

NATIONAL REPORT
of the
UNITED STATES OF AMERICA
to the
XIV INTERNATIONAL CONGRESS
of
PHOTOGRAMMETRY
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1. INTRODUCTION

This National Report of the American Society of Photogrammetry (ASP) to the 1980 XIV Congress of the International Society for Photogrammetry (ISP) in Hamburg, FRG, endeavors to give an account of the Society's activities toward fulfilling its aims and goals since the ISP Helsinki Congress in 1976. The document supplements the reports of the seven U.S. National Correspondents to ISP Commissions in summarizing the total photogrammetric activities in the USA since 1976.

2. NAME OF THE SOCIETY

For the second year in a row, the membership of ASP defeated a constitutional amendment proposed by the Board of Directors of the Society to change the name of the Society to "The American Society of Photogrammetry and Remote Sensing." Therefore, our name will remain the American Society of Photogrammetry. However, remote sensing will be an integral and indivisible part of our profession and we will continue to move forward together.

For long, Photogrammetry has been defined by ASP as "the science and technology of obtaining reliable information about physical objects and the environment, through the process of recording, measuring and interpreting photographic images and patterns of radiant energy derived from sensor systems." Within this definition, Photogrammetry includes the acquisition of imagery from conventional photographic systems, as well as sensors utilizing other portions of the energy spectrum. Both the quantitative (metric) and qualitative (interpretative) aspects of image analysis are included. Thus, modern Photogrammetry is considered to embrace all the elements of image acquisition, mensuration, and interpretation which are called Remote Sensing. Topographic as well as non-topographic applications of photogrammetry are included in the scope of modern Photogrammetry.

3. MEMBERSHIP OF THE SOCIETY

Five classes of members constitute our Society. In March 1980, the members in the various categories were:

Class	Current Numbers	
Honorary	20	
Regular	6,302	
Student	990	
Sustaining	135	
Emeritus(Life)	206	
Grand Total	7,653	From 87 countries

4. AIMS OF THE SOCIETY

The objective and business of the Society is to advance knowledge in the art and science of photogrammetry; to provide means for the dissemination of new knowledge and information; to encourage the free exchange of ideas and communication among those contributing to the advance of photogrammetry; to stimulate student interest in photogrammetry, to exert its efforts toward the improvement of standards; to uphold high ethical principles and to extend and encourage the use of photogrammetry in related fields.

5. DISSIMINATION OF SCIENTIFIC INFORMATION

ASP disseminates scientific information through meetings and publications. Publications of the Society include our own journal *Photogrammetric Engineering & Remote Sensing* (the term *Remote Sensing* was added in January 1975), published monthly and containing the Society's *Newsletter*. In addition, there are currently four basic manuals published by ASP: *The Manual of Photogrammetry* (3rd edition currently out of print, and the 4th edition is in its final phases of preparation, expected in 1981), the *Manual of Remote Sensing*, the *Manual of Color Aerial Photography*, the *Handbook of Non-Topographic Photogrammetry*, and the *proceedings* of its technical meetings, workshops, seminars, and symposia.

In addition to its publications, the Society strives, through local and national meetings, to disseminate knowledge of the science as rapidly and as effectively as possible. The National Society is responsible for the development and the presentation of the Annual and Semi-Annual Technical meetings. The Society is an active member of the International Society for Photogrammetry (ISP).

6. GOVERNMENT OF THE SOCIETY

The government of the American Society of Photogrammetry is vested in its Board of Direction and its officers; while responsibility for day-to-day management of the Society's affairs rests with the Executive Director and Secretary-Treasurer. The Society has established and supports a series of Administrative, Central, Technical, Awards and Liaison Committees which are responsible to the President. Their function is advisory, however.

The Society is subdivided geographically into 18 local Regions, some of which have organized Chapters. Each of these regions selects its own officers and directors, and elects one member to the Board of Direction of the

parent Society. The Society organization includes, to date, three Technical Divisions. Up to March 1978, the three Technical Divisions were named: Photography Division, Photogrammetric Surveys Division, and Remote Sensing and Interpretation Division. A major reorganization took place in 1978. The purpose of these Divisions is to bring the Society closer to the members who are ordinarily specialists in a limited phase of the discipline. The Division Directors are members of the Board of Direction of the Society.

7. TECHNICAL DIVISION REORGANIZATION IN 1978

Due to concern for the type of activities, and in some areas, inactivity within the three Technical Divisions, a Committee on Technical Division Reorganization was formed in 1977. The objective was to examine the structure and functions of the then existing three Technical Divisions, and to make recommendations on the number, the names, and functions of the Technical Divisions of ASP.

Restating the purpose of Divisions within the Society as outlined by the Society in 1970 on the implementation of the formation of the Divisions:

- "Give members with specialized interests a focal point, an identity,
- Stimulate activity by providing an organizational structure that can operate more efficiently,
- Insure appropriate representation on the Board of Direction for major activities of the Society (The Director of each Division is automatically a member of the Board of Direction of ASP),
- Provide a place in the Society for any new group that wishes to identify itself as a separate entity."

After considerable deliberations the following three Technical Divisions, the names of committees within each Division and an outline of the areas of activities and responsibility of each Division and Committee were proposed to the Board of Direction and approved by the Board on March 2, 1978.

8. ASP TECHNICAL STRUCTURE (1978)

8.1. PRIMARY DATA ACQUISITION DIVISION

8.1.1. *Sensor Systems Committee:*

The Sensor Systems Committee will consider the design, engineering and performance aspects of optical and electro-optical sensors and their potential applications to photogrammetric and remote sensing tasks. Satellite, aircraft, extraterrestrial, and underwater systems will be considered.

8.1.2. *Environmental Controls Committee:*

Important subjects include the influence of the atmosphere, hydrosphere, and outer space on data acquisition.

8.1.3. *Data Characteristics, Quality, and Standards Committee:*

This committee will undertake to specify those data characteristics of primary importance to the photogrammetry and remote sensing community; to establish methods of quality evaluation; and to define standards for these data.

8.1.4. *Data Processing Reproduction, and Display Committee:*

This committee will investigate the processing and reproduction procedures for remote sensing data required to produce optimum quality *first generation datal products* (analog and digital) and/or their transformation to usable second generation products. Procedures, computer routines, and instrumentation involved in processing activities to produce the products needed are subjects within the domain of this committee.

8.1.5. *Vehicles and Navigation Committee:*

The design and performance characteristics of aircraft, satellites, submersibles, etc., and their navigational methods are the principle subjects of concern.

8.1.6. *Technical Review of Journal Manuscripts Committee:*

Review manuscripts of papers submitted for possible publication in *Photogrammetric Engineering & Remote Sensing*.

8.2. DIGITAL PROCESSING AND PHOTOGRAMMETRIC APPLICATIONS DIVISION

8.2.1. *Image Data Processing Techniques Development Committee:*

The development of processing and analysis techniques to be applied to various types of digital and analog remote sensor data. This would include such topics as spectral and spatial pattern recognition classification algorithms and techniques software systems developments, and multi-source data base analysis.

8.2.2. *Computational Photogrammetry Committee:*

Development of computational techniques in all photogrammetric and associated surveys such as triangulation adjustment, auxiliary data, mathematical models of various sensor data, and digital terrain models.

8.2.3. *Automated Cartography Committee:*

Applying the photogrammetric and cartographic principles, including digital techniques, to achieve acceptable standards for and stimulating the development of all forms of charts and maps; encouraging the use of charts and maps in new applications.

8.2.4. *Instrumentation Committee:*

Design, construction, calibration, and evaluation of various

photogrammetric and remote sensing instrumentation for data reduction, processing, display, and analysis.

8.2.5. *Close-Range Photogrammetry Committee:*

Applying close-range photogrammetry in such areas as architecture, bio-medicine, engineering, law enforcement, and others; stimulating new applications of close-range photogrammetry and assuring that proper attention is given to the calibration and evaluation of geometric quality in close-range photogrammetric surveys.

8.2.6. *Cadastral Surveys Committee:*

Accomplishing selected tasks within the broad scope of cadastral surveying by photogrammetric methods.

8.2.7. *Transportation Surveys Committee:*

Utilizing photogrammetry in making surveys for transportation and all other types of engineering works and facilities, including surveys for their reconnaissance, location, and design, for obtaining their right-of-way, and for their construction, maintenance, improvement, and reconstruction wherever necessary.

8.2.8. *Technical Review of Journal Manuscripts Committee:*

Review manuscripts of papers submitted for possible publication in *Photogrammetric Engineering & Remote Sensing*.

8.2.9. *Standards Committee:*

Working closely with the Standards Committee of the American Society of Photogrammetry, and providing a member and an alternate member from the Standards Committee of the Division to serve as a member of the Standards Committee of ASP. Compiling standards applicable to the interests and work of all Committees within the Division and presenting them to the Standards Committee of ASP for its consideration and adoption for use by all concerned.

8.3. REMOTE SENSING APPLICATIONS DIVISION

8.3.1. *Education and Interpretation Skills Committee:*

The Education and Interpretation Skills Committee is dedicated to: (1) the promotion of improved education in remote sensing; and (2) the development of interpretation skills. It provides a means for disseminating course outlines, curricula, teaching aids, new teaching techniques, information relating to on-the-job training and employment needs and opportunities. The committee's technical areas of interest span all 3 divisions of the Society from primary data acquisition to processing analysis and interpretation of data, but special attention is given to education on the applications of remote sensing in the Earth Sciences. The Committee strongly encourages its membership to publish papers in the Society's Journal

(*Photogrammetric Engineering and Remote Sensing*) and to present papers at technical meetings and special symposia sponsored by the American Society of Photogrammetry.

8.3.2. *Engineering Applications Committee:*

The Engineering Applications Committee promotes the exchange and dissemination of information concerning the utilization of remote sensing techniques to engineering applications. It provides a vehicle for exchange of information and ideas to engineers, geologists, and land planners interested in such diverse subjects as highway route selection, reservoir and dam siting, foundation design, solid waste disposal sites, sewage disposal sites, analysis of ground water supply, sources of construction materials, and issues relating siting and construction to optimum land use. Technical areas include satellite and aircraft remote sensing data acquisition and image interpretation. The committee encourages written and oral communication through the Society's Journal (*Photogrammetric Engineering and Remote Sensing*) and through technical meeting and special symposia sponsored by the American Society of Photogrammetry.

8.3.3. *Extraterrestrial Sciences Committee:*

The Extraterrestrial Sciences Committee grew out of a need to incorporate into the ASP the remote sensing activities that are associated with spacecraft and earth-based observations of the planets. One of the important reasons for creation of the Committee is the promotion of interaction between planetologists, who utilize remote sensing data for planets, and terrestrial scientists, who utilize analogous data sets for the Earth's surface.

8.3.4. *Geography and Land Use Committee:*

The Geography and Land Use Committee exists to represent both the basic and applied remote sensing research interests of scientists engaged in geographic and land use studies. As a mechanism for representing these interests, the committee seeks to encourage the exchange of ideas in the Society's journal (*Photogrammetric Engineering and Remote Sensing*) and at technical meetings. Technical areas of interest include: sensor systems; interpretation theory and techniques; imaging processing, including necessary hardware and software components; geographic/environmental information system as well as a wide variety of basic and applied research with emphasis on the analysis and modeling of spatially distributed processes and phenomena in urban, rural and natural settings.

8.3.5. *Geological Sciences Committee:*

The Geological Sciences Committee was formed to assist geologists and investigators in allied fields in the presentation of the results of their research in remote sensing and to facilitate and encourage the exchange of ideas and concepts. Such interchange is accomplished through publication in the

Society's Journal (*Photogrammetric Engineering and Remote Sensing*) and technical meetings of the Society as it applies to sensors, theoretical geology, natural resources applications, exploration techniques, the enhancement and interpretation of sensor data, and its display and use in modeling for purposes of resources management and planning.

8.3.6. *Hydrospheric Sciences Committee:*

The Hydrospheric Sciences Committee promotes the dissemination of the results of remote sensing investigations on fresh and saline water systems of the Earth's surface. It provides a vehicle for exchange of information and ideas to oceanographers, limnologists, and other scientists interested in such diverse subjects as water pollution, estuarine dynamics and wetland hydrology.

Technical areas of investigation include data management, analysis and development of interpretive techniques as applied to a range of activities from spacecraft design to assisting the user community. The committee encourages written and oral communications and publications through the American Society of Photogrammetry.

8.3.7. *Plant Sciences Committee:*

The Plant Sciences Committee promotes the exchange of information relating to the utilization of remote sensing techniques for the study, inventory, management and monitoring of vegetation resources. Technical areas include satellite and aircraft remote sensing data acquisition and analysis within the disciplines of Agriculture, Range Management, Forest Management, Wildlife Habitat Management, Marine and Wetland Vegetation Management and Plant Ecology. The Committee encourages written and oral presentation of research and the applications of remote sensing in the plant sciences through the Journal (*Photogrammetric Engineering and Remote Sensing*) and symposia and other technical meetings sponsored by the American Society of Photogrammetry (ASP).

8.3.8. *Archeology and Anthropology Committee:*

The Archeology and Anthropology Committee encourages and facilitates the exchange of information, data and ideas resulting from the application of remote sensing techniques and methods to archeological and anthropological problems. It provides a means of communication between archeologists and anthropologists who use remote sensing methods in the discovery, photogrammetric measurement, documentation, and graphic representation of prehistoric, historic, and contemporary cultural evidence and in the measurement of the physical aspects of man's interrelationship with his environment. The vehicles for such communication include publication in the Society's Journal (*Photogrammetric Engineering and Remote Sensing*) and by presentation of papers at technical meetings and special symposia sponsored by the American Society of Photogrammetry.

8.3.9. *Technical Review of Journal Manuscripts Committee:*

Review manuscripts of papers submitted for possible publication in *Photogrammetric Engineering & Remote Sensing*.

9. ASP TECHNICAL DIVISION LIAISON WITH ISP COMMISSIONS

For each of the seven ISP Commissions, ASP appoints a correspondent. Liaison between ASP Committees and ISP Commissions is maintained in all aspects of areas of joint interest, particularly in the following areas:

ASP	ISP
I. Primary Data Acquisition Division	-Comm. I (Primary Data Acquisition)
II. Digital Processing and Photogrammetric Application Division	
- Instrumentation Committee	-Comm. II (Instrumentation for Data Reduction)
- Image Data Processing Techniques Development Committee	-Comm. III (Mathematical Analysis of Data)
- Computational Photogrammetry Committee	
- Automated Cartography Committee	-Comm. IV (Topographic & Cartographic Applications)
- Cadastral Surveys Committee	
- Transportation Surveys Committee	
III. - Close-Range Photogrammetry Committee	-Comm. V (Non-Topographic Photogrammetry)
Remote Sensing Applications Division	Commission VII (Interpretation of Data)

10. REPORT ON MISCELLANEOUS ASP DEVELOPMENTS SINCE 1976

The following paragraphs summarize major miscellaneous developments in ASP since the Helsinki Congress in 1976. These developments reflect, in a sense, the developments of photogrammetry in the USA during that period. Since neither all the events nor all organizations are covered, this report should be considered as representative rather than comprehensive.

11. A NEW ASP MANUAL

HANDBOOK OF NON-TOPOGRAPHIC PHOTOGRAMMETRY, Edited by H. M. Karara. American Society of Photogrammetry, Falls Church, Virginia, 1979. 158 x 233mm. xiii + 206 pages, 99 illustrations including 2 in color. Price \$15.00 to members of ASP, \$12.00 to student members, \$20.00 to non-members.

12. SPEAKER'S BUREAU

Established in 1977 to provide regions, universities, trade and civic organizations with qualified lecturers on subjects on various aspects of photogrammetry and remote sensing.

13. VOLUNTARY CERTIFICATION PROGRAM

This program was established in 1975 by ASP Board of Direction, and as of March 1980, 166 individuals have been designated "Certified Photogrammetrist (ASP)".

In simplest terms, certification is official recognition by one's colleagues and peers that he (she) has demonstrated professional integrity and competence. As such, the ASP Voluntary Certification Program complements, but is not a substitute for, registration, which is a legal act on the part of several states to protect the life, health, and property of their people. The program applies equally to persons associated with the several subdivisions of photogrammetry, which by Society definition includes aerial photography, photogrammetric surveys, remote sensing and photographic interpretation. In accordance with Society's Code of Ethics, persons certified must, however, refuse to undertake any work within or related to the field of photogrammetry that is outside their range of competence.

The structure for administering the ASP Certification consists of three major elements: a) The Evaluation Committee which reviews all applications for certification and makes recommendations to the Board of Direction; b) The professional Conduct Committee, which investigates allegations and complaints involving practicing photogrammetrists, and recommends appropriate action to the Board of Direction; c) The Society's Professional Activities Committee, which monitors and develops policy guidance for the overall program.

14. COMMITTEE ON INDUSTRY LIAISON

The primary objectives of this committee are:

- a) To involve the private practicing engineer in Society affairs and to involve the Society in meeting the needs and representing the private photogrammetrist, and
- b) To provide a liaison between the Society and other organizations that represent privately employed photogrammetrists.

To meet the objectives, the Committee sponsors sessions at annual and semi-annual meetings to deal with the problems and concerns of privately employed photogrammetrists. Such sessions deal with such topics as mutual contracting problems, legal liabilities of the photogrammetrist-panel to the attorneys and photogrammetrists, as well as photogrammetry education and technical training needs.

15. NOMENCLATURE COMMITTEE

This Committee continued its efforts towards compiling a list of photogrammetric terms together with their definitions. A list of standard symbols for photogrammetry is also being developed. The material is to become the substance of Chapter XIX of the Fourth Edition of the Manual of Photogrammetry, currently under preparation, and will be presented to ISP's ongoing nomenclature project.

16. ASP FOUNDATION

In 1979 an ASP Foundation was established. It is a non-profit tax-exempt organization to which individual Society members could make contributions. Later on, ASP could expand this foundation to support education,

training and scholarship programs, thus providing a really outstanding service to our profession.

17. SAMPLE OF ACTIVITIES OF ASP'S THREE DIVISIONS

The three recurring functions of each of the three Divisions that recur each year are the Fall and Spring Technical Meetings and the review of papers submitted to the Journal for possible publication.

Proceedings are published for the Annual and Semi-Annual ASP meetings and for most of the symposia and seminars. A short representative list of such recent symposia would include:

- Second Annual William T. Pecora Memorial Symposium, 1976.
- Digital Terrain Models Symposium, 1978, St. Louis, Missouri.
- Coastal Mapping Symposium, 1978, Rockville, Md.
- Vegetation Damage Assessment Symposium, 1978, Seattle, Wash.
- Thermosense 1, 1978, Chattanooga, Tenn.
- Sixth Biennial Workshop on Color Aerial Photography, 1977, Fort Collins, Colorado.
- Machine Processing of Remotely Sensed Data Symposium, 1979.
- Auto Carto IV, 1979, Hyattsville, Md.
- Analytical Plotter Symposium and Workshop, 1980, Reston, Va.

18. OBITUARY

Brig. Gen. (Ret.) Lawrence P. Jacobs, Executive Director of the American Society of Photogrammetry, died on Thursday, January 20, 1977. He was succeeded as ASP Executive Director by William D. French.