

REPORT OF THE STUDIO LIGHTING COMMITTEE*

Summary.—A brief description of the changes that have occurred in studio lighting during the past season. No important changes of technic have occurred but there have been a number of changes in lighting facilities.

It is the purpose of the Studio Lighting Committee to keep the Society informed as to the changes which from time to time occur in the lighting technic, and changes or improvements in lighting equipment. The Committee has attempted also to keep the Society informed of new and immediately anticipated developments in technic and equipment which indicate possibilities of potential advantage for photographic lighting.

Since the Spring Convention at Atlantic City we report no important changes of lighting technic, but with respect to lighting facilities there are a number of matters that should be brought to your attention.

The 5-kw *T-64* has been well accepted. This bulb, being applicable in the 5-kw Solarspot equipment, has found wide application in studios well supplied with that type of lamp. The *G-64* 5-kw globe is used principally with the old 24-inch Sunspot equipment, the design of which was not as well adapted to the *T* type of bulb. More recently the manufacturers of tungsten filament globes have introduced the 2-kw *T-48*, which has all the advantages of less blackening, no blistering, and hence the longer useful life which the 5-kw tubular globe of similar design affords.

One lamp manufacturer has completely redesigned his 500-watt, 2000-watt, and 5000-watt Solarspot equipment. The new-style Solarspot affords greatly increased ventilation in all positions in which such equipment is used. Since the lamp manufacturers have so perfected the design of bipost globes that they are practically prefocusing, the new Solarspots are made front-opening to afford the most convenient and accessible means of installing globes and the special filters required for Technicolor photography. The new style Solarspots incorporate quick focusing arrangements, conveniently accessible from

* Presented at the 1940 Fall Meeting at Hollywood, Calif.; received October 22, 1940.

either the front or the rear of the lampheads. A number of other minor improvements contribute to convenience in operation and longer life of the equipment.

The tiny spotlamps of 100 and 150-watt sizes have, with the application of fast emulsions, found a definite place in industry. Their small size permits them to be mounted on cameras for use as catch lights, and because they may be easily concealed behind set pieces they afford a convenient means of providing touches of light here and there as needed.

Some experimental Solarspot equipment has been designed to accommodate the 10-kw *G-96* tungsten filament globe. These Super-Solarspots, equipped with Macbeth whiter-light filters, have been experimentally applied in Technicolor photographic operations. The acceptance of equipment of this type is being watched with interest to ascertain just what place it may hold in the future as a lighting source for color photography.

High-intensity arc spots continue to be the principal light-sources for color photography. Improvements in negative carbons have greatly restricted the so-called "frying noises," so that it is no longer a serious detriment in sound recording. Further improvements have been made in the arc equipment through the application of shear-rubber mountings to the mechanism-driving motors, and most of the older arc equipment has been brought up to the present standards by revision.

There are a number of items of interest in certain special fields of photographic illumination. At one of the major studios a short subject was made, which exhibited the startling photographic possibilities of the Edgerton high-speed mercury lamp, which is capable of photographing still pictures in approximately $1/130,000$ of a second, and motion pictures, at a thousand frames per second. While such light-sources have been known to the industry for some time, we believe that the making of this short subject was the first production, involving such illumination, designed primarily for public exhibition.

There has been considerable interest among the process photographers in the experimentation with a 10-kw biplane filament lamp. This concentrated tungsten filament source, when used with plano-convex condensers and $f/3.6$ objective lenses, is said to produce an illumination of 45 foot-candles over an 18-foot screen, which is an increase of 50 per cent over the results previously obtained with the 7-kw globe. It is anticipated that the results of this experimentation

will produce a continually greater use of these high-wattage, concentrated-filament globes in the process slide projectors.

The process projection of motion picture backgrounds has profited much from the series of conferences held during the Summer of 1939 under the auspices of the Research Council of the Academy of Motion Picture Arts and Sciences. One company, in close conformity to the suggested specifications of the Research Council Rear Projection Committee, has produced a high-intensity arc mechanism control and lamp house. This new equipment makes possible the transition from one carbon size to another with only momentary delay as positive carbons are positioned through an automatically operating photronic control. The negative carbon can be maintained at any given arc voltage automatically when adjusted by the control of a single governing rheostat. The new lamp has been designed to accommodate carbons from 13.6 to 16 and 18 mm in diameter, with their various negative carbons, and the control arrangements will maintain positive and negative carbon positions automatically at the proper burning rates. The positive feed is water cooled. The lamp is extremely convenient for operation, and with this new high-intensity arc and the potentialities of the relay condenser system, along with the many improvements that have been made in the projector head, the possibilities of background projection have been considerably augmented.

F. E. CARLSON
F. M. FALGE

E. C. RICHARDSON, *Chairman*
R. E. FARNHAM

C. W. HANDLEY
D. B. JOY