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Division of Physics & Electrical Engineering

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Subject Focussing of Aerial Cameras

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We have noted recently a considerable amount of interest in methods of focussing aerial cameras. For this reason we venture to describe the method used in this laboratory during the last year. This method has proved quite satisfactory and convenient in securing the best overall photographic performance of a camera lens.

It will have been noted in our reports on lens film resolving powers that for each type of lens we explore seven planes in the neighbourhood of the plane containing the point of best definition on the axis. A Cobb test target with a density difference of .2 in the focal plane of a collimator is used for making resolving power measurements on the axis and at 5° intervals off the axis. Similar measurements are made for each aperture. Several types of negative material are usually employed. Service Super XX is invariably one and in general Panatomic X and HR film are also used. Except for HR film the exposure is the same at each angle. It is chosen so that the density range on the axis and at the most extreme angle is within the range of best resolving power for the particular negative material. With HR film the exposure is chosen so that the density on the axis and at each angular setting are the same and of a value such that the best resolving power is obtained. Thus exclusive of veiling glare, haze and vibration, service conditions are duplicated as far as exposure is concerned in the case of Super XX and Panatomic X. Even without introducing these factors it is legitimate to say that the average resolving power computed from these experiments for each plane is significant from the point of view of service photography.

Apparatus is being constructed at the present time so that the deterioration in resolving power which results from veiling glare, haze and vibration can be measured and included in the results of later work.