

BULGARIAN PHOTOGRAMMETRY AND ISPRS

I. Katzarsky

22 Omourtag Street, BG-1124 Sofia, Bulgaria, ikatzarsky@abv.bg

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ABSTRACT

The aim of this paper is to inform the international photogrammetry community with the development and state of Bulgarian photogrammetry, as well as its participation in the life of International Society for Photogrammetry and Remote Sensing (ISPRS). The contents of the paper is based on documentation of the Society, papers by participants in ISPRS events and other sources, as well as the personal impressions of the author being contemporary person in photogrammetry activity in Bulgaria and abroad during the last 50 years. The paper has a structure of three parts: 1. Introduction. 2. Bulgarian Photogrammetry (Stages in development of Bulgarian photogrammetry, Beginning and first production, Institutions and education, Photogrammetric production, Photogrammetric technical means in Bulgaria, Application of digital photogrammetry in Bulgaria, Photogrammetric events in Bulgaria, Bulgarian photogrammetric literature). 3. Relations with ISPRS (Membership, Participation in 12 ISPRS congresses, Bulgarians in ISPRS managerial bodies, ISPRS Awards, Other structures connected with ISPRS).

1. INTRODUCTION

The aim of this paper is to inform the international photogrammetry community with the development and state of Bulgarian photogrammetry, as well as its participation in the life of International Society for Photogrammetry and Remote Sensing (ISPRS).

The contents of the paper is based on documentation of the Society, papers by participants in ISPRS events and other sources, as well as the personal impressions of the author being contemporary person in photogrammetry activity in Bulgaria and abroad during the last 50 years.

2. BULGARIAN PHOTOGRAMMETRY

Bulgaria is the first Balkan country, which apply photogrammetry. Bulgarian photogrammetry has a long and fruitful history, marked by the efforts of three professional generations.

2.1 Stages in development of photogrammetry in Bulgaria

1. Terrestrial, aerial, cosmic.
2. Analogue, analytical, digital.
3. Topographic, cadastral and special mapping at different scales, for different purposes, in different form (graphical, digital).
4. Non-topographic applications (Close-range photogrammetry).

2.2 Beginning and first production

- 1908 – Terrestrial pictures near City of Sofia – plotted in Vienna Cartographic Institute by Eduard von Oreby means of his Stereoautograph.
- 1912-1918 – Aerial pictures from balloon and terrestrial pictures – during the Balkan and First World War.
- 1917 – Aerial pictures from zeppelin, and in 1926 from airplane over City of Gabrovo.

- 1928 – Terrestrial pictures by Phototheodolite Wild on 2.5 sq. km – plotted in Wild Heerbrugg Co. by Autograph A2.
- 1930 – Test area of 50 km² is covered by aerial pictures for production of topographic map at 1:25 000 scale
- 1932 – Topographic map at 1:25 000 scale by terrestrial photogrammetry.
- 1935 – Photo-plan at 1:10 000 scale of Sofia Municipality by aerial photogrammetry.
- 1940 – Aerial stereo-photogrammetry for producing topographic map at 1:25 000 scale.

2.3 Institution and education

- 1891 – Topographic Division (now Military Geographic Service) at Ministry of Defence is establish.
- 1922 – A Group of Surveyors is established. Since 1965 is Union of Surveyors and Land Managers in Bulgaria with actively participation of Bulgarian photogrammetrist.
- 1930 – First school in photogrammetry at Military Geographic Service is edited.
- 1942 - High Technical School is established, now University of Architecture, Civil Engineering and Geodesy
- 1945 – Photogrammetry Department at State Polytechnic {now University of Architecture, Civil Engineering and Geodesy} is establish.
- 1947 – Subject Photogrammetry is introduced in Sofia Technical High-school.
- 1951 - Main Department of Geodesy and Cartography (now Agency of Geodesy, Cartography and Cadastre) is establish.
- 1952 - Geoplanproject – the largest state company in surveying and mapping, applying photogrammetry, is establish.
- 1953 – Photogrammetru Department at Geoplanproject is restablished. with main task production and revision of Large-scale Topographic Map (1:5000, 1:10 000) and large-scale urban topographic maps (1:1000), as well as other photogrammetric production.
- 1962 - Research Institute of Geodesy and Photogrammetry is establish.
- 1968 - Department Geodesy and Photogrammetry is established at Road Research Institute with main task production of

large-scale topographic maps (1:2000 to 1:500) and photogrammetric measurements of the terrain as input for automatic road design.

1873 - Photogrammetru Department at National Institute of Culture Institute is established.

1975 – Laboratory of Photogrammetry and Remote Sensing at Institute Niproruda is established.

1976 – Photogrammetry Laboratory at Mine and Geological University is established.

1977 - Photogrammetry Group at Transport Designing Institute is established. with main task production topographic maps at 1:1000 scale as basis for designing and reconstruction of railways.

1983 – Photogrammetry Department at National Cadastre Center is established during the period 1983-1966 orthophoto-plans at 1:5000 and 1:10 000 scale of 80 % of Bulgarian territory are produced.

2001 – Photogrammetry Department at Geogaphic Information System – Sofia Ltd. is established.

Now photogrammetry and remote sensing is subject in 4 universities and several technical high-schools.

2.4 Photogrammetric production

1. Revision of topographic map at 1:25 000 scale (more than 1300 sheets), size 50x50 cm.
2. Revision of topographic map at 1:5000 scale (about 19 000 sheets), size 50x50 cm.
3. Production and revision of cadastral maps at 1:1000 scale (sheet size 80x50 cm) of urban territories.
4. Special applications.

2.5 Photogrammetric technical means in Bulgaria

1. Air grafts: Antonov AN-30, L-410 Photo-variant, Cessna 404 Titan.
2. Aerial cameras: RC-30, RMK A 15/23, as well as RC-10, MRB 15/23, MRB 30/23.
3. Film processor: Colenta.
4. Photogrammetric scanners: DeltaScan.
5. Digital photogrammetric workstations: Photomod, Soket Set, Geomatica OrthoEngine,
6. Erdas Imagine, DVP.

2.6 Application of digital photogrammetry in Bulgaria

1. Production units – 5.
2. Universities – 4.
3. Research institute – 1.

2.7 Photogrammetric events in Bulgaria

1958-2006 – 79 national and international conferences, symposia, seminars and meetings are organized.

2.8 Bulgarian photogrammetric literature

1930 – First Bulgarian manual in photogrammetry is edited.

1930-2006 – Edited books and textbooks – 37.

1966-1999 – Doctors theses in Bulgaria – 16.

1929-2001 – Edited technical specifications, regulations, manuals – 35.

3. RELATIONS WITH ISPRS

3.1 Membership

The Union of Surveyors and Land Managers in Bulgaria is member of ISPRS since 1967.

3.2 Participation in 12 ISPRS congresses

- III Congress, Zurich, 1930.
- V Congress, Rome, 1938.
- VII Congress, Stockholm, 1956.
- XI Congress, Lausanne, 1968.
- XIII Congress, Helsinki, 1976.
- XIV Congress, Hamburg, 1980.
- XV Congress, Rio de Janeiro, 1984.
- XVI Congress, Kyoto, 1988.
- XVII Congress, Washington, 1992.
- XVIII Congress, Vienna, 1996.
- XIX Congress, Amsterdam, 2000.
- XX Congress, Istanbul, 2004.

Presented 15 papers in the ISPRS congresses.

3.3 Bulgarian in ISPRS managerial bodies

1. Second Vice President, 1988-1992.
2. Member of Financial Commission, 1996-2000.

3.4 ISPRS Award

A Bulgarian

1. Is winner of Eduard Doležal Award 2000, established by Austrian Society for Surveying and Geoinformation (ÖVG) in memory of the founder of ISPRS.
2. Has Certificate of Appreciation for significant contributions to the financial management of ISPRS (1996-2000).

3.5 Other structures, connected with ISPRS

1. Representatives (reporters) of the Union of Surveyors and Land Managers in Bulgaria at the eight ISPRS technical commissions.
2. 1958 - Photogrammetry and Remote Sensing Section at the Union of Surveyors and Land Managers in Bulgaria is establish.