HIGH ALTITUDE PHOTOGRAPHY.

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In connection with the topographic mapping program of the vast woodland and lake region of northern Maine, the Army Air Corps has, at the request of the Geological Survey, recently photographed about 3,000 square miles with the new 5-lens camera. Two areas were involved. The first, the Rangeley Lakes region, was photographed at an altitude of 19,500 feet, giving a scale of 1:39,000; and the second, the Chesuncook Lake-Upper Allagash region, was photographed at an altitude of 17,000 feet, giving a scale of 1:34,000.

The use by the Geological Survey of photographs of such small scale is in the nature of an experiment, as most of the photographs used heretofore have been 1:24,000 scale and larger, but with the development of this new camera by the Air Corps, it is possible to obtain these small scales without undue hardship and, moreover, with the 5-lens arrangement, the great area covered per composite photograph at these high altitudes gives promise of being of invaluable assistance in the extension of control by radial intersection methods.

Third-order triangulation has been extended across northern Maine, using existing steel fire towers as observation towers and signals as far as suitable, giving an average of one point per quadrangle (about 210 square miles), and some fourth-order work has been done, resulting in an average per quadrangle of four points, which have been selected particularly in view of their possible use as photographic control. The execution of this fourth-order work is attended with many difficulties and in some localities it is practically impossible, except at prohibitive cost, to secure the necessary control for the topographer to base his work upon.

It is hoped that these small scale 5-lens photographs will offer the means of solution of this difficult problem of control, as photographs taken at 19,000 feet altitude cover an area in the shape of a Maltese cross 19 miles square and the quadrangles are approximately 12 by 17 ½ miles in extent. It is obvious that with an average of one point per quadrangle there will be at least one control point visible on each photograph and in many cases two or more, and experience has indicated that where such conditions exist a control net can be intersected from the photographs with a degree of accuracy sufficient for mapping wooded areas on 1:48,000 scale.

Aside from their anticipated value as a control instrument, these photographs, due to their high quality, give promise of being nearly as valuable as the larger scale photographs formerly used for obtaining shore lines of lakes, stream courses, trails and other features.