The purpose of the technical excursions was to acquaint the participants of the Congress with the technique and applications of photogrammetry in Finland.
In Finland there are only a few bigger institutes using photogrammetry. Therefore several smaller institutes and private companies as well as some institutes representing other fields of technique were visited.

THE TECHNICAL TOWN OF OTANIEMI

The Technical Town of Otaniemi comprises the departments and laboratories of the Helsinki University of Technology, the buildings of the Student Body, laboratories of the Technical Research Centre of Finland as well as some other research institutes. Six of these were on the visiting list.

The Department of Surveying of the Helsinki University of Technology and the Laboratory of Land Use of the Technical Research Centre of Finland (VTT)

The Department of Surveying consists of the Institute of Geodesy, Cartography and Photogrammetry, and the Institute of Real Estate Techniques and Law.
The laboratory of Land Use is one of the 32 laboratories of the Technical Research Centre of Finland. Research in photogrammetry, remote sensing, surveying, land use planning, land use economics, and real estate appraisal is being carried out in the laboratory.
Dr. Einari Kilpelä, professor in photogrammetry and head of the Surveying Department, presented the curriculum and facilities of the Department to the 300 visitors from 47 countries. The visitors were then taken to a guided tour through the Institute of Photogrammetry. During the tour the research and education program and facilities were presented. Among the equipement demonstrated were a stereocomparator, a horisontal goniometer and several types of analogical instruments from various manufacturers. Furthermore, the participants visited the Laboratory of Land Use of the VTT which is situated in the same building. The research work of the Laboratory of Land Use is closely related to the scope of instruction of the Department of Surveying. Remote sensing is one of its current projects. The presentation was given by the head of the Laboratory, *Mr Pekka Raitanen,* who also gave a special demonstration regarding the laboratory's remote sensing program.

The Ship Building Laboratory of the Technical Research Centre of Finland (VTT)

53 persons from 16 countries visited this Laboratory, in which *Mr. Johan Lund* told about the product development of ships and the miniature models used in measuring the resistance and investigating seaworthiness and manoeuverability of ships. He also presented the test basins of the Laboratory, one of which measures 120 m by 11 m by 5 m, and the other, the seakeeping basin, 40 m by 40 m by 3 m.

The Road and Traffic Laboratory of the Technical Research Centre of Finland (VTT)

Ms Tekla Rosenberg described the research work of the Laboratory explaining the partly photogrammetric methods of planning, construction and maintenance of traffic routes. She also told about the investigation of traffic techniques and safety, and technical-economic matters to the 69 visitors from 30 countries.

The Helsinki University of Technology Library

The University Library as well as the Main Building are planned by Architect Alvar Aalto, and situated in the middle of the University campus. The Library offers a pleasant environment for the study of technical literature. *Ms Sirkka-Liisa Känsälä* presented the Library to 26 visitors from 18 countries. She told that the University Library also functions as the National Central Library of Technology. In addition to its free services the Library offers chargeable services; the Computer-Based SDI Service regularly delivers to its clients a list of literature references to new journal articles, reports, patents, congress papers, etc.
Retrospective literature searches are carried out using both the interactive system of the Library and foreign information retrieval systems in the on-line mode.

The Finnish State Computer Centre

The Finnish State Computer Centre moved in 1975 over to a new specially planned building in Otaniemi. This greatly facilitated the work of various research centres already situated in Otaniemi.
Mr. Matti Suominen presented the premises of the Computer Centre and explained its scope of activity. The large-capacity computers of the Finnish State Computer Centre satisfy the needs of state institutions and universities throughout the country.
The Computer Centre received 79 visitors from 30 countries.

The Geological Survey of Finland

Ms Sinikka Roos enlarged upon the research work of the Geological Survey. She pointed out that photointerpretation is used for technical and petrological studies of bedrock and glacial structures, for mapping of drift, gravel and ground water inventories, for ore exploration, and for engineering geology. All the conventional types of photos (black and white, colour, false colour) taken from various heights as well as satellite imageries are studied.
The Geological Survey of Finland was visited by 104 congressists from 26 countries.

OTHER RESEARCH INSTITUTES AND ORGANIZATIONS

The Forest Research Institute

Buses took 80 visitors from 21 countries to the Department of Forest Inventory and Yield of the Institute where presentation was made by *Dr. Simo Poso.* He told that the major objective was to get information on the quantity and development of the raw material for purposes of forest policy. A new methodology has been developed in order to apply aerial photo interpretation to forest inventory in a way suited to Finnish conditions. A general description of this method and the state of application was given.

The Metsähovi Observatories

Kirkkonummi (30 km)

A visit to the Metsähovi-Observatories of the University of Helsinki, of the Helsinki University of Technology, and of the Finnish Geodetic Institute was made by 58 visitors from 24 countries.

Dr. Juhani Kakkuri and *Mr. Kari Kalliomäki* from the Finnish Geodetic Institute presented the Satellite Laser Observatory and *Mr. Seppo Urpo* the Radio Telescope Observatory. The visitors had an opportunity to see a large radiotelescope (diameter 13.7 m), which is used for radio-astronomical studies and will also be used for very long baseline interferometry (VLBI) as well as a satellite laser for satellitegeodetic measurements.

The National Board of Survey (NBS) and the National Board of Public Roads and Waterways (NBPRW)

There were 209 visitors from 41 countries in the University lecture hall in which *Mr. Hilpas Lyytikäinen* and *Mr. Osmo Niemelä* described the photogrammetric methods used in topographic mapping, and the use of aerial photography and photointerpretation in various mapping operations at the NBS.

On behalf of the Mapping Section of the Road Planning Division of NBPRW *Mr. Raimo Koski* presented photogrammetric mapping on large scales 1:500—1:2000 and data processing needed for road design work.

After the presentations the group was taken by buses to the NBS exhibition of maps for an overall view of the production of contemporary national map series and the mapping situation in Finland.

The City of Helsinki Real Estate Office

The presentation was given by *Mr. Osmo Ojanen* in the showrooms of the Metro. The Helsinki Real Estate Office, City Survey Department, presented city mensuration and photointerpretation and the contents and preparation of various kinds of maps together with methods of drawing and duplicating. In the Metro Office the visitors were acquainted with the planning and construction of the Helsinki Metro and the rolling stock to be procured. There was a special presentation of the use of close-range photogrammetry in determining the dimension of tunnels.

The Helsinki Metropolitan Area Water Co. presented the planning and realization of the project to construct a tunnel of 120 km with a cross section of 16 m² to secure water of good quality for the capital and its surroundings. Photogrammetry is applied in finding a suitable route for the tunnel and in controlling the dimensions of the tunnel.

PRIVATE COMPANIES

Finnmap Ltd

The consulting firm Finnmap (Oy Kunnallistekniikka Ab) received 170 visitors from 40 countries at their head office in Lauttasaari, Helsinki. Finnmap is the leading surveying and mapping company in Finland with a complete service also in aerial photography.

Finnmap's photogrammetric production unit based on six plotters, EK 22, and a Hewlett-Packard 21MX computer was presented by *Mr. Ilkka Kukkonen. Mr. Sven Wik* introduced the company's projects of major interest both in Finland and abroad.

Mittaustekniikka Oy

Järvenpää (40 km)

The consulting engineering company Mittaustekniikka Oy invited visitors to hear the introduction made by *Mr. Veikko Korhonen.* He talked mainly about applying photogrammetry to large-scale mapping, measuring the volume of oil reservoirs, and crossection mensuration of tunnels. Automatic data processing applications of photogrammetric automatic drawing instruments and digitizers for miniature computers were also presented. There were 32 visitors from 16 countries.

Soilwater Consultants

As one of the largest consulting engineering companies in Finland, Soilwater Consultants offers a complete range of services in environmental planning and in building. The head office of the company is situated in Lauttasaari, Helsinki, where the photogrammetric mapping process was presented by *Mr. Matti Seppälä* to 19 visitors from 11 countries.

STUDY TOUR TO LAPLAND

Among the tours during the weekend of July 17—18, 1976, the study tour to Lapland offered an opportunity to all those interested in getting acquainted with the inventory of forests and with geological, geophysical and meteorological research work carried out north of the Polar Circle. The number of participants was 26. They were looked after by *Mr. Reino Ruotsalainen.* On Saturday the participants flew from Helsinki to Ivalo, then took a bus 35 km south, to Laanila, where field work carried out in the photogrammetric inventory of forests was presented within the test area of the Institute for Forestry Research.

The Tourist Center of Saariselkä offered to the visitors a pleasant accomodation with a real taste of Lapland.
On Sunday the participants were taken by bus 40 km further south, to Vuotso, where an introduction was given to the photointerpretation of soils at the Vuotso Research Station of the Geological Survey of Finland.
From Vuotso the tour continued (90 km south) to the Sodankylä Geophysical Observatory of the Finnish Academy of Science and Letters, where participants had an opportunity to visit a ionospheric station, a recording station of magnetic pulsations, a station for auroral observations and a seismic station.
In addition, visitors were able to follow radiosounding activities at the aerological station of the Finnish Meteorological Institute.
On Sunday evening the participants flew back to Helsinki and Congress work.

Archipelagian cruise on the Gulf of Finland, from the harbour of Helsinki to the island Kaunissaari, a recreation area of the City.