

# Annual Report

## Region Presidents and Officers Meeting

### Roll Call

Present were:

| NAME                  | REGION          | CAPACITY                  |
|-----------------------|-----------------|---------------------------|
| Marilyn O'Cuilinn     | ASPRS           | Vice-President-Elect      |
| Ellen Davis           | ASPRS           | Staff                     |
| William D. French     | ASPRS           | Executive Director        |
| George F. Gross       | Columbia River  | President                 |
| William G. Hemple     | St. Louis       | Vice President            |
| Roberta E. Lenczowski | St. Louis       | President                 |
| William G. Adams      | Mid-South       | President                 |
| Charles H. Andregg    | Florida         | Director                  |
| Charles Woodward      | Florida         | President                 |
| Linda Conober         | Rolla           | President                 |
| Enzo E. Becia         | Alaska          | Director                  |
| Roger Hoffer          | ASPRS           | Vice President            |
| Richard Dahlberg      | W. Great Lakes  | Director                  |
| Paul Hopkins          | Central N.Y.    | Director                  |
| David A. Wahlstrom    | Texas-Louisiana | President Elect           |
| Lynn Johnson          | Rocky Mt.       | President                 |
| Stanford T. Hovey     | Potomac         | Secretary/Treasurer       |
| Maurice X. Pia        | Intermountain   | Director                  |
| Earl Hoskins          | Texas-Louisiana | Past President            |
| Alan Mikuni           | N. California   | President                 |
| Russell G. Congalton  | N. California   | Vice President            |
| Michael Renslow       | N. California   | Director                  |
| Marv Everett          | Puget Sound     | Past President            |
| Bill Maynard          | Potomac         | Vice President            |
| Robin Carroll         | Potomac         | President                 |
| Tom Lauterborn        | Potomac         | Director                  |
| Pat Northcutt         | ASPRS           | Student Activities Chair. |
| Robert Burtch         | E. Great Lakes  | Secretary/Treasurer       |

### Introduction and Remarks - Vice President-Elect

Vice President-Elect Marilyn O'Cuilinn called the meeting to order at 10:15 am, introduced herself, welcomed and thanked everyone in attendance. She further mentioned that she will be looking forward to her official travels on behalf of ASPRS because it will give her the opportunity to meet and work with members in all of our Regions. A sign-up sheet was circulated.

Vice President-Elect O'Cuilinn reminded the attendees of the upcoming GIS/LIS 1988 meeting to be held November 29 - December 3, 1988 in San Antonio, Texas.

### Brief Reports on Recent and Future Region Activities

Each Region represented at the meeting reviewed activities of that Region, past and future. A wide range of activities was covered - scholarships, open houses, workshops, social events, technical sessions, tours at government facilities and private firms were some activities mentioned.

Some specific information covered included the following:

Texas/Louisiana held their second annual GIS/LIS workshop at Texas A&M, held a dinner meeting with Alden Colvocoresses as speaker, and will be making arrangements to host GIS/LIS 1988 in November 1988.

Intermountain has held several events along with local ACSM and URISA chapters, produced a co-op newsletter with ACSM and held a Social BBQ which was well attended.

Central New York also held a joint meeting with local ACSM and included people from outside of the Region residing in upper New York State, plan to hold a joint meeting with Society of American Foresters, and gave first and second place scholarships of \$150.000 and \$50.00 respectively.

Western Great Lakes has offered several tours, some held with the local URISA chapter, and are trying to find ways to get more response to their scholarship program.

Alaska has to replace two Region Officers. The Region held three meetings with ACSM and Alaska Society of Land Surveyors. The Region hosted the 23rd Annual Alaska Surveying and Mapping Conference, and plan to participate in this conference again in 1989. The two-day short Course was sold out weeks prior to the conference and re-scheduled for sometime in April. Over 20 registrations have already been received.

Rolla has offered a \$20.00 rebate as a membership promotion and a \$10.00 rebate to bring back former members, with great success. The Region is attempting to put a Region Newsletter together and is trying to form a Chapter in Lawrence, KS.

Florida continues to produce an excellent Newsletter. The Region held a joint meeting with FACM in St. Petersburg with about 20 exhibitors in attendance, held a joint meeting with the SPLS regarding registration of Surveyors in Florida, and organized a series of six meeting with surveyors to provide them with information about Photogrammetry.

Mid-South increased Active membership, held a spring meeting in Vicksburg and a fall meeting in Memphis, produced four Newsletters, tours, held a Student Paper competition with a cash award and offered a \$500.00 scholarship. The Region is planning a meeting in NSTL with some tours, and a meeting in Lexington with a GIS Workshop.

St. Louis has been very busy for the past two years planning the Annual Convention that we are now attending (GREAT JOB!). The Region participated in the St. Louis Science Fair (Jr. and Sr. High School level), held an annual region meeting

in June with Bill French and Rick Dorman in attendance, held a technical meeting in September with Jack Mackey from SPOT, and appointed a new Newsletter Editor (Phil Kelley). Additional technical meetings were held in Nov. and Dec. The Nov. meeting featured "Colvo" Colvocoresses; the Dec. meeting featured Dave Goodmann of the California DOT with a presentation on surveying the Egyptian Pyramids.

Columbia River held four technical meetings and one social meeting. Some of these meetings are held with the Puget Sound Region. GIS was the focus of one of these meetings attracting an attendance of 200 people. A new Newsletter Editor is increasing the Newsletter in size and planning to incorporate a GIS section. The Region will host the ASPRS/ACSM 1991 Fall Convention, and are starting to do the planning for this convention.

Potomac held their fall technical meeting at the Air and Space Museum in Washington, DC. The Region will help host the upcoming ASPRS/ACSM Fall Convention in September 1988 at Virginia Beach, Va., and some of their members are beginning to be very busy with the plans for the ASPRS/ACSM Annual Convention to be held in Baltimore, Md., in March 1989.

Puget Sound made strong mention that their Region does not appear on the map of Regions published in the Yearbook issue of *PE&RS*. The Region held a meeting in Whistler, BC cosponsored with the Columbia River Region, which attracted an attendance of 375 plus 35 exhibitors. The Region also held a GIS seminar and offered, as a membership promotion, a drawing for a trip to the Fall Convention in Reno, NV, and a Manual of Remote Sensing. The Region plans to hold a meeting with the new British Columbia URISA chapter.

Northern California cohosted the ASPRS/ACSM Fall Convention in Reno, NV, and GIS 1987 in San Francisco, CA. The Region also participated in the 27th Annual Surveying and Photogrammetry Conference in Fresno, CA. The Region also participated in the ASPRS/ACSM/CLSA dinner social. The Region will be taking part in several technical meeting upcoming in 1988 as well as taking a major role in planning the 1988 California Mapping Conference. There are plans to develop a Northern California Region scholarship program.

Intermountain held a meeting jointly with ACSM, with whom they share a joint mailing list. The Region offers a \$700.00 scholarship.

Vice-President-Elect O'Cuilinn reminded Region Officers that all IRS reporting forms should have been at ASPRS Headquarters by February 28, 1988. Some Regions had not responded. She requested their immediate cooperation.

#### *New Business*

##### A. Region Bylaws

1. Each Region Officer was given a copy of the new ASPRS Bylaws, adopted by the ASPRS Board of Directors on October 6, 1987. Vice President-Elect O'Cuilinn asked that all Regions review their Regional Bylaws to make sure that they are in compliance with the new ASPRS National Bylaws, and to revise Region Bylaws as necessary.

She asked that each Region immediately send a copy of their current Bylaws to ASPRS Headquarters, and to prepare a draft of new Region Bylaws to be submitted to headquarters by September 1988, with a final completion for ASPRS and Bylaws Committee by April 1989. Mr. French offered the help of George Cranwell, attorney for ASPRS, and Charles Andregg of the Florida Region for Regions needing assistance in formulating their revised Bylaws.

2. The Bylaws Committee of ASPRS will review the new Region Bylaws in their draft form.

3. The final draft of the new Region Bylaws will again be reviewed and subsequently approved by the Bylaws

Committee as soon as possible following the Annual Convention in April 1989.

##### B. Calendars and Conflicts

1. Vice President-Elect Marilyn O'Cuilinn requested all Regions inform Headquarters about Region meetings and activities before they happen. They should also be aware of the national events calendar as they do their planning. Closer communication with Headquarters will help to keep everyone informed and make Region and national meetings better by avoiding scheduling conflicts.
2. Regions were asked to give ASPRS Headquarters 60 days notice when requesting an ASPRS National Officer to attend a Region Meeting.

##### C. Reporting Changes in Region officers

1. Vice President-Elect Marilyn O'Cuilinn reminded the Region Officers that Article V, Section 5 of the ASPRS Bylaws states "Region elective officials shall be active members of the Society." In a few cases some of the Region officers have not paid dues for the current year. These dues payments must be brought up to date or the Region Officer must step down.

#### *Grant Requests*

Ellen Davis informed the Region Officers that headquarters is ready to receive Membership Promotion Grant requests and in fact received one prior to Convention. This promotion had been discussed by the Membership Committee during the Fall Convention in Reno, NV, and brought before the Region Officers during their meeting at the Fall Convention. Since the Proposal received a positive response at that time, Headquarters now has a procedure in place to process grant requests.

#### *Sale of Headquarters Building*

William D. French informed the Region Officers of the upcoming sale of our Headquarters, occupied by ASPRS and ACSM, owned by ACSM. Terms of the sale include a lease-back agreement for 12 months and 2 options to continue a lease agreement, 6 months at a time. The Boards of Directors of ASPRS and ACSM have expressed a desire to continue to colocate. The Executive Directors of ASPRS and ACSM are meeting with the Executive Directors of AAG and URISA to investigate the feasibility of the four Associations occupying the same facility.

A "Blue Ribbon" committee consisting of Mr. Lawrence Ayres of ACSM and Mr. Marshall Wright of ASPRS, along with the Executive Directors of ASPRS and ACSM, are looking at possible sites for this co-relocation.

Vice President Roger Hoffer talked to the Region Officers about the possible expenses of this relocation and possible ways of fund raising.

#### *Student Activities Committee*

Pat Northcutt advised the Region Officers of the committee's progress in implementing H.1 - H.2.1 of the ASPRS Long Range Plan. Her committee has recommended that scholarship information be a required part of all Annual Region Reports, and has developed a comprehensive student questionnaire. The committee recommends that a University representative be appointed to serve as a liaison between the Society and students at each University. The Committee is in the process of researching the methods used to determine the student budget at conventions, determining roles of Student Chapters, and has recommended adding a section H-2.2, to the Long Range Plan suggesting ways to improve communication between students.

Currently the committee is planning the student program for the Fall Convention in Virginia Beach, VA. They hope to streamline the procedures for using student help during the conventions.

The Region Presidents and Officers meeting was adjourned at 12:45. Following adjournment, luncheon was served.

*Ellen Davis, Membership Services Manager*

# Annual Report

## Primary Data Acquisition Division

### Committee, Activities

- **Platforms and Navigation** Charles J. Finley, Chairman  
No activity has been reported by this Committee during the 1987-88 year.
- **Sensor Systems** Ronald Ondrejka, Chairman  
The Sensor Systems Committee has been active in promoting sensor technology at national and international conferences such as Electronic Imaging 87, International Workshops (UNESCO, Trieste 1987), NASA Sensor Surveys, and Government workshops (US Forest Service) and others. Ron has been promoting space reflights of the Large Format Camera (LFC) and the possibility of flying the LFC in a high-altitude aircraft for earth resource applications. An outstanding technical session entitled "Aerial Reconnaissance Systems" was held at Reno. LTC Al Crane was the organizer. LTC Crane has since retired from the USAF and is working for the Autometrics Corporation.
- **Environmental Factors** Clarice L. Norton, Chairman  
Ms. Norton has continued her studies of the key environmental effects on sensors. These effects are vibration, pressure, and temperature. Large temperature changes during sensor operation can cause large degradation in image quality outputs. Research in finalizing temperature stable materials and lighter weight optical elements is of primary concern to this Committee. Ms. Norton served as moderator of the very well attended session in Reno entitled "Evaluation of Electro-Optical Imagery for Reconnaissance."
- **Image Quality** Lorin Peck, Chairman  
An excellent, well attended session at Reno on "Evaluation of Electro-Optical Imagery for Reconnaissance" was organized by Mr. Peck and Ms. Norton. Significant items of technical interest were as follows:

1. ASCC Air Std 101/11 Image Interpretability Rating Scale (IIRS). This rating scale is an interesting new publication for imagery rating.
  2. A study presented by Fairchild Weston gave the following table as a guide to interpretability of electro-optical imagery.
- | Task               | Definition                  | Resolution Base |
|--------------------|-----------------------------|-----------------|
| Detect             | Distinguish from background |                 |
| Recognize          | Classify by type of object  | 2 × Base        |
| Identify           | Classify within a type      | 4 × Base        |
| Technical Analysis | Describe precisely          | 8 × Base        |
3. The main limiting factor in electro-optical sensors is data transmission rate. Two hundred seventy-four MBytes/sec is being achieved by reconnaissance aircraft sensors.
  4. Solid state detectors have the capability to image at their size limit. Film limit is related to grain size. Detector sizes ranging from 7 to 13 micrometers diameter are available to sensor designers.

The Image Quality Committee met in St. Louis on Wednesday, March 16 at 1:00 pm to 4:00 pm. Subjects discussed were:

- a. EO&IR Imagery and Sensor Evaluations
- b. The Military Common Imagery Format Standard—Status
- c. Technical Paper Session for Fall 1988 Convention in Virginia Beach

- **Specifications** Hartmut Ziemann, Chairman  
Dr. Ziemann has been engaged in closing out his projects with the Canadian National Research Council in preparation for his new position in Germany. His work in Commission I of the ISPRS on standardization in reporting parameters of camera calibration merits continued effort in the PDAD. No activities have been reported this period, however.
- **Data Processing, Reproduction, and Display** R.J. Thompson, Chairman  
No activities from this Committee have been reported.



Primary Data Acquisition Division meeting.

### PDAD Items of Further Interest

1. Media Day: Don Light will continue to work with Don Hemenway of ASPRS Headquarters to plan a media day if the interest remains.
2. A PDAD Brochure design should be revisited.
3. Standardization of photographic resolution in specifications for aerial photography should be considered.
4. PDAD should continue its efforts to sponsor technical sessions with the air recon community.
5. The PDAD advocates the title of "ASPRS Engineering and Science Series" for the new manuals now being considered.
6. Don Light has suggested Debenture Bonds to Bill French as a means to raise money to finance a new building for the Society. In this debenture bond concept, members purchase bonds issued by ASPRS. The interest rate is attractive to bond buyers and in this manner they help their Society finance a new home.

Mr. Walter Boge was elected as Deputy Director, PDAD. Dr. Vince Salomonson became Director PDAD at the St. Louis meeting.

It has been a pleasure to serve the ASPRS as Director of PDAD.

—Donald L. Light, Director, PDAD

## Annual Report Photogrammetric Applications Division

The Photogrammetric Applications Division met on April 1, 1987 at the Baltimore Convention and on October 5, 1987 at the Reno Convention to hear committee reports and discuss Division business.

The PAD Division's committees continue to be our centers of activity. The Transportation Committee organized a technical session at the Baltimore Convention, and the committee holds regular meetings at each convention. The Automated Cartography Committee has reactivated itself to organize a session at the St. Louis Convention. The Education Committee is representing the Division of the ASPRS and ASPRS-ACSM joint education committees. The Close-Range Committee is working with the Industrial Measurements Group to organize as a new technical interest area within the Division. Finally, our Sessions Program Committee has been providing assistance in organizing PAD sessions at each convention.

The PAD Division has been actively working with the Industrial Measurements Group to organize as an entity within ASPRS.

Through the Close-Range Committee and with cooperation from headquarters and the convention committee, a day of technical sessions and meetings were scheduled for this group at the St. Louis Convention. Representatives of the Industrial Measurements Group have been invited to the PAD Division meeting to discuss ASPRS and Division organization.

The PAD Division has continued to work on the reorganization of the *Manual of Photogrammetry*, the *Manual of Remote Sensing*, and the Society's publication series. Technical publications were discussed at the Division's meetings in Baltimore and Reno. Suggestions generated by the Division's members were incorporated in committee reports submitted to the Board of Directors.

The PAD Division intends to include the long-range plan on each Division meeting agenda and consider goals, actions, and revisions to the plan on a continuous basis.

—Steven D. Johnson, Director, PAD

## Annual Report Remote Sensing Applications Division

During the period of April, 1987, through March, 1988, the Remote Sensing Applications Division has been in the process of reorganizing its committee structure. Responses to the director's call for participation did not, however, result in a clear consensus on what the reorganized structure should look like. It appears that a mixture of functional and topical committees might provide a structure that could be supported by the membership. The structure proposed at the Fall Convention follows, with short descriptions of the services these committees might perform:

### Functional

#### GIS:

Provide coordination with the Joint GIMS Committee, develop workshops and sessions on the tools and techniques for the use of remotely sensed data in GIS systems, and provide reviewers for journal articles on remote sensing-GIS integration.

#### Education, Research, and Innovation:

Provide coordination with the ASPRS Education Committee, produce an annual review of remote sensing research performed in the United States, seek out new and innovative uses/techniques (such as expert systems), and disseminate information on educational opportunities for individuals interested in remote sensing.

#### Digital Image Interpretation:

Provide coordination with other societies involved with digital image interpretation (IEEE, SPIE, etc.), provide reviewers for journal articles on image processing, organize sessions and workshops on digital image processing techniques, and assist in the completion of the ASPRS Science and Engineering Series.

#### Visual Image Interpretation:

Similar to Digital Image Interpretation.

#### Standards, Specifications, and Quality Assurance:

Coordinate with the Professional Practice Division to develop standards for certification of remote sensing specialists, develop specifications guidelines for the procurement of remote services, and collect and publish suggested procedures for the assessment of quality and accuracy in remote sensing interpretation.

### Topical

The topical committees all have similar charters: To provide technical interchange between scientists with common inter-

ests, focusing on applications within specific discipline groups; to provide authors and reviewers for journal articles; to develop workshops and technical sessions; and to carry forward the process of publishing the ASPRS Science and Engineering Series.

The Topical committees are: Engineering, Atmospheric, and Hydrospheric Sciences; Plant Sciences; Earth Sciences; Archaeology, Anthropology, and Land Use.

Except for the Engineering, Atmospheric, and Hydrospheric Sciences Committee, no committee has met or elected officials. The Division will spend the next year attempting to populate a committee structure with volunteers. The alternative will be to create *ad hoc* committees whenever they are needed, dispensing with a formal committee structure.

Despite a lack of formal committee structure, the Division has organized sessions and tutorials, is actively involved in the revision of the Manual of Remote Sensing (ASPRS Science and Engineering Series), has provided authors and reviewers for *PE & RS*, and has participated in the business of the Society. Special recognition is due to Chris Stohr and Dan Civco for their efforts as Chairs of the Engineering Applications and Education and Interpretative Skills Committees, respectively.

—Thomas Mace, Director, RSAD



Remote Sensing Applications Division meeting.

## Annual Report Professional Practice Division

The Division officers and committee chairman for the 1987-1988 calendar year were as follows:

Division Director - Marshall S. Wright, Jr.  
 Assistant Division Director - Donald G. Mohr  
 Chairman, Publications Committee - Marilyn M. O'Cuilinn  
 Chairman, Government Practice Committee - Roger E. Crystal  
 Chairman, Private Practice Committee - George F. Walker  
 Chairman, Standards and Specifications Committee - Dean C. Merchant  
 Chairman, Program Planning Committee - Roger (Sky) Chamard

Messrs. Chamard and Crystal have been elected to the positions of Division Director and Assistant Division Director, respectfully, and took office in March 1988.

Highlights of the past year's activities include the following:

- The Division, working with the ASPRS headquarter publication staff, has finalized the Division "flyer" and copies have been printed and distributed.
- The Division approved the "Spatial Accuracy Standard for Large-Scale Topographic Maps" prepared by Dean Merchant's Standards and Specifications Committee and recommended to the ASPRS Executive Committee that the document be transmitted to the entire ASPRS Board of Di-

rector's for adoption at the Reno convention. However, last-minute questions were raised and the Division Director convened a meeting of all concerned at ASPRS headquarters in December to address these questions. General agreement was reached on all items contained in the Standard and the revised Standard will now be submitted to the Board for approval and adoption.

- Frank Moffitt was appointed as the Division representative to the Practical Papers Award Committee.
- Dr. John G. Lyon, Ohio State University, has been appointed as Assistant Associate Editor of *Photogrammetric Engineering and Remote Sensing*, representing the Division.
- The Division (primarily Sky Chamard) provided input to ASPRS headquarters with regard to the US Department of Labor's National Apprenticeship and Training Guidelines, related to the effect these guidelines could have on the fields of photogrammetry and remote sensing.
- The Division sponsored a session, moderated by Roger Crystal, at the Fall Convention of the ASPRS/ACSM/WFPLS held in Reno in October, 1987 and a session at the Annual March 1988 ACSM/ASPRS Convention in St. Louis.

—Marshall S. Wright, Jr. Director PPD

## Annual Report Specifications and Standards Committee Professional Practice Division

The Specifications and Standards Committee (SSC) began the year with an open session held in Baltimore concerning the latest draft of the "Accuracy Specifications for Large-Scale Line Maps". As a result of discussions held during the session and subsequently at the SSC meeting, a final draft of the specifications was prepared and circulated within the SSC in April of 1987. The revised draft was approved unanimously by the SSC and submitted to the Professional Practice Division and subsequently to the ASPRS Board of Directors for acceptance as an ASPRS standard.

The ASPRS Board did not act on the standard at their meeting in Reno pending further discussions. On March 9th, 1988 a meeting was held to resolve the concerns with members representing the ASPRS Board, the Professional Practice Division, the SSC and the US Geological Survey. This meeting resulted in a proposal to add an introductory paragraph and change the title of the draft standard to "ASPRS Interim Accuracy Standards for Large-Scale Maps". The proposal was accepted and the draft was modified once again and circulated to the members of the SSC for a vote. The revised draft standard was unanimously approved by the members of the SSC and submitted for adoption to the ASPRS. The document currently awaits acceptance by the Board of Directors of the ASPRS. A copy of the draft follows.

The SSC met in St. Louis to continue its work with standards and specifications development.

—Dean C. Merchant P.E., L.S., Chairman, SSC/PPD



Professional Practice Division meeting.

# ASPRS INTERIM ACCURACY STANDARDS FOR LARGE-SCALE MAPS

The American Society for Photogrammetry  
and Remote Sensing - 1988

These standards have been developed by the Specifications and Standards Committee of the American Society for Photogrammetry and Remote Sensing (ASPRS). It is anticipated that these ASPRS standards may form the basis for revision of the U.S. National Map Accuracy Standards for both small-scale and large-scale maps. A major feature of these ASPRS standards is that they indicate accuracy at ground scale. Thus, digital spatial data of known ground-scale accuracy can be related to the appropriate map scale for graphic presentation at a recognized standard.

These standards concern the definitions of spatial accuracy as they pertain to large-scale topographic maps prepared for special purposes or engineering applications. Emphasis is on the final spatial accuracies that can be derived from the map in terms most generally understood by the users.

## 1. Horizontal Accuracy:

Horizontal map accuracy is defined as the rms error<sup>1</sup> in terms of the project's planimetric survey coordinates (X, Y) for checked points as determined at full (ground) scale of the map. The rms error is the cumulative result of all errors including those introduced by the processes of ground control surveys, map compilation and final extraction of ground dimensions from the map. The limiting rms errors are the maximum permissible rms errors established by this standard. These limiting rms errors for Class 1. maps are tabulated in Table 1E (feet) and Table 1M (meters) along with typical map scales associated with the limiting errors. These limits of accuracy apply to tests made on well-defined points only<sup>2</sup>.

TABLE 1E. — PLANIMETRIC COORDINATE ACCURACY REQUIREMENT (GROUND X OR Y IN FEET) FOR WELL-DEFINED POINTS - CLASS 1. MAPS

| PLANIMETRIC (X or Y) ACCURACY <sup>3</sup><br>(limiting rms error, feet) | TYPICAL MAP SCALE |
|--|-------------------|
| 0.05   | 1:60              |
| 0.1  | 1:120             |
| 0.2  | 1:240             |
| <hr/>  |                   |
| 0.3  | 1:360             |
| 0.4  | 1:480             |
| 0.5  | 1:600             |
| 1.0  | 1:1,200           |
| 2.0  | 1:2,400           |
| 4.0  | 1:4,800           |
| 5.0  | 1:6,000           |
| 8.0  | 1:9,600           |
| 10.0   | 1:12,000          |
| 16.7   | 1:20,000          |

\* indicates the practical limit for aerial methods - for scales above this line, ground methods are normally used

## 2. Vertical Accuracy:

Vertical map accuracy is defined as the rms error in elevation in terms of the project's elevation datum for well-defined points only. For Class 1. maps the limiting rms error in elevation is set by the standard at *one-third* the indicated contour interval for well-defined points only. Spot heights shall be shown on

<sup>1</sup>see Appendix A., Section A1.

<sup>2</sup>see Appendix A., Section A2.

<sup>3</sup>see Appendix A., Section A3.

TABLE 1M — PLANIMETRIC COORDINATE ACCURACY REQUIREMENT (GROUND X AND Y IN METERS) OF WELL-DEFINED POINTS - CLASS 1. MAPS

| PLANIMETRIC (X or Y) ACCURACY <sup>3</sup><br>(limiting rms error, meters) | TYPICAL MAP SCALE |
|--|-------------------|
| 0.0125   | 1:50              |
| 0.025  | 1:100             |
| 0.050  | 1:200             |
| <hr/>  |                   |
| 0.125  | 1:500             |
| 0.25   | 1:1,000           |
| 0.50   | 1:2,000           |
| 1.00   | 1:4,000           |
| 1.25   | 1:5,000           |
| 2.50   | 1:10,000          |
| 5.00   | 1:20,000          |

\* indicates the practical limit for aerial methods - for scales above this line ground methods are normally used

the map within a limiting rms error of *one-sixth* of the contour interval.

## 3. Lower-Accuracy Maps:

Map accuracies can also be defined at lower spatial accuracy standards. Maps compiled with limiting rms errors of twice or three times those allowed for a Class 1. map shall be designated Class 2. or Class 3. maps respectively. A map may be compiled that complies with one class of accuracy in elevation and another in plan. Multiple accuracies on the same map are allowed provided a diagram is included which clearly relates segments of the map with the appropriate map accuracy class.

## 4. Map Accuracy Test<sup>4</sup>:

Tests for compliance of a map sheet are optional. Testing for horizontal accuracy compliance is done by comparing the planimetric (X and Y) coordinates of well-defined ground points to the coordinates of the same points as determined by a horizontal check survey of higher accuracy. The check survey shall be designed according to the Federal Geodetic Control Committee (FGCC) [FGCC, 1984] standards and specifications to achieve standard deviations equal to or less than *one-third* of the "limiting rms error" selected for the map. The distance between control points (d) used in the FGCC standard for the design of the survey shall be the horizontal ground distance across the diagonal dimension of the map sheet.

Testing for vertical accuracy compliance shall be accomplished by comparing the elevations of well-defined points as determined from the map to corresponding elevations determined by a survey of higher accuracy. For purposes of checking elevations, the map position of the ground point may be shifted in any direction by an amount equal to twice the limiting rms error in position. The vertical check survey should be designed to produce rms errors in elevation differences at check point locations no larger than *1/20th* of the contour interval. The distance (d) between bench marks used in the FGCC standard for the design of the surveys vertical check surveys shall be the horizontal ground distance across the diagonal of the map sheet. Generally, vertical control networks based on surveys conducted according to the FGCC standards for Third Order provide adequate accuracy for conducting the vertical check survey.

<sup>4</sup>see Appendix A., Section A4.

Discrepancies between the X, Y, or Z coordinates of the ground point, as determined from the map and by the check survey, that exceed *three* times the limiting rms error shall be interpreted as blunders and will be corrected before the map is considered to meet this standard.

The same survey datums, both horizontal and vertical, must be used for both the project and the check control surveys. Although a national survey datum is preferred, a local datum is acceptable.

A minimum of 20 check points shall be established throughout the area covered by the map and shall be distributed in a manner agreed upon by the contracting parties<sup>5</sup>.

Maps produced according to this spatial accuracy standard shall include the following statement in the title block:

THIS MAP WAS COMPILED TO MEET THE ASPRS  
STANDARD FOR CLASS 1. MAP ACCURACY

If the map was checked and found to conform to this spatial accuracy standard, the following statement shall also appear in the title block:

THIS MAP WAS CHECKED AND FOUND TO CONFORM  
TO THE ASPRS  
STANDARD FOR CLASS 1. MAP ACCURACY

## APPENDIX A. EXPLANATORY COMMENTS

### A1. Root Mean Square Error

The "root mean square" (rms) error is defined to be the square root of the average of the squared discrepancies. In this case, the discrepancies are the differences in coordinate or elevation values as derived from the map and as determined by an independent survey of higher accuracy (check survey). For example, the rms error in the X coordinate direction can be computed as:

$$rms_x = \sqrt{(D^2/n)}$$

where:

$$D^2 = d_1^2 + d_2^2 + \dots + d_n^2$$

d = discrepancy in the X coordinate direction

$$= X_{map} - X_{check}$$

n = total number of points checked on the map in the X coordinate direction

### A2. Well-defined Points

The term "well-defined points" pertains to features that can be sharply identified as discrete points. Points which are not well-defined (that is poorly-defined) are excluded from the map accuracy test. In the case of poorly-defined image points, these may be of features that do not have a well-defined center such as roads that intersect at shallow angles [U.S. National Map Accuracy Standards, 1941]. In the case of poorly defined ground points, these may be such features as soil boundaries or timber boundaries. As indicated in the ASPRS Standard, the selection of well-defined points is made through agreement by the contracting parties.

### A3. Relationship to U.S. National Map Accuracy Standards

Planimetric accuracy in terms of the "limiting rms error" can be related to the United States National Map Accuracy Standards (NMAS) provided the following assumptions are made:

<sup>5</sup>see Appendix A., Section A5.

- the discrepancies are normally distributed about a zero mean
- the standard deviations in the X and Y coordinate directions are equal
- sufficient check points are used to accurately estimate the variances

To compute the "circular map accuracy standard" (CMAS) which corresponds to the 90% circular map error defined in the NMAS [ACIC, 1962, p. 26, p. 41]:

$$CMAS = 2.146 \sigma_x \quad \text{or;} \quad CMAS = 2.146 \sigma_y$$

Given these relationships and assumptions, the limiting rms errors correspond approximately to the CMAS of 1/47th of an inch for all errors and related scales indicated in Table 1E. For the metric case indicated in Table 1M, the CMAS is 0.54 mm for all rms errors and corresponding scales. It is emphasized that for the ASPRS Standard, spatial accuracies are stated and evaluated at *full or ground scale*. The measures in terms of equivalent CMAS are only approximate and are offered only to provide a comparison to the National Map Accuracy Standard of CMAS of 1/30th inch at map scale.

### A4. Check Survey

Both the vertical and horizontal (planimetric) check surveys are designed based on the National standards of accuracy and field specifications for control surveys established by the Federal Geodetic Control Committee (FGCC). These standards and specifications [FGCC, 1984] are intended to establish procedures which produce accuracies in terms of relative errors. For horizontal surveys, the proportional accuracies for the various orders and classes of survey are stated in Table 2.1 of the FGCC document and for elevation accuracy in Table 2.2. These tables along with their explanations are reproduced here. From FGCC [1984]:

## "2.1 HORIZONTAL CONTROL NETWORK STANDARDS

When a horizontal control is classified with a particular order and class, NGS certifies that the geodetic latitude and longitude of that control point bear a relation of specific accuracy to the coordinates of all other points in the horizontal control network. This relationship is expressed as a distance accuracy, 1:a. A distance accuracy is the ratio of relative positional error of a pair of control points to the horizontal separation of those points.

TABLE 2.1 — DISTANCE ACCURACY STANDARDS

| Classification             | Minimum distance accuracy |
|----------------------------|---------------------------|
| First-order.....           | 1:100,000                 |
| Second-order, class I....  | 1: 50,000                 |
| Second-order, class II.... | 1: 20,000                 |
| Third-order, class I.....  | 1: 10,000                 |
| Third-order, class II..... | 1: 5,000                  |

" A distance accuracy, 1:a, is computed from a minimally constrained, correctly weighted, least squares adjustment by:

$$a = d/s$$

where

a = distance accuracy denominator

s = propagated standard deviation of distance between survey points obtained from the least squares adjustment

d = distance between survey points"

## “VERTICAL CONTROL NETWORK STANDARDS

When a vertical control point is classified with a particular order and class, NGS certifies that the orthometric elevation at that point bears a relation of specific accuracy to the elevations of all other points in the vertical control network. That relation is expressed as an elevation difference accuracy,  $b$ . An elevation difference accuracy is the relative elevation error between a pair of control points that is scaled by the square root of their horizontal separation traced along existing level routes.

TABLE 2.2 — ELEVATION ACCURACY STANDARDS

| Classification                   | Maximum elevation difference accuracy |
|----------------------------------|---------------------------------------|
| First-order, class I . . . . .   | 0.5                                   |
| First-order, class II . . . . .  | 0.7                                   |
| Second-order, class I . . . . .  | 1.0                                   |
| Second-order, class II . . . . . | 1.3                                   |
| Third-order . . . . .            | 2.0                                   |

“ An elevation difference accuracy,  $b$ , is computed from a minimally constrained, correctly weighted, least squares adjustment by

$$b = S/\sqrt{d}$$

where

$d$  = approximate horizontal distance in kilometers between control point positions traced along existing level routes.

$S$  = propagated standard deviation of elevation difference in millimeters between survey control points obtained from a least squares adjustment. Note that the units of  $b$  are (mm)/ $\sqrt{(\text{km})}$ .”

For an example of designing a check survey (selecting an order and class), assume that a survey is to be designed to check a map which is intended to possess a planimetric (horizontal) “limiting rms error” (see Table 1E. of the map standard) of one foot and a contour interval of two feet. In contrast to survey accuracies, which are stated in terms of relative horizontal distances to adjacent points, map features are intended to possess accuracies relative to all other points appearing on the map. Therefore, for purposes of the check survey, the distance between survey points ( $d$ ) is taken as the diagonal distance on the ground across the area covered by the map. According to the FGCC survey standards this is the distance across which the “minimum distance accuracy” and “maximum elevation difference accuracy” is required (see Table 2.1 and 2.2 of the [FGCC, 1984] document).

For the planimetric check survey, assume that the diagonal distance on the ground covered by the map is 6000 feet. The propagated standard deviation ( $s$ ) required for the check survey is one-third of the limiting rms error of one foot or 0.33 foot in this example. Returning to the equation from the FGCC [1984] document relating distance between survey points ( $d$ ), standard deviation ( $s$ ) and distance accuracy denominator ( $a$ ):

$$a = d/s = (6000 \text{ feet})/(0.33 \text{ feet}) = 18,182$$

By referring to Table 2.1 of the FGCC document, it is clear that a control survey designed according to the standards and spec-

ifications for *second-order, class II* is required to produce the horizontal check survey for this example. If the project control survey is conducted at a standard of accuracy equal to or better than second-order, class II, the check survey can tie to the project control network in accord with FGCC standards.

For the vertical check survey, the distance ( $d$ ) is also taken as a diagonal ground distance across the map to account for the fact that elevation accuracy pertains to all mapped features. The propagated standard deviation in elevation ( $S$ ) is required by this standard to be equal or less than 1/20th of the contour interval of two feet;

$$S = (1/20) \text{ CI} = 0.10 \text{ feet}$$

Returning to Table 2.2 of the FGCC document, relating distance between bench marks ( $d$  in km), the standard deviation in elevation ( $S$  in mm), and the elevation difference accuracy ( $b$ );

where;

$$S = 0.10 \text{ feet} = 30.5 \text{ mm}$$

$$d = 6000 \text{ feet} = 1.818 \text{ km}$$

then;

$$b = s/\sqrt{d} = 28.1 \text{ mm}/\sqrt{\text{km}}$$

It is clear that a third-order survey for elevation differences is more than adequate for purposes of conducting the check survey for this map example. Other methods for conducting the check survey for elevation are acceptable provided they have demonstrated accuracy capability equal to that required by this map standard. Such departures however must be agreed upon by the contracting parties prior to conducting the survey.

## A5. Check Point Location

Due to the diversity of requirements anticipated for any large-scale special purpose or engineering map, it is not realistic to include statements that specify the spatial distribution of check points designed to assess the spatial accuracy of the map. For instance, it may be preferred to distribute the check points more densely in the vicinity of important structures or drainage features and more sparsely in areas that are of little or no interest. Of course suitable notation, such as a change in map class for the region of lesser interest, should be included accordingly on the map sheet.

For a map sheet, however, of conventional rectangular dimensions, intended to portray a uniform spatial accuracy over the entire map sheet, it may be reasonable to specify the distribution. For instance, given the minimum of twenty check points, it could be specified that at least 20% of the points be located in each quadrant of the map sheet and that these points be spaced at intervals equal to at least 10% of the map sheet diagonal.

## REFERENCES

- Bureau of the Budget (1947), “United States National Map Accuracy Standards”, U.S. Bureau of the Budget, June 17
- Committee for Standards and Specifications (1985), “Accuracy Specifications for Large-Scale Line Maps”, *Photogrammetric Engineering and Remote Sensing*, Vol LI, pp.197–199, Feb.
- Federal Geodetic Control Committee (1984), “Standards and Specifications for Geodetic Control Networks”, Federal Geodetic Committee, Sept.



## Annual Report Geographic Information Management Systems (GIMS) Committee

### SUBCOMMITTEE SUMMARIES

#### Programs

The GIS '87 reports were extremely good. The committee, headed by Russ Congalton, who handled the session in San Francisco did an outstanding job.

The GIMS Executive Seminar held at the Saddlebrook Inn in Tampa Bay, Fla. was, unfortunately, not a money maker. However, the people who attended felt it was worthwhile.

My own observation, without a complete analysis, was that there needed to be more support people involved. The GIMS committee has a responsibility to monitor these functions sponsored by ACSM/ASPRS in the GIS area — not to inhibit initiative but to insure additional assistance that may be required — as in the case of the Executive Seminar held in Tampa Bay. Therefore, Mike Dwyer, Program Subcommittee Chairman, has been appointed the GIMS liaison to the GIS-LIS '88 Seminar to be held in San Antonio this year.

Alan Voss, GIMS Vice Chairman, was the representative for the GIMS Committee at the Florida State GIS Seminar. He reported it was a good meeting and well attended. He was pleased to represent GIMS at this meeting.

Programs Subcommittee Chairman Roy Meade has resigned due to work pressures and a replacement will be named shortly. It will be hard to replace his expertise and enthusiasm.

#### Publicity

The Publicity Subcommittee continues to focus on the GIMS Newsletter. All subcommittees are urged to contribute articles/reports for this newsletter. Ed Crane, Chairman, has been elected to the URISA Board of Directors so will act as liaison from URISA to the GIMS Committee. He has suggested that the new editor of the newsletter act as Publicity Subcommittee Chairman. Ed's replacement will be named shortly.

A newsletter will be published prior to the St. Louis convention and plans are to continue this procedure into next year.

#### Multipurpose Cadastre

Dr. James Crossfield has resigned as Subcommittee Chairman and Ramesh Shethra has replaced him. The deadline for RFP's has been extended for both the Computer Guidelines and Cost Benefit Procedures research contracts. The Terms and Definitions Grant Project is underway and will be completed by July. It has been given to Dr. Ken Duecker and his associates at Portland State University in Oregon.

#### Publications

Bill Ripple has been holding down the fort, so to speak, for ASPRS but we have not found an ACSM co-chairman to assist him. The compendium entitled: Geographic Information Systems for Resource Management was published in March, 1987, and appears to be selling well. The second volume is still in progress.

A special thanks is extended to the GIMS members who edited the papers for the special October issue of *Photogrammetric Engineering and Remote Sensing*: James W. Merchant, Roy A. Mead, Joseph A. Bernert and Bill Ripple.

#### Standards

An expert panel was called together in November, 1987, to work on the Standards portion of the MPC and completed the first draft of the "Multipurpose Geographic Database Guidelines for Local Governments". A follow-up meeting was held February 4, 1988, and the final draft was presented to both boards at the St. Louis convention. Copies will be available for review. We feel that the volunteer committee's work has been completed (other than minor review changes) and they have disbanded. The subcommittee is forwarding a recommendation that the report be expanded with sample maps and a professional cover be created for possible publication.

#### Applications

After Ron Welebny resigned as Subcommittee Chairman, Sam Meltz (ACSM) and Phil Craul (ASPRS) were appointed and have set up an afternoon session at the St. Louis Convention. They will be expanding the sessions at future conventions.

#### Other

- Due to his workload, Dr. Terrence Keating has resigned as ASPRS Co-Chairman of the GIMS Committee. He will be missed.
- Paul Durgin has started an electronic bulletin board called Leased Squares for the GIMS committee to leave messages or pass on information. The number will be published in the GIMS newsletter. It is 603-322-9969 and 300-2400 baud calls are accepted.

- Billie C. Swenson, ACSM Co-Chairman GIMS Committee



GIMS Committee meeting.

## Annual Report Publications Committee

The Publications Committee (PC) formally convened in January at ASPRS Headquarters. The PC usually meets twice between the annual and fall conventions, for a total of four meetings a year.

In 1987, however, the PC was unable to arrange for a meeting immediately following the fall convention.

### Publications Status

#### Positive Actions

- "Directory of GIS College Courses" by Morgan. The PC Committee endorsed this project for publication, while referring it to Ralph Kiefer, Chairman of the Education Committee to review it for conflicts with anything that committee may be doing. Kiefer has since reviewed and approved the project and is now working in coordination with Morgan on this directory.
- "Fundamentals of GIS: A Compendium" edited by Ripple. The PC approved the publication of this follow-up volume to Ripple's previous "GIS For Resource Management: A Compendium" which was the best selling book for ASPRS in 1987.
- "Glossary of the Mapping Sciences" edited by Henriksen. The PC reaffirmed its backing of this publication.

#### Negative Actions

- "An Introduction to GIS" by Parent. After careful consideration, the PC felt that this publication was not one the Society wished to undertake.
- "AM/FM GIS Compendium" in conjunction with AM/FM. This project has been cancelled due to lack of cooperation from AM/FM.

#### Continuing Actions

- "Dimensional Analysis Through Perspective" by Williamson and Brill. The PC is concerned about whether there is a sufficient market for this book to warrant publication. They wish to refer it to the Photogrammetric Applications Division for review. They also requested that staff review market projections with authors.
- "Map Projections—A Working Manual" by Snyder. The PC is reviewing this book for acquisition from the Government Printing Office for resale by the Society.
- "Analytical Instrument Workshop," from ISPRS meeting held in Phoenix. These Proceedings are due in at Headquarters soon, and are scheduled for publication. In addition, eight hours of videotape were shot from which a program may be edited.

### ASPRS SCIENCE & ENGINEERING Series

The PC considered the suggested new titles for this series made by the ad hoc committee of division directors. The PC approved the revised title, "ASPRS Science & Engineering Series." The first volume will be completed and available for public sales at the ISPRS Congress.

### Long-Range Plan

John Lyon discussed the publications-related sections of the Long-Range Plan with the PC. The PC noted that it had referred a number of journal related items to the Journal Policy Committee, since the Long-Range Planning Committee overlooked this group.

The PC recommended that a special effort be made to involve ASPRS Divisions in creating special issues of *PE&RS* and acquiring practical papers.

### Publication Market Survey

The PC met with Bob Loweth to review the survey to be sent to the membership. Loweth briefed them on the purposes and requirements of the survey, and the PC made recommendations on a number of the survey questions.

—Lawrence W. Fritz, Chairman, Publications Committee



Division Directors meeting.

## Annual Report Survey of the Profession Committee

Since publication of the second "Survey of the Profession", our committee has received no further charge from ASPRS and has been inactive. We request that the officers and board of ASPRS give consideration to the future role of this committee in serving the Society. Some options may include performing a third survey of the private sector; conducting a new survey of public activities at the federal, state and local levels of government; or inactivating the committee.

Thank you for your continuing support in conducting our information gathering surveys of the profession.

—Anthony B. Follett Survey of the Profession Committee

## Annual Report ASPRS Education Committee

The period March 1987 to March 1988 was one of progress for the ASPRS Education Committee. The formal committee membership now stands at 12 members, with representation from each of the 4 ASPRS Divisions, and at-large members chosen to be liaison persons with various ASPRS and non-ASPRS committees. Six members of the ASPRS Education Committee also serve as members of the ACSM-ASPRS Joint Education Committee.

### *Committee Activities at 1987 Annual Meeting (Baltimore)*

- cosponsored the "Joint ACSM/ASPRS Forum for Educators"
- held a two-day session featuring a showing of nine videotapes dealing with "Quantitative Methods in Remote Sensing" (arranged by Education Committee member Daniel Civco)
- held an ASPRS Education Committee meeting
- held an ACSM-ASPRS Joint Education Committee meeting

### *Committee Activities at 1987 Fall Technical Meeting (Reno)*

- cosponsored the "Joint ACSM/ASPRS Forum for Educators"
- held an ASPRS Education Committee meeting
- held an ACSM-ASPRS Joint Education Committee meeting
- participated in Student Affairs Committee Meeting

### *ASPRS Education Committee activities March 1987 to March 1988*

- conducting a survey of photogrammetry and remote sensing education programs and courses in the United States and Canada (final draft of report will be available March 14)
- preparing an annotated list of textbooks and reference publications related to photogrammetry and remote sensing
- working on aspects of long-range plan (progress has slowed considerably since there is no longer an ASPRS Education Director)

—Ralph W. Kiefer, Chairman, Education Committee

## Annual Report Student Affairs Committee

This Student Affairs Committee has been busy in several areas. This report is divided into two sections: The Long-Range Plan and Other Activities.

### *The Long-Range Plan:*

The Student Affairs Committee met during the Fall 1987 meeting at Reno, Nevada. The primary purpose of this meeting was to review the Long-Range Plan of ASPRS, sections H.1 – H.2.1. The following were present during the meeting: Pat Northcutt, Paul Hopkins, Ralph Kiefer, Mary Buit, and Bonnie Gabbert.

To meet Goal H-1.1: Develop a formal policy, plan and standard operating procedure for delivery of services to student members, the following action was taken:

**H.1.1.: Recommend that scholarship information be a required part of all Annual Region Reports.** Students are presently unaware of scholarships offered within their region. To obtain this information, each director of a region, was sent a questionnaire requesting the data. To date, 8 regions have failed to respond.

**Develop a comprehensive student questionnaire.** The questionnaire is necessary in order to complete a formal plan for operating procedures for delivery of student services. Many students are unaware of current services, and may have ideas concerning additional services which could be offered by the Society. A preliminary questionnaire was handed out during the Fall student program at Reno. Although the questionnaire was too general to be of specific use, it provided valuable insight into some of the concerns of students. A more comprehensive questionnaire will be reviewed and revised during the Student Affairs Committee meeting at St. Louis.

**H.1.2.: Recommend that a university representative be appointed to serve as a liaison between the Society and the university students.** This person will be given a title, as yet to be decided upon, and listed in the Yearbook issue of *PE&RS*. A letter of appointment will be sent along with a certificate stating the name of the representative and his/her function.

**H.1.3.: Research is ongoing into the methods used to determine the student budget at conventions — the amount and how it is spent.**

To meet Goal H-2: Attract and serve increased number of student members, the following action has been taken:

**H-2.1: Determining roles of Student Chapters.** This will be discussed during the spring meeting and recommendations will be made.

**Recommendation to add section H-2.2:** Improve communication between students. Several ideas on this include: A student page in *PE&RS* every month; one month listing all scholarship opportunities, the next month a newsletter concerning student activities within different regions. Develop a student regional newsletter to be mailed directly to students. Add the advisor's name and address to Student Chapter Listings in the Yearbook Issue of *PE&RS* as changes occur in Student Officer positions.

### *Other Activities*

Other activities include planning the student program for the spring meeting at St. Louis. Multiple conversations and letters with Bill Hemple concerning student events have been very productive. This meeting will see a strong student program which we hope will be beneficial to the students. Other activities including students is the opportunity to work during the convention in return for reimbursement of registration fees and \$22.00/night for lodging. The student is required to work 4 hours each day during the convention.

The Holiday Inn-Riverfront was selected by Mr. and Mrs. Hemple as the student hotel for the convention. Management is agreeable to allowing up to 4 students per room at the rate of \$88.00/night. The rooms are also equipped with kitchenettes which should be helpful to the students.

I would like to stress the outstanding job Bill Hemple has done in planning student housing and events for the spring meeting. He has been very helpful and cooperative in planning activities in conjunction with the student affairs committee.

Plans are ongoing for the fall Virginia Beach meeting. Hopefully procedures for using student help during the convention will be more streamlined for this convention.

—Pat Northcutt, Chairperson Student Activities Committee

## Annual Report Joint Government Affairs Committee

The Joint Government Affairs Committee is pleased to report that since our Fall Convention in Reno, Nevada, Congress has moved forward on several significant legislative measures which will have a positive impact on the surveying and mapping professions. We were successful in obtaining Brooks Act provisions for surveying and mapping contracts for airport development and improvement projects and for projects undertaken by the Bureau of Reclamation. We also made great strides in moving Congress toward adoption of a measure containing a one-year study of surveying and mapping organization within the federal government; the development of a multipurpose land information system; and the establishment of Federal Land Information System standards. The first session of the 100th Congress concluded late in December after Members finally reached agreement on a budget reduction measure and a fiscal spending bill.

With the second session of the 100th Congress now underway, the committee recognizes that much work needs to be done within a short period of time to achieve our legislative goals. The actual legislative work periods in this congressional session will be condensed due to the long recesses for Democratic and Republican National Conventions this summer and the 1988 Fall Elections. Strong efforts must be made by the Committee, our Joint Government Affairs Director and our members themselves to generate congressional action on our legislative interests by June or else many of our initiatives will perish. From June until the end of the session, Congress will be involved with the budget, appropriations measures and the elections.

The highlights of the committee's accomplishments in the first session of Congress since the Reno Convention are listed below:

**Airport and Airway Reauthorization**—The Committee was successful in obtaining a provision in the Airport and Airway Reauthorization bill which requires the use of the Brooks Act qualifications-based selection procedures for all surveying, mapping, architecture and engineering contracts. The provision requires that government grantees on airport related improvement projects apply the Brooks Act procedures to subcontracts as well as prime contracts. This five-year authorization provides \$1.7 billion annually for fiscal 1988-90 and \$1.8 billion annually for fiscal 1991-92 for FAA grants to airports for expansion and improvement projects. Congress strongly endorsed the Airport and Airway Reauthorization and the President signed it into law on December 30, 1987. It is now Public Law 100-223.

**Bureau of Reclamation**—The Continuing Resolution (CR) for Fiscal 1988 includes a provision in the Energy and Water Development Appropriation for *permanent* use of the Brooks Act qualifications-based selection method by the Bureau of Reclamation for their surveying and mapping contracts. The Committee had strongly advocated this provision. In October 1987, the BuRec announced its intention to move and reorganize as part of an effort to redefine its mission. The BuRec does not wish to initiate major new construction projects. Instead, they would like to focus on water resource management. However, Congress has restrained the BuRec's intended reorganization and move by including in the CR a provision limiting the transfer of their headquarters and requiring the Commissioner, Assistant Commissioner for Administration, and a minimum of sixty professional staff to remain in Washington, D.C.

**Land Information Study**—Contained in the House-passed "Federal Land Exchange Facilitation Act" (H.R. 1860) is a section strongly promoted by our committee for a study of surveying and mapping organization in the Federal government;

the development of a multipurpose land information system; and the establishment of LIS standards. We also successfully eliminated a provision from the original bill that would have granted statutory surveying authority to the Forest Service. The Committee is actively working to move this legislation in the Senate this year.

**Forest Service Meeting**—A member of the Joint Government Affairs Committee and our Joint Government Affairs Director participated in a meeting of the Forest Service Cadastral Contracting Group in Salt Lake City, Utah in December. The Forest Service called this meeting to examine all aspects of Forest Service contracting. The Committee felt participation in this meeting would serve to keep the lines of communication open with the Forest Service and allow an opportunity to explain our support for the Brooks Act procedures for surveying and mapping services. The exchange of information has led to a better understanding of the problems faced by the private-sector surveyor and the Forest Service. The Committee will continue to dialogue with the Forest Service in an effort to move their contracting methods in the direction of the qualifications-based procedures contained in the Brooks Act.

**Office of Federal Procurement Policy Reauthorization**—Working with COFPAES, the Committee revised the definition of architectural/engineering services contained in the original Brooks Act to include surveying and mapping, amongst other additions. Chairman Jack Brooks (D-Tx) skillfully incorporated this clarification of A/E services under the Brooks Act as an amendment to the Office of Federal Procurement Policy Reauthorization measure. The Committee reported this measure in late September but the House Armed Services Committee Chairman is squabbling with Chairman Brooks about referral to his committee due to some controversial defense procurement provisions (not our amendment) contained in the bill. For this reason, further action on the OFPP bill has been halted until the two committee chairmen reach an understanding.

**Pipeline Safety Reauthorization**—The Committee has been advocating that the pipeline safety reauthorization measure, H.R. 2266, contain a stricter mapping provision for locating gas pipeline and pipeline facilities. As reported from the House Energy and Commerce Committee, the bill includes a modified pipeline mapping provision. It requires the Secretary of Transportation



Joint Government Affairs Committee meeting.

to issue regulations establishing minimum Federal standards for pipeline operators. Such information includes "a map or maps along with appropriate geographic descriptions showing the location of major pipeline facilities." H.R. 2266 is now before the Surface Transportation Subcommittee of the House Public Works and Transportation Committee where we have initiated efforts to mandate more *accurate* mapping requirements for new gas pipeline installations.

**Section 921 Reforms—Small Business Set-Asides**—Based on the provisions contained in Section 921 enacted in the 99th Congress, the Small Business Administration recommended a small business size standard adjustment for surveying. The SBA proposed that the surveying size standard be reduced from the current \$2.5 million to \$250,000.

In the Fiscal Year '88 continuing resolution, there was a provision which precludes the SBA from promulgating final regulations adjusting small business size standards prior to *May 31, 1988*. In the interim, we are working with the Senate and House Small Business Committees for hearings on a small business pilot test program. If enacted, this would rescind Sec. 921 reforms. The Small Business Pilot test program would be based on small business participation and is seen as a more positive alternative to reducing the high level of set-asides for surveying and mapping and the other impacted industries listed in Sec. 921.

#### *Plans for 1988*

The Joint Government Affairs Committee met January 17-19, 1988 in Easton, Maryland. Considerable thought was given to the direction our government affairs program should be headed in 1988. Our initiatives will be in the following areas:

**Land Information Study**—The Committee will work strenuously to move the "Federal Land Exchange Facilitation Act" in the Senate. This measure contains the one-year study of surveying and mapping organizations in the Federal government, the development of a multipurpose land information system and the establishment of LIS standards. This provision passed the House of Representatives in December 1987 but will need substantial efforts on our part to generate Senate interest. A similar land exchange bill passed the House in the 99th Congress but died in the Senate.

**Landsat**—The committee plans to closely monitor congressional involvement with the transition and development of the advanced technology civil earth remote sensing satellite as well as funding for the continued operation of the Landsat system.

**Pipeline Safety**—We will continue our efforts to obtain a more accurate mapping provision for new gas pipelines. The pipeline bill needs to be reauthorized this year. We have the support of the National Transportation Safety Board and the National Utility Contractors Association for our initiative.

**Small Business Set-Asides**—The Committee plans to work with the Senate and House Small Business Committees on a Small Business Pilot Test Program as an alternative method to Sec. 921 reforms for reducing the high level of set-asides within our profession and the other impacted industries listed in the small business set-aside reform law.

**National Historic Surveying Monuments**—The Committee will develop criteria and research the process by which we can place historic surveying monuments on the National Historic Registry and have them recognized as historic landmarks. The American Society of Civil Engineers has had a program in effect for a long time for civil engineering landmarks. We would like to begin a similar program to recognize prominent surveying landmarks.

**Procurement**—The Committee has recommended that we work to obtain a Brooks Act requirement for surveying and mapping contracts for the US Forest Service and the Defense Mapping Agency. The Committee also recommends that ACSM-ASPRS meet with key individuals at the Defense Mapping Agency to educate them about how the Brooks Act applies and why we support this contracting method.

**State Legislative Clearinghouse Program**—The committee plans to further refine and develop the State Legislative Clearinghouse Program during this year to make it more responsive to our participant's needs and interests. In particular, we believe the program should provide more assistance on the following: 1) Development of local and state land information systems; 2) Mini-Brooks bills; 3) State bills defining the practice of land surveying; 4) Remonumentation measures; and other significant state initiatives on surveying and mapping issues.

—Roger D. Phelps, Chairman  
Joint Government Affairs Committee

## Annual Report Membership Committee

ASPRS's total individual membership as of 12/31/87 was:

|   |      |
|---|------|
| Active Members (to include Emeritus and Honorary) | 6321 |
| Student Members                                   | 1252 |
| Total   | 7573 |

ASPRS gained 378 new members as a result of the 14 month membership promotion. Our "Get a Member, Get a Mug" promotion netted us 144 new members.

In January 1987 ASPRS sent out a Reenrollment form to each member of the Society. 4,896 of our members responded. The following is a breakdown of responses by membership type.

|                   |       |
|-------------------|-------|
| Type 1 (Active)   | 3,898 |
| Type 2 (Student)  | 737   |
| Type 3 (Emeritus) | 246   |
| Type 4 (Honorary) | 15    |
| TOTAL             | 4,896 |

Also as a result of this Reenrollment, we were able to identify 212 student members whose status needed to be changed to that of active member.

—Ellen Davis, Membership Services Manager



Membership Committee meeting.

## ASPRS Voluntary Certification Program

SINCE THE ASPRS VOLUNTARY CERTIFICATION PROGRAM was established by the ASP Board of Directors in 1975, 529 individuals have been designated "Certified Photogrammetrist (ASPRS)."

Background, requirements, and procedures of the Certification Program are contained in the *Certification Brochure* which, along with application forms, can be obtained from ASPRS Headquarters.

A complete roster of Certified Photogrammetrists and their present affiliations are printed below. Individuals are asked to provide the Society with appropriate information should any changes need to be made.

### Certified Photogrammetrists (ASPRS)

*Name and Affiliation*

#### A

ADAMS, Keith P., Lockwood Mapping, Inc.  
 ADAMS, Farrell R., Arkansas State Hwy. Trans. Dept.  
 ADKINS, Lonnal L., Photo Science, Inc.  
 ALLEN, Raymond R., National Park Service  
 ANDERSON, Edgar C., Kenting Earth Sciences, Ltd.  
 ANDERSON, Larry A., US Army Corps of Engineers  
 ANDERSEN, Norman C., PRC Government Info. Systems  
 ANDREWS, Daniel S.  
 ANSON, Abraham, Consultant  
 ANTHONY, Jack R., Montana Dept. of Highways  
 AUST, Harry L., Aust Aerial Mapping  
 AVILA, Vincente E., Universidad Central Quito

#### B

BABER, James J., Omax Biosensing  
 BACKHAUS, Ralph E., US Army Corps of Engineers  
 BACKLUND, Oliver, Alaska Dept. of Transportation  
 BAILEY, James W. Sr., Greenhorne & O'Mara, Inc.  
 BAILEY, John P., Greenwood & Associates  
 BAKER, Darrel L., Wild Heerbrugg Instruments  
 BAKER, Donald G., Ayres Associates  
 BAKER, William O., Michael Baker Jr., Inc.  
 BALL, Robert Montague, Southern Resource Mapping Corp.  
 BARG, William H., The Sidwell Company  
 BARTON, Duane, Benatec Associates  
 BEAZLEY, Jon S., Jon Beazley, P.E.  
 BECKER, Jon E., Florida Dept. of Transportation  
 BECKOM, Terry L., Hoffman & Company, Inc.  
 BENESH, Milosh, California Institute of Tech., Jet Propulsion Laboratory  
 BENNETT, Howard C., David K. Nale, ADR Associates  
 BENTLEY, Ivan D., Valley Aerial Mapping Service, Inc.  
 BERRINGTON, Trevor, Intrasearch, Inc.  
 BERRY, Carl M. Jr., Walker & Associates, Inc.  
 BHAWANI, Binisain, Airborne Systems, Inc.  
 BILU, Joseph, Williams-Stackhouse, Inc.  
 BLACKBURN, Dewayne L., Atlantic Aerial Surveys, Inc.  
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## Annual Report Evaluation for Certification Committee

This last year has been an active one for the Committee and members deserve sincere thanks for the efforts put forth. Members are: Abraham Anson, Committee Secretary-retired, Virginia; Francis H. Moffitt, Consultant, California; James V. Taranik, Desert Research Institute, Nevada; Donald G. Mohr, Aero-Metric Engineering Inc, Wisconsin; and Chester E. Kowalczyk, retired, Maryland.

Through the Committee's concerted efforts we have reduced the review of applications over twenty percent to an average elapsed time from receiving the application in Committee through final decision to 4.5 months. We hope to reduce even more this coming year.

We reviewed 39 applications. Eighteen applicants were recommended for certification, seven were deferred or rejected and fourteen are still in the review process.

In cooperation with the PPD we prepared, "National Apprenticeship Training Guidelines For Photogrammetric Technician" for submission by headquarters to the US Department of Labor. This was an effort in which we identified 6000 hours of training needed, in a series of 10 training modules, to qualify as a photogrammetric technician as defined by the Department

of Labor.

There is concern that the cost of processing applications are more than the \$35.00 presently charged to each applicant. The estimated present costs for each application are as follows:

|                         |              |
|-------------------------|--------------|
| Mailing                 | \$4.40       |
| Certificate of Award    | 2.50         |
| Headquarters Processing | 30.00        |
| *Reviewers              | 33.75        |
| Total                   | <u>70.65</u> |

\* A very minimum estimated cost were we paying those dedicated reviewers.

I recommend for Board Action that fees be increased for application for certification to \$100.00 starting July 1, 1989. Increase in fee schedule should be announced in at least two issues of *PE&RS*. This fee schedule is in line with fees charged by other professional organizations. [NOTE: This was passed by the Board of Directors.]

—"Sky" Chamard, Chairman,  
 Voluntary Certification Program

A view of the spacious exhibition area.



## Annual Report The ASPRS Inter-Society Liaison Committee

*Formal Exchanges:* Two societies have decided to begin formal exchanges with ASPRS during this reporting period. ASPRS Headquarters is regularly exchanging journals with the Canadian Remote Sensing Society (CRSS). In addition, your Chairman has been officially invited to sit on the Control Group of the Engineering Application of Remote Sensing (EARS) Committee of the American Society of Civil Engineers (ASCE). Pending approval by the Aerospace Division Board of Directors, Dr. Paul will begin serving on this ASCE Committee at the May Annual Meeting of ASCE in Nashville.

The Society of Mining Engineers (SME) appears very interested in establishing liaison, and is the only other society of the many with which we have been in contact that has made an effort to bring our invitation to the attention of its Board of Directors. Especially disappointing has been the lack of response from the Society of American Foresters (SAF) and the Geological Society of America (GSA), two societies which have historically shared ASPRS' goals in the mapping and remote sensing fields. A complexity which has risen in the case of GSA is the fact that it is the prime society over a group of affiliated professional societies. As a matter of fact, it has asked ASPRS to become an affiliated member, which Headquarters is currently studying.

Individual ISLC member efforts are now called for to bring the two societies of SAF and SME into our network, with Mr. Lawrence Pettinger taking the lead with SAF, and Dr. William Smith with SME.

*Memorandum of Understanding:* A draft MOU, prepared by the Chairman with assistance from ASPRS Executive Director William French, has been informally circulated to ASCE, CRSS, and SME. ASCE EARS has already approved it and forwarded it up to the Aerospace Division for review.

**RECOMMENDATION:** The Chairman of the Inter-Society Liaison Committee respectfully recommends that the ASPRS Board of Directors review the draft Memorandum of Understanding (MOU) and agree to adopt the MOU as a general guide for formal liaisons with other professional societies. The Chairman wishes to point out that the MOU has been distributed to several societies on an informal basis. One, ASCE, is pleased with its contents and believes it could serve as a working document for coordinating activities with budgetary ramifications.

*Survey of the Profession:* At the Reno Fall 1987 Convention, the Inter-Society Liaison Committee met in conjunction with ASCE EARS and the Geosat Committee to discuss the desirability and interest in conducting a survey of the remote sensing and mapping profession. It was not clear what objectives and information were desired in such a survey, and the idea was discussed in very general terms. However, it is noted that the subject remains a central topic on the meetings of EARS and will be pursued in greater depth at the Nashville ASCE Meeting. Your Chairman's involvement in this Meeting will permit ASPRS to keep abreast of discussions on this survey to determine whether we wish to participate.

*Ad-Hoc Developments:* There are a few international developments in which the Chairman is involved in an official capacity that could (and do) have direct impact on ASPRS and its liaison activities in the near future:

1. ISPRS Congress—1992: Your Chairman has been working as a member on the ASPRS Organizing Committee for ISPRS 1992 to secure member votes for the US as the host site for ISPRS 1992. Mr. William French, Lawrence Fritz, and I met with the Director (Mr. Michael Michaud) of the State Department's Office of Advanced Technology for the purpose

of obtaining State Department assistance through our US embassies in all of the member nations of ISPRS. Mr. Michaud is personally supportive of requesting our science and economic counselors to approach the appropriate mapping agencies in these countries seeking their votes on our behalf.



ISPRS Commission Commission II.

Your Chairman has prepared a draft cable of request to our embassies in these countries requesting this assistance. The cable has been cleared by the State Department and will be sent out shortly.

2. International Space Year (ISY): The Inter-Society Liaison Committee has forged a link between the ISPRS 1992 Congress and plans for an International Space Year in 1992, celebrating, among other things, the quincentenary of the European discovery of the Americas. My Office in the Agency for International Development (AID) has just sent four teams throughout the developing countries to ascertain their interest and ideas for participating in ISY. The teams were put together by the Technology Application Center, AID's remote sensing contractor, directed by our Committee's Secretary, Dr. Stanley Morain. The report of the recommendations of the developing world will be available in March, 1988. Bringing ISPRS to the US in 1992 would be a real boon to the US preparation for ISY and our demonstration of renewed leadership in space.
3. Liaison with the Latin American Society of Remote Sensing Specialists (SELPER): ASPRS had arranged for our Committee's Vice Chairman, Mr. Lawrence Pettinger, to attend the SELPER Meeting in Bogota, Columbia, in October, 1987. Mr. Pettinger and two other US delegates were not cleared at the last minute to enter Columbia because of disturbing political events in that country, but two other US representatives did obtain security clearances and attended. SELPER is very interested in collaborating with ASPRS on future activities. The chairmanship of SELPER has rotated to Argentina, who has been in contact with your Chairman about placing a strong US presence in Argentina for the 1989 SELPER meeting.

*Summary:* The Inter-Society Liaison Committee has been active on a number of fronts. Our focus has been on the strategic level of involving the Society in global developments, but we are also making progress in establishing formal links with other key societies. The few that we have forged contacts with are serious and enthusiastic about collaborating with us. Our future efforts will be devoted to firming up liaison with SAF and perhaps a couple more in the US, and we are particularly interested in developing relationships with international societies.

—Charles K. Paul, Chairman,  
ASPRS Inter-Society Liaison Committee

## Annual Report Committee for the Preservation of Aerial Photography

Compilation of a source list for possible repositories has met with very positive response. Committee members have made significant progress in contacting existing organizations that have cartographic/photographic services that are interested in archiving collections of historical imagery. A rough draft of this list should be available by December 1988.

To help promote awareness for preservation of historical imagery a display was set up in Reno of the Reno area consisting of a very recent (fall 1987) and historical (early 1940) photographs. The fall 1987 print was donated to the International Geographic Information Foundation for their annual auction.

At the ASPRS Board of Director's meeting in Reno the subject of a name change was addressed. It was agreed that the objectives and the scope of the committee would be reevaluated to determine if the committee should encompass more than aerial photography and if that should be reflected in the name of the committee.

A request for correspondence identifying the present fair market value of a small collection of aerial photography was received and answered. Guidelines set forth by George E. Cranwell in his letter of September 6, 1984 were used.

Eugenia M. Barnaba with Cornell University has joined the committee. Her interest and experience, will no doubt, be a great asset to the work of the committee.

The Committee is proposing to the Technical Program Director for the 1989 spring meeting that we chair a session on preservation of aerial photography. This session would include physical and chemical preservation.

Because of travel constraints the committee was unable to meet in St. Louis. A meeting is scheduled for March 31, 9:00 am at ASPRS Headquarters.

—Lola Britton, Chairperson  
Committee for Preservation of Aerial Photography

## Annual Report Awards Policy Committee

During the year a final Deed of Award was prepared, reviewed, and accepted for the new scholarship award established on behalf of Analytical Surveys, Inc., Mr. John A. Thorpe, President.

In the past this Committee has existed basically as a committee of one. However, during the latter part of the 1987-88 year the Committee became a true committee with the addition of several members, and they are: Dr. Marvin E. Bauer, University of Minnesota; Dr. Chris J. Johannsen, Purdue University; Dr. Warren R. Philipson, Cornell University; Mr. Gary L. Nies, Walker & Associates, Inc.

The Committee will continue to review Deeds of Award for possible modifications that may be necessary. The Committee will also be looking at awards that are outside the Society purview for possible nominations from the Society membership.

Another major activity for the Committee is the review of the existing awards program for possible action under the Society

Long-Range Plan. Unfortunately, heavy work commitments for the Chairman have not allowed for this activity to get fully underway as yet.

As reported last year, the Committee-developed matrix outlining basic information about the ASPRS awards will be used as the basic for investigating the areas for new awards.

A continuing activity of the Committee is the written notification to Award Committee Chairpersons regarding their committees's composition and reporting requirements. The notification procedure now includes a copy of the pertinent deed to each new Award Committee Chairperson. This eliminates the need to refer the chairperson to certain pages of a certain issue of the *PE&RS* Journal for the last published copy of the pertinent deed of award.

—William G. Hemple,  
Chairperson, Awards Policy Committee



Awards Committee meeting.

## ASPRS Group Insurance Program Report of the Administrator

The Group Term Life Plan available to your members completed its 23rd policy year on September 30, 1987. The Plan has again demonstrated its sound financial condition. Claims and expense obligations for the 1986-87 policy year have been met and a surplus has again been earned. This surplus, with your permission, can be distributed to your eligible insured members as a premium credit on the April 1, 1988 semiannual renewal of the Plan. This credit together with the one given on the October 1, 1987 semiannual renewal will represent the twenty-third time since the inception of the Plan that a portion of the semiannual premium has been waived. We ask your consideration and approval of the recommendation outline in this report.

### *Financial Results of the Group Term Life Plan*

The overall earned premium for the Plan for the 1986-87 policy year has again increased and totaled \$11,676,013. Total paid claims also increased from \$4,006,732 to \$5,637,297. The rise in paid claims was due to an increase in the number of claims (196 claims were paid during the 1986-87 policy year compared to 166 for the prior 1985-86 policy year). The average death claim also rose from \$23,700 to \$28,400. Higher paid claims, representing 48.3% of the 1986-87 earned premium, plus a small additional amount (\$80,662 or 0.7% of earned premium) necessary to maintain the claim reserves for the Plan, resulted in an overall incurred loss ratio of 49.0% of earned premium. This is higher than the incurred loss ratio for the last two policy years (37.0% in 1985-86 and 46.5% in 1984-85), but still well within acceptable levels. After paying the claims and the necessary expenses of maintaining the Plan, a surplus of \$3,475,575 or 29.8% of premium remained. Data relative to the total experience of the Plan, the premium contributed by your insured members during the 1986-87 policy year and the surplus available to be given as credits are provided in the attached exhibits.

### *Recent Plan Developments*

The Plan's continued financial success supports the substantial credits that have been given over the past 12 months and the recent premium rate reduction. Specifically, these were:

- A 60% semiannual credit given to eligible insureds on the April 1, 1987 renewal;
- A 100% semiannual credit given to eligible insureds on the October 1, 1987 renewal; and
- A 10% reduction in the premium rates of the Plan (i.e. member, spouse and children) effective October 1, 1987.

The combination of these two premium credits and the reduction in premium rates has had a positive effect in continuing the competitive low net cost of the Plan.

### *April 1, 1988 Credit Recommendation*

The current favorable financial condition of the Plan supports another premium credit on the next semiannual renewal, April 1, 1988. This is in addition to the ones previously given on the April 1, 1987 and October 1, 1987, semiannual renewals. *Therefore, we recommend that a credit equal to 10% of the semiannual premium due be given to all members insured in the Plan as of September 30, 1987.* The combination of this recommended credit and the 100% semiannual credit given on October 1, 1987 means that for the current policy year of the Plan—October 1, 1987 through September 30, 1988—55% of the annual premium for eligible insureds will have been waived.

### *Summary*

The Group Term Life Plan available to your members continues to be financially sound. Therefore, we are pleased to recommend that a credit equal to 10% of the semiannual premium due be given to eligible insureds on the April 1, 1988 renewal. If you concur with this recommendation, please execute the enclosed authorization form and return it in the envelope provided.

## WHERE DID THE MONEY COME FROM? WHERE DID THE MONEY GO?

1987 was a good year for ASPRS!

The Society ended the year with \$65,068 income over expense. We want to report to you *where the money came from in 1987* to support the Society's activities and to let you know *how it was spent*.

The information is presented as compared to other associations of like-size budgets so that you can see how your Society is functioning. The comparative information was taken from the ASAE Association Operating Ratio Report, 1985-1986. The Survey included respondents of US Associations of individual members with budgets between \$1,000,000 and \$2,500,000.

One of the most valuable uses that can be made of this Association Operating Ratio Report is to identify areas where our Society differs from the range of common experience and then to determine why it differs.

R. William Taylor, CAE, President of ASAE, commented in the preface of the Report, "Effective management of fiscal resources is the hallmark of a competent manager. In prosperous years, an association's success depends on rational fiscal prudence. In lean years, its survival does."

You will note from the following income analysis that ASPRS is quite unique in that only 26.5% of the Society's income is derived from Membership Dues and approximately 54% of the income is generated from the sale of the *PE&RS* Journal and the other publications. The average association's income from Membership Dues is 48.2% and 10.6% of their income is derived from the sale of periodicals and other publica-

ASPRS's income from Conventions of 17.1% compares very favorably with the average association Convention income of 11%.

Income generated from investment of funds is below the average percentage. However, your Board took steps in 1986 to create a budget reserve fund and in 1987 as well as 1988 reserve funds have been budgeted.

TABLE 1. 1987 ASPRS INCOME

| ASAE Average Percentage | ASPRS Percentage | Description of Income Item  | ASPRS Income |
|-------------------------|------------------|-----------------------------|--------------|
| 48.2                    | 26.5             | Dues                        | \$ 375,889   |
| 10.2                    | —                | Education                   | —            |
| 11.0                    | 17.1             | Conventions                 | 243,397      |
| 3.2                     | 1.0              | Certification/Accreditation | 8,518        |
| 3.7                     | 24.3             | Periodical, Advertising     | 344,921      |
| 3.0                     | 10.3             | Periodical, Subscriptions   | 147,218      |
| 0.8                     | 4.2              | Periodical, Other           | 59,920       |
| 3.1                     | 15.0             | Nonperiodical Publications  | 213,141      |
| 6.8                     | 0.6              | Investments                 | 9,622        |
| 10.0                    | 1.0              | Other Income                | 13,575       |
| 100%                    | 100%             |                             | \$1,416,201  |

*Expense Analysis:*

The following expense comparative data is reported to you by Expense Functions. The average number of Staff represented by the ASAE Survey Report is 20. ASPRS currently has 14 staff members. For con-

TABLE 2. 1987 ASPRS EXPENSE

| Average ASAE Percentage | ASPRS Percentage | Expense by Function         | ASPRS Expense      |
|-------------------------|------------------|-----------------------------|--------------------|
| 28.5                    | 23.6             | Executive & Administrative  | \$ 318,980         |
| 4.3                     | 5.4              | Volunteer & Governance      | 71,934             |
| 6.9                     | 3.4              | Membership Promotion        | 46,353             |
| 4.6                     | 1.0              | Public Relations            | 13,762             |
| 1.8                     | 2.5              | Government Relations        | 34,638             |
| 12.9                    | 37.0             | Periodical Publication      | 500,438            |
| 1.8                     | 18.2             | Nonperiodical Publications  | 245,287            |
| 9.9                     | 5.0              | Conventions                 | 66,726             |
| 10.4                    | -0-              | Education                   | -0-                |
| 1.7                     | .5               | Certification/Accreditation | 6,541              |
| 11.1                    | 3.4              | Other Programs              | 46,474             |
| <u>93.9%</u>            | <u>100%</u>      |                             | <u>\$1,351,133</u> |

sistency of reporting, we have used the Expense Function categories of expense used by ASAE. Our Education Programs are self-supporting.

The Executive and Administrative Expense Function is well within the average expense. The Voluntary and Governance Expense Function represents expense to support all Committees, Divisions and Regions.

As you would expect, since ASPRS publishes more than most associations with a large percentage of our income coming from the sale of the Journal and other publications, our publishing expense is greater than the average association expense.

ASPRS dues have only increased \$5 since 1983, from \$40 to the current \$45 dues for regular members. This has been possible primarily due to the Society's programs and a commitment by your Board of Directors to maintain the lowest dues schedule possible. It has also been made possible by dedicated volunteer convention staff workers whose efforts have helped to make the conventions so successful.

We hope that you will find this report useful and you can readily see just how your dues dollars are spent.

-Florence G. Stevenson  
Assistant Executive Director

-William D. French, CAE  
Executive Director

**FINANCIAL EXHIBIT  
OF THE  
1986-87 POLICY YEAR EXPERIENCE  
OF  
ORGANIZATIONS PARTICIPATING  
IN  
ENGINEERING ASSOCIATIONS INSURANCE TRUST  
SPECIAL ASSOCIATIONS LIFE INSURANCE TRUST  
AMERICAN PUBLIC HEALTH ASSOCIATION INSURANCE TRUST  
AMERICAN ASSOCIATION FOR THE ADVANCEMENT  
OF SCIENCE INSURANCE TRUST**

|     |   |                  |              |                  |              |
|-----|---|------------------|--------------|------------------|--------------|
| I.  | <u>TOTAL EXPERIENCE OF THE PLAN</u>   |                  |              |                  |              |
|     | Total Earned Premium  |                  |              | \$11,676,013     | 100.0%       |
|     | Incurred Claims*  | \$5,717,959      | 49.0%        |                  |              |
|     | Net Plan Expenses**   | <u>2,482,479</u> | <u>21.2%</u> |                  |              |
|     | Total Plan Charges  |                  |              | 8,200,438        | 70.2%        |
|     | Remainder   |                  |              | \$ 3,475,575     | 29.8%        |
|     | Additional Funds in CSR Available for Premium Credits                           |                  |              | <u>2,561,706</u> | <u>21.9%</u> |
|     | Total Funds Available for Premium Credits                                       |                  |              | \$ 6,037,281     | 51.7%        |
|     | Less Cost of 100% Semiannual Credit on 10/1/87 Renewal                          |                  |              | <u>5,451,103</u> | <u>46.7%</u> |
|     | Balance of Funds Available for 10% Semiannual Credit on 4/1/88 Renewal          |                  |              | \$ 586,178       | 5.0%         |
|     | *Paid claims, plus net change in case reserves.                                 |                  |              |                  |              |
|     | **Includes taxes, underwriting, administration and marketing expenses.          |                  |              |                  |              |
| II. | <u>DATA RELATIVE TO: American Society for Photogrammetry and Remote Sensing</u> |                  |              |                  |              |
|     | Earned Premium Contributed by Your Members during the 1986-87 Policy Year       |                  |              |                  | \$39,617     |
|     | Distributable Surplus Available to Your Insured Members for Premium Credits     |                  |              | \$ 21,068        |              |
|     | Less Cost of 100% Semiannual Credit on 10/1/87 Renewal                          |                  |              | <u>\$ 18,965</u> |              |
|     | Balance of Funds Available for 10% Semiannual Credit on 4/1/88 Renewal          |                  |              |                  | \$ 2,103     |
|     | Total Annual Credit To Be Given Your Members during 1987-88 Policy Year         |                  |              |                  | 55.0%        |

## Leadership Notes

### ASPRS Board of Directors Meeting, St. Louis MO

The 1988 ACSM-ASPRS Annual Convention, held in St. Louis, Missouri, was a success in every way. George Cline and his marvelous staff made everything run smoothly and 5000 people enjoyed the famous Midwestern hospitality while attending the sessions, exhibits and social events. See the article by Don Hemmenway p. xxx for more information about the Convention.

In order to keep you up-to-date on the business of the Society, the following is a report of actions taken by your Board of Directors during its meeting of March 17.

**Finance:** The Board accepted the 1987 Financial Report which showed the Society ended the year with \$65,000 income over expense. You should know that for the last three years your Board has budgeted a reserve fund to ensure the Society's financial stability. The independent audit for 1987 was also reviewed and accepted.

**Headquarters:** Once again, the ASPRS Board of Directors reaffirmed its position that ASPRS wants to continue to colocate with ACSM. As you may know, ACSM has entered into an agreement to sell the Headquarters building in Falls Church. However, to give the Societies sufficient time to find a new headquarters, the purchase agreement included a one-year lease-back and two additional six-month lease options. ASPRS has currently signed a one-year lease with the new owner.

The Association of American Geographers (AAG), the Urban and Regional Information Systems Association (URISA) and others have been approached with the thought of sharing headquarters space with ASPRS and ACSM and creating a "Land Information Center." The concept of the Land Information Center will provide a focal point for organizations and individuals interested in information about the land.

This is an exciting time. A special joint ACSM-ASPRS committee has been established to study the procurement of a new headquarters building and report back to their respective Boards. We will keep you informed.

**Convention Revenue Sharing:** The ASPRS and ACSM Boards received a report from the Ad Hoc Joint Committee established to study Convention Revenue Sharing. The ASPRS Board of Directors approved a uniform policy for Convention Revenue Sharing, with no ceiling on convention rebate, using a formula for rebate of 20% on the first \$5,000, 10% on \$50,000 and 5% on the balance of the net convention income. Both the ASPRS and ACSM Boards requested the Societies' Presidents to ask the Joint Committee on Revenue Sharing to review the subject of providing a cap on convention revenue distributed to local organizations.

**Accuracy Standards for Large-Scale Maps:** The ASPRS Interim Accuracy Standards for Large-Scale Maps as recommended by the Specifications and Standards Committee and the Professional Practice Division were adopted.

**Certified Photogrammetrist Application Fee:** The Board approved an increased fee for application as a Certified Photogrammetrist from \$35 to \$100, effective July, 1989 and requested the Committee for Evaluation of Certification and the Professional Practice Division to look into continuing education needs for certification, to examine the multidisciplinary nature of the profession, and to study the problem of recertification.

**ASPRS Procedure for Professional Conduct:** The Board accepted the ASPRS Procedure for Professional Conduct Cases.

**XVI ISPRS Congress, 1992:** The Society has submitted a formal bid to host the XVI International Congress of the ISPRS in Washington, DC, in 1992. The decision relative to the location of the ISPRS 1992 Congress will be made in Kyoto, Japan, July, 1988. There will be strong competition from several countries

to be the site for this important meeting. Considerable effort has been undertaken by the ASPRS organizing committee to promote the benefits of having the meeting here in our nation's capital.

**ASPRS Executive Committee:** Maurice Nyquist was elected to serve as a member of the Executive Committee to fill the vacancy created by Marilyn O'Cuilinn's election to the office of Vice President.

**ASPRS Bylaws:** You should have received the updated ASPRS Bylaws distributed as a special reprint with the March issue of the *PE&RS*. In the future, each new member of the Society will receive a copy of the Bylaws.

**Joint Satellite Mapping & Remote Sensing Committee:** The Board endorsed a letter sent by the Joint Satellite Mapping & Remote Sensing Committee to Mr. William R. Graham, Science Advisor to the President, which proposed the continuation of the Earth Sensing Program and the establishment of a US Government operational Earth Remote Sensing Satellite Program by 1992.

The Board also endorsed the Joint Satellite Mapping & Remote Sensing Committee's proposed letter to Mr. Graham advising that the ISPRS will meet in Kyoto, Japan from July 1-10 and that the US delegation, led by ASPRS, is proposing a plenary session aimed at international cooperation in Earth-sensing to include the mapping and monitoring of the Earth. The Administration was invited to express such views as it may have on this subject.

**ASPRS Sustaining Members:** It was reported that 19 Sustaining members have joined the Society within the last six months which brings the total number of Sustaining members to an all-time high of 176.

**Joint Government Affairs Committee:** The Board approved the Joint ACSM/ASPRS Government Affairs Committee's plan for 1988.

**Cooperative Agreement:** The ASPRS and the ACSM Boards agreed to establish and encourage future cooperative activities between the American Congress on Surveying, the Canadian Institute of Surveying and Mapping and the American Society for Photogrammetry and Remote Sensing.

**IGI Foundation:** The IGI Foundation is administering a new ASPRS Memorial Fund which has been established for Ta Liang, a Cornell University engineer, teacher and a foremost air photointerpreter for landform analysis who died in 1987.

A new \$4,000 annual ASPRS scholarship award, sponsored by Analytical Surveys, Inc., was awarded for the first time in St. Louis during the ASPRS Annual Business and Awards Meeting.

Lola Britton, Michael Renslow and Roger "Sky" Chamard have agreed to serve as Trustees of the International Geographic Information Foundation (IGIF). John Bossler, Jerry Robinson, Jack Dangermond and Terrence Keating have agreed to serve on the IGIF Advisory Council.

The Silent Auction sponsored by the IGIF was a huge success. The Foundation is very grateful to those who donated auction items.

**End of Update:** This covers the major business conducted by the ASPRS Board of Directors during its meeting in St. Louis. We hope you have found it informative and we would welcome hearing from you if you would like additional information.

— Florence G. Stevenson  
Assistant Executive Director