

# SYMPOSIUM: APPLICATIONS OF PHOTOGRAMMETRY IN THE U. S. DEPARTMENT OF AGRICULTURE\*

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## INTRODUCTION

IT is probably an undeniable fact that no country in the World uses aerial photography as extensively as the United States. Aside from its more commonly accepted usage in the preparation of topographic and planimetric maps, aerial photography in the Department of Agriculture serves a great utilitarian purpose in presenting in pictorial form a representation of the face of the Earth as viewed from vertically overhead. Such photographs, used either stereoscopically or as enlargements from the individual photographs, serve as a medium upon which is, or can be outlined, any or all of the various factors affecting land-use; whether it be soil types, extent of erosion, timber and vegetative types, land use and its capabilities, flooded areas, farm and field boundaries, crop areas, or any factor affecting or influencing man's occupancy of the land. The aerial photograph, in the hands of an experienced technician, serves as a medium more easily understood than the most elaborate and skillfully drawn map.

The procurement of aerial photographs at times of high flood conditions preserves a graphic record of the extent of the high water line which later is often obscured by crop conditions, and is often forgotten in the lapse of time.

It should not be concluded from these statements that the Department of Agriculture is merely a "user of aerial photographs" and is not thoroughly familiar with the inherent errors occasioned by tilt, tip, relief displacement, lens distortions, etc., as it employs numerous photogrammetric engineers and technicians who transform the land-use agencies' depiction of the data imposed on the aerial photographs into true scale orthographic maps. The Forest Service is a recognized Federal mapping agency, and as such makes topographic quadrangle maps of national forest areas to prescribed national map accuracy standards.

As an indication of the amount and extent of aerial photography performed by the Department agencies, it has executed either directly or by contract as of June 30, 1949, 4,009,890 square miles of vertical photography at a cost of \$11,240,739. Inasmuch as the area of the United States is slightly more than 3,000,000 square miles, the excess area represents acreage of areas previously photographed.

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\* In addition to the papers herein given, it was planned that the Symposium include a paper by the Division of Soil Survey, Bureau of Plant Industry, Soils, and Agricultural Engineering. It is regretted that this had not been completed when sending manuscript to the printer was necessary. Publication later on is planned—*Publication Committee.*