer were used to imitate on large completely cylindrical cycloramas the various visual conditions found at sea or in the air, depending on the particular trainer. Realism with a vengeance! A fog, overcast day, sunset, fine day, dark night and so forth had to be produced not for an awestruck audience ready to gape with wonder but for officers with months of experience of the actual conditions behind them.

One such trainer has to be repeated 60 times at various stations all over the Allied world, and Strand Electric engineers had to travel with these equipments wherever they were sent to ensure that the effects were set up with the requisite skill. The 60 installations each comprised 20 optical effects projectors, with the necessary slides (some moving),

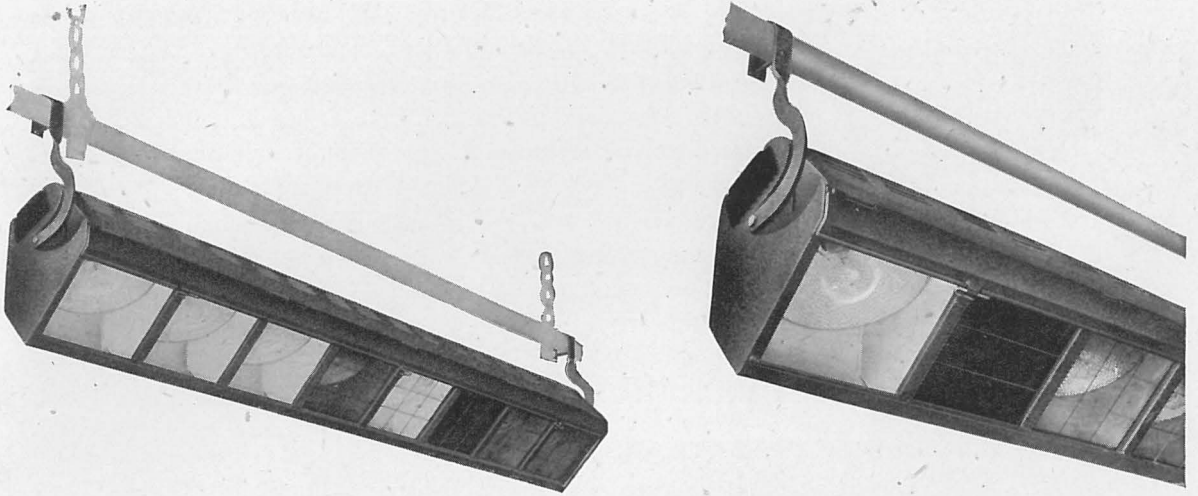
22 floods, 7 spots all centred around a special magnascopic epidiascope with automatic motion for the devising of which Strand engineers were largely responsible. The lighting effects were connected to a remote controlled dimmer bank. The various effects could be pre-set to be brought in by a series of single push-buttons; for example, depression of the "sunset" push would automatically place all the dimmers in their various positions to give the correct effect.

Many other trainers were equipped, some taking a much more elaborate form, while others much simpler usually made up for it in quantity of repeat orders.

Direct theatre work has included garrison, ordnance factory theatres, E.N.S.A. fit-up stages and the like. The greatest interest, however, attaches to the export contract for the National Opera House, Lisbon, secured in competition with German and Italian firms. The parade through the Lisbon streets of the vans delivering the equipment, in the late autumn of 1940, was in the nature of a British triumph. A view of the large installation appears on the cover of this booklet and of the beautiful auditorium (a National monument) on page 3. A year later another large installation for a large new theatre and circus in Oporto was successfully delivered, again thanks to the Royal and Merchant Navies.

In the home theatre, service has almost completely devolved on the Hire department, whose doughty deeds, while trying to cope with an ever-decreasing staff and stock, will as usual have to go unsung. Here is to be sought the explanation of the battered and makeshift apparatus bearing the Strand Electric name; not for this equipment has been a comfortable sojourn in some safe warehouse.

Standard Battens and Footlights



These are entirely new designs based on a 9-in. centre compartment. There are two housings, one for suspension as a batten or for use vertically as lengths; the other for placing direct on the floor as footlight or groundrow.

Two 8½-in. diameter silvered Sunray glass reflectors (A.235 and A.236) are interchangeable between batten and footlight housings. These reflectors give soft-edged crossing beams free of all filament striation.

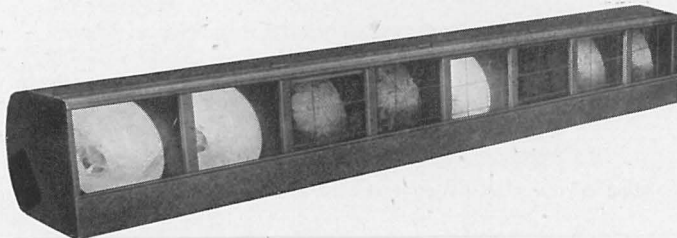
The A.236 reflector gives a medium angle 55° beam and is standard for general batten work, the main beam being directed on the stage below while the direct light of the lamp illuminates the neighbouring border.

The A.235 reflector gives a wide angle even beam, free of hot spot; and is standard for footlight and groundrow work. Actors downstage are evenly lit and the light travels well up the "house tabs." Up stage the light is of low intensity to obviate shadows on cyclorama or back cloth. This reflector is also used in the battens required for even colour mixing at close range as, for example, a cyclorama on a small stage.

The housings of both batten and footlight are very strong, being constructed of a single piece folded trunking in 20-gauge steel, with pressings welded thereto to form the compartments. The exterior presents a smooth surface free of projections and sharp corners. Baffled ventilation inlets and outlets are provided; in the case of the footlight on the stage face only, so no light can be seen by the audience. Finish: black crystalline outside, batten stoved white inside, footlight stoved black inside.

Metal colour frames are interchangeable between batten and footlight; they take an 8-in. by 9½-in. medium. Both batten and footlight are wired to suit customer and connector blocks are fitted in wiring trough when needed. Batten also includes adjustable suspension arms for 1½-in. barrel and clamp for multicore cable.

The batten and footlight are stocked in 6-ft. or 3-ft. lengths which can be bolted together to make a complete unit; or as is modern practice, the lengths can be separated by spots or acting area floods.

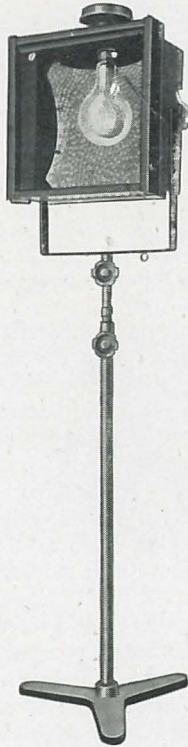


To take 60-, 100- or 150-watt Theatre Batten lamps (not included). Batten or Footlight 6-ft. length, 8 compartments £10 0s. 0d.
3-ft. length £5 0s. 0d.

Weight, per 6-ft. length:
Batten, 58 lbs. Footlight, 49 lbs.



Pattern B237/M



Pattern 49/M

Stage Floods

There are three sizes for 150-, 500- and 1,000-watt lamps respectively. Metal reflectors can be supplied but for best results silvered glass is recommended, and these are fitted as standard. Each lantern can take either of two reflectors, a medium angle 60° beam type M, or a wide angle 100° beam type W. The former, which is fitted unless otherwise ordered, is suitable for most general purposes where the light may have to travel some distance; the latter is for close-range work and for colour mixing.

All three lanterns are provided with an efficiently ventilated housing fitted with colour runners, fork and clamping wheels for suspension or for insertion in a stand, and 2-ft. Rockbestos tails.

PATTERN B237/M or /W 60-, 100- or 150-WATT FLOOD

To take Theatre Batten type E.S. Lamp (not included) **£2 10s. 0d.**

PATTERN 30/M or /W 300- or 500-WATT FLOOD

To take General Service G.E.S. Lamp (not included)... .. **£5 12s. 6d.**

PATTERN 49/M or /W 1,000-WATT FLOOD

To take General Service G.E.S. Lamp (not included)... .. **£7 10s. 0d.**

Accessories, see page 7 opposite.

Weights :

Pattern B237, 10½ lbs. Pattern 30, 15 lbs. Pattern 49, 24 lbs.

Cyclorama Lighting

The Strand Electric have lit cycloramas from probably the smallest at Citizen House, Bath, and at Toynbee Hall, London, to the largest in Britain—at Covent Garden Opera House. In these, as in most installations, including the Shakespeare Memorial Theatre and Lisbon Opera House, the three-colour Red, Blue and Green system is used.

Installations may consist of wide-angle battens (page 5) or banks of the wide-angle floods above. Groundrows can be formed from the wide-angle footlight with castor attachments, sometimes in double rows.

Exactly what form the lighting installation of a particular cyclorama should take is dependent on many factors, and schemes will be prepared on receipt of details and plans.

Acting Area Floods



There are two types of flood designed to throw intense narrow angle beams with a sharp cut-off. The Pattern 56 gives an extra-narrow 24° beam and the Pattern 66 gives a narrow 45° beam. Both lanterns are fitted with spill rings similar to those shown in the Pattern 50 photo (page 9) to prevent any stray light beyond the main beam.

Each lantern is complete with a 16-in. diameter metal colour frame and 2-ft. Rockbestos tails. To take 1,000-watt General Service G.E.S. lamp (not included).

Pattern 56 (24°)	} Weight : 26 lbs.	... £10 0s. 0d.
Pattern 66 (45°)		

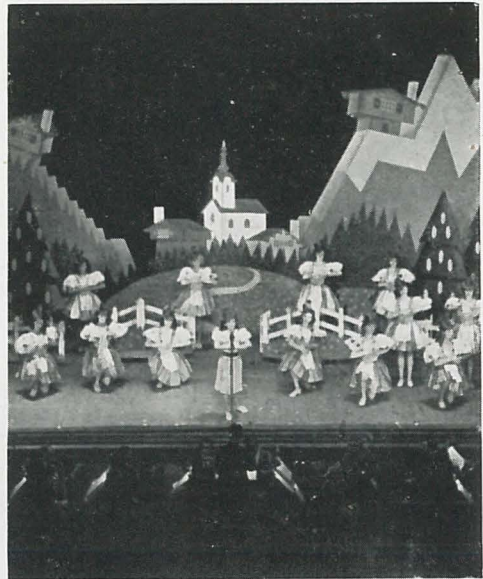
Floodlight and Spotlight Accessories

Millboard Colour Frames, per dozen : Pattern 30 and 50, **10s. 6d.** Pattern 27, **4s. 6d.** Pattern 45, **5s.** Pattern 44, **6s.** Pattern 43 and 73, **7s. 6d.**
 Metal Colour Frames, per dozen : Pattern B237, **£1 4s.** Pattern 49, **£2 10s.** Pattern 56 and 66, **£3.** Pattern 73, **£1.** Pattern 102, **£1 16s.**

Light Telescopic Stand each **£1 12s. 0d.**

Heavy Telescopic Stand each **£1 17s. 6d.**

"L" Clamp for $1\frac{1}{2}$ -in. barrel
 each **2s. 6d.**



"The Night and the Music"
 at the London Coliseum

Colour Mediums

There are 45 Strand filters, the reference numbers of which seem to have been adopted as standard in the British Theatres and Cinemas.

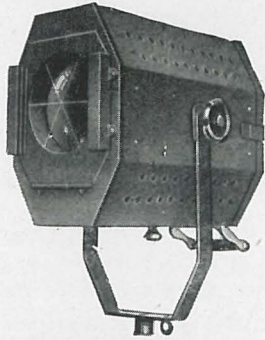
The majority of these colours are available both in Gelatine or in non-flam. Cinemoid. The latter material is recommended when any degree of permanence is required; it complies with the regulations of the London, Middlesex and other County Councils.

Gelatine : All colours except 5A (22 in. by $17\frac{1}{2}$ in.), **£1** per dozen.

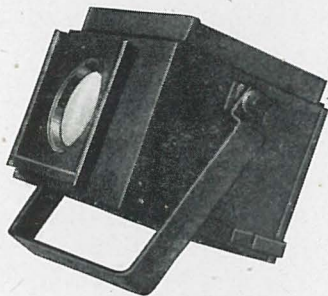
Frosts (22 in. by $17\frac{1}{2}$ in.), **£1 10s.** per dozen.

Cinemoid : Colour Chart and prices on application.

Focus Lanterns (Spots)



Pattern 43



Pattern 27

The optical system consists of a plano convex lens and a projector-type lamp on a movable tray giving a beam variable between 40° and 11° approximately by means of a knob under the lantern. All except the Pattern 27 are fitted with spherical metal reflectors to redirect the light from behind the lamp on to the lens.

All four lanterns are provided with an efficiently ventilated housing, the vents of which are properly baffled to prevent light leakage. Colour runners are fitted and forks supplied which may be used for suspension or insertion in a stand. 2-ft. Rockbestos tails.

PATTERN 27. FLOAT SPOT, 250 WATT

Very small, with 3-in. diameter lens for footlight work. To take a Round Bulb E.S. B.1 Lamp (not included). **£3 10s.** Weight, 5 lbs.

PATTERN 45. MINIATURE SPOT, 250 WATT

$4\frac{1}{2}$ -in. diameter lens for very small stage batten work. To take a Round Bulb E.S. B.1 Lamp (not included). **£5 10s.** Weight, $9\frac{1}{2}$ lbs.

PATTERN 44. BABY SPOT, 500 WATT

$4\frac{1}{2}$ -in. diameter lens. To take Round Bulb Class B.1 or Tubular A.1 G.E.S. Lamp (not included) **£7 10s.** Weight, 18 lbs.

PATTERN 43. STAGE SPOT, 1,000 WATT

6-in. diameter lens. To take Round Bulb Class B.1 or Tubular A.1 G.E.S. Lamp (not included). **£9 15s.** Weight, 25 lbs.

Pattern 102, Soft Edge Spot, 1 or 2 kw.



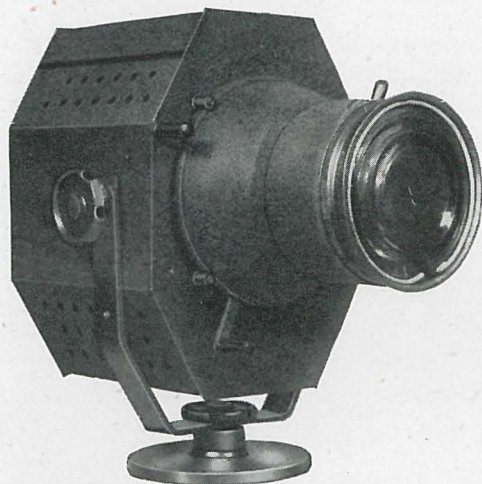
Pattern 102

This is a new model, replacing Patterns 100 and 101, the *Effective* diameter of the lens has been increased to 10 in. with a corresponding increase of light. The housing has been redesigned to incorporate sheet metal pressings in the main; ventilation improved and the weight decreased. Focusing is by easy action lever with scale back and front. Colour runners and 3-ft. Rockbestos tails. Beam angle variable from 10° to 45° . To ensure best use is made of the optical system, a Bipost Prefocus Holder is fitted.

£32. Weight, 34 lbs.

Telescopic Stand, on castors, **£4.**

Pattern 73, Mirror Spot, 1,000 watt

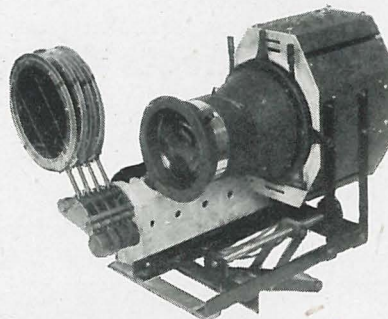


This spotlight gives a high-intensity beam that can be adjusted by framing shutters. An 8-in. diameter silvered glass mirror projects an intense beam of light on the variable gate. This is focused by a 6-in. diameter step lens. Rectangular spots of various sizes can be projected with an intensity of treble that obtained from an ordinary spotlight. This lantern is particularly suitable for circle front or bridge spotting.

Complete with framing shutters giving beam angles 19° to 3° , colour runners, 2-ft. Rockbestos tails. To take Round Bulb B.1 or Tubular A.1 G.E.S. Lamp (not included). **£15 10s.** Weight, 30 lbs.

As careful adjustment of the lamp is necessary to get the best out of the optical system, it is intended to standardise the large prefocus lamp cap and holder as soon as possible.

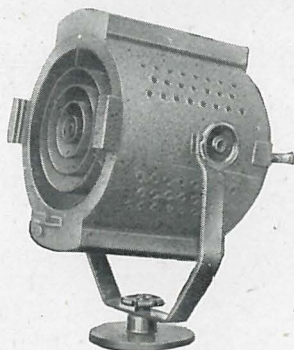
NOTE.—The Mirror Spot can be fitted with a double lens combination to give beam angles from 30° to 5° for shorter throws, at a slight extra charge. The magnetic mechanism shown on the right can be fitted to give remote colour change of four colours and white.



Pattern 50A, Pageant Lantern, 1,000 watt

This lantern gives an intense almost parallel beam (17° to 11°) suitable for stage sunlight effects or long-throw illumination. The front is fitted with spill rings to cut off the direct rays of the lamp beyond the main beam.

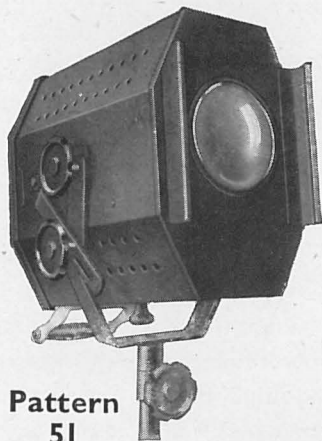
Complete with 10-in. silvered glass mirror, colour runners and 2-ft. tails. To take Round Bulb B.1 or Tubular A.1 G.E.S. Lamp (not included). **£11 10s.** Weight, 26 lbs.



Pattern 81, Low Voltage Spot

This is a miniature edition of the Pattern 50A above, but employs a 12 volt 36 watt car lamp. Complete with lamp and built-in transformer. **£7 2s. 6d.** Weight, 12 lbs.

Optical Effects



**Pattern
51**

For most stage purposes optical effects can be projected by means of a 1,000-watt projector lamp. On long Front of House throws, however, special attachments and lenses are available to make use of the arc spotlights on the following page. Quotations given on receipt of customers' detailed requirements.

Pattern 51. This is a lantern similar in construction to the Pattern 43 Spotlight on page 8, except that a 5-in. by $4\frac{1}{2}$ -in. double-condenser lens is fitted and special runners are provided to carry the effects attachments below. To take 1,000-watt Round Bulb B.1 or Tubular A.1 G.E.S. Lamp (not included). **£10 15s.** Weight, 26 lbs.

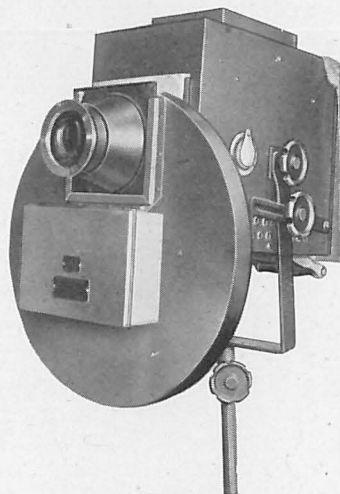
Effects Attachments

These take two main forms: the circular type for Fleecy or Storm Cloud, Rain, Snow, Fog, Smoke, Flames, Running Water, Dissolving Colour, etc.; the rectangular type for Waves, Water Ripple, Aurora Borealis, etc. Both are clock-work driven, and the price of the former is **£17 10s.** each, and the latter **£16 10s.** Electric Motor drives can be quoted.

Stationary slides of clouds, etc., require a turntable front, **£3 10s.**

Stationary Mica cloud slides in frame, **10s.** each.

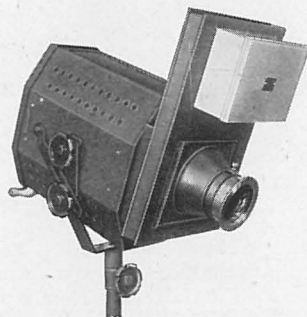
For stage projection, Extra Wide, Wide Angle, or Narrow Angle lenses are suitable at **£4 10s.** each.



Cloud Effect

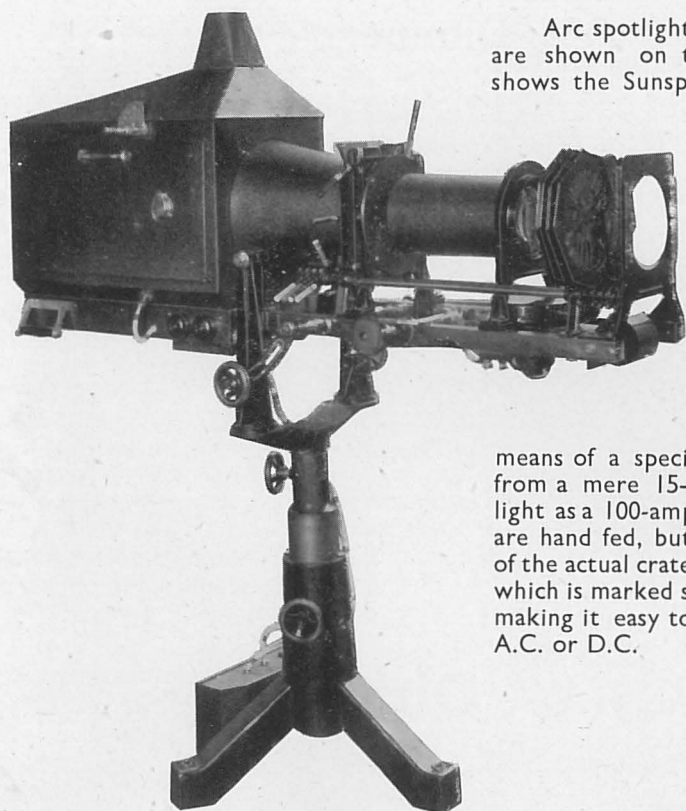
Special Effects

Strand Electric specialise in special lighting effects and stunts among which may be included Ultra Violet Fluorescent effects in use for many years past and for which special Black lamps, lanterns, paints and make-ups can be supplied. Filters are also supplied for the complementary colour Samoiloff lighting effect. Space does not permit details of the noise, smoke, properties and other Strand incidentals of stage production.



Wave Effect

Arc Spotlights

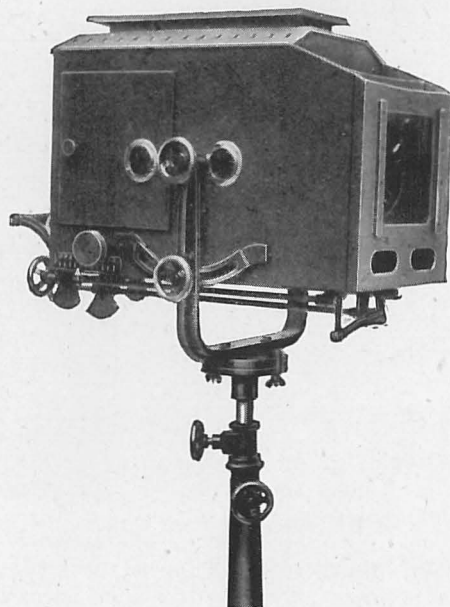


Arc spotlights take various forms, of which two are shown on this page. The upper photograph shows the Sunspot, a mirror arc spotlight giving a high-intensity beam. By means of framing shutters and iris diaphragm various shaped spots can be hard or soft focused on to the stage. The colour magazine is fitted with cooling blower, and the spotlight is well balanced to move easily on its heavy cast stand.

Either D.C. or A.C. can be used—indeed, the latter is to be preferred in many ways. By means of a special inductor the Sunspot, while fed from a mere 15-ampere plug, will produce as much light as a 100-ampere standard spotlight. The carbons are hand fed, but by means of an arc image a picture of the actual craters is projected on to a white screen which is marked showing the correct length of arc gap making it easy to keep the light steady whether on A.C. or D.C.

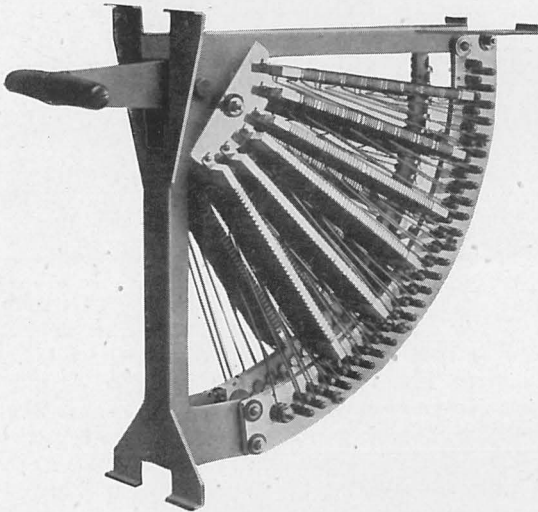
The lower photograph shows an 80-ampere D.C. Arc Spot of the more usual type. These are less costly than the Sunspot, but are correspondingly less effective. The size illustrated can be fitted with a colour magazine, and small-size 30-40-ampere Arc Spot is also available.

Quotations for suitable arc spots, their control gear, and resistances or inductors will be furnished on receipt or enquiries, giving details of throw, etc.



Dimmers

Resistance Dimmers



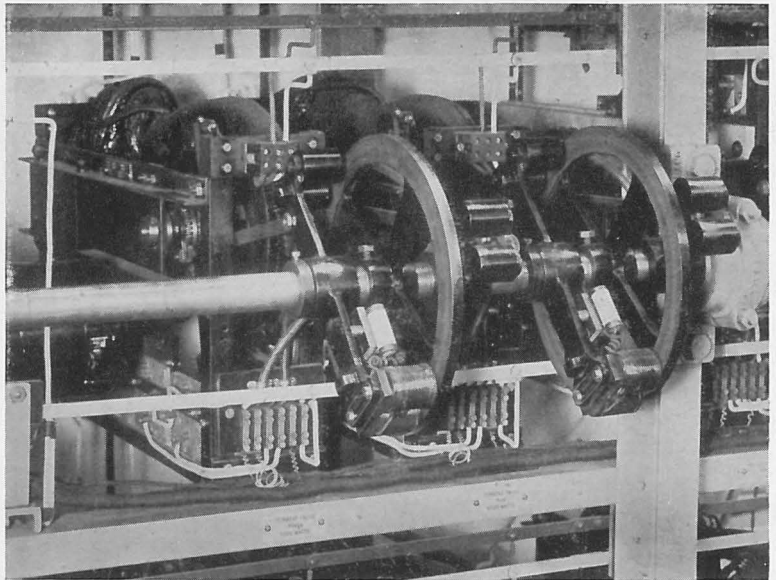
Strand Electric have just completed tests on a new standard resistance dimmer which it is hoped to have in production in a few months. The photograph on the left shows the clean lines and the compact assembly of the new dimmer. The frame is a die-casting which can carry resistance elements for any load up to 6 Kw. (230-volt). There are 100 contacts for the graduated resistance steps, the full-on and blackout contacts being additional. Dimmers can be wound to give 50% load variation.

The dimmer is suitable for use in automatic, remote control, and direct-operated boards; a new range of the latter, remarkable for the small space they occupy, is being designed. Until the new Type S dimmer is in regular production the pre-war Sunset dimmers, types A, A1, B, and D, can be supplied, and of course the various patterns of slider dimmer.

Transformer Dimmers

This type of dimmer, though many times more expensive than the corresponding resistance dimmer, has one supreme advantage in its ability to dim any load up to its rated capacity. The check is exactly the same in the case of, for instance, a 6-Kw. dimmer, whether the load is 250 watts or 6,000 watts. It is therefore particularly suitable for plug circuits such as stage dips.

The photograph on the right is of one of the twenty-eight 6-Kw. models (magnetic clutch operated) supplied as part of the Lisbon Console control. Sixteen of a smaller model form part of the London

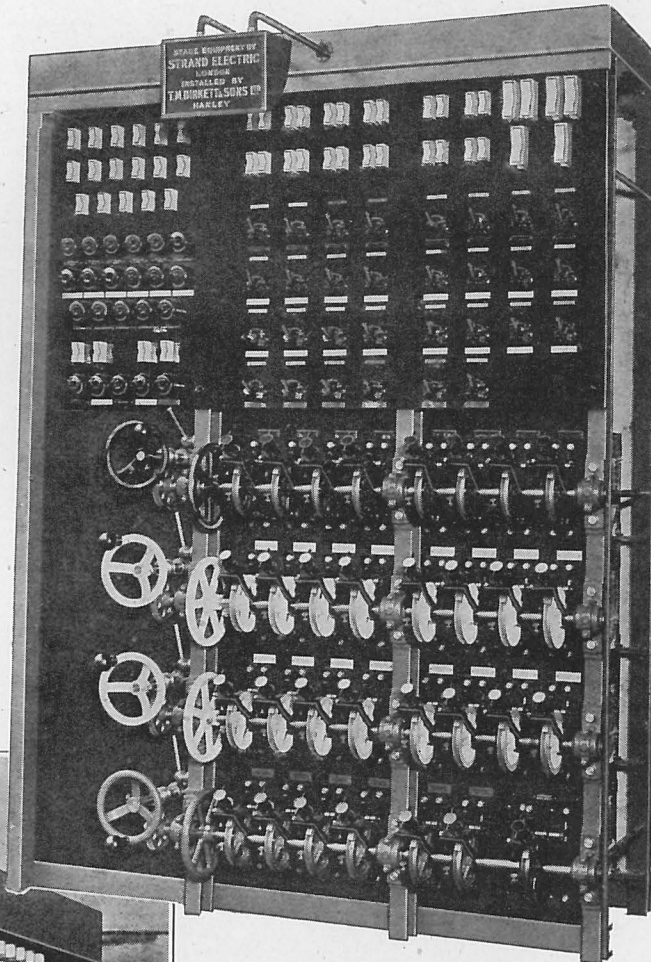


Palladium console, while others have been fitted to direct-operated boards. Tapping is by means of a commutator and special brush gear, as this form is less likely to give trouble on overload than where direct contact is made from brush to transformer winding.

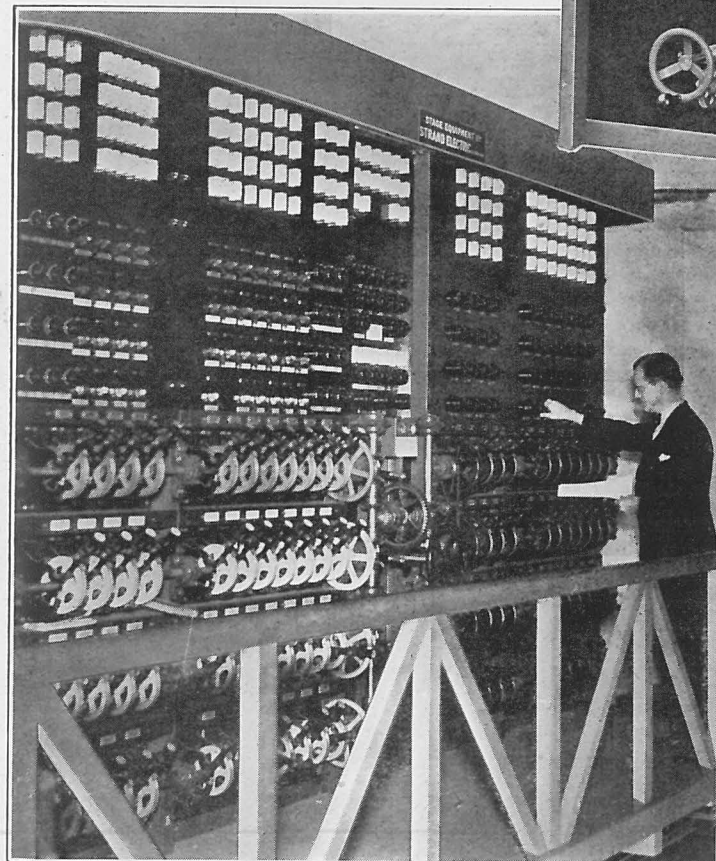
Dimmer Boards

The dimmer and switch boards illustrated on this page are examples of the pre-war Strand types which at the time were considered the last word in direct-operated control. These are the boards being supplied at the moment.

Customers are warned, however, that, based on the new standard dimmer (page 12 opposite), a series of boards is being designed which will give flexibility of control hitherto unobtainable from any direct-operated board. At the same time these new boards will take up *much less* space. The new range will include standard models for the smallest and the largest stage, and a portable interlocking board in which the weight of the present model will have been halved.

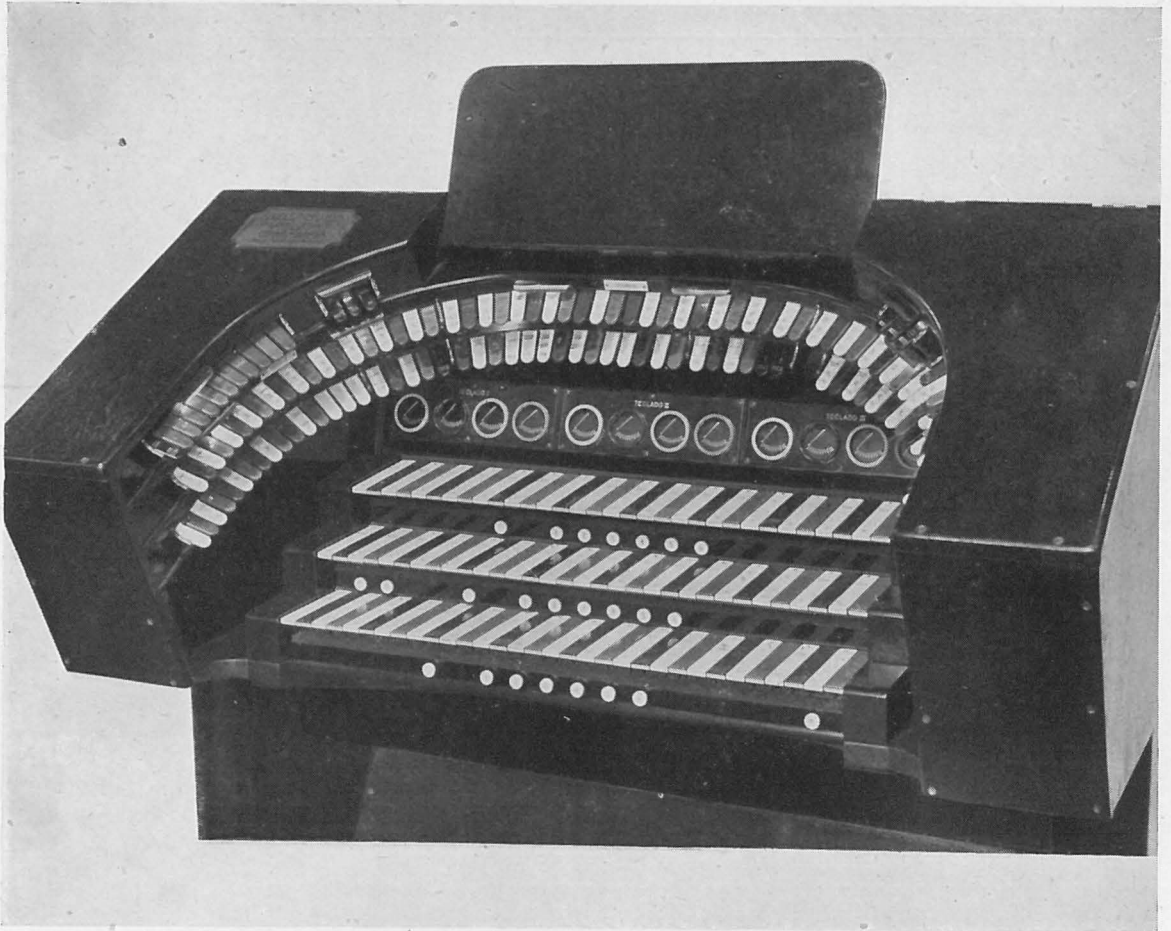


The dimmer board above is a pre-war colour master type fitted with slow and quick motion master wheels, self-release handles, back-of-board switches and remote magnetically-operated blackouts. The dimmer board on the left (St. James's Theatre, London) is a pre-war grand master cross-control fitted, in addition to the features of the board above, with illuminated dimmer scales, two-way and off switches to connect spotting and other circuits independent of the master blackout, and spline action, constant mesh cross-control gearing. It is typical of over fifty such grand master boards to be found in The Shakespeare Memorial Theatre, Stratford-on-Avon, Opera House, Blackpool, Alhambra, Paris, and other theatres.

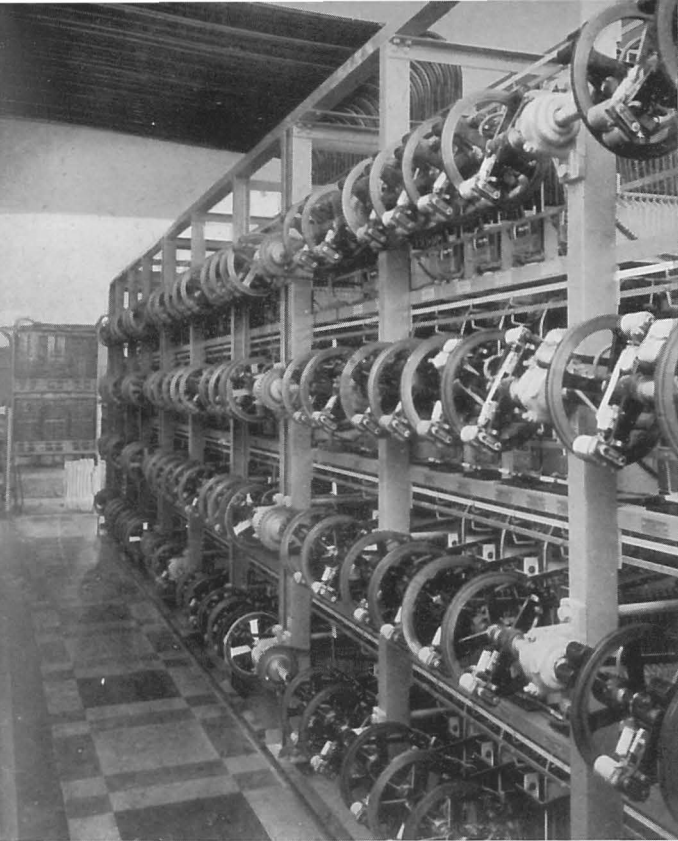




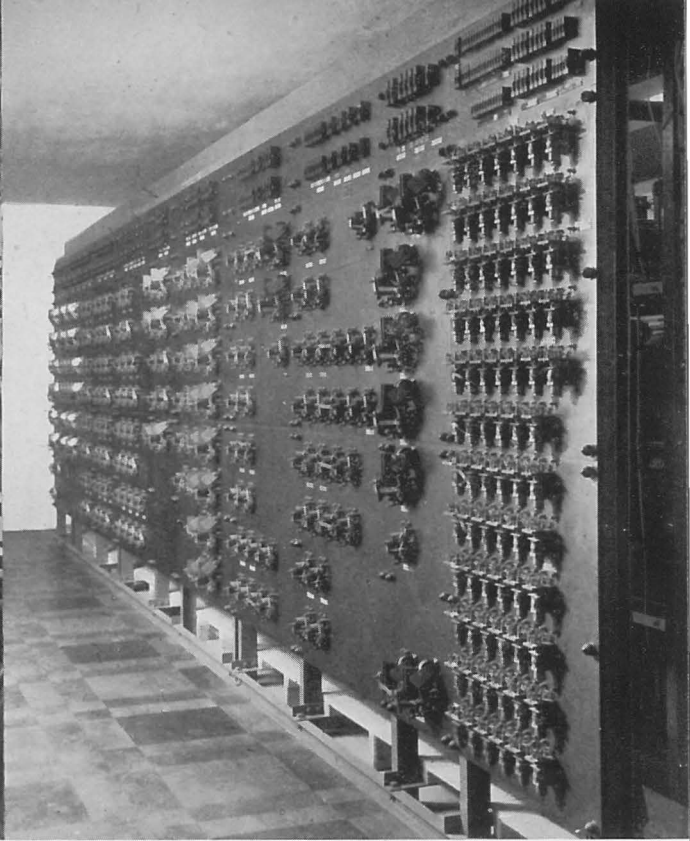
*Portable Control Desk for Theatre Royal, Bristol,
and for South Shore Ice Rink, Blackpool*



Movable Light Console, Lisbon Opera House



Dimmer Bank



Contacteur Panel

Lisbon Opera House

Remote Control

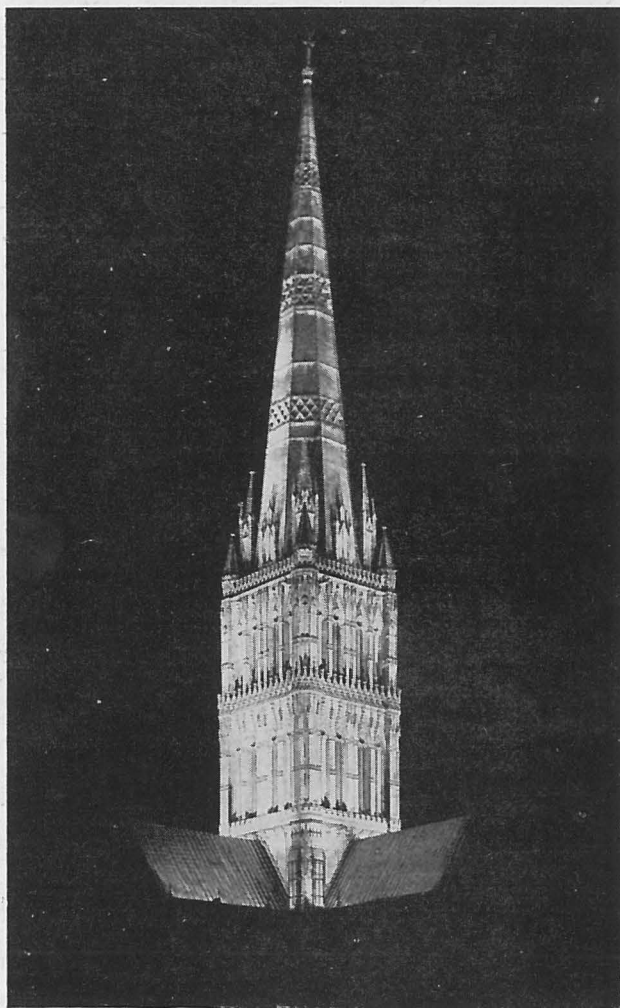
Strand Electric are pioneers in the design and manufacture of remote control for the theatre. Among the Strand landmarks of the past have been the introduction of the magnetic clutch in 1930 ; the installation of still the largest electric remote control in Europe at Covent Garden Opera House in 1934 ; and the completion of the Light Console in 1935.

In the design of stage remote control it is necessary to bear in mind the need for absolute control over larger and larger installations by one man in full view of the stage. Whereas a few years ago stage lighting installations of 60 to 80 dimmer ways controlling mainly magazine equipment were considered the last word, now installations of 120 or more ways are commonplace and are still growing. Such installations comprise banks of directional apparatus (pages 7, 8 and 9) with magazine equipment playing a purely subsidiary part ; only thus are really exciting intensities and dramatic contrasts obtainable.

The Strand Light Console system gives to one man control of a complete installation, be it 150, 250 or more ways, from a movable desk at the end of a single 1½-in. diameter flexible metallic hose. Its versatility is proved by three installations, the Lisbon Opera for Opera and Ballet, the London Palladium for Revue and Variety, and Earl's Court Exhibition as a Colour Organ.

For smaller installations of up to 80 ways the portable desk shown at the top of the opposite page can be supplied ; in this instance the dimmer banks can take a unit form and the whole arrangement (19 2Kw.) can be toured without dismantling, the units being plugged together on site.

Before scrapping an existing Lantern



Strand Floodlighting, Salisbury Cathedral

Other activities include : Cinema, Ballroom and Exhibition Lighting, Outdoor Floodlighting of Buildings, Pageants and Fountains. Hire Fitups, Electrical Installation work, both theatrical and otherwise. Signs, etc.

A temporary demonstration theatre has been arranged at Head Office to replace the one demolished by a bomb.

Have you tried a New Lamp ?

All filament lamps have a life of 1,000 hours or less ; after that time the light output diminishes more and more though the lamp may not fail.

Have you Washed the Lens and Reflectors ?

Dusting is not sufficient, a film of dirt is deposited which even soap and water will not in some instances remove, light absorbed 50% or more.

Has the Reflector been Re-Silvered ?

Lanterns such as the Mirror Spot and Pageant require to have their reflectors re-silvered after two to three years. 90% of the light may be lost.

Is the Lantern Correctly Adjusted ?

The lamp, reflector and lens should be accurately centred with the adjustments provided. Except in the (at present rare) instances where prefocus caps were fitted, lamp filaments are badly located and visual corrections must be made.

Hire Department

The apparatus listed in this catalogue can be hired.

In normal times a complete catalogue of 124 pages is published, but due to the paper shortage these have mainly to be restricted to the export market for the time being.

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