

39925

EIGHTH INTERNATIONAL CARTOGRAPHIC CONFERENCE
USSR, MOSCOW, AUGUST, 1976

Bilich Yu. S., Vakhromeyeva L. A.

HIGHER EDUCATION IN CARTOGRAPHY IN THE USSR

(The National Committee of Cartographers, USSR)

Moscow, 1976

EIGHTH INTERNATIONAL CARTOGRAPHIC CONFERENCE
USSR, MOSCOW, AUGUST, 1976

Bilich Yu.S., Vakhomejeva L.A.
HIGHER EDUCATION IN CARTOGRAPHY IN THE USSR
(The National Committee of Cartographers, USSR)

Moscow, 1976

Faint, illegible text at the top of the page, possibly bleed-through from the reverse side.

Second block of faint, illegible text in the middle of the page.

Výzkumný ústav geodetický, topografický
a kartografický v Praze
Knihovna

1321/46

39925

HIGHER EDUCATION IN CARTOGRAPHY IN THE USSR

Meeting diverse requirements in maps and atlases in the USSR is provided by cartographic industry in accordance with the plans of Directorate of Geodesy and Cartography under the Council of Ministers of the USSR. To fulfil these plans and to carry out associated research work training qualified specialists in cartography is of prime importance, special attention being paid to the training of diplomated cartographic engineers.

Higher cartographic education in our country is developed as a part of geodetic education; its history is inseparable from the development of the Moscow Institute of Geodesy, Aerial Surveying and Cartography (MIIGAiC) (former the Land-surveying Institute) the 200-th anniversary of which will be celebrated in 1979.

The periods in the history of higher education of cartographic engineers can be followed beginning with isolated cartographic subjects included into the syllabus of geodetic education up to the formation of cartographic speciality (the first higher cartographic school in the world) and the establishment of cartographic faculty among other faculties of MIIGAiC in 1936.

Diplomated cartographic engineers being specialists of high qualification in the field of preparation geographical maps and atlases of different content and for various purposes are trained at the cartographic faculty of MIIGAiC.

Diplomated cartographic personnel in cartography is trained in the Novosibirsk Institute of Geodesy, Aerial Surveying and

Cartography as well.

Trends in training cartographic engineers and their changes result from the tasks in hand of carto-geodetic industry, availability of diplomated engineering personnel, and the achievements of science and technology.

According to the curriculum of recent years diplomated cartographic engineers should be broad field specialists. It envisages training cartographic engineers in two specialities: "map compiling and editing" and "map publishing". Output of broad field diplomated specialists meets the most important tasks of higher education. Theoretical bases and practical necessity to train broad field diplomated cartographic engineers is due to the character and wide connections of cartography with a number of associated sciences to meet current tasks and their integration, the unity of all the processes in map production from its preparation to its final publication.

The present curriculum provides training in 30 subjects of general and special education, besides there are specialized, optional subjects etc. There are subjects of general science, training in them is carried out according to special lines and the use of modern mathematical methods is required while training.

Cartographic engineers are trained to be able to carry out compilation and edition of maps by means of methods employed in field survey and office work; editing, compiling, and publication of geographical and thematic maps and atlases. That is why diplomated cartographic engineers get broad field geodetic education which makes the scientific ties of geodesy and cartography stronger and enables graduates to carry out the work

in various stages of carto-geodetic production as well as provides the means of representing spacious information on maps by modern methods.

After graduation from MII GAiC diplomated cartographic engineers are employed at different establishments and offices as compilation engineers of cartographical and thematic maps as well as editors of maps and atlases produced. They also act as leading officials in map-making industry, that is why the range of cartographic subjects taught is wide, and the variety of those considerable. Mastering these subjects provides profound knowledge in theory, technology, and applied cartography, in economics and organization of cartographic industry. Inclusion of such subjects as electronics, computing techniques, programming, and automation of cartographic work as reading subjects will enable future specialists to work on automation of cartographic processes. Effective realization of this new curriculum brings about the task of further improvement of subject cycles it consists of, strengthening logical connections between the subjects, and showing those in syllabuses. Syllabuses and teaching aids should help improve the course of training. To develop a theory of classical cartographic subjects (map study, map compiling and editing, mathematical cartography and others) on the principles of new general scientific conceptions and methods is very important, as well as independent development of automation problems in cartography in its wide sense. The requirements to train broad-field specialists are met by art education of specialists who, while training, are taught graphic arts and get acquainted with map deliniation, they learn the laws of visual perception, readability and appearance of maps.

In the course of training cartographic engineers specific role is played by practical training consisting of different class activities and field-and-office practice, this latter lasting for 41 weeks all in all. Improvement in practical training should bring closer together the Institute and advanced cartographic enterprises, research institutions; it is aimed at using the results obtained during practical training in the course of academic studies and at developing skills of independent activity and organization of work.

Students combine their studies with research work, and experience gained in teaching students by individual plans is improved.

Introducing new teaching methods and technical aids is very important for further improvement of training processes. Programming, using computers, a class-room for programmed tests are introduced in training too.

Professors and teachers carry out large scope of methodical activity aimed at development skill of self-guidance and creative work on the part of the students.

Graduation designs are based on the entire cycle of training in map making and the results of these designs should be usable in cartographic industry; the results obtained should be applied when introducing cartographic methods into the work of other industries and establishments.

Time spent on mastering different cycles of subjects and on developing practical skills while training diplomated cartographic engineers can be shown in percentage in the following way:

Theoretical cycles	
social and socio-economic subjects	14,7%
physico-mathematical subjects	17,2%

geodetic subjects	14,7%
geographical subjects (inc. geomorphology)	6,5%
cartographic subjects (with applied chemistry)	27,0%
subjects including electronics, elementary course of electroengineering, use of computers etc.	4,5%
foreign language } including optional	7,1%
physical education } courses	8,3%

In the entire cycle of training cartographic engineer theoretical courses occupy 63,4%

Field practice of students to consolidate theoretical background (practical training) 13,4%

Activity while holding posts of responsibility in map-making industry and compiling graduation work 23,2%

To improve their skills the graduates of cartographic faculty after graduating from MIIGAiC work on probation (according to their specialities) which lasts for up to one year at the places where they are assigned to. Professors and teachers of the Institute help in arranging this probation. Further education of young specialists is provided on-the-job.

Further education of cartographic engineers and development of their creative plans, training teachers of high qualification for MIIGAiC is provided by the post graduate training in cartography.

Studying at extramural faculty of MIIGAiC is an additional way to acquire higher education in cartography for those engaged in cartographic and geodetic production and at enterprises; it is also a way of obtaining higher education for those having special secondary education in geodesy and cartography.

6.

Continuity of education in the USSR (no gap between secondary and higher school programs) makes it possible for graduates of secondary schools and special secondary institutions (including those with geodetic specialization) to enter the cartographic faculty of MIIGAiC.

Подп. к печати 23.06.76г.

Зак.287 кпл МИИГАиК т.300