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Commission VI

Commission report

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ECONOMIC, PROFESSIONAL AND EDUCATIONAL
ASPECTS OF PHOTOGRAMMETRY, 1976-1980

Abstract

The paper deals with major tasks and the activities of ISP Working Groups of Commission VI. The Special emphasis is laid on the situation in developing countries and on the course curriculae. The paper presents the Commission Board, short report of the symposium and program for 1980 ISP Hamburg Congress.

Report of Commission VI

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INTRODUCTION

This report highlights the activities of ISP Commission VI "ECONOMIC, PROFESSIONAL AND EDUCATIONAL ASPECTS OF PHOTOGRAMMETRY" during the period 1976-1980 and sketches the major tasks in the field of educational, economic and professional aspects of photogrammetry. Historical context and notation and terminology in photogrammetry as well as bibliography and information dissemination problems will be discussed. Some information connected with photogrammetric and remote sensing periodicals will be presented.

BOARD OF COMMISSION

Prof.Dr.Habil.Zbigniew Sitek - President of Commission VI /Poland/, Dr.Habil.Józef Jachimski - Secretary of Commission VI /Poland/.

Commission Reporters /ISP Status §10 and §24 and 25 Bye-Laws/:
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Prof.H.G.Jerie /Netherland/; Eng.C.T.Horsfall /Nigeria/;

Dr.J.Petras /Czechoslovakia/; Prof.Dr.M.Serge Paul /France/;
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HIGHLIGHTS OF THE ACTIVITIES OF COMMISSION VI

The activities of Commission VI during the past four years were based mostly on the resolutions constituted at the XIII ISP Congress in Helsinki in 1976 and the suggestions received from the President and Council of ISP.

ACTIVITIES RELATED TO RESOLUTIONS

To fulfill the task listed in the resolutions the seven Working Groups were constituted. WORKING GROUP VI/1 "Education and Research in Developed and Developing Countries" chaired by Professor Dr. A.Brandenberger, Laval University, Quebec, Canada was established in September 1976 /Vice-Chairman Brigadier M.M.Datta, Senior Director, Centre for Survey Training and Map Production, Hyderabad /India/. This Group, related to resolution N^o 1, as a major task took consideration about the needs and objectives for developing curricula at various levels of educational programs and the continuation of work for world-wide inventory of photogrammetric education and research facilities.

Therefore two international studies of this nature were carried out during 1976-1980.

The first one connected with needs and objectives at various levels of photogrammetric educational programs in different countries of the world was chaired by Brigadier M.M.Datta. This was based on the information about photogrammetric courses gathered in three questionnaires:

A - dealing with lecture hours in basic subjects and in photogrammetry or photointerpretation. The following subjects were concerned: basic principles of photogrammetry, aerial photography and navigation, rectification and orthophotography, photogrammetric instruments, applied mathematics and computer applications, theory of observations and adjustments, theory of orientation, aerial triangulation, application of aerial photogrammetry and remote sensing, terrestrial and non-topographic photogrammetry and other subjects.

- B - dealing with the number of hours assigned to classes for practical training. In this case the subjects were binocular vision, relative orientation, absolute orientation, computations and programming, rectification and orthophotography, photographic procedure, camera calibration and testing of instruments, aerial triangulation, terrestrial and non-topographic photogrammetry, photointerpretation and remote sensing, other subjects,
- C - dealing with degrees and diplomas, duration of courses, number of students.

These questionnaires dealt with the following four levels of instruction: post-graduate education, graduate education, diploma level education and certificate level education.

The study allowed to suggest course content and the distribution of lecture and practical instruction hours of three levels /technical level, graduate or technologist level and post-graduate or professional level/ of courses which may follow in developing countries.

Another project carried out W.G.VI-1 was chaired by Prof. Brandenberger and was connected with continuing the work on establishment of world inventory and analysis of photogrammetric education and research facilities, including photointerpretation and remote sensing. A similar project but dealing with surveying and mapping education was completed under the auspices of the United Nations during the period 1976-78. Prof.A.Brandenberger was also put in charge by the UN to analyse data and to prepare the report.

Of the five questionnaires of ISP WG VI-1 /in English and French/ three /A,B,C/ request information from all countries on photogrammetric education facilities, concerning educational institutions, enrollment, level of education, specific information on photogrammetry courses /duration of study program, name of courses, total number of hours per course/, type of diplomas /degrees/, available equipment, number of graduates per year and annual budget. The other two questionnaires /D and E/ request information on photogrammetric research facilities, staff and annual expenditures for photogrammetric research and development. The additional research star-

ted in the W.G.VI-1 is connected with minimum and maximum programs on fotogrammetric education for geodetists and cartographers /not specialized in photogrammetry/. The results of the studies are presented in six invited papers which are set up in two sessions during the Congress in Hamburg /see program/.

WORKING GROUP VI-2 /see resolution N^o 2/ "Photogrammetry in its Historical Context" headed by Dr.T.J.Blachut, National Research Council of Canada, Ottawa, was established as the Editorial Board of the book "Photogrammetry - Historical Review of Methods and Instruments" in July 1976 in Helsinki. This most active group started to fulfill the need and the obligation to record the development of photogrammetry as a part of general intellectual and scientific achievements of mankind. It is understandable that at the present time it is still possible to locate and preserve some original materials and sources of information. The main task of WG VI-2 was to write and publish the book.

Contents of the book:

Foreword by the ISP President Mr.J.Cruset, France /1 page/, Introduction by the Chairman of the Editorial Board Dr.T.J. Blachut, Canada /2 pages/, Chapter 1 - Beginnings of Photogrammetry until the Introduction of the Airplane by Dr.T.J. Blachut, Canada /30 pages/, Chapter 2 - Acquisition of Primary Data by Prof.F.L.J.H.Corten, Netherlands /42 pages/, Chapter 3 - Analogue Methods and Instruments, by Prof.R.Burkhard, W.Germany /66 pages/, Chapter 4 - Analitical Methods and Instruments by Prof.K.Rinner, Austria and G.H.Schut, Canada /48 pages/, Chapter 5 - Non-cartographic Photogrammetry, Prof.H.Bonneval, France /40 pages/, Chapter 6 - Photointerpretation and Remote Sensing, Prof.Ch.E.Olsen, USA /40 pages/, Chapter 7 - Photogrammetry in Mapping Earth and Universe /Satellite Photogrammetry/, Dr.F.Doyle USA /30 pages/, Chapter 8 - Significance and Future Role of Photogrammetry, Prof.K.Rinner, Austria /10 pages/, Chapter 9 - Synoptic Tables Correlating Various Events, Dr.B.Dubuisson, France /10 pages/.

In addition to the above authors, to the editorial Board belong Prof.Z.Sitek /Poland/ and Prof.L.Solaini /Italy/.

Members of the Editorial Board are internationally prominent scholars.

The first meeting of the Editorial Board took place in Lausanne /Switzerland/ on March 17-18, 1977. The second meeting was organized on August 3, 1979 in Bonn /West Germany/.

All texts are in preparation and should be completed by the end of June 1980.

Another effort of the Chairman of W.G.VI-2 and the Editor-in-Chief Dr.T.J.Blachut was to obtain financial support for typing , editing and illustrations of the book.

The members of Editorial Board and particularly Chairman of W.G.VI-2 undertaken a lot of activity to investigate the possibilities of publishing and financing the book. But this part of effort must be postponed for years 1980-84.

WORKING GROUP VI-3 /resolution N^o 3/ "Notation and Terminology" chaired by Prof.Paul R.Wolf, University of Wisconsin, Madison, USA was organized at Helsinki ISP Congress. The W.G.VI-3 was appointed and consisted of Dr. M.Serge Paul /France/; Dr.M.J. Pietschner /GDR/; Prof.J.A.Szorenyi /Australia/; and Prof. Paul Louis Baetsle /Belgium/. The activity of W.G.3 was concentrated on production of a trilingual /English-French-German/ glossary of photogrammetric terms.

This very difficult and time consuming task was based on English Glossary of Photogrammetry Terms which in 1977 was completed for inclusion to the 4-th edition of the Manual of Photogrammetry. The English Glossary was prepared by the American Society of Photogrammetry and became the substance of a "working document" for ISP W.G.VI-3. The American Society of Photogrammetry gave its approval for ISP to use its Glossary of Photogrammetry Terms as a basis for preparing the trilingual glossary. Copies of Glossary drafts were sent to each of the members of W.G.3 for review and making necessary changes and corrections. At the end of 1978 the completed English Version of the Glossary of Terms was sent to Dr.Paul - head of a subcommittee for the purpose of preparing a French translation, and to Dr. Pietschner - head of a subcommittee to prepare a German translation. The final drafts or parts of

them /if translations are not finished by then/ should be printed for the XIV ISP Congress in Hamburg. It will play a very important role for the further development of this project and give the opportunity for a world - wide discussion about the form and context of a photogrammetric glossary of terms in three languages. The tri-lingual Glossary of Remote Sensing Terms is also needed badly. Therefore during the period 1980-84 the Working Group VI-3 should continue the work with an expanded committee with experts in this area.

WORKING GROUP VI-4 /Resolution N^o 4/ "Bibliography and Information Dissemination" was working under the chairmanship of Dr.A.Linsenbarth, Institute of Geodesy and Cartography Warsaw, Poland. The WG VI-4 is continuing the project: "The National Bibliographies of Photogrammetry". Only a few countries /for instance Great Britain/ publish succesively every year in their photogrammetric journal /like "Photogrammetric Record"/ the national photogrammetric bibliography. Therefore the second volume of "The National Bibliographies of Photogrammetry" is needed for those countries which have not their own photogrammetric journals. The "Bibliographies" should fully cover the photogrammetric, photointerpretation and remote sensing publications issued and worked out by each country including books, papers, research reports. The volume consists of three parts. Part one contains national bibliographies of the countries which have not participated in the elaboration of volume I issued by University of Mining and Metallurgy, Cracow, 1976.

Part two is a supplement to the first volume for the period of 1975-1979.

Part three lists doctor s theses in the field of photogrammetry, photointerpretation and remote sensing.

Bibliographical descriptions comprise the titles of publications in English and in the original language, the name of the periodical and the publisher. The surname and the first letters of the authors' names, the place and year of issue, the volume of the periodical and page numbers, the number of illustration and also number of references included.

Continuation of this library edition, in due time will allow for the completion of an up-to-date documentation of photogrammetric and remote sensing works for all member-countries of ISP.

Another task of WG VI-4 was to establish a close link between Geo Abstracts, Part G and ISP.

Since January 1-st 1978 International Bibliography of Photogrammetry has become a part of GAG. GAG publishes six issues per annum, each issue containing 400-500 titles with abstracts. W.G.VI-4 started work in investigating computerized bibliographic systems in the world. This study will help to include photogrammetric bibliography in one of the existing computerized bibliographic systems.

WORKING GROUP VI-5 /see resolution N^o 5/ - "Planning, Economy and Professional Aspects" was headed by Prof.Dr.S.K.Ghosh, Laval University, Quebec, Canada. The W.G.VI-5 consisted of 19 members. In view of the resolution and in accordance with the general opinion of the majority of W.G.VI-5 members study started on planning and organizational aspects of photogrammetric projects. Technical, economic and time factors in most of the countries are not considered for planning photogrammetric project studies, because there is not the available data for this purpose. To obtain a wide representation of the present state of affairs under different criteria /all continents, rich, poor and medium rich countries, countries giving a wide range of technical advance/ Prof.S.K.Ghosh developed a questionnaire with the following questions:

- I. Cost related questions /relating to your organization country/
- II. Effectiveness questions /relating to your organization country/
- III. Do you use any cost-effectiveness model? If so, what?
- IV. In your job planning efforts..,
 1. Do you use any Program Evaluation Review Technique?
 2. Do you use any form of Critical Path Method?
- V. What other Decision Theory, if any, is used?
- VI. Are you aware of and do you implement any of the following

"controls"? Before during or after production runs?

1. Production control, 2. Inventory control. 3. Quality control.

VII. Your suggestions, comments, relevant to the photogrammetric operations /coventional, nonconventional/.

The questionnaires were distributed to academic, govermental private and commercial organizations. The responses came from countries with diverse political and economic backgrounds. The analysis of this survey is presented in activity report of ISP W.G.VI-5.

To start with collaboration between Commission V and Commission VI in the field of economic aspects of photogrammetry and keeping in mind suggestions of ISP Council that inter-commission working groups are not recommended the Board of Commission VI and W.G.V-2 organized a joint session of W.G.VI-5 /Planning, economy and professional aspects/ and W.G.V-2/Cost-effectiveness of close-range photogrammetry/ at the Cracow ISP Commission VI Symposium /8-10 August 1978/. Five very interesting papers were presented and discussions were very lively.

WORKING GROUP VI-6 /see resolution N^o 6/ "Photogrammetric and Remote Sensing Periodicals", chaired by Prof.Dr.J.Hothmer, Schwalbach am Taunus, FRG, was established in the begining of 1977 to prepare guide lines regional international "Photogrammetry and Remote Sensing Periodicals". Prof.Hothmer distributed among seven W.G.VI-6 members his first drafts of - statue for Regional International Periodicals /RIPs/ on Photogrammetry and Remote Sensing /to be considered as a guide line/ and - Resolution to be released by the General Assembly of the Hamburg Congress. The final draft is presented by Prof.Hothmer to the Congress as an Invited Paper /activity report of W.G. VI-6/. The aim of the project is:

- to reduce the number of periodicals,
- to improve the economy, providing any subscriber with more information for the some amount of money,
- to supply up to date information through monthly publication.

In Prof.Hothmer's opinion RIPs should be established for the geographic regions of Africa, Latin America, Northern America, Australasia, Eastern Europe and Western Europe.

WORKING GROUP VI-7 /resolution N^o 7/ "Cooperation with Pertinent Associations" was not established. Some activity was maintained by President of Commission. The representatives of FIG and ICA presented papers at Symposium of Commission VI in Cracow in 1978.

COMMISSION VI SYMPOSIUM AND MEETING

From 8-th to 10-th of August, 1978 a Symposium and meeting of Commission VI was held at the University of Mining and Metallurgy in Cracow Poland. The Symposium was supported by the Polish Society of Photogrammetry. 70 participants from 19 countries attended the Symposium among them colleagues from such distant countries as Japan, Indonesia, USA, Canada and Australia. 22 papers and WG activity reports were presented. The official language at the Symposium was English but Polish participants could follow the papers and discussions in Polish /through simultaneous interpretation/.

We had five technical sessions. The first session was dedicated to professional aspects of photogrammetry. At the second session the Working Group activity reports were presented. The third session covered problems of photogrammetric education with special emphasis on education in developing countries. The trends in Photogrammetric Education in Bulgaria, Nigeria and USA were presented. The fourth session was dedicated to economic problems of aerial large scale photogrammetry. The last session was a joint session of WG VI-2 "Cost Effectiveness of Close-Range Photogrammetry" and WG VI-5 "Planning, Economy and Professional Aspects of Photogrammetry". The proceedings of the Symposium /in English/ were distributed among the participants and the National Reporters of Commission VI in December 1978, as a Special volume "PAPERS FOR THE INTERNATIONAL SYMPOSIUM COMMISSION VI" issued by the Stanislaw Staszic University of Mining and Metallurgy, Kraków, August 1978.

COMMISSION VI PROGRAM FOR THE HAMBURG CONGRESS

Six Invited Papers, seven activity reports /having the status of Invited Papers/ will be presented and one Panel Discussion, five regular technical sessions, one Joint Session /with Commission V/ and one Poster Session will be organized at the Congress.

Topic of the Sessions:

1. Terminology, Economic Aspects and History of Photogrammetry and Remote Sensing
2. Information Dissemination
3. Research and Education in Remote Sensing and Photogrammetry
4. Photogrammetric Education for Non-photogrammetrists
5. Photogrammetric Education in Developing Countries and Photogrammetric Periodicals

Joint Session /with Commission V/ Topic: Computerization of Bibliography for Photogrammetry and Remote Sensing.

CONCLUDING REMARKS

During the period 1976-1980, significant progress is noticeable in various fields of education, history, terminology and economic aspects at photogrammetry.

1. The team of prominent scholars prepared the texts of the book on "Photogrammetry - Historical Review of Methods and Instruments", which should be published in the period 1981-1984 as a ISP history of photogrammetry.
2. For photogrammetric education in developing nations course content and distribution of lecture and practical instruction hours of three levels of courses /technical, graduate and postgraduate or professional/ were prepared.
3. The world-wide inventory and analysis of photogrammetric education and research facilities including photointerpretation and remote sensing was being done.
4. Opening the door for minimum and maximum education photogrammetry programs for surveyors and cartographers.
5. The work started with developing of the tri-lingual /English, French, German/ glossary of photogrammetric terms - based on English Glossary of Terms prepared by American Society of Photogrammetry.
6. The guide-lines for regional international Photogrammetry and Remote Sensing Periodicals" have been prepared.
7. Some information was gathered about cost-effectiveness, planning and organizational aspects of photogrammetric map production in the world.

I hope that the progress achieved during the past four years will continue and the projects which started successfully in 1976-80 will be finished in the near future.