

THE AMERICAN SOCIETY OF PHOTOGRAMMETRY

Its First Ten Years and the Next

O. S. Reading

DURING the evening of July 29, 1934, a dozen men met around the writers dining room table in Washington and enthusiastically agreed that there be an American Society of Photogrammetry.* Each of the individuals present had supervision of several to a score or more of men engaged in taking air photographs or mapping from them. It was quickly agreed that there would be at least fifty to a hundred men in the United States who would be glad to pay \$3.00 or so a year to be kept informed of the latest technical details of photogrammetric work, both in the United States and abroad, and to have personal contact and discussion at meetings with others engaged on similar work. Colonel Birdseye had brought along some copies of the Archives of the International Society of Photogrammetry and he and Mr. Eliel described the extensive activity in photogrammetry abroad. It was agreed that as soon as the American Society was organized it should join the International Society. Mr. Brown lead off a cracking discussion of the needs for intelligent map specifications and tests and it was quickly apparent that standardization of specifications would be one of the major activities of the new society. The publication of a mimeographed news letter was considered feasible with perhaps a printed year book or "transaction" to include the more important papers.

In a second organization meeting two weeks later, Colonel C. H. Birdseye who had formerly been Chief Topographic Engineer of the U. S. Geological Survey, a staunch advocate of photogrammetry who had resigned to launch a commercial photogrammetric company, agreed to act as president of the new society. Mr. Ninneman and Mr. Wright agreed to divide the work of secretary and treasurer between them with help on correspondence (with overtime pay) by Mr. Wright's secretary. Mr. Collier accepted the editorship of the "News Notes" as they were called (a most important job which he filled with éclat and distinction for several years) and Mr. Brown agreed to head a committee on constitution and by-laws.

The new society went over much better than the little group had hoped. By December 1934, when the Fourth International Congress was held in Paris, the society had 122 members. It was agreed that all who joined before the first annual meeting and election would be considered charter members, and there were 217 of them when it was held on April 22, 23, 1935, at the New National Museum in Washington. The Society's growth has kept pace with the great increases in the use of air photographs since then, indicating that its membership includes practically all the men actively engaged in photogrammetry as a career in this country as well as many others less directly interested. When the Fifth International Congress of Photogrammetry met at Rome in 1938 the membership of the American Society was 802, making it easily the largest national society. Germany (including Austria) was next with about 600 and Italy third with 200, closely followed by France and Switzerland. Some 72 of the 802 members of the American Society were citizens of other nations and this proportion still holds. The membership shrank slightly with the recession of the

* There would have been a number of others invited had they been in Washington or available at the time, but it may be of interest to list the organization group here: R. K. Bean, C. H. Birdseye, W. N. Brown, J. L. Buckmaster, C. W. Collier, C. H. Davey, L. T. Eliel, Hans Gruner, T. W. McKinley, J. W. Ninneman, O. S. Reading, and M. S. Wright.

A.A.A. program after 1938, but jumped again with the advent of war. In January, 1944, it was 1143.

Among the proud memories of the charter members was the purchase, from Society funds, of a special typewriter for equalizing margins and the change in 1936 from the mimeographed "News Notes" to the lithographed PHOTOGRAMMETRIC ENGINEERING. They were still more pleased when the publication became a printed quarterly in its present form in 1937.

ACHIEVEMENTS OF THE SOCIETY

Recognition for Photogrammetry: Right from the start the society has been successful in its main purpose—keeping its members in contact with each other and with the details of the most important current work in photogrammetry. During the first year the publication of reports and tests made by the Photo Mapping Detachment of the Corps of Engineers (which incidentally did not appear in other publications because their editors considered the matter might appear too critical of the work of existing agencies) did much to establish the superiority of photogrammetric methods over the older surveying practices. These and several other papers did more than anything else to remove photogrammetry from the "not very accurate and costly, but interesting experiment" classification, with which it was regarded by older topographers, and to make it plain that photogrammetry could do better and cheaper topography than any other method in sizeable projects. Certainly this recognition of the value of photogrammetry would have required many more years had it not been for the society and its publication.

The Development of Standard Specifications for Aerial Photographs: This valuable achievement was largely due to the untiring energy of its second president, Col. H. H. Blee. Appreciating the great value of the standard specifications for the 400,000 square miles of photography per annum program of the Department of Agriculture, Col. Blee visited and revisited all the government agencies interested in purchasing aerial photographs, the National Bureau of Standards, and many commercial operators until a general agreement as to the best photography obtainable at a practicable cost for the tremendous program was embodied in the standard specifications. With the cooperation of the representatives of some of the larger agencies, he also had them adopted as standard government specifications by the Procurement Division of the Treasury Department. The ready contacts which the Society had established between all the individuals most concerned, and the certainty that any objections would be thoroughly aired by discussion through the Society, made general agreement comparatively easy to obtain. One shudders to think what wild claims and loud squawks might have arisen had it not been for the standard specifications. Col. Blee was unanimously elected an honorary member of the Society in recognition of his work on them.

Precision Camera Specifications: As stereoscopic methods of mapping developed, the need for cameras having fixed calibration and between-the-lens shutters became evident. A committee under the chairmanship of Dr. I. C. Gardner, Chief of the Optical Instrument Section of the National Bureau of Standards, drew up specifications for cameras which would produce satisfactory photographs for stereoscopic mapping. The requirements of these specifications were incorporated in the Standard Specifications for Aerial Photographs. Since then cameras for mapping photographs have been built to meet the specifications, and a practicable method of calibrating and certifying the accuracy of the cameras at the National Bureau of Standards has been worked out. This has

done much to improve the accuracy and usefulness for mapping of photographs taken for the government.

Bibliography of Photogrammetry: The December 1936 number of PHOTOGRAMMETRIC ENGINEERING was a bibliography of photogrammetry. A tremendous amount of work by Messrs. J. I. Davidson, M. S. Kennedy, G. Medina, E. A. Schuster and B. B. Talley resulted in a volume of some 117 pages, an exceedingly complete and valuable job. Some of us may have wished that its numerous titles might have had an X, XX, XXX, and XXXX classification like a list of recommended movies. One of the major projects of the Society should be to bring the bibliography up to date as soon as the many contributions to the literature due to war activities become known.

International Recognition: With the appearance of PHOTOGRAMMETRIC ENGINEERING in print (and especially the fine number on Cameras and Photography, Vol. IV, No. 2, which formed the report of Committee 2 of the 5th International Congress, mainly the work of Mr. B. G. Jones and Col. Blee) the American Society took its rightful place as one of the leading members of the International Society. This was aided a bit, perhaps, by a typically efficient American Society conduct of the meetings of Committee 2 at the 5th Congress under the chairmanship of the writer with Mr. M. S. Wright backing him up. The American Society is well and favorably known to all who attended that Congress—a good foundation for restoring good will and international cooperation in the days ahead.

Specifications for Map Accuracy: Under the able chairmanship of Mr. G. D. Whitmore, a committee of the Society drew up specifications for map accuracy based on the advances made practicable by photogrammetric methods. With the background of the experience and testing in the Tennessee Valley, under Mr. Whitmore's supervision, the specifications could not be talked down as impracticable. They will mean a very marked advance in the art of mapping and it is very gratifying that their provisions were adopted for the defense mapping projects recently executed for the War Department. The writer has not forgotten how he was laughed at by several members of the Board of Surveys and Maps about twelve years ago for saying that photogrammetry would make it possible to map practicably all well defined detail within a millimeter of its correct position. The Society has done a lot of educating in ten years!

Nomenclature: A committee on Nomenclature under the chairmanship of Mr. B. G. Jones has done very valuable work toward standardizing the technical meanings of words used in photogrammetry. The definitions recommended thus far will appear as a chapter in the Society's *Manual of Photogrammetry*. Everyone will be much more certain of being understood and of understanding others if the recommended use is carefully complied with. There would seem to be a further field of great usefulness if the committee would standardize the symbols to be employed on photogrammetric diagrams. Nearly every text uses a different letter for principal point, plumb point, exposure station, etc. It would greatly simplify study if future publications could use the same symbols for the same meanings on their diagrams.

Manual of Photogrammetry: Several years ago Mr. G. Medina, during his term of office as president of the Society, started a project for a manual composed of articles written for PHOTOGRAMMETRIC ENGINEERING. This manual, composed of articles from men in immediate contact with the work they describe, will form a most valuable source book of authoritative statements. At long last, due mainly to the unflagging perseverance of the able editor of PHOTOGRAMMETRIC ENGINEERING, Mr. P. G. McCurdy, the manual will be

available in October, 1944. Although it may suffer somewhat from overlapping and style variations due to its large number of authors, no one can read the new manual without having a much sounder grasp of photogrammetry, its scope and its products, than he could get from any other book.

PAST POLICY AND PRECEDENTS

The Presidency: Early in the councils of the Society, it was decided that it would be better to pass the presidency on each year than to continue one man in office, however able or devoted he might be. There has been no cause to regret this policy as a list of the past presidents demonstrates:

1935—C. H. Birdseye	1940—L. T. Eliel
1936—H. H. Blee	1941—Guillermo Medina
1937—O. S. Reading	1942—T. P. Pendleton
1938—Virgil Kauffman	1943—Minton W. Kaye
1939—M. S. Wright	1944—L. A. Woodward

It was also considered that the presidency should alternate between Washington and the field with the first vice president ordinarily succeeding the president. In this way either the president or the first vice president is in Washington to assist in the conduct of the Society's affairs, and a certain preparation for continuity in the program is secured. After many debates, the present policy of a single slate of nominations with provision for additional nominations by petition has been adopted rather than a plurality of candidates. The nominating committee is in a position to review carefully the qualifications of the men it selects (including their popularity, through the nominating ballot sent to the membership before the election ballot is prepared). As the presidency is an honorary office with much work and responsibility and no pay, one rather expects it to be offered to him rather than to run for it. Also, the policy of a new president each year guarantees that if one continues zealous and outstanding work in photogrammetry, the presidency will eventually come around to him. On the other hand, with a multiplicity of candidates, those not selected cannot help feeling rejected and hesitant about running again—a distinct loss to the Society. The system has resulted, and always should result, in the selection of the men doing the most outstanding work in photogrammetry during the few years before their election. The Society should always have first regard to the quantity and quality of work being done in the selection of its officers.

The Semi-annual Meetings: At places of outstanding photogrammetric activity, though not always held, are by all means worthy of becoming a permanent part of the Society's program. The first hand contact with the individuals responsible for outstanding work in their offices or plants is invaluable to all who can attend such meetings. The papers contributed and the stimulating enthusiasm at such meetings have been of great importance in furthering the work of the Society. All who have attended any of the meetings, whether at Wright Field, Chattanooga, New York, San Antonio or Tulsa, long for more of them.

Local Sections: The field sections of the Society at Chattanooga, Sacramento, and in Texas and Colorado, have furnished most enjoyable and profitable evenings to those able to participate in them. There is nothing like first hand contacts with others doing similar work for help and stimulation in one's own. Wherever there is a group of photogrammetrists there ought to be a local section whether it can look forward to permanence or not.

International Cooperation: From the start, the Society has welcomed inter-

national cooperation. We have a great deal to learn from other countries about photogrammetry and we can help them a lot, too. Unfortunately, the war broke up cooperation with the International Society just as it was becoming most fruitful. All those who knew him deeply mourn the reported death of Dr. Schemmerhorn, the International President, in a German concentration camp. There will be need for men of good will to carry on the good work when peace is established. Recent calls of Russian, Turkish, Chinese, British and many South American visitors at our offices make it apparent that international cooperation will be most beneficial and welcome in the future.

One of the most enjoyable and profitable forms of such cooperation has been the regular exchange of visits and papers between the presidents of the Canadian Institute of Surveying and the Society at the time of the two annual meetings. The individuals concerned remember their visits as high spots in their careers and become the channels for exchange of the ideas most helpful to their own country when they return. As strong societies are formed in the countries to the south, we should by all means set up similar exchanges.

THE NEXT TEN YEARS

The Past is Prologue: Now that the Society has passed the diaper stage when its anxious founders jammed their offices and homes with the Society's papers, pressed their secretaries and their wives into long hours of overtime, typing, and neglect of other duties to help the Society grow, we may perhaps review again with profit the objectives responsible for that enthusiasm and growth.

Technical Data: First of all is the direct contact with the work going on in photogrammetry, both with the individuals doing it at the meetings and their papers in the publications. Progress in science or art does not spring from nothing out of the mind of the individual—oh no—rather, he makes a happy new combination of his own experience with what he has learned from others. The ideas from which the new idea is built are founded on the work done by others—perhaps centuries ago but more likely a few years or days before. The more directly the individual is in contact with the work of others that may apply to his own work, the more blocks he has with which to build—the less likely he is to waste time duplicating the mistakes of the others. (He needs, of course, a healthy respect for his own ability to find the answers to problems that have baffled the others.) It is, therefore, the prime function of a technical society to facilitate the exchange of these building blocks of successful, more efficient work among its membership. The war has both accelerated and suppressed from publication many important developments in photogrammetry, building blocks for further progress, that the Society will be eager to make available in its publication as soon as they are released.

Other Societies: There was an interesting and lively discussion at the Sixth International Congress of Surveyors in Rome in 1938 as to whether the photogrammetrists would devour (manager) the surveyors (geometers). After pointing out the increasing use of photogrammetry for large scale cadastral surveys as well as topographic mapping and the high cost of accurate photo plotting instruments, the discussion concluded that the surveyors should by all means learn the simpler methods of using photographs but that there would be a field for individual property surveys and for geodetic surveys as far as could be foreseen in the future.

There is an old jest to the effect that if three Americans meet thrice there will be a president, a vice president and a secretary-treasurer. Perhaps that is why we get along so well with our work. At any rate, there are five or perhaps

more societies in the United States that have to do with surveying and mapping and therefore with photogrammetry. One sometimes questions whether fewer societies, publishing the papers that are now written for the others, might not accomplish just as much. The answer, at least in the opinion of the writer, is no. (Incidentally, he belongs to four of the five societies). Everyone in our complex civilization is compelled, if he would enter fully into life and enjoy fully its possibilities, to join many groups, each organized for a particular activity. If the group is large enough to support a publication of its own, it will find its activities deepened, broadened and in many ways reinforced by the more direct cooperation and detailed information that the specialized publication and meetings make possible. Much more will be accomplished in less time by the specialized society.

This is not to say that an individual should not join other societies with affiliated purposes but not so specialized—quite the contrary. A second main objective for association in groups is to acquaint the users, the public at large, with the value and uses of one's specialty. Membership and active part in disclosing the advantages of one's specialty in the affiliated societies is one of the best ways of doing this. By all means as many members as can afford it should join the Congress of Surveying and Mapping, the Society of Military Engineers, The Society of Civil Engineers, the Society for Promotion of Engineering Education and see that the membership of these societies is fully acquainted with the possibilities of photogrammetry. May all these societies advance together during the next decade for each can lend strong and welcome help to the special work of the others and thence to the country at large.

Expanding Usefulness of Photogrammetry: As to the expanding usefulness of the Society of Photogrammetry during the next decade, we have every reason to hope it will match the last. There are new glasses from rare earths to help the lens designer, new plastics having practically no dimensional changes in varying humidity; faster emulsions and higher resolution emulsions; color film and paper at practically cost; helicopters to hover for large scale photographs; and long range, high speed aircraft for big jobs, all in sight after the war. The Fairchild Award Committee may well have so many deserving candidates to consider that its choice of the outstanding advance in photogrammetry each year will become very difficult.

Ever increasing demand: Improvements or no improvements, the yeast of demand for air photographs and more accurate maps is working. It has been the invariable experience in the older countries that better surveys and better maps always cause an ever increasing demand for more and better surveys and maps. There are millions of our troops and millions of our farmers learning the incomparable value of up to date photographs and maps for planning and coordinating their future actions. The next ten years will see the members of the American Society of Photogrammetry supplying the resulting ever increasing demand with ever greater economy and efficiency.