APPENDIX IV

THE PHOTOGRAPHIC PROCEDURE USED IN THIS EXPERIMENT

When titles are to be superimposed over a motion picture, it is common practice to photograph picture and titles separately. The double exposure is effected by double printing in the laboratory. An alternate method is direct double exposure in the camera. The latter method is seldom used because the possibility of an error occurring while shooting the picture, subsequent wind-back, and then re-exposing the title is magnified many times. Double exposure mistakes are not only costly, but difficult to detect until the processed film is received from the laboratory and inspected at the studio.

Despite the hazard, a tight delivery schedule and limited funds available for the present study made direct double exposure in the camera necessary. In order to reduce the possibility of errors in the photography, a number of precautionary measures were taken. The picture-design called for live subject matter in the top three-fourth of the picture frame with captions in the bottom quarter of the frame.

With this in mind, a mask to fit in front of the camera's one-inch lens was made. It protected the bottom portion of the frame from exposure during the live action photography. The mask was simply a flat piece of metal fastened solidly to the end of the camera sunshade extension. A piece of black suede pastel paper folded over the mask provided a soft blending edge line to the picture. Exact positioning of the mask was determined visually through the lens system. Once located, the mask was locked into position and was not removed until the end of production. No provision for adjusting the mask, or use with another lens

had been incorporated in the design. The availability of one lens only for the live action photography created minor problems occasionally. These were more than offset by the certainty of proper mask location throughout the production.

Meanwhile, standard title cards (black with white lettering) had been ordered from a commercial printer. He was given exact specifications for positioning the captions along the bottom of the title card, together with locations for registration holes to be punched near the top of the cards. The holes would fit over pins in the copy board to be used.

The titling stand was already available from the equipment left from the previous shooting work. The only alteration was the addition of locating pins to the camera platform so that the camera could be removed and replaced quickly with precise accuracy. The whole titling assembly - camera stand, copyboard, lights, etc. - was located in the studio near the live action photography area. All titles were photographed with a 2½-inch telephoto lens.[6] Its focus and diaphragm openings were taped securely at the proper settings. Selection of this long focus lens for the copying operations permitted shooting over the camera mask without interference.

The camera used for all the photography was a Maurer 16 mm. professional model with lens-turret, motor drive and provision for winding the film backwards. In addition to the footage meters on the camera, a synchronous clock with a sweep second hand was included in the camera circuit to keep track of the number of seconds for which a film was shot.

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[6] A telephoto lens is usually of greater than normal focal length, and is so constructed that the back-focus is different from the effective focal length of the lens.

(The effect of all the above devices assured correct mask alignment at all times with exact exposure and title placement on every scene.) This arrangement will become more obvious from Plates VII and VIII.

Actual photography of a scene proceeded in the following manner. The live action scene, being the most difficult, was usually photographed first. All the standard lighting and camera techniques were employed. It will be remembered that the mask in front of the one-inch lens protected the bottom-quarter of the film from exposure. The viewfinder of the camera had also been masked to match the reduced picture area. Footage and clock readings were noted at the beginning and end of each take. As soon as a good take was secured, the camera shutter was closed and the film was wound back to the point where shooting of the scene started. The camera was then removed from its tripod or dolly and placed on the titling stand. The locating pins assured very accurate alignment. Rotating the turret brought the 2½-inch lens into taking position. With the proper title placed on the copy-board, all that remained to be done was running off the proper length of film. Since the title cards were white in black matte, additional masking to protect the already exposed picture area was not necessary. The camera could now be removed and replaced on its tripod or dolly for the next scene. The same procedure was followed for each picture-title scene cycle.

The effectiveness of the above precautions may be judged by the small retake schedule. Only about 30 feet of retakes could be ascribed to double exposure errors. In all, about 6000 feet of film was exposed and over 80 subjects were photographed in nine days. It is believed that double exposure in the camera in this instance was not only successful but

Plate VII

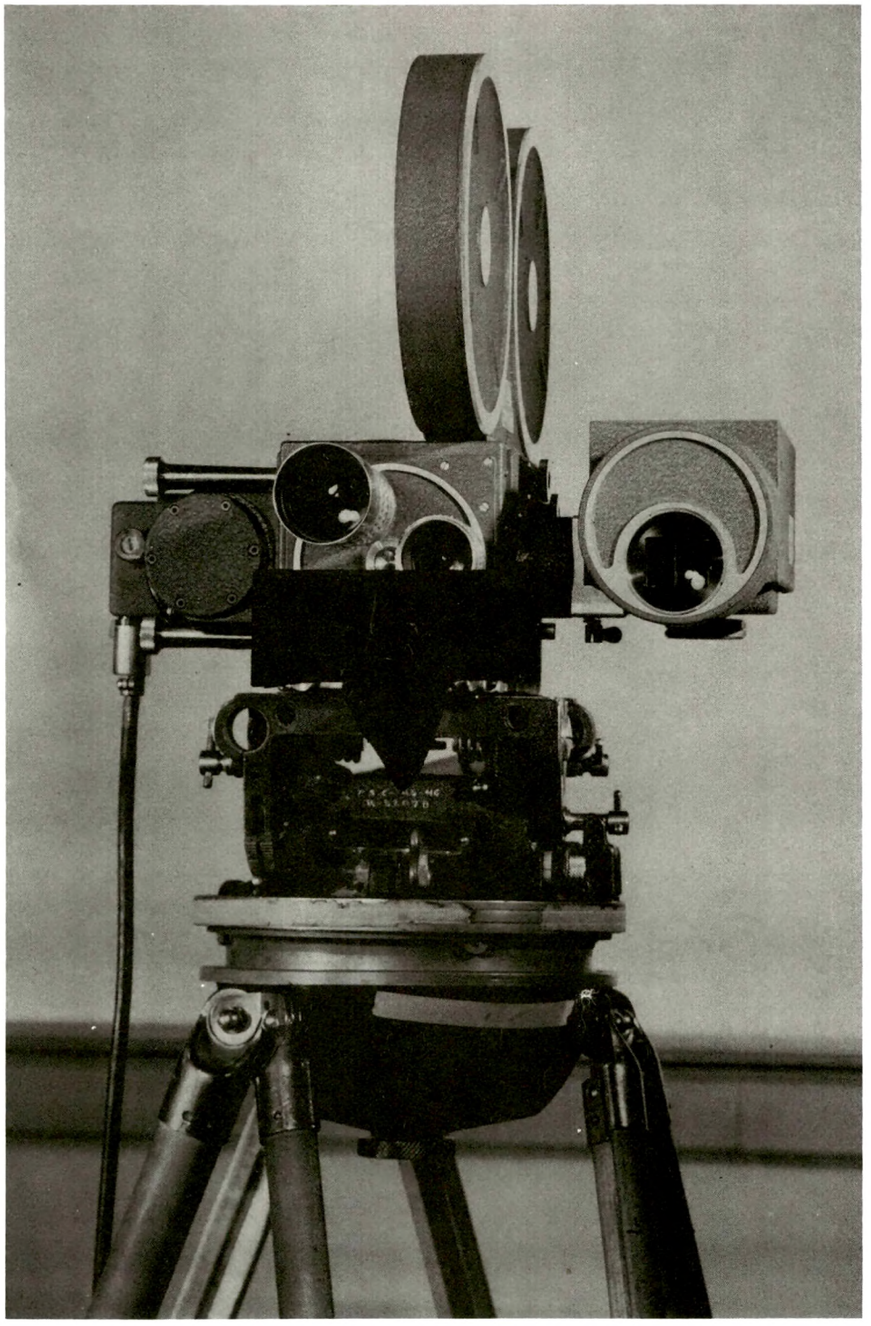

Plate VII. The masking arrangement on the motion picture camera. This mask made it possible to film the picture and the title on one strip of film.

Plate VIII

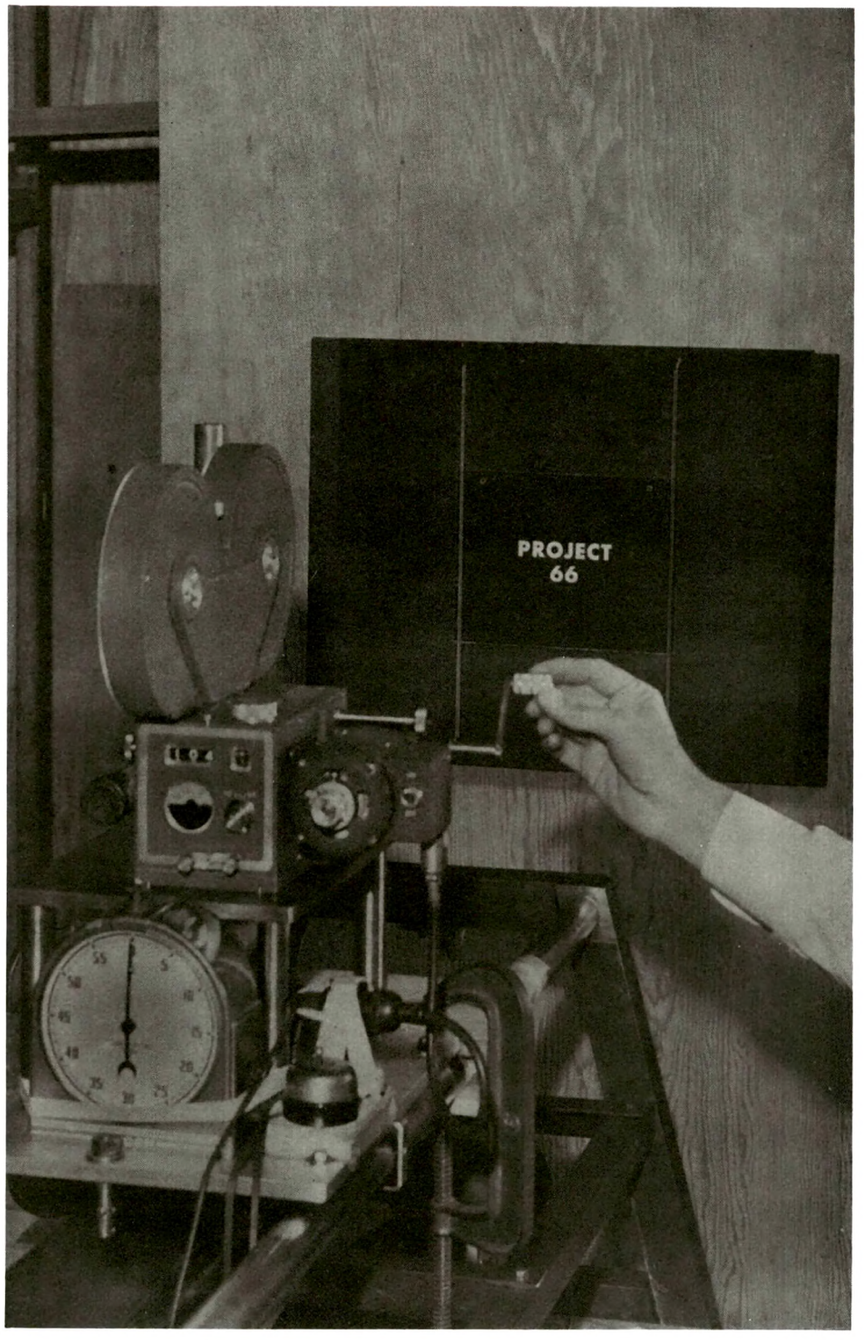

Plate VIII. The camera mount used to film the titles. The title-holder is in the background. The camera is mounted on a titling stand. The motor drive, the winding lever, the footage meter and the synchronous clock are also seen in this picture.

resulted in great savings in both film and laboratory costs. It reduced shooting time slightly and editing time to a fraction of the normal editing time.