

# Photogrammetric Geodesy over Large Regions

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The Ada County, Idaho project is described in three papers.

## INTRODUCTION

PHOTOGRAMMETRY began as a tool of surveying, useful for those special jobs that needed speed and convenience but not the accuracy that theodolite and level could give. Its importance as such a special tool increased slowly and created the discipline of aerotriangulation. Its usefulness for general mapping increased rapidly, kicked forward by the reality of one great war and the likelihood of subsequent ones. This latter aspect of photogrammetry has advanced to the point where the traditional ways of preparing maps have all but disappeared and aerial mapping alone remains.

But aerotriangulation was never seriously considered by practical photogrammetrists as a replacement for the conventional "classical" techniques of surveying. Theory said that the capabilities are there; technology said that it was not able to do what theory required. The situation did not change until World War II forced the development of large computers. These did what hand-held and desk calculators could not, but even then only a few photogrammetrists realized that the situation had changed and that geodetic photogrammetry was possible. In 1964, Woodcock and Lampton described a small project in Salt Lake City that achieved geodetic accuracy. They relied on a large amount of data concentrated on a small area and on the capability of large computers to reduce such data rigorously. They showed that photogrammetry could give high accuracy and that higher accuracy was to be expected. Some geodesists were interested and a few papers kept appearing from time to time telling what could be done with this kind of photogrammetry for cadastral surveying and very-large-scale mapping. But it was not until 1977 that another big advance was announced by the publication of a paper by Duane Brown, "Densification of Urban Geodetic Nets." Brown described a

project on the densification of geodetic control in a large area of Atlanta, but he went much further than this. His paper put together clearly and systematically all that had been done before, extended it, and put it into a sensible economic framework. This paper and one by C. Slama in 1978, describing very precise measurement using a reseau, laid the groundwork for the next advance.

The following three papers can be considered an important third step in the advance of aerial triangulation to its position as successor to the classical methods of surveying. The area surveyed is now a gigantic western county and the precision is better, in some respects, than could be obtained by classical surveying. The first paper, by John Gergen, describes the geodetic network into which the photogrammetric network was fitted. The second paper, by Leslie Perry, describes the project as a whole and the operational parts in particular. The third paper, by James Lucas, describes the procedures that were used for reducing the data and the results obtained. The three papers, taken together, give the detailed history of a project and the advances that made the project possible. They can well stand beside the other two history-making papers of Woodcock and Lambert and of Brown.

## REFERENCES

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