

Photogrammetry Takes the Position of the Third Man*

GOMER T. MCNEIL, *Photogrammetry Inc., Silver Spring, Md.*

IT HAS been our experience that when a photogrammetric evaluation was presented, there arose a compromise in the allocation of personnel and equipment between the special problem and the normal routine. Weeks or months were expended in procuring and modifying reconnaissance equipment, and in many cases, only to have it disbanded subsequent to the test. It is obviously more efficient to obtain the most precise photogrammetric equipment available and thoroughly calibrate it. The equipment should be reserved for subsequent tests, and the accumulation of data from each test would enhance the precision of the equipment.

Photogrammetry is an excellent means to reference an object in motion at a given instant of time. The object may be an aircraft, missile, cloud, wave, landing craft, or the like. It is believed that photogrammetry has not been fully exploited in this regard. The greatest application of photogrammetry has been in the field of map making. Inasmuch as large areas had to be mapped in a productive manner, photogrammetry became highly instrumentized. Instrumentation removed a greater portion of the mathematics of photogrammetry, and the latter, figuratively speaking, has become somewhat of a lost art to many competent instrumental photogrammetrists. It is for this reason that some facilities are not capable of conducting comprehensive non-topographic evaluations of which the basis is mathematics. This condition is perfectly excusable when it is realized that the fundamental purpose of the majority of photogrammetric organizations is to compile maps. The mathematical or analytical approach is justified, at times, inasmuch

as the metrical analysis of a few points or lines do not warrant the time or finances to capitalize data reduction instrumentation for short-term projects. When the project is of a long-term or productive nature, the mathematical approach is still a prerequisite to establish the parameters, design, and performance of the data reduction equipment.

The greatest problem confronting the photogrammetrist in conducting non-topographic evaluations is the lack of a photographic system designated for a specific purpose. This is especially true when requirements dictate wide-angle coverage at a recycling time less than that normally encountered in aerial mapping cameras. The problem of recycling immediately introduces us to the related field of motion picture and high-speed photography which has shown great progress and accomplishment. It is apparent that much can be gained from the mutual consideration of non-topographic evaluations by the combined efforts of the motion picture engineer and the photogrammetrist; particularly on projects involving the metrical analysis of phenomena in motion.

Mr. Kenneth Shaftan, Society of Motion Picture and Television Engineers, has presented the following definition: "To aid in codification and unification of the field encompassing the scientific uses of photography, we need a term to describe it adequately. The term photographic instrumentation is proposed and defined as: 'The use of the photosensitive medium for the detection, recording and/or measurement of scientific and engineering phenomena.' Photographic instrumentation thus includes the apparatus, the techniques, the processes and the applications in scientific endeavors."†

* This is a part of a paper prepared for the VII International Congress. This thought-provoking discussion is even more applicable to the present than to conditions four years ago.—*Editor*

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