SECOND UNITED NATIONS
REGIONAL
CARTOGRAPHIC CONFERENCE
FOR ASIA AND THE FAR EAST

20 October — 1 November 1958, Tokyo, Japan


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UNITED NATIONS
Department of Economic and Social Affairs
New York, 1959
The official records of the proceedings of the Second United Nations Regional Cartographic Conference for Asia and the Far East are being issued in two volumes: the present publication, Volume 1, Report of the Conference, and Volume 2, Proceedings and Papers (E/CONF.25/4). Volume 2 will contain the summary records of the plenary meetings, brief accounts of discussions in committees on technical subjects and technical and background papers.

The official records of the first United Nations Regional Cartographic Conference for Asia and the Far East, held at Mussoorie, India, in February 1955, have been published as E/CONF.16/6 (sales number: 1955.I.29) and E/CONF.16/7 (sales number: 1956.I.23).

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NOTE

Symbols of United Nations documents are composed of capital letters combined with figures. Mention of such a symbol indicates a reference to a United Nations document.

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CHAPTER I
ORGANIZATION OF THE CONFERENCE

TERMS OF REFERENCE

1. The Second United Nations Regional Cartographic Conference for Asia and the Far East held in Tokyo, Japan, from 20 October to 1 November 1958, in pursuance of resolution 600 (XXI) adopted by the Economic and Social Council on 2 May 1956. The Government of Japan made all the physical arrangements and provided the meeting facilities.

ATTENDANCE

2. The following is the list of representatives and observers of participating countries and observers from international organizations.

A. Governments

Australia
Representative:
Mr. Bruce Philip Lambert
Director of National Mapping
Department of National Development

Brazil
Observer:
Rear Admiral Fernando Carlos de Mattos
Naval Attaché, Embassy of Brazil
Tokyo

Burma
Representatives:
U Hla Kin Maung
Director of Survey
Burma Survey Department
(Chairman of the Delegation)

U Hla Gyaw
Officer-in-charge of geodetic research
Burma Survey Department

U Win
Principal Land Records Officer
Shan State Government
Taunggyi

Cambodia
Representative:
Colonel Ngin Karet
Director, Geographical Service of P.A.R.K.

Observer:
Mr. Bunky Saray
Deputy Chief, Divisions of Photogrammetry and Geodesy
Geographical Service

Canada
Representative:
Mr. W. H. Miller
Director, Surveys and Mapping Branch
Department of Mines and Technical Surveys

Ceylon
Representative:
Mr. V. Rasaratnam
Surveyor-General

China
Representatives:
Mr. Mo Tsao
Adviser to the Ministry of Interior
(Chairman of the Delegation)

Major General Wei-shu Hwang
Commandant, Survey College
Combined Service Forces (C.S.F.)

Colonel Chi-chi Chow
Chief, Survey Department
C.S.F.

Alternate representatives:
Mr. Yu-shu Sun
First Secretary, Chinese Embassy
Tokyo

Mr. Wei-I Chang
Chief of Section, Department of Land Administration
Ministry of Interior

Observers:
Colonel Chien Fu
Survey Department
C.S.F.

Colonel Chung-Chi Ying
Survey College
C.S.F.

Colonel Wen Ching Wan
Chief of Operations Section, Survey Department
C.S.F.

Colonel Tsu-Hsiung Tsou
China Map Service
C.S.F.

Colonel Sze-Yu Chu
Assistant Chief, Third Division
Intelligence
Ministry of National Defence
Dominican Republic
Observer:
Mr. Miguel Román Pérez
Minister Counselor of the Embassy of the Dominican Republic in Japan
Tokyo

Ecuador
Observer:
Mr. Gustavo Icaza Borja
Chargé d'Affaires, Embassy of Ecuador in Japan
Tokyo

France
Representative:
Mr. Georges Lacavère
Inspector General
Chief, Cartographic Service
Institut géographique national

Germany (Federal Republic of)
Representatives:
Professor Dr. Karl Gerke
Oberregierungsvorversionsrat
Institut für Angewandte Geodaesie
Frankfurt
(Chairman of the Delegation)

Dr. Willi Beck
Oberregierungsvorversionsrat
(Land Survey Office)
Baden-Württemberg
Stuttgart

Professor Dr. Karl Rinner
Director in the German Geodetic Research Institute
Munich

Dr. Walter Brucklacher
Chief Engineer, Zeiss-Aerotopograph Company
Munich

India
Representatives:
Colonel Ratindersingh Kaha
Director, Map Publication
Survey of India
Dehra Dun
(Chairman of the Delegation)

Mr. E. R. Wilson
Director, Air Survey and Training Directorate
Survey of India
Dehra Dun

Mr. S. S. Sundaram
Principal Civil Hydrographic Officer, Naval Hydrographic Office
Ministry of Defence
Dehra Dun

Indonesia
Representatives:
Lieutenant-Colonel Raden Mas Sutarjo Surjosusmano
Chief, Department of Topography of the Army
(Chairman of the Delegation)

Indonesia (continued)
Mr. Mask. Moentoha
Chief, Department of Land Registration

Major Rudy Edmond Beauspain
Chief, Photogrammetry Institute
Department of Topography of the Army

Iran
Representatives:
Mr. Mohammad Ebrahimi
Director, National Cartographic Centre
(Chairman of the Delegation)

Mr. Ali Nuri
Geodetic Engineer
National Cartographic Centre
Col. Mahmood Shahbandeh
Chief, Photogrammetric Section
Geographic Department of the Iranian Army

Israel
Representative:
Mr. Joseph Elster
Director, Survey Department
Ministry of Labour

Japan
Representatives:
Dr. Chūji Tsuboi
Professor, Tokyo University
(Chairman of the Delegation)

Dr. Katsuhiko Muto
Director, Geographical Survey Institute (G.S.I.)
Ministry of Construction

Dr. Kanji Suda
Chief Hydrographer, Hydrographic Office
Maritime Safety Board
Ministry of Transportation

Alternate representatives:
Dr. Naomi Miyake
Chief, Mapping Division, G.S.I.
Ministry of Construction

Dr. Akira Watanabe
Professor, Ochanomizu University

Dr. Toyozo Okuda
Chief, Geodetic Division, G.S.I.
Ministry of Construction

Mr. Kunihiko Sino
Chief, Topographic Division, G.S.I.
Ministry of Construction

Dr. Michiharu Takeda
Chief, Printing Division, G.S.I.
Ministry of Construction

Mr. Yoshio Ohkawara
Chief, Economic and Social Section
United Nations Bureau
Ministry of Foreign Affairs

Mr. Yushiro Tsukamoto
Chief, Astronomical Section, Hydrographic Office
Maritime Safety Board
Ministry of Transportation
Japan (continued)

Mr. Takuichi Matsuzaki
Chief, Chart and Publication Section, Hydrographic Office
Maritime Safety Board
Ministry of Transportation

Advisers:
Dr. Ietaue Tsubokawa
Chief, First Section, Geodetic Division, G.S.I.
Ministry of Construction

Mr. Yoshikatsu Ogasawara
Chief, Office of Inspectors, G.S.I.
Ministry of Construction

Dr. Takamasa Nakano
Chief, Geographical Section, Mapping Division,
G.S.I.
Ministry of Construction

Mr. Eiji Inoue
Chief, Planning Section, Geodetic Division, G.S.I.
Ministry of Construction

Dr. Ryoshichi Komukai
Research Official, Maritime Research Laboratory,
Hydrographic Office
Maritime Safety Board
Ministry of Transportation

Mr. Akira Irahara
Technical Expert, Administration Section, Hydrographic Office
Maritime Safety Board
Ministry of Transportation

Korea

Representative:
Mr. Pil Shik Chin
First Secretary, Korean Mission in Japan
Tokyo

Alternate representatives:
Mr. Hurng Joon Choi
Editorial Officer, Ministry of Education

Mr. Bong Soo Lee
Professor, Chungchi University

Mr. Won Ho Lee
Third Secretary, Korean Mission in Japan
Tokyo

Peru

Observer:
Mr. José Luis de Cossio
Counsellor of the Embassy of Peru in Japan
Tokyo

Portugal

Representatives:
Mr. A. Paes Clemente
Director General, Instituto Geografico e Cadastral
(Chairman of the Delegation)

Mr. Manoel Alfonso Dias
Director, Centro de Geografia do Ultramar

Switzerland

Representative:
Mr. Robert Scholl
Engineer, Wild Heerbrugg S.A.
Heerbrugg

Thailand

Representatives:
Major Phayon Phumhiran
Chief, Cartographic Section
Survey Department
Royal Thai Army
(Chairman of the Delegation)

Major Swasdi Pachimkul
Chief, Radio Engineer Section
Survey Department
Royal Thai Army

Lieutenant-Commander Virat Sarindu
Chief, Marine Surveying Section
Hydrographic Department
Royal Thai Navy

Flight Lieutenant Manas Thaima
Acting Deputy Chief, Land Section
Directorate of Material
Royal Thai Air Force

Turkey

Representatives:
Lieutenant-General Ihsan Seref Dura
Director General, Directorate General of Cartography
(Chairman of the Delegation)

Colonel Tefvik Ates
Cartographic Service

United Arab Republic

Representatives:
Colonel Soliman Kazem
Director, M.S.D.
(Chairman of the Delegation)

Colonel Anton Khouri
Deputy Director, Geographic Service
Damascus

Philippines

Observer:
Mr. Felipe F. Cruz
Vice-President, Philippine Society of Geodetic Engineers
United Kingdom of Great Britain and Northern Ireland

Representative:

Lieutenant-Colonel W.H. Johns, M.B.E., R.E.,
Assistant Director of Survey, G.H.Q.
Far East Land Forces
Singapore

United States of America

Representatives:

Rear Admiral H. Arnold Karo
U.S. Coast and Geodetic Survey
(Chairman of the Delegation)
Dr. Robert H. Randall
U.S. Bureau of the Budget
Executive Office of the President
(Vice-Chairman of the Delegation)

Advisers:

Mr. Loren A. Bloom
Cartographer, Directorate of Operations
Headquarters of the U.S. Air Force
Mr. John A. Bradley
Geographic Attaché, United States Embassy
Tokyo
Dr. Arthur L. Burt
Department of State
Colonel Frederick O. Diercks
Commanding Officer, U.S. Army Map Service
Brigadier-General Stephen R. Hamner
Assistant Chief of Engineers
Office of the Chief of Engineers
U.S. Army
Colonel Howard G. Krigis
U.S. Marine Corps
Mr. Gordon B. Littlepage
Technical Assistant to the Chief, Division of Charts
U.S. Coast and Geodetic Survey
Colonel Louis R. Wirak
Photo and Survey Branch
Joint Chiefs of Staff

Observers:

Colonel Karl T. Klock, Jr.
Engineer Section, M.A.A.G.
Major Gay J. Brunacci
Topographic Adviser, M.A.A.G.
Colonel Robert E. Herndon
Commanding Officer
U.S. Air Force Aeronautical Chart and Information Center
St. Louis
Mr. Robert O. Davis
Region Engineer, U.S. Geological Survey
Sacramento
Colonel Robert C. Miller
Chief Engineer, Intelligence Division
U.S. Army, Pacific
Lieutenant-Colonel A.M. Ahmajan
Commanding Officer, U.S. Army Map Service,
Far East
Tokyo

United States of America (continued)

Mr. Richard A. Newsham
United States Embassy
Tokyo
Mr. Leslie Y. Dameron, Jr.
Cartographer
U.S. Army Map Service
Mr. Frank L. Culley
Assistant Chief, Geodetic Division
U.S. Army Map Service

Vatican City

Representative:

R. P. Willem Grootaers
Father of the Congregation of the Immaculate Heart of Mary
Tokyo

B. Inter-Governmental Organizations

International Hydrographic Bureau
Dr. Kanji Suda

Pan-American Institute for Geography and History
Dr. Robert H. Randall
Honorary President

C. International Scientific Organizations

International Geographical Union
Mr. Georges Laclavère

International Organization for Standardization
Mr. Katsu Kaneko
Mr. Shoichi Mita
Mr. Kimji Kanehara

International Union of Geodesy and Geophysics
Mr. Georges Laclavère
Secretary-General

D. United Nations Secretariat

Dr. Te-Lou Tchang
Chief, Cartographic Section
Bureau of Economic Affairs
Department of Economic and Social Affairs
(Executive Secretary)

Dr. Chin-Yuan Li
Chief, Mineral Resources Development Section
Economic Commission for Asia and the Far East
(Technical Secretary)

Mr. Christ N. Christofis
Cartographic Section
Bureau of Economic Affairs
Department of Economic and Social Affairs
(Assistant to the Executive Secretary)

OFFICIAL ADDRESSES

3. Dr. Te-Lou Tchang, Executive Secretary of the Conference, opened the Conference on behalf of the

1/ The text of these addresses will be found in Second United Nations Regional Cartographic Conference for Asia and the Far East. vol. 2, Proceedings and Papers (E/CONF.25/4).
Secretary-General of the United Nations, and His Excellency Dr. Masafumi Yoneda, Vice-Minister of Construction, Japan, delivered the inaugural address.

**VOTE OF THANKS**

4. The Conference unanimously adopted a vote of thanks to the host Government for the excellent organization of the Conference and the hospitality extended to the participants.

**ADOPTION OF THE RULES OF PROCEDURE**


**OFFICERS OF THE CONFERENCE**

6. The Conference elected the following Officers of the Conference:

- **President:** Dr. Chūji Tsuboi (Japan)
- **Vice-Presidents:** Lieutenant-General İhsan Saref Dura (Turkey)
  Mr. V. Rasaretnam (Ceylon)
- **Rapporteur:** Mr. E.R. Wilson (India)

**AGENDA**

7. The Conference had before it a provisional agenda (E/CONF.25/1 and Add.1 and 2), prepared by the United Nations Secretariat on the basis of proposals received from the Governments of Burma, Colombia, the Federal Republic of Germany, Japan, the Netherlands, Spain, the United Kingdom and the United States of America. The final agenda, as adopted by the Conference, was as follows:

- **Agenda**
  1. Adoption of the rules of procedure
  2. Election of officers
  3. Adoption of the agenda
  4. Report on credentials
  5. Establishment of technical committees
  6. Brief reports by Governments on the cartographic activities of the respective countries, outlining work achieved, technical developments and difficulties encountered in technical work since the Mussoorie Conference
  7. Establishment of a regional inter-governmental cartographic commission or organization for Asia and the Far East
  8. Geodesy
     (a) Establishment of long standard base lines for calibrating geodimeters and other radio-electric and electromagnetic devices, as well as for assuring the accuracy of networks
     (b) International connexion of geodetic co-ordinates
     (c) Classification and standards of accuracy of geodetic control surveys
     (d) Reports on the use of the geodimeter and the tellurometer in geodetic surveys
  9. Aerial photography: Status of aerial photography programmes
     (a) Maintenance of national standard magnetometers and their comparison
     (b) Observation of national gravimetric nets and their international connexion
     (c) New methods and techniques in geodetic surveys, including gravimetry and geomagnetism
  10. Topographical mapping
     (a) Application of photogrammetric method in map making
     (b) Productivity of third-order photogrammetric instruments for compilation of geographical maps
     (c) Recent developments in photogrammetric plotting instruments
     (d) Automation in photogrammetry and its impact on map production
     (e) Use of Shoran controlled aerial photography in medium-scale mapping
     (f) Consequences of the application of electronics to photogrammetric production of maps
     (g) Importance of auxiliary instruments in photogrammetry
     (h) Adjustment of aerial triangulation according to the method of least squares by means of analogue computers
     (i) Standards with respect to scales, formats, contents and accuracy for topographical map series
     (j) Techniques and methods used in the production of various scale series of topographical maps
     (k) Strengthening of international co-operation in the execution of aerial photographic surveys over border areas
     (l) Cadastral survey
     (m) Questions relating to the establishment of a "cadastre"
     (n) Simplification of cadastral survey by use of air photographs
  11. Photo-interpretation
     (a) Geographic evaluation of aerial photography
     (b) Cartographic problems related to the use of air photographs for the study of the earth's crust for economic and social planning
     (c) Economic evaluation of aerial photographs in conjunction with topographical, geological and geophysical measurements from the air
  12. Topical mapping
     (a) Topical maps: economic maps, special maps for land development, geological maps, national atlases, etc.
     (b) International co-operation in the preparation and publication of topical maps
  13. International Map of the World on the Millionth Scale (IMW)
     (a) Promotion of the publication of the International Map of the World on the Millionth Scale
     (b) Report on progress made with respect to paragraph 4 (b) of resolution 500 (XXXI), adopted by the Economic and Social Council on 2 May 1956, concerning amendments to existing IMW specifications, keeping in mind the need for maintaining both the ICAO World Aeronautical Chart Series and the IMW Series
     (c) International standardization of sheet lines and projections for the land and air series of 1:1 millionth scale

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(d) International standardization of names, spelling and transliteration, and report on progress made in drafting the general framework of a programme looking towards uniformity in the writing of geographic names (Paragraph 4 (a) of resolution 600 (XXI), adopted by the Economic and Social Council on 2 May 1956)

14. Aeronautical charts
(a) Requirements for aeronautical charts and aeronautical information publications
(b) Recent developments in technical equipment used for aeronautical charts

15. Hydrography
(a) Reports by Governments on the present status of their hydrographic work
(b) Hydrographic charting for navigation safety
(c) Special charts for the exploitation of sea resources, including fisheries charts, bottom topographical charts, sediment charts, submarine geological charts, charts showing technical constructions under the sea
(d) Discussion of technical resolutions adopted by the Seventh International Hydrographic Conference

16. Adoption of the report of the Conference

ESTABLISHMENT OF TECHNICAL COMMITTEES

8. The Conference established four technical committees and allocated two technical items to each Committee, namely:

Committee I. (Geodesy and Hydrography): Items 8 and 15
Committee II. (Topography and Photogrammetry): Items 9 and 10
Committee III. (Topical maps and Photointerpretation): Items 11 and 12
Committee IV. (International Map of the World and Aeronautical charts): Items 13 and 14

OFFICERS OF THE TECHNICAL COMMITTEES

9. The four committees elected their officers as follows:

Committee I
Chairman: Colonel Tevfik Ates (Turkey)
Vice-Chairman: Dr. Kanji Suda (Japan)
Rapporteur: Colonel Mahmoud Shahbandeh (Iran)

Committee II
Chairman: Mr. Mohammad Ebrahimie (Iran)
Vice-Chairman: U Hla Kin Maung (Burma)
Rapporteur: Mr. Soliman Kazem (United Arab Republic)

Committee III
Chairman: Mr. Joseph Elster (Israel)
Vice-Chairman: Mr. Mo Tsao (China)
Rapporteur: Major Swasdi Fachimkul (Thailand)

Committee IV
Chairman: Colonel Rajinder Shingh Kalba (India)
Vice-Chairman: Lieutenant-Colonel Raden Mas Sutarjo Surjasonarno (Indonesia)
Rapporteur: U Hla Gyaw (Burma)

CREDENTIALS

10. The President of the Conference reported that the Credentials Committee, composed of the President and the two Vice-Presidents, had found the credentials of the delegations in order.

CLOSING SESSION

11. Mr. Tatsui Chuman, on behalf of the Minister of Transportation of Japan, delivered the closing address and praised the remarkable results achieved by the Conference.
CHAPTER II
RESOLUTIONS ADOPTED BY THE CONFERENCE

12. The background information leading to the decisions of the Conference is contained in the supporting documents and technical papers submitted to the Conference and in the proceedings of the meetings. A check list of all documents distributed to the participants is given in the annex to this report. The resolutions adopted by the Conference are reproduced below.

1. ESTABLISHMENT OF A REGIONAL INTER-GOVERNMENTAL CARTOGRAPHIC COMMISSION OR ORGANIZATION FOR ASIA AND THE FAR EAST

The Conference,

Noting that the Economic and Social Council stressed the importance of international co-operation and co-ordination for mapping by recommending the Member Countries to take appropriate measures therefor, in its resolutions 131 (VI), 281 (IX), 476 (XV), and 566 (XVII),

Recalling that the first United Nations Regional Cartographic Conference for Asia and the Far East, held in India in 1955, recommended the setting up of regional inter-governmental cartographic organizations for advising Governments of the region on their cartographic problems and other vital needs forgiving primary importance to cartographic self-sufficiency as a prerequisite to orderly economic development,

Appreciating that the Council further recommended in its resolution 600 (XXI), adopted at its twenty-first session in 1956, that those regional economic commissions which think it desirable consider the question of establishing cartographic committees for the purpose of periodic consultation among their members,

Noting with satisfaction the keen interest expressed during the debate on the question in the present Conference,

Expresses the hope that this matter will be taken up at the next session of the Economic Commission for Asia and the Far East to be held in Australia in 1959, and that the Commission will study, having fullest regard to the Council’s resolution 600 (XXI) mentioned above, the possibility of taking concrete steps for organizing regional inter-governmental channels of co-operation in the field of cartography, including establishment of an appropriate regional machinery.

30 October 1958.

2. UNITED NATIONS REGIONAL CARTOGRAPHIC CONFERENCE FOR ASIA AND THE FAR EAST

The Conference,

Noting with satisfaction the significant progress made by the countries in this region since the Mussoorie Conference, not only in the cartographic work done, but also in the introduction of modern techniques and equipment for the advancement of work in this field and for the increase of the efficiency of their production,

1. Appreciates the substantial assistance provided by the United Nations technical assistance programme and by the bilateral agreements in the form of technical experts, fellowships, and training equipment;

2. Believes that the reports presented to the Conference and the deliberations which followed were of utmost importance, and have provided valuable information for a better approach to the cartographic problems of this region, both at national and international levels;


1 November 1958.

3. ESTABLISHMENT OF LONG STANDARD BASE LINES FOR CALIBRATING GEODIMETERS AND OTHER RADIO-ELECTRIC AND ELECTROMAGNETIC DEVICES, AS WELL AS FOR ASSURING THE ACCURACY OF NETWORKS

I

The Conference,

Noting the increased use and general acceptance of electronic distance measuring equipment or apparatus employing light-waves,

Considering that all instruments should be regularly calibrated to ensure their continued accuracy,

Deems it desirable that each country should have at least one accurate base line of not less than ten kilometres in length for calibrating these instruments.

II

The Conference,

Recognizing that for the time being the smaller contiguous countries may find it to their mutual advantage to employ a common high precision base line for the purpose mentioned above,

Draws attention to the fact that a subsequent statistical analysis of the numerous comparisons so ob-
tained will help materially to bring about an internationally acceptable value for the velocity of propagation of light or electromagnetic waves and for the most suitable atmospheric corrections to be applied thereto, for survey purposes.

1 November 1958.

4. INTERNATIONAL CONNEXION OF GEODETIC CO-ORDINATES

The Conference,

Recognizing that the establishment of a world-wide geodetic network requires geodetic junctions between continents and connections between significant islands and the continents, and that all the required connections have not yet been achieved in this area,

1. Invites the International Union of Geodesy and Geophysics to establish a panel composed of geodetic experts of the countries in this region to investigate the ways and means to achieve the required connections and to report to the national cartographic agencies concerned on the finding of the panel;

2. Recommends, in the light of the discussions held during the Conference, that the method of star occultations by the moon be used in preference to other methods, as being the most practical and economical for the present, although there is much expectation that artificial satellites will at a later date provide an outstanding means to achieve such connections.

1 November 1958.

5. CLASSIFICATION AND STANDARDS OF ACCURACY OF GEODETIC CONTROL SURVEYS

The Conference,

Appreciating the action of the United States of America in making available the technical paper, "Classification and Standards of Accuracy of Geodetic Control Surveys", 2/

Realizing the extreme importance of obtaining international agreement on the classification and standardization of such surveys,

Recommends that this particular paper should be given careful consideration by all countries in this region.

1 November 1958.

6. USE OF THE GEODIMETER IN GEODETIC SURVEYS

The Conference,

Noting that:
(a) Various countries represented at the conferences have proved that geodimeter models I and II are consistently capable of measuring lines of suitable length with a proportional accuracy of at least 1 part in 300,000,
(b) The optimum length of line for such geodimeter measurements is from ten to twenty miles,
(c) The measurement of triangulation sides of such length will reduce the accumulation of error normally encountered in the development of triangulation from base lines,

Recommends that geodimeter model I or II should be used for the measurement of first-order base lines of appropriate length.

1 November 1958.

7. USE OF THE TELLUROMETER IN GEO- DETIC SURVEYS

The Conference,

Noting the accuracies obtained by various countries in the measurement of lengths when using the tellurometer,

1. Suggests that if adequate precautions are taken for temperature control, for the full development of reading cycles, and for the reduction of "ground swings", then, over distances of ten miles or more, the instrument can be used for the measurement of first-order traverse lengths;

2. Further suggests that the tellurometer can be used for trilateration, but with all lines of fifteen to twenty-five miles in length, it can only be safely expected that the resulting accuracy will be equivalent to or somewhat better than second-order triangulation;

3. Recommends this instrument for surveys for cartographic purposes.

1 November 1958.

8. MAINTENANCE OF NATIONAL STANDARD MAGNETOMETERS AND THEIR COMPARISON

The Conference,

Considering that recent research on the effectiveness of the proton precession magnetometer in the measurement of the components of the earth's magnetic field reveals that this instrument is of sufficient accuracy to introduce it into current practice,

Considering further that the use of this instrument will overcome the difficulties encountered in the international calibration of magnetic measuring instruments,

Urges the Secretary-General of the International Union of Geodesy and Geophysics to take forthwith the necessary action:
(a) To promote the adoption of this instrument for future work in relation with the determination of the world magnetic field;
(b) To request the International Association of Geomagnetism and Aeronomy to publish rules for the international use of this instrument including values to be adopted for the computation, e.g., gyromagnetic ratio, etc.;
(c) To investigate the ways and means of providing the region with a reasonable number of such instruments to speed up the determination of the magnetic field in the area.

1 November 1958.

9. OBSERVATION OF NATIONAL GRAVIMETRIC NETS AND THEIR INTERNATIONAL CONNEXION

The Conference,

Recognizing the great importance of ensuring the homogeneity of all gravity data used for geodetic purposes throughout the world,
Taking note that the International Union of Geodesy and Geophysics and the International Gravimetric Commission recommended respectively in 1951 and 1956 the observation of national gravimetric nets and their international connections,

Considering that the promotion of the recommendations mentioned above requires:

(a) An increase in the density of gravity stations on land and at sea,

(b) A strengthening of the international gravity network by additional long-range junctions,

1. Urges the International Union of Geodesy and Geophysics:

(a) To take forthwith action for promoting in this region the required international connections, national gravity nets and gravity measurement at sea;

(b) To report thereon as soon as possible to national agencies and international organizations concerned;

2. Recommends that sea gravimeters recently developed be used effectively in the vast sea area in this region.

1 November 1958.

10. PRESENT STATUS OF HYDROGRAPHIC WORK

The Conference,

Having heard the progress reports on hydrographic work in various countries,

Trusting that this mutual exchange of information on activities and on modern techniques will increase the efficiency of future work and reduce the expenses involved,

Considering that the lack of sufficient numbers of technicians remains an acute problem in many countries of this region,

Appreciates the special training course for foreign officers conducted by the United States of America in co-operation with the United Nations Educational, Scientific and Cultural Organization and the International Civil Aviation Organization.

1 November 1958.

11. HYDROGRAPHIC CHARTING FOR NAVIGATION SAFETY

The Conference,

Recognizing the important role played by hydrographic surveys in assuring the safety of navigation,

Noting that the required hydrographic data are not yet available for the whole region,

Recommends that the Governments of this region take necessary steps to accelerate hydrographic survey work of sufficient accuracy in areas where such work is deficient or non-existent.

1 November 1958.

12. THE GENERAL BATHYMETRIC CHARTS OF THE OCEANS

The Conference,

Considering that the General Bathymetric Charts of the Oceans is of great value to oceanographers, geophysicists and biologists as well as to hydrographers,

Noting that the present rate of progress in producing new editions of the General Bathymetric Charts of the Oceans is hampered by the lack of adequate means,

Noting further that the International Council of Scientific Unions has interest in furthering this project,

1. Expresses the hope that close co-operation can be developed among all the international bodies concerned so that the up-to-date editions of the Bathymetric Charts of the Oceans can be published at an early date;

2. Recommends that hydrographic offices of the region make available to the International Hydrographic Bureau the necessary data for the revisions.

1 November 1958.

13. SPECIAL CHARTS FOR THE EXPLOITATION OF SEA RESOURCES AND MARINE CONSTRUCTION WORKS

The Conference,

Recognizing the need for special charts for exploiting efficiently marine resources,

Recommends that the interested countries of the region undertake, when possible, the work in this field, exchange publications and charts with each other and make this information available to international organizations concerned.

1 November 1958.

14. DISCUSSION OF TECHNICAL RESOLUTIONS ADOPTED BY THE SEVENTH INTERNATIONAL HYDROGRAPHIC CONFERENCE

The Conference,

Emphasizing that in the interest of safe navigation, it is to the advantage of all countries concerned to adopt a uniform procedure for preparing nautical charts and related documents,

Noting that the technical resolutions adopted by the International Hydrographic Conferences have been followed by many countries throughout the world,

Recommends that the countries of this region implement these technical resolutions as far as practicable.

1 November 1958.

15. PRODUCTIVITY OF THIRD-ORDER PHOTOGRAMMETRIC INSTRUMENTS FOR COMPILATION OF GEOGRAPHICAL MAPS

The Conference,

Considering that:

(a) With respect to this region, it is desirable to increase, with the shortest possible delay, the production of geographical and topographical maps from aerial photographs by employing a greater number of operators,

(b) With a given budgetary provision it is possible to obtain a much larger number of third-order instruments than of higher order instruments,

(c) In general the skill of the operators would be higher when using third-order instruments instead of instruments of higher order, on the same cartographic problem,
(d) The possible proportion between the scale of photographs and the scale of the map has a smaller range of variations with third-order instruments than with the usual plotting machines.

(c) Third-order photogrammetric instruments are tools of adequate precision for the production of such maps if the considerations of items (c) and (d) are taken into account.

Recommends:
(a) That the exchange of data among cartographers of the region and elsewhere should be increased to enable them to evaluate the productivity of the third-order instruments in a more reliable way than has so far been possible;
(b) That, in each particular case, consideration should be given as to whether the conditions for an adequate use of third-order instruments can be fulfilled.

1 November 1958.

16. USE OF SHoran CONTROLLED AERIAL PHOTOGRAPHY IN MEDIUM-SCALE MAPPING

The Conference,

Noting with interest the use, by the United States Army Map Service, by Canada, and others, of Shoran controlled photography in medium-scale mapping such as nadir point positioning, "grid" photography and establishing secondary control points,

Recognizes the value and economy of such photography when applied to extensive mapping projects of large undeveloped areas where establishment of ground control is expensive or impractical.

1 November 1958.

17. CONSEQUENCES OF THE APPLICATION OF ELECTRONICS TO PHOTOGRAMMETRIC PRODUCTION OF MAPS

The Conference,

Noting with interest the experiments being conducted and test equipment being procured by the United States Army Map Service for electronically assisted scanning of the stereo model for semi-automatic production of map compilation materials,

Trusts that the results of these trials will be made available to the mapping agencies of all countries in due course.

1 November 1958.

18. IMPORTANCE OF AUXILIARY INSTRUMENTS IN PHOTOGRAMMETRY

The Conference,

Noting the experience in the use of photographs of the sun or horizon in the determination of lateral and longitudinal tilt, which gives the values of standard deviation almost free of correlation through the whole strip,

Noting the good results obtained by the combination of the statorscope and the airborne profile recorder for the determination of heights, in particular in unmapped areas with sparse or no ground control for height,

Recommends:
(a) That the cartographic agencies in the region pay great attention to the possible use of the images of the sun or horizon and investigate the application of the method in their work;
(b) That the use of the airborne profile recorder and the statorscope should be further developed;
(c) That large projects of small-scale aerial photography should be carried out as far as is practicable with the use of auxiliary instruments mentioned under (a) and (b) in order to facilitate future exploitation of the photographs.

1 November 1958.

19. ADJUSTMENT OF AERIAL TRIANGULATION ACCORDING TO THE METHOD OF LEAST SQUARES BY MEANS OF ANALOGUE COMPUTERS

The Conference,

Considering:
(a) The importance of aerial triangulation for speeding up the production of small and large-scale maps,
(b) The still existing difficulties regarding the adjustment of large blocks of aerial triangulation, since the general principles of geodetic computations are usually neglected in normal practice,

Recommends that the cartographic agencies of the regions study the methods of adjustment of aerial triangulation of blocks and strips, bearing in mind the limited facilities available and other conditions prevailing in this area.

1 November 1958.

20. STANDARD CARTOGRAPHIC PRACTICES

The Conference,

Noting that the procedures contained in "Standard Cartographic Practices"3/ submitted to the Conference have already been successfully implemented by a number of nations,

Recommends their adoption for all new mapping undertaken in this region, as well as for map projects sponsored by the Governments of the region.

1 November 1958.

21. TECHNIQUES AND METHODS USED IN THE PRODUCTION OF VARIOUS SCALE SERIES OF TOPOGRAPHICAL MAPS

The Conference,

Noting the recently developed technical methods for map and chart production and reproduction, including cartographic scribbling,

Realizing the apparent advantages to be gained by the application of these methods for the economical production of maps and charts,

Recommends that full information on these valuable techniques be made available to all interested cartographic agencies and, ifrequired, through the Cartographic Office of the United Nations as a clearing

house for technical bulletins and other related material readily available.

22. CO-OPERATION IN MAPPING BOUNDARY AREAS

The Conference,

Considering:
(a) That each country needs a full aerial photographic coverage for its economic development projects and national mapping.
(b) That difficulties are encountered in carrying out aerial photographic operations over border areas.
(c) That the mapping of an area of common interest requires the co-operation of all concerned, both in technical operations and in facilitating arrangements.

Recommends that in surveying border areas the Governments concerned extend their full co-operation, on a basis of reciprocity, including prompt mutual assistance in providing useful information and in granting the necessary permission.

23. CADASTRAL SURVEY

The Conference,

Recognizing the importance of establishing new registers or improving existing land registers,

Noting the following points:
(a) Cadastral survey should in all cases be based on a sound geodetic control and connected with an existing national geodetic net.
(b) Cadastral work should be planned on a broad scope and on a long-range basis so that it can keep pace with all requirements of future economic development as well as with changes in juridical or social systems.
(c) The precision of a cadastral survey should depend on the land value and should not be higher than necessary for the fulfilment of practical requirements. The cadastral survey should be prepared in different accuracies as required, the first of which could be the enlarged photographs. The numerical cadastral in conjunction with index maps represents the most perfect cadastral survey obtainable and desirable at the present stage of knowledge.
(d) All cadastral surveys can be done either by photogrammetrical methods or by ground survey. The method to be used depends upon the local circumstances.
(e) It is inadvisable to represent on cadastral maps any more topographical details than necessary. The topographical maps which are needed for the whole area, or for a part of it, should be made separately on the same or on a smaller scale. These topographical maps can be derived in planimetry from the cadastral map or from the basic material used for the latter.

1. Recommends that, in planning cadastral work, these points should be borne in mind;
2. Stresses particularly that a cadastral will lose a great part of its usefulness if it is not available in time.

24. PHOTO-INTERPRETATION

The Conference,

Noting the great potentials in the use of aerial photographs for geological interpretation and for compiling maps with the results obtained,

Recommends the mapping agencies concerned in this region:
(a) To use high performance lenses and prints showing sharp contrasts—bright and dark copies—as well as colour pictures and, in each case, to select the suitable emulsion—monochromes, panchromes, infra-red or a combination of them, together with an appropriate filter;
(b) To adopt a simple compilation procedure;
(c) To classify the geological features to be interpreted on the base of characteristics of landforms and to carry out quantitative analysis of the geological phenomena by photogrammetric method;
(d) To give geologists and other specialists sufficient training in the technique of geological interpretation of air photos;
(e) To further the exchange of experiences with other agencies in the field.

25. INFRA-RED PHOTOGRAPHY

The Conference

1. Notes with interest the communications presented by different countries on the applications of infra-red photography to photo-interpretation;
2. Recommends that research and development in this field be actively continued by the organizations which dispose of the necessary equipment and that the results of their investigations be widely disseminated through appropriate scientific publications.

26. GEOGRAPHIC EVALUATION OF AERIAL PHOTOGRAPHY FOR ECONOMIC AND SOCIAL PLANNING

The Conference,

Stressing the great importance of several techniques of photo-interpretation for inventory of natural resources for the study of the present status of social and economic conditions as well as for planning future developments,

Noting that the cost of photographs is a very small fraction of the total cost of a project,

Recommends:
(a) That the future programme dealing with the subject of topical maps should include all techniques of photo-interpretation for the purposes mentioned above;
(b) That in the work of photo-interpretation only aerial photographs of first quality be used;
(c) That in addition to the photogrammetric agencies or universities, centres for aerial photography research or geographical aerial photography evaluation be arranged for the training of qualified and experienced specialists in the field;
(d) That emphasis be given to the development of simpler methods of photo-interpretation in order to accelerate the operations;
(g) That co-operative efforts be furthered to intensify the exchange of experiences, to set up standards for accuracy, and to achieve uniformity in the presentation of results.

1 November 1958.

27. NATIONAL ATLASES

The Conference,

Noting with interest the progress made in the preparation of national atlases on a sufficiently large scale,

1. Draws attention to the usefulness of such atlases for planning economic development of countries;

2. Recommends to the Governments of the region to promote the preparation of such national atlases, taking into account the special conditions prevailing in their respective countries.

1 November 1958.

28. TOPICAL MAPPING FOR INVENTORY OF NATURAL RESOURCES

The Conference,

Recognizing the urgent need for international co-operation in the field of topical mapping for inventory of natural resources,

Recommends the Cartographic Office of the United Nations, in consultation with appropriate national agencies and international organizations, to develop general specifications for activities concerning resources inventory maps and maps for existing land use.

1 November 1958.

29. REGIONAL GEOLOGICAL AND MINERAL MAPS OF ASIA AND THE FAR EAST

The Conference,

1. Notes the progress made in the preparation of regional geological and mineral maps for Asia and the Far East, in particular, the fact that the first regional geological map is scheduled for distribution early in 1959;

2. Commends the Economic Commission for Asia and the Far East for its achievements in this field of topical mapping.

1 November 1958.

30. PROMOTION OF THE PUBLICATION OF THE INTERNATIONAL MAP OF THE WORLD ON THE MILLIONTH SCALE

The Conference,

Recognizing the increasing need for IMW sheets by governmental agencies and scientific and cultural organizations for their various types of work,

Noting that many sheets are out of date,

Recommends to the Governments of this region:

(a) To accelerate the completion of IMW sheets for their respective territories;

(b) To take appropriate measures to speed up the revision of the out-dated maps;

(c) To maintain close co-operation with the United Nations Secretariat, which took over the functions of the Central Bureau, IMW, for periodic exchange of up-to-date information, on progress achieved;

(d) To inform the United Nations Secretariat of the national agency responsible for the publication of IMW sheets, if such notification has not yet been submitted.

1 November 1958.

31. INTERNATIONAL STANDARDIZATION OF SHEET LINES AND PROJECTIONS FOR 1:1 MILLIONTH SCALE SERIES

The Conference,

Recognizing the present urgent need for world-wide map coverage at 1:1 millionth scale for general maps including IMW, aeronautical charts and topical maps,

1. Accepts as a temporary measure the production of topographical maps at 1:1 millionth scale plotted on any projection comparable to the modified polyconic and on sheet lines which may differ from the IMW pattern, as proposed in the progress report prepared by the Secretariat dated 18 October 1958.4

2. Recommends to the Governments to implement as soon as practicable the following:

(a) Adoption of the ICAO Lambert Projection for plotting the IMW Series between 80 degrees north and 80 degrees south latitude;

(b) Adoption of Common ICAO/IMW sheet lines along the parallels. The meridional sheet lines, however, should be either along the ICAO or IMW pattern. The corresponding sheet numbering and reference systems—and no other—should be retained;

(c) Use of the stereographic projection for the polar regions.

1 November 1958.

32. INTERNATIONAL STANDARDIZATION OF NAMES, SPELLING AND TRANSLITERATION

The Conference,

Recognizing the necessity for international standardization of names, spelling and transliteration,

Noting that at present only a small measure of international agreement on transliteration has been achieved,

1. Recommends for consideration the principles outlined in the paper prepared by the Secretariat, dated 15 September 1958,5 and in the background paper submitted by the United Kingdom, dated 4 September 1958.6

2. Suggests that the most suitable agency for the implementation of international standardization of names, spelling and transliteration is the United Nations acting by way of a parent body composed of national representatives and free to confer with appropriate authorities, official and academic, through subordinate study groups concerned with regional problems.

1 November 1958.

5/ Issued as E/CONF.25/L.10 and Add.1 and 2.
33. AERONAUTICAL CHARTS

The Conference,

Taking note of the dynamic increase in aviation throughout the world, including the greatly increased speeds, flying altitudes and distances,

Considering that accurate aeronautical charts and flight information are required for safe navigation,

Considers it desirable that this Conference express to the International Civil Aviation Organization the need for continuing study and improvement of aeronautical charts and aeronautical facilities publications to meet the requirements for improved interpretation imposed by the increased speed of aircraft, greater ranges in operating altitudes and distances and increased air traffic conditions, and that the Standards and Recommended Practices contained in annex 4 and annex 15 to the Convention of the International Civil Aviation Organization be liberalized to permit, if necessary, changes and improvements to meet changing operational requirements for all phases and types of air space navigation.

1 November 1958.

34. DISSEMINATION OF TECHNICAL INFORMATION PRESENTED TO THE CONFERENCE

The Conference,

Noting with great interest the information on recently developed methods, techniques and procedures, all of which are described in the technical documents presented to the Conference,

Recommends that this information be disseminated by the Cartographic Office of the United Nations as widely as possible.

1 November 1958.

35. VOTE OF THANKS

The Conference

Expresses its warm thanks to the Government of Japan for the excellent organization and for the hospitality extended to the Conference.

20 October 1958.
ANNEX

LIST OF DOCUMENTS ISSUED FOR THE CONFERENCE

Series E/CONF.25/...

E/CONF.25/1
Provisional agenda

E/CONF.25/1/Add.1
Provisional agenda: additional proposals

E/CONF.25/1/Add.2
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E/CONF.25/3
Report of the Conference

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E/CONF.25/L.1
Promotion of the publication of the International Map of the World on the Millionth Scale, submitted by Japan [13(a)]

E/CONF.25/L.2
International co-operation in preparation and publication of topical maps, submitted by Japan [12(b)]

E/CONF.25/L.3
Establishment of long standard base lines for calibrating geodimeters and other radio-electric and electromagnetic devices, as well as for assuring the accuracy of networks, submitted by Japan [8(a)]

E/CONF.25/L.4
International connexion of geodetic co-ordinates, submitted by Japan [8(e)]

E/CONF.25/L.5
Maintenance of national standard magnetometers and their comparison, submitted by Japan [8(e)]

E/CONF.25/L.6
Observation of national gravimetric nets and their international connexion, submitted by Japan [8(f)]

E/CONF.25/L.7
The Economic Map (General land use map) of Sweden, submitted by Sweden [12(g)]

E/CONF.25/L.8
International standardization of sheet lines and projections for the land and air series of 1:1 millionth scale, submitted by the United Kingdom [13(g)]

E/CONF.25/L.9
Simplification of cadastral survey by use of air photographs, submitted by the Netherlands [10(g) (ii)]

E/CONF.25/L.10
Report on progress made in drafting the general framework of a programme looking towards uniformity in the writing of geographic names, prepared by the Secretariat [13(d)]

E/CONF.25/L.11
Document withdrawn

E/CONF.25/L.12 and Add.1 (English only)
International standardization of names, spelling and transliteration, submitted by the United Kingdom [13(g)]

E/CONF.25/L.13
Some aids for photogeology, submitted by the Federal Republic of Germany [11(g)]

E/CONF.25/L.14
Geodetic connexion by observations of artificial earth satellites and of lunar occultations, submitted by the United States of America [8(g)]

E/CONF.25/L.15
Use of auxiliary equipment in photogrammetric mapping, submitted by the United States of America [10(g) (vi)]

E/CONF.25/L.16
Use of Shoran controlled aerial photography in medium-scale mapping, submitted by the United States of America [10(a) (ii)]

E/CONF.25/L.17
Photogrammetric mapping by electronically assisted scanning, submitted by the United States of America [10(g) (v)]

E/CONF.25/L.18
Adjustment of aerial triangulation according to the method of least squares by means of analogue computer, submitted by the Netherlands [10(a) (vii)]

E/CONF.25/L.19
Geographic evaluation of aerial photographs, submitted by the Federal Republic of Germany [11(a)]

E/CONF.25/L.20
Problems relating to the establishment of a new land register (cadastre), submitted by the Federal Republic of Germany [10(e) (i)]

E/CONF.25/L.21
The importance of auxiliary instruments in photogrammetry, submitted by the Netherlands [10(a) (vi)]

E/CONF.25/L.22
Report on the progress made with respect to paragraph 4 (b) of resolution 600 (XXI), adopted by the Economic and Social Council on 2 May 1956, concerning amendments to existing IMW specifications, keeping in mind the need for maintaining both the ICAO World Aeronautical Chart Series and the IMW Series, prepared by the Secretariat [13(b)]

E/CONF.25/L.23
Regional geological and mineral maps for Asia and the Far East, submitted by the ECAFE Secretariat [12(g)]

1/ The numbers in square brackets indicate the item numbers on the agenda, as adopted.
Reports by Governments on the present status of their hydrographic work, submitted by Japan [15(a)]

Hydrographic charting for navigation safety, submitted by Japan [15(b)]

Special charts for the exploitation of sea resources and marine construction works, submitted by Japan [15(c)]

Aerial photogrammetry in China, submitted by China [10(g)]

Status of work of the Millionth Scale Map Series in China, submitted by China [13(a)]


Aeronautical charts and aeronautical information publications, submitted by the United States of America [14(a)]

Recent developments in techniques used in production of aeronautical charts, submitted by the United States of America [14(b)]

Modern applications of cartographic techniques, submitted by the United States of America [10(e)]

Use of the geodimeter and tellurometer in geodetic measurements, submitted by the United States of America [8(d)]

Recent developments in adjustment techniques in aerial photogrammetric mapping with minimum ground control, submitted by the United States of America [10(g)]

Some recent developments in geomagnetism and gravimetry, submitted by the United States of America [8(g)]

Classification and standards of accuracy of geodetic control surveys, submitted by the United States of America [8(c)]

Topographic mapping in the Americas, submitted by the United States of America [10]

Selected publications relating to topographic mapping in the United States, submitted by the United States of America [10]

Automation in geodesy, photogrammetry and cartography, submitted by the Federal Republic of Germany [10(a) (iii)]

Proposals for the compilation of aeronautical charts, submitted by the Federal Republic of Germany [14]

The production of topographic maps by photogrammetric methods, submitted by the Federal Republic of Germany [10(a)]

List of documents for: items on the provisional agenda, prepared by the Secretariat [3]

Establishment of long base lines, submitted by Japan [6(a)]

Connexion of geodetic co-ordinates by occultation, submitted by Japan [8(b)]

Absolute measurement of the earth's magnetic field, submitted by Japan [8(c)]

Observation of national gravimetric nets and their international connexion, submitted by Japan [8(d)]

Carrying out of large-scale surveys by aerial photogrammetry, submitted by France [10(a)]

The taking and use of infra-red aerial photography at the Institut géographique national, submitted by France [11]

Two new French plotting instruments: Stérophoto and Stéroéoflex, submitted by France [10(a) (i)]

Use of material on perforated cards for geodetic documentation, submitted by France [6 and 8]

Use of astronomical control nets for preparing maps by photogrammetry, submitted by France [10(a)]

The radius photogoniometer, submitted by France [10(a) (ii)]

Introduction into aerotriangulation of data furnished by instruments installed in the photographic airplane, submitted by France [10(a)]

"Mechanographic" workshop of the Institut géographique national, submitted by France [6]

Activities of the Institut géographique national in the territories of Asia and Oceania, submitted by France [6]

Standard cartographic practices recommended for international use for land maps, submitted by France [10(b)]

Report on cartographic activities in India, submitted by India [6]

International standardization of names, spelling and transliteration, submitted by the Federal Republic of Germany [13(d)]

Report on cartographic activities in Turkey, submitted by Turkey [6]

Land use map (1:50,000), submitted by Japan [12(a)]

Selection from Standard Regulation of Landform Survey, submitted by Japan [12(a)]

Special maps for land development, submitted by Japan [12(a)]

Observation of national gravimetric nets and their international connexion, submitted by Burma [8(d)]
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