EDUCATION IN PHOTOGRAMMETRY AND REMOTE SENSING AT THE CZECHOSLOVAK UNIVERSITIES

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1. Introduction

The development of the photogrammetric education at the Czechoslovak high schools and the technical universities has been closely connected with the development of photogrammetric mapping in Czechoslovakia. At the specialized high schools for geodesy and cartography there have been educated technicians for operating the photogrammetric plotters. In Czechoslovakia there are three technical universities /in Prague, in Brno and in Bratislava/with Department for Geodesy and Cartography, where courses of photogrammetry and remote sensing are held.

2. Development of photogrammetric mapping and education

The great development of photogrammetry in Czechoslovakia really began in the fifties of this century, when the mapping of the whole country at the scales 1: 25 000 /Military Topographic Map/ and 1 : 10 000 /Civil Topographic Map/started. Both Maps were finished for the whole terrotory approximately during twelve years. The main method for accomplishing those Maps was the Photogrammetric Universal Mathod /analog/ and the mainly used plotters were the Stereoplanigraphs Zeiss Jena.
At the begining of the sixties the preparation works for large scale mapping /1 : 5 000 and 1 : 2 000/ of the whole territory of Czechoslovakia have been undertaken. First time the large scale map was conceptualized as Technical Economic Map with very precise planimetry and altimetry. In the meantime the concept has been changed and nowadays so called "Basic Map of Large Scale" /ZMVM/ has been accomplished. The "ZMVM" comprizes mainly theplanimetry which is needed for cadastral purposes. The main method for this mapping has been the Numerical Photogrammetric Universal Method, and consequently automatic coordinatographs have been used for plotting of planinetry.
The need of specialized engineers-photogrammetrists in practice has called forth the deep theoretical education in photogrammetry at schools. In the late sixties and during seventies the basic course of photogrammetry /at the Department of Geodesy and Cartography/ was in three semesters. The specialized engineers -photogrammetrists attened one more semester. Between the fourth and fifth years of studies all students went over two-weeks practice outside the school. This status existed till 1983, when the five-years studies of geodesy and cartography have been changed directively to four-years studies at all Czechoslovak technical universities. Within the contemporey studies of geodesy and cartography there are two semesters of photogrammetry in the third year of studies with 3 hours of lectures and 3 hours of prctice weekly. To the end of the third school year the students go over three-weeks outside practice, together in photogrammetry and mapping.

3. Contemporary education in remotesensing

The students at the Department of Geodesy and Cartography get very good konwledge about photogrammetry for mapping purposes,

both theoretical and practical knowledge. However, during the course of photogrammetrythey get knowledge also about photointerpretation for non-topographical purposes, about telecommunication systems used at satellites, and application of remotely sensed data.
During the last years, in connection with extension of application of data from air and satellites for various exploration purposes, we at the Universities have felt that it is necessary to spread and deepen the knowledge of students in remote sensing.
At the Technical University in Prague, Department of Geodesy and Cartography, starting the school year 1983/84, a group of about 15 students yearly has started five-years studies specialized in photogrammetry and remote sensing. In Brno /Technical University, Department of Geodesy and Cartography/ starting the school year 1986/87, the course of photogrammetry has been extended to the course of photogrammetry and remote sensing, with one more hour of lecture in winter semester and one more hour of practice in sommer semester weekly, for all students of four-year studies.

4. Extraordinary forms of study

Sofar it has been referedabout ordinary university studies. In about 15 last years, there has been introduced another type of studies, so called postgraduate studies, into the Czechoslovak university system. This postgraduate study enables opportunity for engineers from practice to spread and deepen Their knowledge for some special purpose during 2 or 3 semesters of special study. It is considered that this kind of study /postgraduate study/ would be very suitable for studiing of remote sensing.
As far as we know, it will be needed to organize two kinds of s study in remote sensing. First, the postgraduate study of photogrammetry and remote sensing for various professionals, who work in the field of collecting and application of data from air and satellite imageries. This postgraduate study should be organized by Departments of Geodesy and Cartography. Second, the postgraduate study for geodesists and cartographers, who work in various fields, where geodesy, photogrammetry and remote sensing are applied for data collecting. This second kind of postgraduate study should be organized by other universities, e.g. University for Agriculture and Forestry, etc.