



**FOURTH UNITED NATIONS
REGIONAL
CARTOGRAPHIC CONFERENCE
FOR ASIA AND THE FAR EAST**

21 November - 5 December 1964, Manila, Philippines

Vol. I. Report of the Conference

UNITED NATIONS

DEPARTMENT OF ECONOMIC AND SOCIAL AFFAIRS



**FOURTH UNITED NATIONS
REGIONAL
CARTOGRAPHIC CONFERENCE
FOR ASIA AND THE FAR EAST**

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Vol. I. Report of the Conference

UNITED NATIONS

New York, 1965

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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FOREWORD

The official records of the Fourth United Nations Regional Cartographic Conference for Asia and the Far East, held in Manila, Philippines, from 21 November to 5 December 1964, are being issued in two volumes, the present publication, volume 1, *Report of the Conference*, and volume 2, *Proceedings of the Conference and Technical Papers* (E/CONF.50/5).

The official records of the previous United Nations Regional Cartographic Conferences for Asia and the Far East have been published as documents E/CONF.18/6 (Sales No.: 55.I.29) and E/CONF.18/7 (Sales No.: 56.I.23), for the First Conference; as documents E/CONF.25/3 (Sales No.: 59.I.9) and E/CONF.25/4 (Sales No.: 61.I.8) for the Second Conference; and as documents E/CONF.36/2 (Sales No.: 62.I.14) and E/CONF.36/3 (Sales No.: 64.I.17) for the Third Conference.

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Chapter I

ORGANIZATION OF THE CONFERENCE

TERMS OF REFERENCE

1. The Fourth United Nations Regional Cartographic Conference for Asia and the Far East was held in Manila, Philippines, from 21 November to 5 December 1964, in pursuance of resolution 928 (XXXV) adopted by the Economic and Social Council on 3 April 1963. The Government of the Philippines 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

ARGENTINA

Observer :

Mr. Eduardo N. Colombo
Chargé d'affaires
Manila

AUSTRALIA

Representative :

Mr. John Dunstan Lines
Supervising Surveyor
Division of National Mapping
Department of National Development

CANADA

Representative :

Mr. Alfred Lambert
International Boundary Commissioner
Department of Mines and Technical Surveys

CHINA

Representatives :

Mr. Mo Tsao
Adviser to the Ministry of the Interior
(*Chairman of the Delegation*)
Mr. Chung-Chi Ying
Vice-President, Survey College

Alternate representatives :

Mr. William K. C. Wang
First Secretary, Embassy of China
Manila
Mr. Wei-i Chang
Chief, Cartographic Section
Ministry of the Interior

CONGO (DEMOCRATIC REPUBLIC OF)

Representatives :

Mr. Antoine C. V. Yowalola
Director, Institute of Geography
(*Chairman of the Delegation*)
Mr. Charles Bosa
Assistant Director, Institute of Geography
Mr. Leonard Ntueba
Chief, Bureau of Photography
Institute of Geography

ETHIOPIA

Representative :

Mr. Mekbib Mammo
Technical Director, Imperial Ethiopian Mapping
and Geography Institute

FEDERAL REPUBLIC OF GERMANY

Representatives :

Mr. Willi Beck
Counsellor
Federal Ministry of Transportation

Observers :

Mr. Helmut Bischoff
Sales Manager, Zeiss-Aerotopograph Company
Oberkochen, Württemberg
Mr. Bernhard Send
Photogrammetric Engineer, Zeiss-Aerotopograph
Company Manila

FRANCE

Representative :

Mr. Georges R. Laclavère
Director of Cartography
Institut géographique national

HOLY SEE

Representative :

Father James J. Hennessey, S.J.
Director, Manila Observatory
Manila

INDIA

Representatives :

Mr. James Christopher Ross
Director, Southern Circle
Survey of India
Bangalore
(*Chairman of the Delegation*)

Captain Sunil Rajendra
Chief Hydrographer
Ministry of Defence

INDONESIA

Representatives :

Lieutenant-Colonel Rudy E. Beaupain
Chief, Photogrammetric Services
Directorate of Topography
Department of the Navy
(*Chairman of the Delegation*)

Captain Subagijo Taepoer
Chief, Planning and Research Services
Directorate of Hydrography
Department of the Navy

Mr. Sutnisno Prawotokusumo
Chief, Aerial Photo-interpretation
Department of Agrarian Affairs

Mr. Marsaid
Chief, Technical Division
Directorate of Land Registration
Department of Agrarian Affairs

Mr. Soewarno Martojoewono
Deputy Director, Aerial Survey
State Enterprises

Colonel Dono S. Indarto
Air Attaché, Embassy of Indonesia
Manila

IRAN

Representative :

Mr. Badredine Marashi
Director, National Cartographic Centre

ISRAEL

Representative :

Mr. Joseph Elster
Director, Survey Department
Ministry of Labour

ITALY

Observer :

Mr. Ezio Viti
Technical Director, Ente Italiano Rilievi Foto-
grammetrici
Milan

JAPAN

Representatives :

Mr. Yoshimichi Harada
Chief, Cartographic Division
Geographic Survey Institute
Ministry of Construction
(*Chairman of the Delegation*)

Mr. Yasuhiko Kimura
First Secretary, Embassy of Japan
Manila

Advisers :

Mr. Gaku Hiraoka
Managing Director, Kokusai Aerial Survey Com-
pany

Mr. Hiroyuki Takeda
Chief Geologist, Kokusai Aerial Survey Company

Mr. Shigeo Shino
Vice-Director, Technological Department
Toyo Koku Jigyo Company

Mr. Takeo Namimatsu
Chief, Photographic Division
Kimoto Company

Mr. Hideo Nakamura
Research Fellow
Institute of Industrial Science

Mr. Eiji Kurihara
Chemical Section
Kimoto Company

LEBANON

Representative :

Commandant Joseph Bitar
Director, Department of Geography and Geodesy

Alternate :

Mr. Jean Sfeir
Chief, Cartographic Service
Department of Geography and Geodesy

MALAYSIA

Representatives :

Tuan Haji Mohammed Yatim Bin Yahaya
Director, National Mapping and Survey Depart-
ment
(*Chairman of the Delegation*)

Mr. John P. Hendroff
Cartographer, Central Drawing Office
Survey Department

Alternate :

Mr. Eric W. Lawrance
Director, Lands and Surveys
Sarawak

NETHERLANDS

Representative :

Mr. Anthonie van der Weele
Director, International Training Centre for Aerial
Survey

PHILIPPINES

Representatives :

Mr. Macario Peralta, Jr.
Chairman, Board of Technical Surveys and Maps
Secretary of National Defense
(*Chairman of the Delegation*)
Commander Marcelino S. Tabin
Vice-Chairman and Executive Director, Board of
Technical Surveys and Maps
(*Vice-Chairman of the Delegation*)
Mr. Rafael M. Contreras
Member, Board of Technical Surveys and Maps
Under-Secretary of Public Works and Communi-
cations
Mr. Jesús C. Perlas
Member, Board of Technical Surveys and Maps
General Manager, National Waterworks and Sewer-
age Authority
Mr. Nicanor G. Jorge
Member, Board of Technical Surveys and Maps
Director, Bureau of Lands
Mr. Epifanio N. Salumbides, Jr.
Member, Board of Technical Surveys and Maps
Dean, College of Engineering
National University
Mr. Tim V. Certeza, Jr.
Member, Board of Technical Surveys and Maps
President, Philippine Surveying and Mapping Insti-
tute
Mr. Fernando Busuego, Jr.
Director, Bureau of Mines
Captain Cayetano Palma
Director, Bureau of Coast and Geodetic Survey
Mr. Bernardino Bantegui
Director, Office of Statistical Co-ordination and
Standards
National Economic Council
Captain Constancio Legaspi
Assistant Director, Bureau of Coast Geodetic
Survey
Captain Avelino de Guzmán
Bureau of Coast and Geodetic Survey
Mr. Norberto S. Vila
Head, Geodetic Engineering Department
College of Engineering
University of the Philippines

Mr. Anastacio V. Torrijos
Head Executive Assistant and Chief, Topographical
Maps Division
Board of Technical Surveys and Maps
Captain Teodosio N. Fojas
Assistant to the Director of Technical Services
Bureau of Coast and Geodetic Survey
Mr. César Reyes
Chief National Planner
National Economic Council
Mr. Pedro Ylagan
Chief Architect and Head, Planning and Survey
Department
People's Homesite and Housing Corporation
Commander Jayme Presbítero
Assistant to the Director of Operations
Bureau of Coast and Geodetic Survey
Mr. Filomeno L. Corton
Chief Cartographic Engineer and Chief, Special
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Board of Technical Surveys and Maps
Mr. Apolonio S. Evalle
Chief, Research and Development Division
Board of Technical Surveys and Maps
Mr. Ricardo Cruz
Supervising Scientist and Chief, Programming and
Evaluation Division
National Science Development Board
Commander Antonio Ventura
Chief, Operational Management Audit Unit
Bureau of Coast and Geodetic Survey
Mr. Manuel Abrogar, Jr.
Chief, Cartographic Division
Bureau of Coast and Geodetic Survey
Mr. Mario Manansala
Administrative Officer and Chief, Geodetic and
Geophysics Division
Bureau of Coast and Geodetic Survey
Mr. José B. Sare
Chief Surveyor, Surveys Division
Bureau of Lands
Captain Severo B. Barrios, Jr.
Commanding Officer, 516th Engineer Base Topo
Company
Philippine Army
Captain Vicente Angeles
Chief, Photo Branch
Philippine Air Force
Mr. Claro Martín
Chief, Fisheries Research Division
Philippine Fisheries Commission
Mr. Román B. Valera
Chief, Technical Services Division
Reforestation Administration
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Chief, Investigation and Survey Section
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Cadastre
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Supervising Surveyor IV
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Supervising Geologist II
Bureau of Mines

Mr. Arsenio Fernando
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Supervising Civil Engineer II
Department of Public Works and Communication

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Director, Office of National Planning
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Deputy Governor, Land Authority

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Mr. Socorro Valera
Director, Presidential Economic Operation Pro-
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Philippine Army

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President, Philippine Society of Geodetic Engineers

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Board of Technical Surveys and Maps

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Mineral Land Surveyor
Bureau of Mines

Mr. Elpidio P. Tolentino
Surveyor
Parks and Wildlife Office

Mr. Marcelino A. Samin
Cartographer II
Bureau of Forestry

PORTUGAL

Representative :

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Chief, Geographic Mission of Timor

REPUBLIC OF VIET-NAM

Representative :

Commandant Nguyen Van Quy
Director, National Geographic Service

Observer :

Mr. Do Lenh
Chargé d'affaires, Embassy of Viet-Nam
Manila

SAUDI ARABIA

Representative :

Mr. Mohammed Qalsay Asaad
Head, Photogrammetric Section
Ministry of Petroleum and Mineral Resources

SWITZERLAND

Representative :

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Engineer, Wild Heerbrugg S. A.

SYRIA

Representative :

General Abdul Mouin Safi
Director, Geographic Service
(*Chairman of the Delegation*)

Alternate :

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Geographic Service

THAILAND

Representatives :

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Chief of Survey, Survey Department
(*Chairman of the Delegation*)

Mr. Bancherd Balankura
Director General, Department of Land Development

Mr. Yong Chantrangkur
Deputy Chief and Construction Superintendent
State Railway of Thailand

Mr. Sarot Montrakun
Soil Technologist, Rice Department
Ministry of Agriculture

Captain Sapon Tongkumvongsa
Deputy Director, Hydrographic Department

Mom Luang Pilandh Malakul
Chief, Survey Division
Irrigation Department

Mr. Chootragool Sumanakate
 Director, Cadastral Survey
 Department of Lands

Colonel Chumphon Kulkasem
 Technical Officer
 Survey Department

Colonel Phoon Phon Asanachinta
 Technical Officer
 Survey Department

Colonel Vira Suvannus
 Chief, Education Division
 Survey Department

Colonel Burin Uppalakalin
 Chief, Control Survey Division
 Survey Department

Mr. Chamnong Debusdin Na Ayudhya
 Chief, Territorial Administration Division
 Department of Local Administration
 Ministry of the Interior

Mr. Kaset Pitakpaivan
 Chief, Geological Survey Division
 Department of Mineral Resources

Mr. Ambhorn Arunrangsri
 First Grade Economist
 National Statistical Office

Sub-Lieutenant Somvhang Tandalak
 Senior Lecturer
 Chulalongkorn University

Mr. Srethvit Suvunnetr
 First Grade Engineer, Highways Planning and
 Project Analysis Division
 Technical and Planning Office
 Ministry of National Development

Squadron Leader Chalong Jermjirdpol
 Directorate of Matériel
 Royal Thai Air Force

Mr. Chumni Boonyobhas
 Chief, Forest Inventory Section
 Forest Department

Lieutenant-Colonel Banlang Khamasundara
 Cartographic Officer
 Survey Department

Mr. Vraluck Chatarupavanich
 Second Grade Engineer, Technical Division
 National Energy Authority
 Ministry of National Development

TUNISIA

Representative:

Major Moncef Charrad
 National Defence Staff
 (*Chairman of the Delegation*)

Adviser:

Captain Mimoun Somrani
 National Defence Staff

UNION OF SOVIET SOCIALIST REPUBLICS

Representatives:

Mr. Alexandre Nikiforovich Baranov
 Head, Principal Cartographic Directorate
 (*Chairman of the Delegation*)

Mr. Evgueni Ivanovich Khoudiakov
 Head of Section
 Ministry of Foreign Affairs

Mr. Victor Ivanovich Koulikov
 Ministry of Foreign Affairs

Mr. Oleg Anatolyevich Krokhaev
 Attaché, Ministry of Foreign Affairs
 (*Secretary-Interpreter of the Delegation*)

UNITED ARAB REPUBLIC

Representatives:

Mr. Mohamed Saleh Hassan
 Director, Military Survey Department
 (*Chairman of the Delegation*)

Mr. Ibrahim Gahnem
 Director, Technical Services
 Military Survey Department

Mr. Anwar Abd El Megid
 Director, Planning and Organization
 Military Survey Department

Mr. Mohamed Abdel F. Mohsen
 Military Survey Department

UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND

Representatives:

Mr. George James Humphries
 Director, Overseas Surveys
 Directorate of Overseas Surveys
 (*Chairman of the Delegation*)

Lieutenant-Colonel William Neville Morris
 Directorate of Military Survey
 Singapore

Lieutenant-Colonel Donald G. L. Wilde
 Assistant Director, Directorate of Military Survey
 Singapore

Adviser:

Mr. Grafton J. Bentley
 Acting Senior Land Surveyor
 Crown Land and Surveys
 Hong Kong

UNITED STATES OF AMERICA

Representatives:

Mr. G. Etzel Percy
 The Geographer, Department of State
 (*Chairman of the Delegation*)

Admiral H. Arnold Karo
 Director, Coast and Geodetic Survey

Captain Lawrence W. Swanson
Assistant Director, Coast and Geodetic Survey

Colonel Leonard Landon Haseman
Directorate of Mapping, Charting and Geodesy
Department of Defense

Mr. Hellmut Schmid
Scientific Adviser
Coast and Geodetic Survey

Mr. Leonard M. Murphy
Chief, Seismology Division
Coast and Geodetic Survey

Mr. Clarence G. Johnson
Air Navigation Specialist
Federal Aviation Agency

Mr. Frank A. Clemens
Assistant to the Director of Operations, Aeronautical Chart and Information Center
United States Air Force
St. Louis, Missouri

Mr. William A. Radlinski
Assistant Chief Topographic Engineer
Geological Survey

Lieutenant-Colonel Richard G. Bohn
Commanding Officer, United States Army Map Service, Far East
Tokyo

Mr. Arthur F. Striker
Chief, Cartography Branch
Geological Survey

Mr. Gordon B. Littlepage, Jr.
Deputy Assistant Director for Cartography
Coast and Geodetic Survey

Mr. Robert J. Beaton
Director, Nautical Chart Division
Naval Oceanographic Office

Colonel Francis G. McBride
Chief, Mapping and Geodesy
Corps of Engineers
Department of the Army

Mr. John A. Bradley
Geographic Attaché, Embassy of the United States
Bangkok

B. *United Nations Specialized Agency*

UNITED NATIONS EDUCATIONAL, SCIENTIFIC AND CULTURAL ORGANIZATION

Mr. Wayne Albert Mills
Scientific Officer, UNESCO South East Asia Science Co-operation Office
Djakarta

C. *Inter-governmental Organizations*

International Hydrographic Bureau
Captain Aveline D. de Guzman

European Organization for Experimental Photogrammetry Research
Mr. Anthonie van der Weele

D. *International Scientific Organizations*

International Society of Photogrammetry
Mr. Robert Scholl

International Union of Geodesy and Geophysics
Captain Cayetano Palma

E. *United Nations Secretariat*

U Nyun
Executive Secretary, Economic Commission for Asia and the Far East
(*Representing the Secretary-General*)

Mr. Horacio Ureta
Chief, Cartographic Section
Department of Economic and Social Affairs
(*Executive Secretary*)

Mr. Chris N. Christopher
Cartographic Section
Department of Economic and Social Affairs
(*Deputy Executive Secretary*)

Mr. Hideho Sawata
Secretariat, Economic Commission for Asia and the Far East
(*Assistant Secretary*)

OFFICIAL ADDRESSES¹

3. U Nyun, Executive Secretary of the Economic Commission for Asia and the Far East, opened the Conference on behalf of the Secretary-General of the United Nations, and Mr. Macario Peralta, Jr., Secretary of National Defense of the Philippines, delivered the welcome address for the President of the Philippines.

VOTE OF THANKS

4. The Conference adopted by acclamation a vote of thanks to the Government of the Philippines for the excellent arrangements provided for the organization of the Conference and for the kind hospitality extended to the participants.

ADOPTION OF THE RULES OF PROCEDURE

5. The Conference unanimously adopted its rules of procedure.²

OFFICERS OF THE CONFERENCE

6. The Conference elected the following officers:

President:

Mr. Macario Peralta, Jr. (*Philippines*)

¹ For summaries of these addresses, see *Fourth United Nations Regional Cartographic Conference for Asia and the Far East, Vol. 2—Proceedings of the Conference and Technical Papers (E/CONF.50/5)*.

² See annex VI.

Vice-Presidents :

- Mr. John Dunstan Lines (*Australia*)
- Mr. Badredine Marashi (*Iran*)

Rapporteur :

- Captain Sunil Rajendra (*India*)

AGENDA

7. The Conference had before it a provisional agenda (E/CONF.50/1 and Add.1) prepared by the United Nations Secretariat on the basis of proposals received from Governments. The final agenda adopted by the Conference is given below:

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. Progress reports by countries on their respective cartographic activities since the last Conference
7. Reports on progress in matters which formed the basis of the resolutions or recommendations of the last Conference
8. Geodesy
9. Hydrography and oceanography
10. Topography and photogrammetry
11. Aerial photo-interpretation
12. Topical maps
13. Aeronautical charts
14. International Map of the World on the Millionth Scale (IMW)
15. Geographical names
16. Adoption of the report of the Conference

ESTABLISHMENT OF TECHNICAL COMMITTEES

8. The Conference established five technical committees and allocated certain agenda items to them as shown below:

Committee I

- Geodesy Item 8

Committee II

- Topography and photogrammetry Item 10

Committee III

- Aerial photo-interpretation and topical maps Items 11 and 12

Committee V

- Aeronautical charts, International Map of the World on the Millionth Scale (IMW) and Geographical names Items 13, 14 and 15

Committee V

- Hydrography and oceanography Item 9

OFFICERS OF THE TECHNICAL COMMITTEES

9. The five committees elected their officers as follows:

Committee I

- Chairman: Commander Marcelino S. Tabin (*Philippines*)
- Vice-Chairman: Mr. Mo Tsao (*China*)
- Rapporteur: Colonel Burin Uppalakalin (*Thailand*)

Committee II

- Chairman: Dr. Yoshimichi Harada (*Japan*)
- Vice-Chairman: Lieutenant-Colonel Rudy E. Beaupain (*Indonesia*)
- Rapporteur: Captain Teodosio N. Fojas (*Philippines*)

Committee III

- Chairman: Colonel Chumphon Kulkasem (*Thailand*)
- Vice-Chairman: Tuan Haji Mohammed Yatim Bin Yahaya (*Malaysia*)
- Rapporteur: Mr. Grafton J. Bentley (*United Kingdom*)

Committee IV

- Chairman: Major Moncef Charrad (*Tunisia*)
- Vice-Chairman: Commandant Nguyen Van Quy (*Republic of Viet-Nam*)
- Rapporteur: Commandant Joseph Bitar (*Lebanon*)

Committee V

- Chairman: Mr. James Christopher Ross (*India*)
- Vice-Chairman: Captain Sopon Tongkumvongse (*Thailand*)
- Rapporteur: Mr. Manuel Abrogar, Jr. (*Philippines*)

CREDENTIALS

10. The President of the Conference reported that the Credentials Committee, composed of himself and the two Vice-Presidents, has examined the credentials submitted by the delegations and found them in order.

CLOSING SESSION

11. The President of the Conference congratulated the delegates on their co-operation and praised their exchange of ideas in the field of cartography. The representative of the United Kingdom, on behalf of the delegates, assured the President that the success of the Conference would be long remembered. Other delegates added their appreciation of the results of the Conference.

Chapter 2

RESOLUTIONS ADOPTED BY THE CONFERENCE

12. The resolutions of the Conference are reproduced below; summaries of the work of the technical committees are given in annexes I to V. A check-list of the documents issued for the conference, including background, technical and information papers submitted by the participants in connexion with the various items of the agenda, can be found in annex VII.¹

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

The Conference,

Appreciating the offer of the Government of Australia to be the host country for the Fifth United Nations Regional Cartographic Conference for Asia and the Far East,

Recommends to the Economic and Social Council that the Fifth United Nations Regional Cartographic Conference for Asia and the Far East be convened in Australia not later than March 1967.

4 December 1964.

2. ESTABLISHMENT OF A UNITED NATIONS CARTOGRAPHIC UNIT AT THE HEADQUARTERS OF THE ECONOMIC COMMISSION FOR ASIA AND THE FAR EAST

The Conference,

Recalling the importance attached by the Economic and Social Council to the strengthening of international co-operation and co-ordination in the field of cartography.

Conscious of the urgent need for continuity in the co-operative work undertaken in the periods between regional conferences and for provision of advice to Governments of the region on cartographic problems, as expressed by the previous conferences,

Recognizing that the regional interests can best be served by a United Nations regional cartographic unit,

Recommends that a unit of the United Nations Headquarters Cartographic Section be established at the headquarters of the Economic Commission for Asia and the Far East with the following aims in view:

¹ The full text of the background and technical documents will be found in *Fourth United Nations Regional Cartographic Conference for Asia and the Far East, Vol. 2 — Proceedings of the Conference and Technical Papers* (E/CONF.50/5).

(a) To assist member nations in the co-ordination, co-operation and preparation of all matters concerning cartography;

(b) To advise member nations on cartographic techniques suitable for their specialized requirements;

(c) To assist member nations in providing the ways and means of acquiring cartographic equipment and personnel for the planning and development of mapping and charting projects in the interests of their economic development;

(d) To facilitate the training of suitable personnel in the techniques and processes involved in the field of cartography.

4 December 1964.

3. MAP INFORMATION OFFICE

The Conference,

Appreciating the active progress made by the Government of Thailand in establishing the Map Information Office in accordance with resolution 5 of the Third United Nations Regional Cartographic Conference for Asia and the Far East,

Noting the preliminary work done by the Government of Thailand in handling office procedures,

1. *Recommends* to the countries of the region that full co-operation be maintained with the Map Information Office in matters concerning:

(a) The collection of basic literature on cartography, maps and other material of regional interest;

(b) The dissemination to the countries of the region of information on inventory of such material and on places where such material can be obtained;

(c) The carrying out of other related work as may be assigned by the Conference;

2. *Further recommends* that the Government of Thailand be provided with technical assistance, if necessary, in servicing the Map Information Office through the United Nations technical co-operation programmes (including the Special Fund) in accordance with paragraph (b) of resolution 1 of the Third United Nations Regional Cartographic Conference for Asia and the Far East;

3. *Urges* the countries of the region to provide the Office with maps, charts, national atlases, indexes and reports in respect of the following:

(1) International connexion of geodetic co-ordinates;

- (2) International connexion of gravity nets;
- (3) Photo-interpretation keys;
- (4) Boundary data which have been agreed;
- (5) Territorial waters;
- (6) Aeronautical information;
- (7) Hydrography and oceanography;
- (8) Seismological data on the land and the sea;

and with reports and technical papers of all United Nations regional cartographic conferences as well as other aspects of education and research in the field of cartography;

4. *Invites* countries of other regions to contribute similar material.

4 December 1964.

4. ESTABLISHMENT OF BASE LINES FOR CALIBRATING ELECTRONIC AND ELECTRO-OPTICAL INSTRUMENTS

The Conference,

Recognizing the increased use of electronic and electro-optical distance measuring instruments in this region,

Recognizing further the importance of calibrating electronic and electro-optical distance measuring instruments,

1. *Notes* the announced plan of the Republic of the Philippines to establish a standard base line for this purpose;

2. *Recommends* to the countries in the region that do not have a base line for the purpose of calibrating their electronic and electro-optical distance measuring instruments that they establish such base lines.

4 December 1964.

5. CALIBRATION OF CRYSTAL FREQUENCIES IN ELECTRONIC DISTANCE MEASURING INSTRUMENTS

The Conference,

Recognizing that crystal frequencies in electronic distance measuring instruments may undergo changes from time to time,

Recommends that each country of the region investigate the availability of adequate laboratory frequency calibration equipment, and carry out crystal frequency calibrations at time intervals as deemed necessary.

4 December 1964.

6. ESTABLISHMENT OF ADDITIONAL WORLD GRAVITY BASE STATIONS IN THE REGION

The Conference,

Noting the importance of the best value of absolute gravity on the same datum in many fields of science,

Recognizing the desirability of additional absolute gravity stations and the availability of much improved portable relative gravity equipment,

Realizing that this field of activity lies within the province of the International Union of Geodesy and Geophysics (IUGG),

1. *Invites* the IUGG to consider the establishment of additional world gravity base stations in the Far East, in particular at, though not limited to, Manila, Bangkok and Djakarta;

2. *Recommends* that the various countries of the region consider the establishment of national gravity base stations which in turn would be referenced to the stations of the world gravity base net.

4 December 1964.

7. ESTABLISHMENT OF A REGIONAL MAGNETIC OBSERVATORY FOR CALIBRATION OF MAGNETIC SURVEYING INSTRUMENTS

The Conference,

Noting the importance and necessity of calibrating at frequent intervals absolute magnetic instruments used by magnetic observatories in the region,

Noting further that absolute magnetic instruments in the region are not calibrated frequently enough under one standard,

Realizing the importance of having values of the earth's magnetic field obtained in the same standard of measurement for use in studies of related sciences,

Recognizing that the calibration of magnetic instruments in an existing observatory at an easily accessible location in the region is desirable from the viewpoint of economy,

Recognizing further that this field of activity lies within the province of the International Union of Geodesy and Geophysics (IUGG),

1. *Invites* the IUGG to consider the establishment of such a regional magnetic calibration observatory in the region;

2. *Considers* that additional modern instruments and facilities for the proposed regional magnetic calibration observatory, if necessary, may be requested through United Nations technical assistance programmes.

4 December 1964.

8. AN INTERNATIONAL TSUNAMI WARNING SYSTEM

The Conference,

Noting that an international tsunami warning system is now operating in the Pacific Ocean area with the participation of many Governments around the Pacific,

Noting further that the warning services are available to those countries agreeing to exchange seismic and tidal data with all recognized participants and provide adequate dissemination services to their populations,

1. *Recommends* to the States participating in the Conference which, though lying in the Pacific area, are not a part of the present tsunami warning system, that they establish adequate internal communication

and responsible administration for their part of the system, establish and operate seismic and tidal stations and integrate their system with that currently in operation;

2. *Further recommends* to the States participating in the Conference that are members or that wish to become members of the warning system that they make arrangements to participate in the tsunami meeting which will take place early in 1965 in Honolulu.²

4 December 1964.

9. ECONOMY OF AERIAL SURVEYING AND MAPPING

The Conference,

Noting that there is a lack of information about the relation between the various factors to be taken into account when planning an aerial survey,

Noting further that there is a lack of information about the productivity obtained by differing techniques and equipment in the various phases of photogrammetric triangulation and mapping,

Recognizing that the economy of photogrammetric methods can be improved upon in many cases by a reconsideration of the map specifications,

Considering that the collection and distribution of the results of study and experience in these subjects are highly desirable,

1. *Recommends* that countries of the region pay special attention to the economic aspects of their application of photogrammetry and related map specifications;

2. *Further recommends* that all information available on the subject be sent to the Map Information Office at Bangkok, Thailand, for distribution to the other countries of the region.

4 December 1964.

10. STANDARD SCALES FOR BASE MAPS

The Conference,

Noting the need for adequate topographical maps for purposes of planning and engineering industrial and agricultural development projects,

Noting further that these maps can be used as bases for topical, special and thematic mapping and charting,

Recognizing the economy obtained in the use of maps of standard scales and, possibly, standard sizes,

Recognizing further the advantages that these maps afford in the exchange of technical data among neighbouring countries,

² The meeting of the Intergovernmental Oceanographic Commission working group on the international aspects of the Pacific tsunami warning system will be organized by the United States Coast and Geodetic Survey on the recommendation of the Intergovernmental Oceanographic Commission. The purpose of the meeting is to discuss the international aspects of the tsunami warning system with a view to securing the best possible international co-operation in all phases of the system.

1. *Recommends* to the cartographic agencies of the region the production of national base maps at the scales of 1 : 25,000, 1 : 50,000, 1 : 250,000, 1 : 1,000,000, 1 : 2,000,000 and 1 : 5,000,000;

2. *Requests* the more developed countries to assist the countries of the region by contributing on request whatever reproduction material may be available in their cartographic agencies on a cost or exchange basis.

4 December 1964.

11. EXCHANGE OF MAP DESIGN

The Conference,

Noting with interest the paper presented by the United Kingdom on the design of maps at 1 : 25,000 and smaller scales using a minimum number of printing colours,³

Noting further the economy that is obtained by using the minimum number of printings consistent with the specifications,

1. *Recommends* that the free exchange of information on map design be continued after the Conference;

2. *Further recommends* that such information be sent to the Map Information Office at Bangkok, Thailand, for further dissemination to the cartographic agencies of the region.

4 December 1964.

12. SUPER-WIDE-ANGLE PHOTOGRAPHY

The Conference,

Taking into consideration the reports that have been presented on the applications of super-wide-angle photography and the results obtained with it up to now,

Recognizing that, for mapping at various scales, the advantages of economy accruing from this system, as, for example, in the reduction in the number of flight lines, reduction in the number of stereomodels and reduction in the amount of ground control, as compared to normal and wide-angle photography are considerable,

Recommends that the application of the super-wide-angle system be seriously considered in all cases where it is feasible.

4 December 1964.

13. AERIAL PHOTO-INTERPRETATION

The Conference,

Recognizing the need for providing personnel trained in photo-interpretation for purposes of geology, engineering, industrial establishments and inventory of natural resources such as forestry, soil and water,

³ Document E/CONF.50/L.33, "The design of maps at 1:25,000 and smaller scales using a minimum number of printing colours".

Recommends that four sub-regional centres be set up in India, Japan, the Philippines and Thailand to impart training in photo-interpretation.

4 December 1964.

14. TOPICAL MAPS AND NATIONAL ATLASES

The Conference,

Realizing the importance of topical mapping work and the need for standardized specifications for topical maps and national atlases,

Considering that:

(a) There are many subjects for which topical maps may be constructed according to the needs of each country;

(b) It is desirable to standardize specifications;

(c) There is an urgent need for topical maps in the developing countries of the region;

(d) There is a need for a wide-scale exchange of topical maps among interested countries for mutual economic planning,

Recommends to the Fifth United Nations Regional Cartographic Conference for Asia and the Far East that it establish a committee on topical maps and national atlases.

4 December 1964.

15. REGIONAL ECONOMIC ATLAS FOR ASIA AND THE FAR EAST

The Conference,

Noting that the Government of Thailand is prepared to undertake the compilation and publication of a regional economic atlas within two years from the closing date of the Fourth United Nations Regional Cartographic Conference for Asia and the Far East,

Considering the need of the countries of the region for economic maps on the following subjects for the purposes of mutual economic planning: forest resources; water resources; soil classification; transportation; mineral resources; geology; property (with indications of the relative distribution of titled land, forest land and reserved land); land use; electric power resources; industrial power resources; population, and parks and wildlife resources,

Recommends that:

(a) All interested countries and the countries of the Asia and Far East region co-operate with the Government of Thailand by supplying source materials to the Royal Thai Survey Department in Bangkok, Thailand, as soon as possible and not later than October 1965, so that compilation may be completed about October 1966 and publication about October 1967;

(b) The scale of the source maps sent to Bangkok should be at 1 : 1,000,000 and in no case smaller than 1 : 5,000,000;

(c) The Government of Thailand request the United Nations to provide technical assistance experts for the compilation and reproduction of the maps of this atlas;

(d) All compilations be distributed to the interested countries contributing source materials before any publication is done, and that a working group⁴ should meet in Bangkok within two years from this Conference to discuss the final draft of the atlas;

(e) The over-all specifications of the published atlas should be as follows:

(i) The published scale to be at 1 : 5,000,000 unless the working group suggests that certain portions of the atlas be published on the scale 1 : 1,000,000;

(ii) The Lambert Conformal Conic projection to be used;

(iii) The sheet lines of the maps to be rectangular and, if required, in accordance with the sheet lines as noted in the specifications of the International Map of the World on the Millionth Scale (IMW);

(iv) The topographic features to be symbolized according to the IMW specifications; all names to be in roman letters, and the topical map symbols and colours to follow closely the universal system in modified tricolour.

4 December 1964.

16. INTERNATIONAL MAP OF THE WORLD ON THE MILLIONTH SCALE (IMW)

The Conference,

Noting with interest the proceedings and results of the United Nations Technical Conference on the International Map of the World on the Millionth Scale (IMW) held in Bonn, Federal Republic of Germany, in 1962 and the Technical Meeting on Hypsometric Tints for the IMW held in Edinburgh, Scotland, in 1964, and the unanimous agreements reached at those meetings,

Realizing the importance of the specifications adopted at the Bonn Conference,

Recognizing that the countries of the region are in favour of establishing a uniform standard of specifications in the production of the International Map of the World on the Millionth Scale,

Recognizing further the importance of those specifications in relation to the base for the World Aeronautical Chart of the International Civil Aviation Organization, 1 : 1,000,000 (WAC ICAO) and the bases for other special maps,

1. *Recommends* that a working group⁵ be formed at this Conference to promote and establish liaison with the United Nations, the International Civil Aviation Organization and the cartographic agencies of the countries of the region with a view to utilizing as far as possible the specifications common to both the Inter-

⁴ The countries members of the working group are China, Israel, Japan, the Philippines and Thailand (as its Secretary).

⁵ Members of the working group are China, Japan, Malaysia and the Philippines.

national Map of the World on the Millionth Scale and the World Aeronautical Chart (ICAO) in the preparation of base manuscripts for subsequent publications in either series;

2. *Further recommends* that the working group make periodic reports to the countries participating in the Conference on the progress made in this work.

4 December 1964.

17. GEOGRAPHICAL NAMES

The Conference,

Referring to the report submitted in New York in 1960 by the Group of Experts on Geographical Names⁶ and to the decisions adopted at the United Nations Technical Conference on the International Map of the World on the Millionth Scale in Bonn in 1962,⁷

Noting the decision of the Economic and Social Council at its thirty-seventh session to convene in 1967 a United Nations Conference on the Standardization of Geographical Names,

Realizing the fundamental importance of such a conference,

Recognizing that the success of the Conference demands full documentation on existing problems by the Group of Experts on Geographical Names, and an analysis of current systems of transliteration,

Recognizing further that this in turn depends on the completeness of information provided by individual countries,

1. *Urges* that the countries of the region take part in the United Nations Conference on the Standardization of Geographical Names;

2. *Recommends* that these countries should set up national working groups of experts on geographical names to provide as full an account as possible of their practices in processing geographical names for use by the United Nations in its preparation for the Conference.

4 December 1964.

18. HYDROGRAPHIC TRAINING CENTRES

The Conference,

Realizing that facility of navigation will be enhanced by uniformity of methods and techniques employed in the field as well as by chart compiling offices,

Recognizing that the standard and extent of chart coverage by regional charting authorities very much depend upon the availability of trained personnel,

Recognizing further that, in this era of electronic aids in position fixing and distance measurement, adequate

⁶ See United Nations, *World Cartography*, vol. VII (Sales No.: 62.I.25), pages 7 to 18.

⁷ See *United Nations Technical Conference on the International Map of the World on the Millionth Scale, Vol. 2 — Specifications of the International Map of the World on the Millionth Scale (IMW)* (Sales No.: 63.I.20), pages 16 and 17.

training in the calibration and utilization of such equipment is most desirable,

Recommends that the establishment of sub-regional training centres in hydrography in India and Japan be encouraged by the Economic Commission for Asia and the Far East, with expert advice and aid in the latest methods and techniques as well as in the training of personnel, as required.

4 December 1964.

19. USE OF THE METRIC SYSTEM IN NAVIGATION CHARTS

The Conference,

Noting the necessity for obtaining uniformity in the representation of depth and topographical details on navigational charts covering the waters of the region,

Noting further that the world coverage authorities and the regional charting authorities show depths on their charts either in feet and fathoms or in metres or in a combination of both,

Realizing that navigators must use charts containing different systems of measurement,

Recognizing the importance of a uniform system of measurement,

Recommends that a uniform system of inscribing depths be adopted by regional charting authorities, as follows:

(a) Where applicable, the coastal series on the scales 1 : 50,000 and larger shall be converted to the metric system as and when the opportunity arises;

(b) All new editions shall, as far as possible, be published using the metric system.

4 December 1964.

20. THE CO-OPERATIVE STUDY OF THE *Kuroshio* (JAPAN CURRENT)

The Conference,

Recalling that the Intergovernmental Oceanographic Commission, at its third session in June 1964, adopted as an official programme the co-operative study of the *Kuroshio*,

Realizing that this programme may be of interest to the countries of the world as a scientific study,

Recognizing that the cartographic activities of this co-operative study comprise an important aspect of this project,

1. *Invites* interested countries willing to participate in such a programme to extend full support to the project;

2. *Recommends* that a working group⁸ be formed to establish liaison with the United Nations, the Economic

⁸ The group is composed of delegates from the cartographic agencies of the following countries: Canada; China; Japan; Philippines; Republic of Viet-Nam; Union of Soviet Socialist Republics, and United States of America, the delegate from Japan acting as Secretary.

Commission for Asia and the Far East, the United Nations Educational, Scientific and Cultural Organization, the Intergovernmental Oceanographic Commission and interested countries on this co-operative study;

3. *Further recommends* that the working group make periodic reports on its work to the countries of the region, as well as to other interested countries.

4 December 1964.

21. REGIONAL OCEANOGRAPHIC SURVEY OF A PORTION OF THE SOUTH CHINA SEA

The Conference,

Noting that a large portion of the international waters in the South China Sea, extending westward about 300 miles from longitude 113 °E and north to about latitude 15 °N, exclusive of territorial waters surrounding individual islands, is still inadequately surveyed, making navigation in the area dangerous,

Noting further that in this area are contained important natural resources,

Realizing the necessity of surveying the area in order to delineate the navigable channels and provide safe navigation therein and also to collect data on fishing and other resources,

Recognizing that such a survey of the area would be most expeditiously accomplished through a joint co-operative effort of the countries bordering the area, supplemented by aid from other interested countries,

Recognizing further that the countries bordering the area may not have the facilities for undertaking a project of such magnitude,

1. *Invites* the United Nations, the United Nations Educational, Scientific and Cultural Organization, the Intergovernmental Oceanographic Commission and interested countries with available technical resources to participate in a phased programme, with emphasis on the most urgently needed hydrographic surveys;

2. *Recommends* that an initial working group⁹ comprising representatives of countries interested and willing to participate in this project be formed and be enlarged as desired.

4 December 1964.

22. VOTE OF THANKS TO THE GOVERNMENT OF THE PHILIPPINES

The Conference,

Expresses its heartfelt thanks to the Government of the Republic of the Philippines for the excellent arrangements it has been good enough to provide for the organization of the Fourth United Nations Regional Cartographic Conference for Asia and the Far East and for the warm hospitality afforded to each and every participant.

4 December 1964.

⁹ The working group is composed of delegates from the cartographic agencies of the following countries: China; Malaysia; Philippines; Republic of Viet-Nam; Thailand, and United States of America, the delegate from the Philippines acting as Secretary.

Annex I

SUMMARY OF WORK OF COMMITTEE I ON GEODESY

TRIANGULATION

The United Kingdom, in its paper "Adjustment of South Asia triangulation, 1963, and its possible use" (E/CONF.50/L.34), pointed out that it was important to complete the adjustment of the triangulation net covering the border areas of Iran and Afghanistan, southern Burma and Thailand. It emphasized that the completion of this adjustment would make it possible to connect the geodetic control points of South Asia in one standard network from Iran to Burma.

Canada, in a document entitled "Maintaining the Canada-United States boundary" (E/CONF.50/L.91), briefly reviewed the organization of the International Boundary Commission between the two countries, explaining how the Commission co-operates in determining the location of a common boundary between the two States, and how this boundary is maintained. The paper mentioned that topographical maps have already been published and that geodetic determinations and observations are taken at regular intervals to ascertain the positions of boundary monuments and reference points. The results obtained are published.

The Philippines, in its paper "Proposed first-order triangulation of the Philippines" (E/CONF.50/L.97), reviewed the new system it expects to undertake in order to complete a first-order triangulation survey, which would extend throughout the archipelago and connect with the networks of Indonesia and Malaysia.

ELECTRONIC DISTANCE MEASURING INSTRUMENTS

Several papers were presented by the Philippines, the United Kingdom and the United States of America on the subject of electronic distance measuring instruments, describing their experience in the use of such equipment during the past three years. The United States of America pointed out that one of its mapping agencies, the Coast and Geodetic Survey, has established a short base line 1.8 kilometres in length near Washington, D.C., on which electronic distance measuring instruments may be calibrated. Considerable discussion took place in the Committee on the new electro-optical and microwave distance measuring instruments and the tests conducted on them. The Committee recognized the importance of establishing base lines to calibrate electronic distance measuring instruments in present and future survey works, and submitted two draft resolutions to the Conference for adoption.^a

SATELLITE GEODESY

A paper was presented by the United States of America on the experience gained in satellite geodesy, "The use of artificial earth satellites for geodetic measurements" (E/CONF.50/L.45). One important aspect of using satellites for determining geodetic measurements is their value over the long distances which it has not been possible to cover with good accuracy by conventional survey techniques. The Committee noted that the United States of America

^a Adopted as resolution 4, "Establishment of base lines for calibrating electronic and electro-optical instruments", and resolution 5, "Calibration of crystal frequencies in electronic distance measuring instruments".

has developed four nets, using earth satellites tied to already known ground control points.

Two papers submitted by France, "Geodesy by satellite" (E/CONF.50/L.93) and "Determination of the position of the satellite Echo I" (E/CONF.50/L.123), dealt with the first geodetic junction by satellite between Europe and Africa, which was made in May 1964. The satellite observed in this case was Echo I, which was launched by the United States of America. The main interest of this operation was that it afforded the Institut géographique national the possibility of trying out new methods measuring equipment of recent manufacture. It would also permit the accuracy of the geodetic junctions between France and Algeria, made in 1876 and 1879, to be checked. In another document entitled "The method of passive satellite triangulation" (E/CONF.50/L.57), the United States of America described a three-dimensional geometrical triangulation which could provide a better world-wide reference net, replace the time-consuming long-arc triangulation methods, produce a unified three-dimensional reference net and establish the necessary geometric fidelity for a world-wide system of satellite tracking stations.

LEVELLING

The paper "Progress on precise levelling and study of vertical crustal movement in the United States" (E/CONF.50/L.28) presented by the United States of America was considered by the Committee to be an important one. It described the methods and techniques used to conduct precise levelling and showed how levelling aids in the study of the vertical crustal movements in that country.

GRAVITY AND GEOMAGNETISM

The Committee considered the results received from the gravity surveys, which are being conducted continually throughout the world, to be important. It realized that not all countries have established base stations and recognized further that, in order eventually to connect gravity readings within an international network, a regional gravity base station would have to be established. This was briefly pointed out in a document submitted by the Philippines, "Establishment of a regional gravity base station" (E/CONF.50/L.6), and the Committee prepared a draft resolution^b on this subject having specific regard to the establishment of base stations within the region.

The Philippines and the United States of America both presented documents on this subject: "Designation of a regional magnetic observatory where magnetic surveying instruments may be standardized" (E/CONF.50/L.7), and "Geomagnetic instrumentation and data centre activities" (E/CONF.50/L.55), respectively. Since most of the magnetic instruments used in the various observatories throughout the world are calibrated not by one central observatory but by different points, it was suggested that a regional magnetic observatory would serve to improve the accuracy of the values pertaining to the earth's magnetic field as well as pro-

^b Adopted as resolution 6, "Establishment of additional world gravity base stations in the region".

vide a useful standard of measurement which could be used by all the sciences. The Committee submitted a draft resolution to the Conference for adoption.^a

SEISMOLOGY

On the subject of seismology, the Committee considered three papers referring to the tsunamis encountered in the Pacific and Indian Ocean region, "Seismological work in Thailand" (E/CONF.50/L.26), submitted by Thailand, and "An international tsunami warning system for the Pacific" (E/CONF.50/L.48) and "Tsunami — the story of the seismic sea-wave warning system" (E/CONF.50/L.75), both presented by the United States of America. The first of these papers emphasized the need for more seismological stations throughout the region, while the other two pointed to the progress that is being made in the international tsunami warning system now operating in the Pacific Ocean. This type

^a Adopted as resolution 7, "Establishment of a regional magnetic observatory for calibration of magnetic surveying instruments".

of warning system is very important since in recent times the countries bordering both the Pacific and Indian Oceans have suffered from the catastrophic impact of tsunamis. During the discussion, the United States of America brought to the attention of the Committee that, early in 1965, a meeting of the Intergovernmental Oceanographic Commission working group on the international aspects of the Pacific tsunami warning system will be convened in Honolulu, organized by the United States Coast and Geodetic Survey. The purpose of this meeting is to consider the international aspects of the tsunami warning system and at the same time to secure the best possible co-operation in all phases of the system. Noting the importance of this matter, the Committee submitted a draft resolution for adoption by the Conference.^d

The United States of America also presented a paper on "Emergency charting of the Alaska earthquake disaster area" (E/CONF.50/L.72), which reviewed the experience encountered in charting an area immediately after a disastrous earthquake.

^d Adopted as resolution 8, "An international tsunami warning system".

Annex II

SUMMARY OF WORK OF COMMITTEE II ON TOPOGRAPHY AND PHOTOGRAMMETRY

USE OF ORTHOPHOTOSCOPE AND ORTHOPHOTOGRAPHS

The Committee had before it the following papers: "Utility of photo maps" (E/CONF.50/L.64), submitted by Japan; "New developments in orthophotography" (E/CONF.50/L.44), submitted by the United States of America, and "Procurement of cartographic data by means of ortho-projection of aerial photographs" (E/CONF.50/L.73), presented by the Federal Republic of Germany. The Committee noted that continuous improvement is being made in the production of photomaps and in the use of orthophotography. The paper submitted by Japan also considered the production by manual procedures of photo contour maps (similar in principle to the so-called orthophotographs) without the use of special equipment and using conventional photogrammetric instruments. The Committee noted with interest that since the Third United Nations Regional Cartographic Conference for Asia and the Far East many improvements, both in techniques and equipment, have been made in this aspect of photogrammetry and that studies are still continuing.

DEVELOPMENTS AND EXPERIENCE IN AERIAL TRIANGULATION

The Committee took note of the technical papers, "Adjustment of large aerotriangulation blocks on an electronic computer of limited capacity" (E/CONF.50/L.104), presented by France, and "Aerial triangulation in Japan" (E/CONF.50/L.84), presented by Japan. The United Kingdom also submitted a paper on "Aerotriangulation by observation of independent models" (E/CONF.50/L.60). The United States of America submitted a paper on "Analytic aerotriangulation" (E/CONF.50/L.54), which dealt with analytical and semi-analytical triangulation as used by the United States Geological Survey, and analytical triangulation for the intensification of control as employed by the United States Coast and Geodetic Survey.

In a paper entitled, "Mapping of extensive little-explored territories on 1:25,000, 1:100,000 and 1:200,000 scales" (E/CONF.50/L.77), the Union of Soviet Socialist Republics reported considerable experience in the use of aerotriangulation in the mapping of extensive little-explored territories.

The discussion tended to justify the development of the full potential of computational photogrammetry with the goal of

using aerial triangulation for geodetic control intensification. The Committee realized the urgent need of the developing countries for extensive mapping, and the importance of aerotriangulation for rapid and economical mapping. However, the cost of using electronic computers could not be underestimated, especially in the case of the developing countries, and the papers on aerial triangulation therefore reiterated the validity of resolution 10 of the Third United Nations Cartographic Conference for Asia and the Far East^a regarding the promise of digital methods and electronic computers in aerial triangulation; the Committee also reaffirmed its view in the draft resolution which it submitted to the Conference for adoption.^b

DEVELOPMENT OF SCRIBING TECHNIQUES

The Committee noted with interest the information contained in the technical papers submitted on this subject. Since the last Conference, improvements have been made in the field of scribing and in the drafting of topographic maps and topical maps. Notable are those achieved by Japan in the use of transparent strip coats and in the photo-scribing method employing the photo-chemical colour composite and electronic printer processes; these are described in the document entitled "Outline of scribing techniques used in Japan" (E/CONF.50/L.84).

Several countries, notably the Federal Republic of Germany, Thailand, the Union of Soviet Socialist Republics and the United States of America, actively participated in the discussion, describing their experiences in scribing and the use of automatic scribing machines. There was some discussion on the advantages and disadvantages of the different scribing needles-steel, sapphire and diamond point. The new scribing techniques have resulted in extensive saving of time in map compilation.

The Committee noted with interest the information contained in the technical paper submitted by Israel, "Consideration on the applications of an electronic co-ordinatograph in surveying" (E/CONF.50/L.18), and the experiences reported therein on the application of this system. Several papers were submitted dealing

^a See *Third United Nations Regional Cartographic Conference for Asia and the Far East, Vol. I — Report of the Conference* (Sales No.: 62.1.14), resolution 10, page 10.

^b Adopted as resolution 9, "Economy of aerial surveying and mapping".

with the use of the electronic co-ordinatograph in surveying, notably, "Technical problems encountered in the numerical photogrammetric cadastre" (E/CONF.50/L.15), presented by the Philippines, and "Development of photogrammetry and electronic data processing equipment for highway design in Japan" (E/CONF.50/L.114), presented by Japan. The future potential use of the electric co-ordinatograph in surveying was emphasized in these papers, which took into account the savings in the time needed to complete plotting work.

USE OF SUPER-WIDE-ANGLE PHOTOGRAPHY AND RELATED INSTRUMENTS IN MAP COMPILATION

The Committee noted with interest the following papers submitted to the Conference regarding the use of super-wide-angle photography in mapping: "Preliminary investigations into the accuracy of 1:10,000 topographic maps from super-wide-angle photographs" (E/CONF.50/L.71), presented by the United Arab Republic; "Mapping of extensive little-explored territories on 1:25,000, 1:100,000 and 1:200,000 scales" (E/CONF.50/L.77), presented by the Union of Soviet Socialist Republics; "Instrument systems for ultra-wide-angle mapping" (E/CONF.50/L.79), "Some tests on the use of super-wide-angle photography for plotting at large scales" (E/CONF.50/L.80), and "The present requirements in instruments and methods for the intensive use of photogrammetry in small-scale mapping" (E/CONF.50/L.124), presented by Switzerland. These papers described the extensive use of the super-wide-angle camera and showed that the results obtained were very encouraging. The Committee took note of the possibility of using super-wide-angle lens photography in map scales of 1:25,000 or larger. The Netherlands, however, mentioned some disadvantages, especially in the preparation of mosaics and in the instrumentation for aerial triangulation and plotting. The Committee, taking into account the observations made by the Netherlands, concluded that additional studies were necessary but, in view of the economic advantages of super-wide-angle photography, submitted to the Conference for adoption a draft resolution recommending that the application of this system be seriously considered in all cases where it is feasible.^c

DESIGN OF MAPS USING MINIMUM NUMBER OF PRINTING COLOURS

The Committee noted with considerable interest the experiences of the United Kingdom in the preparation of the map on the

^c Adopted as resolution 12, "Super-wide-angle photography".

scale 1:25,000 as described in "The design of maps at 1:25,000 and smaller scales using a minimum number of printing colours" (E/CONF.50/L.33). The Committee recognized that for developing countries, the use of a minimum number of colours in the printing of small-scale maps would be economically beneficial. The Committee agreed on a draft resolution for adoption by the Conference.^d

ECONOMY OF APPLICATION OF AERIAL PHOTOGRAPHS IN NATIONAL MAPPING PROGRAMMES

Several papers submitted to the Conference emphasized the economy to be derived from the application of aerial photographs to national mapping programmes. The three papers, "The economy of the application of aerial photographs to national mapping programmes" (E/CONF.50/L.4), submitted by the Netherlands, "Dam site survey by aerial photogrammetry" (E/CONF.50/L.99), presented by the Philippines, and "An economical experience in topographic mapping" (E/CONF.50/L.119), presented by Japan, covered this subject fully.

The Committee noted with interest the relative economy in the use of aerial photographs in national mapping as compared to conventional surveying methods, and recommended the extensive use of photogrammetry in the national mapping programmes of developing countries. The conclusions derived from the papers submitted advocated the use of aerial photographs as the best compromise on the relative over-all accuracy required and the resulting costs.

A paper submitted by the United States of America, "Automated mapping systems" (E/CONF.50/L.88), explained in detail the use of automated mapping systems for rapid large-scale mapping, including developments in automatic type placement, photogrammetric rectification, mosaicking and stereocompilation.

SEVERAL APPLICATIONS OF PHOTOGRAMMETRY

The Committee noted with interest two papers on the application of photogrammetry to special types of survey programmes: "Development of photogrammetry and electronic data processing equipment for highway design in Japan" (E/CONF.50/L.114), submitted by Japan, and "Photogrammetric procedures in tidal current surveys" (E/CONF.50/L.53), presented by the United States of America. These two papers clearly indicate the numerous possibilities for the use of photogrammetry outside of normal national mapping programmes.

^d Adopted as resolution 11, "Exchange of map design".

Annex III

SUMMARY OF WORK OF COMMITTEE III ON AERIAL PHOTO-INTERPRETATION AND TOPICAL MAPS

AERIAL PHOTO-INTERPRETATION

The Committee noted the eleven technical papers submitted on aerial photo-interpretation. Each of these papers dealt with a specific problem or experience encountered by various countries attending the Conference.

Two papers dealt with the methodology and application of aerial photo-interpretation: "Some remarks on the methodology of aerial photo-interpretation" (E/CONF.50/L.2), submitted by the Netherlands, and "Some applications of photo-interpretation in the Geographical Survey Institute of Japan" (E/CONF.50/L.84), submitted by Japan. The Committee noted that interpreta-

tion of aerial photography is being used more widely year by year by many scientific disciplines, including geology, pedology and agronomy.

Several papers were devoted to the application of aerial photo-interpretation to the study of plant ecology and the conducting of forest inventories. The paper presented by the Netherlands under the title "Some aspects of plant ecology in the tropics in connexion with the use of aerial photography" (E/CONF.50/L.3) pointed out that the study of plant ecology in the tropical rain forest regions would only be possible through special research projects scheduled over a long period of time. Three other papers described the experience of several Governments in the determina-

tion of national forest resources and their usefulness. One of these, entitled "Experiences in photogrammetric restitution for forestry purposes with particular reference to the Wild B8 Avio-graph stereoplotter" (E/CONF.50/L.81), briefly explained the use of this instrument with particular emphasis on the study of the future usefulness and value of the stands. The other two documents, "The use of aerial photographs in the forest inventory of the Philippines" (E/CONF.50/L.14), submitted by the Philippines, and "Recent use of aerial photography for forestry purposes in Japan" (E/CONF.50/L.118), presented by Japan, pointed out that aerial photo-interpreters are able, by studying aerial photographs, to distinguish the various land uses and to classify forests into different categories. In addition, the Japanese paper pointed out that the Forestry Agency of Japan had initiated a training school for both the Japanese and foreign students.

From the paper "Geomorphology as an essential element in aerial survey" (E/CONF.50/L.5), submitted by the Netherlands, the Committee recognized that, for mapping purposes, especially on small scales, it is important that the necessary generalization in the presentation of contour lines or land formations be carried out in such a way that the characteristic features of the terrain are clearly retained for the map user. Two papers were presented by Japan, "Recent developments and applications of colour and infra-red aerial photography in Japan" (E/CONF.50/L.116) and "Recent applications of photo-geology in Japan" (E/CONF.50/L.117). In the latter, it was pointed out that although black-and-white photographs are generally used for geological surveys, infra-red and colour photographs have been introduced more and more into this field, and the indications are that the use of such photography will be further expanded in the near future. The paper also emphasized the importance of applying photo-geological methods, using aerial photographs, to the preparation and publication of maps for highway engineering, typhoon calamity prevention, erosion accident prevention, geological evaluation of earthquake destruction, evaluation surveys of snow-falls and general geological surveying. The Committee was of the opinion that colour photography should be used wherever it was economically feasible, though it recognized that the costs of colour are much greater than those of panchromatic photography at this time. The Committee considered that, as the use of colour photography was expanded, the costs would, in turn, be reduced. It was also noted that at the present time not all countries possess facilities for producing and processing colour film. In the paper presented by the Philippines entitled, "Photo-interpretation as a tool for a land reform programme" (E/CONF.50/L.9/Rev.1), the Committee noted that the developments in the aerial photographic processes should be used for photo-interpretation and mapping purposes, which, in turn, would help to avoid delays in the preparation and execution of land reform programmes and other economic programmes.

"Maps and aerial photographs for natural resource manage-

ment on the national forest system" (E/CONF.50/L.46), submitted by the United States of America, listed the types of maps which are useful as guides in the management of natural resources.

The Committee recognized the need to train personnel in aerial photo-interpretation in the region and, in a draft resolution submitted for adoption by the Conference^a recommended that sub-regional training centres in aerial photo-interpretation be established within the ECAFE region.

TOPICAL MAPS

Several papers were before the Committee regarding topical maps and national atlases. A paper by Thailand entitled "Soil survey in Thailand" (E/CONF.50/L.113) indicated the experience of that country with respect to its preparation of soil maps for expediting its programme on land utilization. Thailand presented another paper on "Large-scale maps for rice culture improvement" (E/CONF.50/L.110), in which the Committee noted that large-scale maps prepared for this purpose at 1:1,000, 1:2,000 and 1:4,000 were compiled by incorporating the area of each paddy field on a traverse board plane. The Philippine paper, "Agricultural land use of the Philippines" (E/CONF.50/L.63), showed how the Government was undertaking a land use study in implementation of its agricultural and economic development programmes. The types of maps produced on the scale 1:2,500,000 were discussed, with special emphasis on the twelve categories that are being used to represent the principal types of soil to be found in the Philippines.

The Philippines and Thailand both presented documents concerning the preparation and publication of their national atlases. The Philippine paper, entitled "Specifications for a regional economic atlas" (E/CONF.50/L.13 and Add.1), described the experience of that country and listed the specifications considered most suitable to that country's immediate needs in guiding its economic development programmes. "Thailand's statistical atlas project" (E/CONF.50/L.95) presented the methods and techniques which that country was using to produce this type of national atlas.

The United States of America submitted a paper on the preparation of topical maps, "General inventory of physical resources from existing source data" (E/CONF.50/L.87), which dealt with the experience and the advantages of publishing maps primarily for this purpose.

In conclusion, the Committee prepared a draft resolution^b for adoption by the Conference, which suggested that a committee on topical maps and national atlases be established at the Fifth United Nations Regional Cartographic Conference for Asia and the Far East.

^a Adopted as resolution 18, "Aerial photo-interpretation".

^b Adopted as resolution 14, "Topical maps and national atlases".

Annex IV

SUMMARY OF WORK OF COMMITTEE IV ON AERONAUTICAL CHARTS, THE INTERNATIONAL MAP OF THE WORLD ON THE MILLIONTH SCALE (IMW) AND GEOGRAPHICAL NAMES

AERONAUTICAL CHARTS

The Committee considered several papers on aeronautical charts, two of which were submitted by the United States of America and entitled "Relief portrayal on aeronautical charts" (E/CONF.50/L.27) and "Simultaneous compilation of multiple aeronautical

chart series" (E/CONF.50/L.52). In both of these the emphasis was on the practical experience gained in using the latest techniques for compiling and reproducing aeronautical charts.

The Philippines presented a paper, "New sheet lines for IMW and WAC (ICAO) for the Philippines" (E/CONF.50/L.12), which indicated that, the country being an archipelago, it had prepared

new sheet lines in accordance with the provisions laid down for such territories, both to satisfy its needs for the World Aeronautical Chart and the International Map of the World on the Millionth Scale and to avail itself of the savings in time and money.

INTERNATIONAL MAP OF THE WORLD ON THE MILLIONTH SCALE (IMW)

Japan presented a paper, which was reproduced as part of document E/CONF.50/L.84, relating to its experience in producing, in 1961, a "trial map" on the millionth scale. The Geographical Survey Institute compared this trial map with the old IMW series published by Japan and the IMW specifications adopted in 1962 by the United Nations Technical Conference on the International Map of the World on the Millionth Scale. Japan proposed to produce three sheets, covering the whole country, on the millionth scale using the new IMW specifications with extended sheet lines for reasons of economy.

Document E/CONF.50/L.35, presented by the United Nations Secretariat, dealt with the United Nations Technical Meeting on Hypsometric Tints for the International Map of the World on the Millionth Scale, which was held in Edinburgh from 5 to 6 August 1964. The Committee considered this paper and was hopeful that the results of the Meeting would materialize in the near future.

Several countries indicated in their national reports the progress they had made in the publication of the International Map of the World on the Millionth Scale. The Committee concluded its consideration of this subject by drawing up a draft resolution for adoption by the Conference.^a

^a Adopted as resolution 16, "International Map of the World on the Millionth Scale".

GEOGRAPHICAL NAMES

Japan introduced a document entitled "Present status of domestic standardization of geographical names in Japan" (part of E/CONF.50/L.84), which outlined the problems arising within that country from the need, first, to standardize Japanese names in that language and then to romanize their spelling. Japan considered the former task important for all maps to be used domestically, and the latter especially useful for maps prepared for international use.

The United Nations Secretariat reported that the Economic and Social Council had decided at its thirty-seventh session to convene a United Nations Conference on the Standardization of Geographical Names during 1967. Considerable discussion took place on this matter and several participants emphasized the importance of the countries of the region attending this Conference. The Committee considered that a good way to prepare for it would be for the countries of ECAFE to establish, if they had not already done so, working groups of experts on geographical names which would be able to provide the necessary information and possibly prepare national reports following as closely as possible the practices recommended by the Group of Experts on Geographical Names which met in June 1960 at United Nations Headquarters.^b The Committee noted that Geneva and New York were the locations most favoured for the Conference, with a majority of the participants preferring Geneva. Upon completion of its discussion on this matter, the Committee prepared a draft resolution for adoption by the Conference.^c

The United States of America submitted a document entitled "Sea floor names in principle and practice" (E/CONF.50/L.47), which thoroughly reviewed the method used in designating generic names relating to the land forms of the bottom of the oceans of the world.

^b See United Nations, *World Cartography*, vol. VII (Sales No : 62 I 25).

^c Adopted as resolution 17, "Geographical names".

Annex V

SUMMARY OF WORK OF COMMITTEE V ON HYDROGRAPHY AND OCEANOGRAPHY

The Committee discussed two documents submitted by the Philippines, "Implementation of the co-operative study of the *Kuroshio* (Japan Current)" (E/CONF.50/L.11) and "Joint hydrographic survey of shoal waters beyond 100 miles west of Palawan" (E/CONF.50/L.16). The delegate of Japan pointed out that his country was preparing for the study of the *Kuroshio*, which was to take place in 1965, and that it was planned to use the M.S. *Takuyo* and three other ships. "Report on the hydrographic activities in Japan, 1961-1964" (E/CONF.50/L.115) included the information that four times a year Japan conducts bathythermograph (BT) observations of the *Kuroshio* along the coast of southern Japan, and twice a month geomagnetic electrokinetograph (GEK) observations and studies of the direction, velocity and changes in the current flow. Permanent tide gauges to supplement the study of the *Kuroshio* were established at three places on the Izu Islands in 1963 and at three places in the Nansei Islands in 1964. The Committee prepared a draft resolution on this matter.^a

On the subject of a hydrographic survey off the west coast of Palawan, Japan stated that it would support an oceanographic survey in co-operation with the countries adjacent to the area and other countries interested in the scientific study of the area. It was also stated that, in 1940, the Japanese Hydrographic Office had executed oceanographic surveys in this area. The results of these surveys have been transmitted to the General Bathymetric

^a Adopted as resolution 20, "The co-operative study of the *Kuroshio* (Japan Current)".

Chart of the Oceans (GECBO) Centre in accordance with a resolution of the International Hydrographic Bureau, and they will be included in the revised charts covering this area. The Committee, noting the importance of a regional oceanographic survey of a portion of the South China Sea, submitted a draft resolution for adoption by the Conference.^b

Several countries manifested support for these two projects and a willingness to join in them.

Technical documents published by the Maritime Safety Board of Japan on the experiences encountered in echo sweeping surveys, the application of photogrammetry to coastal surveys, the publication of a harbour traffic volume chart, and the experiment in preparing nautical charts with electrostatic printing machines were submitted to the Conference as information papers without symbols.

The Committee considered the paper "International co-operation in oceanography" (E/CONF.50/L.31), submitted by the United States of America. After a brief exchange of views on the subject, all the delegates agreed that the proposal on international co-operation was a laudable one.

A proposal by India for standardizing the system of measurement on navigation charts in favour of the metric system was discussed by the Committee. The members of the Committee

^b Adopted as resolution 21, "Regional oceanographic survey of a portion of the South China Sea".

generally agreed that this would be an aid to navigators since they would be obliged to use only one system of measurement. Several participants stated that conversion to the metric system would not be feasible at present, but concurred with the draft resolution, which was submitted to the Conference for adoption.^c In another proposal, India emphasized the need to establish sub-

^c Adopted as resolution 19, "Use of the metric system in navigation charts".

regional hydrographic training centres for the training of personnel, particularly since electronic equipment is now becoming more widely used for distance measurement and position fixing in hydrographic surveying. The Committee recognized the importance of establishing such training centres and drafted a resolution on the subject for adoption by the Conference.^d

^d Adopted as resolution 13, "Hydrographic training centres".

Annex VI

RULES OF PROCEDURE OF THE CONFERENCE

I. REPRESENTATION AND CREDENTIALS

Rule 1

Each State participating in the Conference shall be represented by an accredited representative. If more than one representative is appointed, one of them shall be designated as the head of the delegation. Each delegation may also include such alternate representatives and advisers as may be required.

Rule 2

The credentials of representatives, alternate representatives and advisers shall be submitted to the Executive Secretary, if possible not later than twenty-four hours after the opening of the Conference. The credentials shall be issued either by the Head of the State or Government or by the Minister for Foreign Affairs.

Rule 3

The President and the Vice-Presidents of the Conference shall examine the credentials and report upon them to the Conference without delay.

Rule 4

Pending the decision of the Conference upon the report on credentials, the representatives, alternate representatives and advisers shall be entitled provisionally to be seated in the Conference.

II. AGENDA

Rule 5

The list of items set forth by the Secretariat and communicated to the Governments invited to the Conference by the Secretary-General of the United Nations shall form the provisional agenda for the Conference. Any member of the Conference may propose any item for inclusion in the provisional agenda.

III. OFFICERS

Rule 6

The Conference shall elect a President, two Vice-Presidents and a Rapporteur from among the representatives of the States participating in the Conference.

Rule 7

The President shall preside over the plenary meetings of the Conference. He shall not vote but may designate another member of his delegation to vote in his place.

Rule 8

If the President is absent from a meeting or any part thereof, a Vice-President designated by him shall preside. A Vice-President acting as President shall have the same powers and duties as the President.

IV. SECRETARIAT

Rule 9

The Executive Secretary of the Conference appointed by the Secretary-General of the United Nations shall act in that capacity in all meetings of the Conference. He may appoint a deputy to take his place at any meeting.

Rule 10

The Executive Secretary or his representative may at any meeting make either oral or written statements concerning any question under consideration.

Rule 11

The Executive Secretary shall provide and direct such staff as is required by the Conference. He shall be responsible for making all necessary arrangements for meetings and generally shall perform all other work which the Conference may require.

V. CONDUCT OF BUSINESS

Rule 12

The majority of the members of the Conference shall constitute a quorum.

Rule 13

In addition to exercising the powers conferred upon him elsewhere by these rules, the President shall declare the opening and closing of each plenary meeting of the Conference, shall direct the discussion at such meetings, accord the right to speak, put questions to the vote and announce decisions. He shall rule on points of order and, subject to these rules of procedure, shall have complete control over the proceedings.

Rule 14

The President may, in the course of the discussions, propose to the Conference the closure of the list of speakers or the closure of the debate. He may also propose the suspension or the adjournment of the meeting or the adjournment of the debate on the item under discussion. He may also call a speaker to order if his remarks are not relevant to the matter under discussion.

Rule 15

The President, in the exercise, of his functions, remains under the authority of the Conference.

Rule 16

During the discussion on any matter a representative may at any time raise a point of order, and the point of order shall be immediately decided by the President in accordance with the rules of procedure. If the decision is challenged by any representative it shall be immediately put to the vote of the Conference for decision and it shall stand unless overruled. A representative raising a point of order may not speak on the substance of the matter under discussion.

Rule 17

During the discussion of any matter a representative may move the adjournment of the debate on the item under discussion. Any such motion shall have priority. In addition to the proposer of the motion, one representative shall be allowed to speak in favour of, and one representative against, the motion.

Rule 18

During the course of the debate, the President may announce the list of speakers and with the consent of the Conference declare the list closed. The President may, however, accord the right of reply to any member if, in his opinion, a speech delivered after he has declared the list closed makes this desirable. When the debate on an item is concluded because there are no other speakers, the President shall declare the debate closed. Such closure shall have the same effect as closure by the consent of the Conference.

Rule 19

A representative may at any time move the closure of the debate on the item under discussion, whether or not any other representative has signified his wish to speak. Permission to speak on the closure of the debate shall be accorded only to two speakers opposing the closure, after which the motion shall be immediately put to the vote.

Rule 20

The Conference may limit the time allowed for each speaker.

Rule 21

Proposals and amendments shall normally be introduced in writing and handed to the Executive Secretary of the Conference, who shall circulate copies to the delegations. As a general rule no proposal shall be discussed or put to the vote at any meeting of the Conference unless copies of it have been circulated to all delegations not later than the day preceding the meeting. The President may, however, permit the discussion and consideration of amendments or motions as to procedure even though these amendments or motions have not been circulated or have only been circulated the same day.

Rule 22

A motion may be withdrawn by its proposer at any time before voting on it has commenced, provided that the motion has not been amended. A motion which has thus been withdrawn may be reintroduced by any representative.

Rule 23

When a proposal has been adopted or rejected, it may not be considered unless the Conference, by a two-thirds majority of the representatives present and voting, so decides. Permission to

speak on the motion to reconsider shall be accorded only to two speakers opposing the motion, after which it shall be immediately put to the vote.

VI. VOTING

Rule 24

Each State represented at the Conference shall have one vote, and the decisions of the Conference shall be made by a majority of the representatives of States participating in the Conference present and voting.

Rule 25

For the purpose of these rules, the phrase "representatives present and voting" means representatives present and casting an affirmative or negative vote. Representatives who abstain from voting shall be considered as not voting.

Rule 26

The Conference shall normally vote by show of hands, but any representative may request a roll-call. A roll-call shall be taken in the English alphabetical order of the names of the delegations at the Conference, beginning with the delegation whose name is drawn by lot by the President.

Rule 27

After the President has announced the beginning of the vote, no representative shall interrupt the vote except on a point of order in connexion with the actual conduct of voting. Explanations of their votes by representatives may, however, be permitted by the President either before or after the voting. The President may limit the time to be allowed for such explanation.

Rule 28

Parts of a proposal shall be voted on separately if a representative requests that the proposal be divided. Those parts of the proposal which have been approved shall then be put to the vote as a whole; if all the operative parts of a proposal have been rejected, the proposal shall be considered rejected as a whole.

Rule 29

When an amendment is moved to a proposal, the amendment shall be voted on first. When two or more amendments are moved to a proposal, the Conference shall first vote on the amendment furthest removed in substance from the original proposal and then on the amendment next furthest removed therefrom, and so on, until all the amendments shall be put to the vote. When, however, the adoption of one amendment necessarily implies the rejection of another amendment, the latter amendment shall not be put to the vote. If one or more amendments are adopted, the amended proposal shall then be voted upon. A motion is considered an amendment to a proposal if it merely adds to, deletes from or revises part of that proposal.

Rule 30

If two or more proposals relate to the same question, the Conference shall, unless it decides otherwise, vote on the proposals in the order in which they have been submitted. The Conference may, after each vote on a proposal, decide whether to vote on the next proposal.

Rule 31

All elections shall be decided by secret ballot unless otherwise decided by the Conference.

Rule 32

If, when one person or one delegation is to be elected, no candidate obtains in the first ballot the majority required, a second ballot shall be taken, which shall be restricted to the two candidates obtaining the largest number of votes. If in the second ballot the votes are equally divided, the President shall decide between the candidates by drawing lots.

In the case of a tie in the first ballot among the candidates obtaining the second largest number of votes, a special ballot shall be held for the purpose of reducing the number of candidates to two. In the case of a tie among three or more candidates obtaining the largest number of votes, a second ballot shall be held; if a tie results among more than two candidates, the number shall be reduced to two by lot.

Rule 33

If a vote is equally divided upon matters other than elections, a second vote shall be taken after an adjournment of the meeting for fifteen minutes. If this vote also results in equality, the proposal shall be regarded as rejected.

VII. LANGUAGES

Rule 34

English and French shall be the working languages of the Conference.

Rule 35

Speeches made in either of the working languages shall be interpreted into the other working language. Speeches made in any one of the official languages of the United Nations shall be interpreted into the two working languages.

VIII. RECORDS

Rule 36

Summary records of the plenary meetings of the Conference shall be kept by the Secretariat in the working languages. They shall be sent as soon as possible to all representatives, who shall inform the Secretariat within three working days after the circulation of the summary records of any changes they wish to have made. Any disagreement concerning such changes shall be referred to the President of the Conference for decision.

IX. PUBLICITY OF MEETINGS

Rule 37

The plenary meetings of the Conference and the meetings of its committees shall be held in public unless the body concerned

decides that exceptional circumstances require that a particular meeting be held in private.

X. COMMITTEES

Rule 38

The Conference may establish such committees as may be necessary for the performance of its functions. Items relating to the same category of subjects may be referred to the committee dealing with that category of subjects. Committees shall not introduce any item on their own initiative.

Rule 39

Each committee shall elect its own Chairman, Vice-Chairman and Rapporteur.

Rule 40

So far as they are applicable, the rules of procedure of the Conference shall apply to the proceedings of the committees. A committee may dispense with certain language interpretations.

XI. SPECIALIZED AGENCIES, OTHER INTERGOVERNMENTAL ORGANIZATIONS AND NON-GOVERNMENTAL ORGANIZATIONS

Rule 41

Observers of specialized agencies invited to the Conference may participate, without the right to vote, in the deliberations of the Conference and its Committees, upon the invitation of the President or the Chairman, as the case may be, on questions within the scope of their activities.

Written statements of such specialized agencies shall be distributed by the Secretariat to the delegations at the Conference.

Rule 42

Other intergovernmental organizations and non-governmental organizations attending the Conference may, upon the invitation of the President or the Chairman of a Committee of the Conference, as the case may be, submit written or oral statements to the Conference on subjects for which these organizations have a special competence.

XII. AMENDMENTS

Rule 43

These rules of procedure may be amended by a decision of the Conference.

Annex VII

LIST OF DOCUMENTS ISSUED FOR THE CONFERENCE

Series E/CONF.50/...

- E/CONF.50/1 and Add.1 Provisional agenda
- E/CONF.50/2. Draft report of the Conference
- E/CONF.50/3. Resolutions adopted by the Conference

E/CONF.50/C/...

- E/CONF.50/C.1/1. Documents already issued for item 8
- E/CONF.50/C.1/2. Draft report of Committee I on geodesy

- E/CONF.50/C.2/1. Documents already issued for item 10
- E/CONF.50/C.2/2. Draft report of Committee II on topography and photogrammetry
- E/CONF.50/C.3/1. Documents already issued for items 11 and 12
- E/CONF.50/C.3/2. Draft report of the working group on specifications of the regional economic atlas of Asia and the Far East
- E/CONF.50/C.3/3. Draft report of Committee III on photo-interpretation and topical maps

- E/CONF.50/C.4/1. Documents already issued for items 13, 14 and 15
- E/CONF.50/C.4/2. Draft report of Committee IV on aeronautical charts, the International Map of the World on the Millionth Scale (IMW) and geographical names
- E/CONF.50/C.5/1. Documents already issued for item 9
- E/CONF.50/C.5/2. Draft report of Committee V on hydrography and oceanography

Series E/CONF.50/INF...

- E/CONF.50/INF.1. Advance information regarding general arrangements of immediate interest to the participants
- E/CONF.50/INF.2. and Add.1. Provisional list of delegates
- E/CONF.50/INF.3. Officers of the Conference
- E/CONF.50/INF.4 and Add.1 to 3. Information regarding documents already issued
- E/CONF.50/INF.5. List of participants

Series E/CONF.50/L...

- E/CONF.50/L.1 and Corr.1. Proceedings of the Third United Nations Regional Cartographic Conference for Asia and the Far East, submitted by the United Nations Secretariat (7)^a
- E/CONF.50/L.2. Some remarks on the methodology of aerial photo-interpretation, submitted by the Netherlands (11)
- E/CONF.50/L.3. Some aspects of plant ecology in the tropics in connexion with the use of aerial photography, submitted by the Netherlands (11)
- E/CONF.50/L.4. The economy of the application of aerial photographs to national mapping programmes, submitted by the Netherlands (10)
- E/CONF.50/L.5. Geomorphology as an essential element in aerial survey, submitted by the Netherlands (11)
- E/CONF.50/L.6. Establishment of a regional gravity base station, submitted by the Philippines (8)
- E/CONF.50/L.7. Designation of a regional magnetic observatory where magnetic surveying instruments may be standardized, submitted by the Philippines (8)
- E/CONF.50/L.8 and Add.1. Establishment of sub-regional base lines for the calibration of electronic distance measuring instruments, submitted by the Philippines (8)
- E/CONF.50/L.9/Rev.1. Photo-interpretation as a tool for a land reform programme, submitted by the Philippines (11)
- E/CONF.50/L.10/Rev.1. Establishment of a training centre in applied geodesy and photogrammetry (including photo-interpretation) in the Philippines, submitted by the Philippines (7 and 10)
- E/CONF.50/L.11. Implementation of the co-operative study of the *Kuroshio* (Japan Current), submitted by the Philippines (9)
- E/CONF.50/L.12. New sheet lines for IMW and WAC (ICAO) for the Philippines, submitted by the Philippines (13 and 14)
- E/CONF.50/L.13 and Add.1. Specifications for a regional economic atlas, submitted by the Philippines (12)
- E/CONF.50/L.14. The use of aerial photographs in the forest inventory of the Philippines, submitted by the Philippines (11)
- E/CONF.50/L.15. Technical problems encountered in the numerical photogrammetric cadastre, submitted by the Philippines (10)

- E/CONF.50/L.16. Joint hydrographic survey of shoal waters beyond 100 miles west of Palawan, submitted by the Philippines (9)
- E/CONF.50/L.17. Gravity survey of the Philippines, submitted by the Philippines (8)
- E/CONF.50/L.18. Considerations on the applications of an electronic co-ordinatograph in surveying, submitted by Israel (10)
- E/CONF.50/L.19. Experiences in the preparation of a 1:10,000 economic map of Israel, submitted by Israel (10)
- E/CONF.50/L.20 and Add.1. Steps taken by the Government of the Philippines in connexion with resolutions of the Third United Nations Regional Cartographic Conference for Asia and the Far East, submitted by the Philippines (7)
- E/CONF.50/L.21. Synopsis of papers presented by the United Kingdom, submitted by the United Kingdom (8, 10 and 11)
- E/CONF.50/L.22. Establishment of a cartographic section in ECAFE, submitted by the Philippines (7)
- E/CONF.50/L.23 and Corr.1. Report on cartographic activities in Thailand for the period 1961-1964, submitted by Thailand (6)
- E/CONF.50/L.24 and Add.1. Report on progress in matters which formed the basis of the resolutions or recommendations of the last Conference, submitted by Thailand (7)
- E/CONF.50/L.25. Progress report of cartographic activities, 1961-1964, submitted by the United States of America (6)
- E/CONF.50/L.26. Seismological work in Thailand, submitted by Thailand (8)
- E/CONF.50/L.27. Relief portrayal on aeronautical charts, submitted by the United States of America (13)
- E/CONF.50/L.28. Progress on precise levelling and study of vertical crustal movement in the United States, submitted by the United States of America (8)
- E/CONF.50/L.29. New developments in aerial photography and photogrammetry, submitted by the United States of America (10)
- E/CONF.50/L.30. Comparison tests of electro-optical and microwave distance measuring instruments, submitted by the United States of America (8)
- E/CONF.50/L.31. International co-operation in oceanography, submitted by the United States of America (9)
- E/CONF.50/L.32. Frequencies for microwave distance measurement, submitted by the United Kingdom (8)
- E/CONF.50/L.33 and Corr.1. The design of maps at 1:25,000 and smaller scales using a minimum number of printing colours, submitted by the United Kingdom (10)
- E/CONF.50/L.34. Adjustment of South Asia triangulation, 1963, and its possible use, submitted by the United Kingdom (8)
- E/CONF.50/L.35. United Nations Technical Meeting on Hypsometric Tints for the International Map of the World on the Millionth Scale, held in Edinburgh, 5-6 August 1964, submitted by the United Nations Secretariat (14)
- E/CONF.50/L.36. The computation of survey networks using an electronic computer, submitted by the United Kingdom (8)
- E/CONF.50/L.37. Control surveys in the Solomon Islands, submitted by the United Kingdom (8)
- E/CONF.50/L.38. Mapping for the Labuk Valley (Sabah) project, submitted by the United Kingdom (10)
- E/CONF.50/L.39 and Corr.1. United Kingdom report, submitted by the United Kingdom (6)
- E/CONF.50/L.40. Rules of procedure, submitted by the United Nations Secretariat (1)

^a The numbers in parentheses refer to the numbers of the items on the agenda, as adopted

- E/CONF.50/L.41. Application of automated systems to nautical chart production, submitted by the United States of America (9)
- E/CONF.50/L.42. Generalization and omission of detail: an economic approach to the chart maintenance problem, submitted by the United States of America (9)
- E/CONF.50/L.43. Linear perspective of a titled photograph for chart maintenance, submitted by the United States of America (9)
- E/CONF.50/L.44. New developments in orthophotography, submitted by the United States of America (10)
- E/CONF.50/L.45. The use of artificial earth satellites for geodetic measurements, submitted by the United States of America (8)
- E/CONF.50/L.46. Maps and aerial photographs for natural resource management on the national forest system, submitted by the United States of America (11)
- E/CONF.50/L.47. Sea floor names in principle and practice, submitted by the United States of America (15)
- E/CONF.50/L.48. An international tsunami warning system for the Pacific, submitted by the United States of America (8)
- E/CONF.50/L.49. Air-borne control for topographic mapping, submitted by the United States of America (8)
- E/CONF.50/L.50. United Nations Conference on the Standardization of Geographical Names, submitted by the United Nations Secretariat (15)
- E/CONF.50/L.51. Practical improvements in stereoplottting instruments, submitted by the United States of America (10)
- E/CONF.50/L.52. Simultaneous compilation of multiple aeronautical chart series, submitted by the United States of America (13)
- E/CONF.50/L.53. Photogrammetric procedures in tidal current surveys, submitted by the United States of America (10)
- E/CONF.50/L.54. Analytic aerotriangulation, submitted by the United States of America (10)
- E/CONF.50/L.55. Geomagnetic instrumentation and data centre activities, submitted by the United States of America (8)
- E/CONF.50/L.56. Semi-automatic photo composition of sounding depths for nautical charts, submitted by the United States of America (9)
- E/CONF.50/L.57. The method of passive satellite triangulation, submitted by the United States of America (8)
- E/CONF.50/L.58. Applications of quality control in the photographic laboratory, submitted by the United States of America (13)
- E/CONF.50/L.59. Significance of a unified world gravity system, submitted by the United States of America (8)
- E/CONF.50/L.60 and Corr.1. Aerotriangulation by the observation of independent models, submitted by the United Kingdom (10)
- E/CONF.50/L.61. "Color-trol" for tropical mapping, submitted by the Philippines (12)
- E/CONF.50/L.62. Production of the Geological Map of the Philippines on the scale 1:1,000,000, submitted by the Philippines (12)
- E/CONF.50/L.63. Agricultural land use of the Philippines, submitted by the Philippines (12)
- E/CONF.50/L.64. Utility of photo maps, submitted by Japan (10)
- E/CONF.50/L.65. Report on cartographic activities in Switzerland, submitted by Switzerland (6)
- E/CONF.50/L.66. Progress report on cartographic activities since the last Conference, submitted by Malaysia (6)
- E/CONF.50/L.67. Progress of cartographic activities in China, 1961-1964, submitted by China (6)
- E/CONF.50/L.68. Report on cartographic activities in Viet-Nam, submitted by the Republic of Viet-Nam (6)
- E/CONF.50/L.69. Cartographic activities in the United Arab Republic, 1961-1964, submitted by the United Arab Republic (6)
- E/CONF.50/L.70. Report on cartographic activities in Australia as at 1 September 1964, submitted by Australia (6)
- E/CONF.50/L.71 and Corr.1. Preliminary investigations into the accuracy of 1:10,000 topographic maps from super-wide-angle photographs, submitted by the United Arab Republic (10)
- E/CONF.50/L.72. Emergency charting of the Alaska earthquake disaster area, submitted by the United States of America (10)
- E/CONF.50/L.73. Procurement of cartographic data by means of ortho-projection of aerial photographs, submitted by the Federal Republic of Germany (10)
- E/CONF.50/L.74 and Corr.1. Forest inventory, land use and mountain agriculture resources, surveying and planning practice in Taiwan, 1961-1964, submitted by China (12)
- E/CONF.50/L.75. Tsunami — the story of the seismic sea-wave warning system, submitted by the United States of America (8)
- E/CONF.50/L.76. Satellite geodesy, submitted by Japan (8)
- E/CONF.50/L.77. Mapping of extensive little-explored territories on 1:25,000, 1:100,000 and 1:200,000 scales, submitted by the Union of Soviet Socialist Republics (10)
- E/CONF.50/L.78. Gravity survey in China, 1961-1963, submitted by China (8)
- E/CONF.50/L.79. Instrument systems for ultra-wide-angle mapping, submitted by Switzerland (10)
- E/CONF.50/L.80. Some tests on the use of super-wide-angle photography for plotting at large scales, submitted by Switzerland (10)
- E/CONF.50/L.81. Experiences in photogrammetric restitution for forestry purposes with particular reference to the Wild B8 Aviograph stereoplotter, submitted by Switzerland (11)
- E/CONF.50/L.82. A north-seeking gyro attachment for the theodolite as a new aid to the surveyor, submitted by Switzerland (10)
- E/CONF.50/L.83. New air-borne instrumentation for photogrammetry, submitted by Switzerland (10)
- E/CONF.50/L.84, consisting of the following six papers submitted by Japan:
- Cartographic works in Japan in the period 1961-1964 (6);
 - Measurement of total magnetic force at sea in the International Indian Ocean Expedition in the period from November 1963 to February 1964 (9);
 - Gravity measurement in the Indian Ocean (9);
 - Some applications of photo-interpretation in the Geographical Survey Institute of Japan (11);
 - Aerial triangulation in Japan (10);
 - Map for development, conservation and disaster prevention (12);
 - IMW project of Japan in the light of the new specifications adopted at the Bonn Conference (14);
 - Present status of domestic standardization of geographical names in Japan (15);
 - Outline of scribing techniques used in Japan (10);
 - A new surveying and mapping programme in Japan (10)
- E/CONF.50/L.85. Report on the activities of the Survey of Israel during the years 1961-1964, submitted by Israel (6)

- E/CONF.50/L.86. Large-scale photogrammetric mapping (1:1,000 to 1:20,000) in developing countries for civil engineering and cadastral purposes, submitted by the Federal Republic of Germany (10)
- E/CONF.50/L.87. General inventory of physical resources from existing source data, submitted by the United States of America (12)
- E/CONF.50/L.88. Automated mapping systems, submitted by the United States of America (10)
- E/CONF.50/L.89. Aerial photographic training activities in China, 1961-1963, submitted by China (7)
- E/CONF.50/L.90. Rapid determination of mean sea level in the United Arab Republic, submitted by the United Arab Republic (8)
- E/CONF.50/L.91. Maintaining the Canada-United States boundary, submitted by Canada (8)
- E/CONF.50/L.92. Activities of the Institut géographique national in Asia and Oceania, submitted in France (6)
- E/CONF.50/L.93. Geodesy by satellite, submitted by France (8)
- E/CONF.50/L.94. Establishment of a standard base line for the calibration of electronic distance measuring instruments, submitted by the Philippines (8)
- E/CONF.50/L.95. Thailand's statistical atlas project, submitted by Thailand (12)
- E/CONF.50/L.96. General considerations on the economic map series in Japan, submitted by Japan (12)
- E/CONF.50/L.97. Proposed first-order triangulation of the Philippines, submitted by the Philippines (8)
- E/CONF.50/L.98. Magnetic observations in the Philippines, submitted by the Philippines (8)
- E/CONF.50/L.99. Dam site survey by aerial photogrammetry, submitted by the Philippines (10)
- E/CONF.50/L.100. Philippine participation in the occultation observation programme in the Far East, submitted by the Philippines (8)
- E/CONF.50/L.101. First-order astronomical observations on selected triangulation stations in the Philippines, submitted by the Philippines (8)
- E/CONF.50/L.102. The use of stereoscopic aerial photography of the surface of the sea in making coastal surveys, submitted by France (11)
- E/CONF.50/L.103. Progress in aerial colour photography at the Institut géographique national, submitted by France (10 and 11)
- E/CONF.50/L.104. Adjustment of large aerotriangulation blocks on an electronic computer of limited capacity, submitted by France (10)
- E/CONF.50/L.105. Mapping for development projects, submitted by Cambodia (6)
- E/CONF.50/L.106. Report on progress in fields covered by resolutions or recommendations of the last Conference, submitted by China (7)
- E/CONF.50/L.107. Dendrometer of Japan Forestry Technical Association, submitted by Japan (11)
- E/CONF.50/L.108. Progress report on cartographic activities in Canada, 1961-1964, submitted by Canada (6)
- E/CONF.50/L.109. National Atlas of China, submitted by China (12)
- E/CONF.50/L.110. Large-scale maps for rice culture improvement, submitted by Thailand (12)
- E/CONF.50/L.111. Aerial photography and photogrammetry in the United States Coast and Geodetic Survey, submitted by the United States of America (10)
- E/CONF.50/L.112. Ballistic cameras: determination of the position of luminous objects against a background of stars, submitted by France (8)
- E/CONF.50/L.113. Soil survey in Thailand, submitted by Thailand (12)
- E/CONF.50/L.114. Development of photogrammetry and electronic data processing equipment for highway design in Japan, submitted by Japan (10)
- E/CONF.50/L.115. Report on the hydrographic activities in Japan, 1961-1964, submitted by Japan (6 and 9)
- E/CONF.50/L.116. Recent developments and applications of colour and infra-red aerial photography in Japan, submitted by Japan (11)
- E/CONF.50/L.117. Recent applications of photo-geology in Japan, submitted by Japan (11)
- E/CONF.50/L.118. Recent use of aerial photography for forestry purposes in Japan, submitted by Japan (11)
- E/CONF.50/L.119. An economical experience in topographic mapping, submitted by Japan (10)
- E/CONF.50/L.120. Utility of photomaps, submitted by Japan (10)
- E/CONF.50/L.121. Progress report of the Philippines on surveying and mapping submitted by the Philippines (6)
- E/CONF.50/L.122. Review of surveying and mapping in the Federal Republic of Germany since the last Conference, submitted by the Federal Republic of Germany (6)
- E/CONF.50/L.123. Determination of the position of the satellite Echo I, submitted by France (8)
- E/CONF.50/L.124. The present requirements in instruments and methods for the intensive use of photogrammetry in small-scale mapping, submitted by Switzerland (10)
- E/CONF.50/L.125. Construction features of the B8 Stereomat, submitted by Switzerland (10)
- E/CONF.50/L.126. Report of the Syrian Arab Republic on the progress of its cartographic activities, submitted by Syria (6)
- E/CONF.50/L.127. Report on cartographic activities in the Kingdom of Saudi Arabia, submitted by Saudi Arabia (6)
- E/CONF.50/L.128. "Graph-strip" modified to suit local conditions, submitted by the Philippines (10)
- E/CONF.50/L.129. Brief report on the cartographic activities in India for the period 1961-1964, submitted by India (6)
- E/CONF.50/L.130. National report on cartographic activities since November 1961, submitted by Portugal (6)
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- E/CONF.50/SR.1 and Corr.1. Provisional summary record of the first plenary meeting held on 21 November 1964 (morning)
- E/CONF.50/SR.2/Rev.1. Provisional summary record of the second plenary meeting held on 21 November 1964 (afternoon)
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- E/CONF.50/SR.8. Provisional summary record of the eighth plenary meeting held on 5 December 1964 (morning)

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