

# **ISPRS**

**2004**

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## **OBITUARIES**

**Zarko Jaksic**

**Gerald Clement Brock**

**Teodor Joseph Blachut**

**Gilbert Louis Hobrough**

**Wang Zhizhuo**

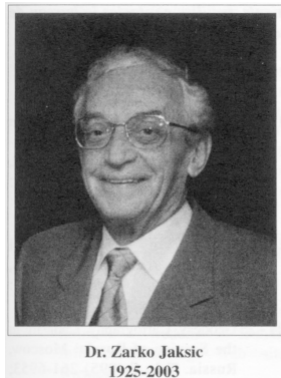
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## OBITUARIES

### ZARKO JAKSIC (1925-2003)

With the passing of ZARKO JAKSIC on March 20 2003, the international photogrammetric community lost one of its prominent members and an outstanding scientist. Zarko was born in Cantavir, Serbia in 1925, the only child of Sima and Milica Jaksic. Zarko excelled academically, but after completing high school he was at loose ends due to the German occupation. He joined the partisans and subsequently the fledging Yugoslav Army.



After World War II, Zarko enrolled in the University of Belgrade, graduating as a Geodetic Engineer. He was a superb student and was groomed to become member of the faculty. He specialized in photogrammetry, gained his master's degree and became an Assistant Professor of photogrammetry at the University under Prof. Drazic. While teaching there, he met and married in 1954 his first wife, Marta Barany.

In 1961 Zarko was awarded a post doctorate fellowship at the National Research Council of Canada in the Photogrammetric Research Section, Division of Applied Physics. Although his original intention was to return to Belgrade after a year, he decided to settle in Canada and brought his wife Marta and his son Tom to

Ottawa. Zarko soon became a prominent member of the Photogrammetric Research Section, under the direction of Ted Blachut and a highly respected scientist, nationally and internationally. He participated in a cadastral pilot project in Columbia using stereo-orthophotos. After U. Helava left NRC, Zarko played a key role in the development of the analytical plotter, Anaplot, being responsible for the internal architecture of the system.

From 1980 to 1984 he was President of Commission II of ISPRS. In this role he encouraged young photogrammetrists to become involved in ISPRS and so had significant influence on the way in which ISPRS developed. He authored numerous technical and scientific papers and was active in the Canadian Institute of Geomatics. Upon Ted Blachut's retirement in 1980, Zarko succeeded him as head of the Section. In 1986 the Section was disbanded and Zarko transferred to the Canadian Space Agency where he pursued his scientific work until retirement in 1990.

Marta, his first wife, died in 1995. In 1998 Zarko married Marta Pivonka and moved from Ottawa to Toronto.

Zarko leaves his widow, Marta in Toronto, his son Tom Jaksic, who is an Associate Professor of Surgery at Harvard Medical School and an Attending Surgeon at Children's Hospital, Boston, Tom's wife Loretta and three grandchildren: Alexander (age 10), David (age 11) and Kathryn (age 13).

### GERALD CLEMENT BROCK (1911 - 2002)

Gerald Brock, who died in Mexico on 30th November, 2002 at the age of 91, was President of Commission I (Photography and Navigation) of the International Society for Photogrammetry from 1960-1964. This was the first time that UK had been responsible for one the ISP Technical Commissions. He was a founding Council member of the Photogrammetric Society in 1952 and, at the time of his death, the only survivor of that first Council.

Brock was awarded the President's Medal of the Photogrammetric Society in 1964 and was made an Honorary Member of the Photogrammetric Society in 1976.

He graduated BSc (Hons.) Chemistry Dublin in 1931 and undertook with a research in organic chemistry; gaining an MSc Dublin in 1933. He joined the Admiralty Chemical Laboratory, Portsmouth in 1934, and then became a research chemist, at Dufay-Chromex in 1935.

He joined the Royal Aircraft Establishment (RAE) in 1939 and became Head of Photographic Research and Development, Ministry of Aircraft Production in 1944 and Head of Air Photographic Division, RAE in 1945.

He was intimate involvement at RAE in research in lighting conditions, film properties, processing machines and a new generation of airborne cameras. Between 1943 and 1947, 113 technical papers and reports were published under Brock's name at RAE.

*Physical Aspects of Air Photography* (Longmans Green) appeared in 1952, and republished in 1967 by Dover as *The Physical Aspects of Air Photography*.

Brock left RAE to become Manager, Photographic Image Evaluation Department, Optics Division, Itek Corporation 1961-1967. He worked on image quality in high resolution aerial photography, contributing to development of the first American photographic reconnaissance satellite program, code named "Corona".

He was a contributing author to an Itek publication entitled *Photographic Considerations for Aerospace*.

From 1967-1976, Brock worked with W. Vinten Ltd. on the measurement of modulation transfer functions of lenses and on the development of a transportable rapid processing machine for aerial film.

*Image Evaluation for Aerial Photography* (Focal Press) was published in 1970.

[These notes have been extracted from an obituary notice which is published in the *Photogrammetric Record* during 2003.]

### **TEODOR JOSEPH BLACHUT (1915-2004)**

Dr. Teodor (Ted) Blachut, a leading photogrammetrist of the 20<sup>th</sup> century, passed away in Ottawa, at the age of 89 on June 17 2004.

Ted was born and educated in Poland. He graduated in 1938 from the Technical University in Lwow, Poland in Geodetic Engineering (Dipl.Ing) and received in 1971 the degree of Doctor of Technical Sciences from the Swiss Federal Institute of Technology in Zurich (ETH). His thesis was on the subject of stereo-orthophotos.

During the Second World War, after the fall of Poland, Ted made his way to France where he joined the 2<sup>nd</sup> Polish division. After the fall of France, the Polish Division crossed to Switzerland and was interned there. During that time Ted met Dr Max Zeller, professor of photogrammetry at the Swiss Federal Institute of Technology (ETH) who happened to be the commanding officer of the interned camp. His love of photogrammetry started at that time. He worked briefly with Prof. Zeller and then joined WILD Heerbrugg where he participated in the development of the famous autograph A7 and traveled widely to install Wild photogrammetric instruments and give instruction and training.

In 1951, Ted with his Swiss wife Fanni immigrated to Canada to organize a Photogrammetric Research Section in the Division of Physics at the National Research Council of Canada in Ottawa. He was able to assemble a group of scientists, who under his direction developed new concepts and photogrammetric

instrumentation. Schut pioneered analytical aerial triangulation and his method of block adjustment was used all over the world. Helava formulated the concept of analytical plotter and NRC builds the Anaplot which was exhibited at the ISPRS Congress in Helsinki in 1976. The intense preoccupation of the section with analytical methods in aerial triangulation leads to the development of mono comparator which was manufactured by a Canadian company.

The concept of stereo-orthophotos advanced by prof. S.H. Collins was embraced by Ted Blachut and further developed and enhanced by him. Stereo-orthophoto became one of the leading achievements of the last century in the field of photogrammetry.

Ted published some 130 scientific papers. He co-authored with Prof. R.Burkhardt a book entitled *Historical Development of Photogrammetric Methods and Instruments*, sponsored by ISPRS. He was active in ISPRS and other photogrammetric societies organized many scientific conferences. His scientific work brought him much recognition. He was elected Fellow of the Royal Society of Canada and the Polish Academy of Sciences (PAN), and received the honor of Doctor honoris causa from the Technical University of Mining and Metallurgy (AGH) in Krakow Poland.

He is survived by his wife of 55 years Fanni, his sons Janek, Daniel and Piotr and his ten grandchildren, all in Canada

### **GILBERT LOUIS HOBROUGH (1918 – 2002)**

THE DEATH occurred on 30th January, 2002 in Vancouver, British Columbia of Gilbert Louis Hobrough, whose remarkable contribution to scientific invention had an impact on photogrammetry which was well ahead of its time. Regarding himself as an engineer who was totally immersed in the physical sciences, he was responsible, singly or jointly, for inventions which resulted in the granting of at least 47 patents in fields as diverse as phonograph turntables and pickups, high fidelity loudspeaker design, radar and barometric altimetry, three dimensional machine vision and laser interferometry.

Hobrough was born in Toronto, Ontario in 1918. His formal education was completed by evening classes after he dropped out of daytime high school. He tended to study what interested him and did so by

correspondence with the University of London external department. Half a century later, he did admit that he should have pursued studies for a conventional university degree. One childhood hobby involved radio, an interest which he maintained throughout life. During the Second World War, he worked for Rogers Radio Tubes, first making and then developing radar tubes. Towards the end of the war, he moved to the village of Lucknow, north-west of Toronto, to work for an aircraft parts company which was in the process of converting to civilian production. Here, he developed a phonograph turntable drive which led to his first patent. Then, in an old mill, he opened his own first business, a small foundry and machine shop. He became the village's studio photographer and also made the printing plates for pictures in the local newspaper.

After spending a couple of years working on industrial process controls for uranium production for Eldorado Mining in Port Hope on Lake Ontario, he returned to Toronto. There, in 1951, Hobrough began work for the Photographic Survey Corporation Ltd., a Canadian member of the Hunting Group of companies of England. He developed an electronic dodging printer for air survey photography but, as the result of an oversight, the company let slip the patent rights. He also developed an airborne profile recorder which required a radar system to measure the distance from aircraft to ground to an accuracy of about a foot (0.3 m). By measuring the boiling temperature of toluene very accurately, he was able to devise a "hypsometer" of the required accuracy which performed in real time.

Memories may have been embellished with the passage of the years, but reliable sources reported that, on observing a room full of busy photogrammetric plotting instrument operators, Hobrough was heard to mutter: "There has to be a better way!". So began development of the first successful stereo-image correlator for demonstration on a Kelsh Plotter in 1957. The technology was later embodied in production of the Raytheon-Wild B8 Stereomat (Fig. 1). The significance of this stride in photogrammetric technology was recognised by the American Society of Photogrammetry. The Photogrammetric Award of ASP for 1961, given by the Fairchild Camera & Instrument Corporation, went to Hobrough for his "contribution to the development of the automatic stereo-plotting system, known commercially as Stereomat".

History has not regarded Hobrough and the Stereomat too enthusiastically. Many textbooks ignore this pioneer and his work altogether. However, Schenk (1999), in a chapter on image matching fundamentals, stated: "Image matching, or finding conjugate points automatically, has quite a long history. First experiments started in the fifties [1950s], most notably by Hobrough. The solution was analog in nature; correlations which were realized in hardware compared (correlated) the gray levels of two images. Wild Heerbrugg, then the leading manufacturer of photogrammetric equipment, introduced a correlator at the occasion of the 1968 ISP Congress [in Lausanne]. This innovative instrument [Raytheon-Wild A2000] did not enjoy much success, however. For one, the photogrammetric community was rather skeptical [sic] toward this new concept. Furthermore, the instrument was not flexible and reliable enough." Konecny and Lehmann (1984) were content, on page 364, to ascribe credit where it was due. *"Im Jahre 1957 wurde von G. Hobrough in Kanada der erste funktionierende Bildkorrelator zur automatischen Höhenauswertung (der Stereomat) entwickelt."* [In the year 1957, G. Hobrough developed the first operational image correlator for automatic height measurement (the Stereomat).] Hobrough's own papers (Hobrough, 1959, 1960) were not numerous but are all the more important as a consequence.

In 1961, Hobrough moved to California where he and George Wood developed the concept for the Automatic Registration Electronic Stereoscope (ARES) instrument to correlate high resolution reconnaissance photography with high precision survey photography in order to enable more precise measurement of changeable ground conditions. They sold this project to the Itek Corporation and then joined Itek to develop it, first at Palo Alto, California, and then in Massachusetts (Hobrough, 1965; Hobrough and Wood, 1965). While with Itek, Hobrough also patented a method for controlling the shape of telescope mirrors of large diameter but small thickness. He used a laser interferometer to count interference rings on the mirror and actuators to flex the mirror into the desired shape.

Following his period with Itek, Hobrough moved to Vancouver in 1968 to establish Hobrough Ltd. in order to develop an automated orthophotography system which used high speed stereo-image correlation. The resulting Gestalt Photo Mapper (GPM) was a considerable success and confounded long accepted ideas about the uniquely human capability of stereopsis (Hobrough and Hobrough, 1971a and b). Commercialisation of GPM products was carried out by a bureau service which operated in Canada, USA, Japan and the Republic of Ireland. A client could gain access to a highly automated production system without the need for capital investment.

In 1972, Hobrough left the company which bore his name in order to co-found, with Ted, his son, several other companies. For a while, he returned to the development of high quality audio equipment but soon he turned his attention again to image correlation. He spent a year at the University of Hannover, extending this work in a joint venture between Jumeite Laboratories Ltd. of Vancouver, Carl Zeiss and DLR, the German space agency (Hobrough, 1978). He enjoyed his time in Hannover and especially the company of an old friend, Uki Helava, and a new colleague, Gottfried Konecny.

At the XIVth Congress of the International Society for Photogrammetry, held in Hamburg in 1980, Hobrough was presented with the Brock Gold Medal, the Society's most prestigious award. The terms of the award state that it is "presented for an outstanding landmark contribution to the evolution of photogrammetric theory, instrumentation, or practice." The Gestalt Photo Mapper fitted that requirement perfectly.

Until his retirement in 1987, Hobrough continued to work in Vancouver on image correlation for industrial robotics in a field which he had led for 30 years but which was now called machine vision. In retirement, he concerned himself with an examination of variations in the speed of light throughout the universe and the forces which caused such variations.

One of our discipline's more prolific inventors deserves this belated tribute. News of Gilbert Hobrough's death, though published in Canada at the time, regrettably did not reach a wider audience until 18 months later.

## WANG ZHIZHUO (1909-2002)

Prof. Dr. Wang Zhizhuo died on May 18, 2002, at the age of 93. Born on December 16, 1909 and educated in China, Britain and Germany in the 1930s, Wang later became founder of the discipline of photogrammetry and remote sensing and one of the few forerunners of education and research in geomatics



in China. Consecutively

holding professorship at several prestigious national universities in China, the honorary presidency of Wuhan Technical University of Surveying and Mapping and senior membership of the Chinese Academy of Sciences, Wang enjoyed high and wide respect in the academic community in China as a true scientist as well as a devoted educator. His international recognition is reflected in his award of the honorary membership of ISPRS in 1988 and the wide use of his masterpiece 'Principle of Photogrammetry with Remote Sensing' as a classical reading for postgraduates in many countries since 1990.

## MOHAMED MOSSAD ALLAM (1940-2002)



A well-known contributor to ISPRS, Dr. Mosaad Allam tragically passed away at the age of 62, as the result of an automobile accident in Riyadh, Saudi Arabia on 21 August 2002. Throughout his long

and prominent career in the surveying and mapping profession, Dr. Allam served on numerous national and international scientific associations and commissions. He was President of ISPRS Commission II from 1992-1996. Dr. Allam also served as Chairman of Commission V-E of the International Federation of Surveyors (FIG); was a member of the US National Committee for the exchange of digital map data and was the Canadian representative on the International Cartographic Association (ICA) for standards. Throughout his distinguished career Mosaad played key roles in the successful creation of many GIS-related programs. These include the creation of the national GIS Technology Centre in the GIS Division/Department of Energy, Mines and Resources (EMR), the creation of the Inter-Agency Committee on Geomatics, the development of the data model for the national topographic database and the Canadian standards for digital data exchange. Born and raised in Tanta, Egypt, Mosaad obtained a Civil Engineering degree from Alexandria University in 1961. Subsequently Mosaad obtained a PhD. in Photogrammetric Engineering from the Geodesy, Aerial Survey and Cartography Institute Moscow, Russia in 1967. After finishing this education, Mosaad began his working career as an Assistant Professor of Photogrammetry at Al-Azhar University in Cairo. In 1970, Mosaad moved to Canada where he

accepted a position as a post doctoral fellow with the National Research Council (NRC). In 1972 he joined the Department of Energy, Mines and Resources (EMR), and later married his wife Amira in 1974. Mosaad moved through various positions in the Research and Development Section and in the Topographic Engineering Section of EMR. Subsequent to several other positions, Mosaad was appointed as Deputy Director and later as Director of the GIS Division within the Surveys, Mapping and Remote Sensing Sector of EMR. Mosaad proudly served the government of Canada for 26 years, and consulted on behalf of many organisations such as the Food and Agriculture Organization (FAO) of the United Nations. In 1997, he implemented and became the Director of the Egyptian Environmental Information Systems (EEIS) project in Cairo, Egypt. In 1999, he retired and returned to Canada with Amira and Omar. During his time as President of ISPRS Commission II, the field of systems for data processing, analysis and representation was changing rapidly and the working groups and subsequent resolutions reflected this change, and set the pattern for the succeeding years. Mosaad's experience in a production organisation gave him the background to lead the commission through these changes and to concentrate on relevant and topical issues. His enthusiastic and good humoured contribution to ISPRS will be remembered. Mosaad was known by all his friends and colleagues as a brilliant, sympathetic humanitarian whose professional contribution to his work brought him to the forefront of his profession. His many years of Government and professional service both in Canada and serving the people in developing nations, and his contribution to ISPRS, is a testament to his dedication and loyalty. Mosaad was laid to rest in Riyadh on 26th August and a memorial service was held in Cairo on 7th September. A memorial service for his friends and colleagues was also held in Ottawa on 19 October 2002. Mosaad is survived by his wife Amira and his two sons Nader and Omar.

## PAUL WOLF (1934-2002)

“It’s not what you take in life, it’s what you give.”

Dr. Paul R. Wolf, age 67, passed away on Wednesday, March 6, 2002, peacefully at home, following a courageous battle with prostate cancer. Wolf was born June 13, 1934 in Mazomanie, Wisconsin. He graduated from Mazomanie High School and served in the U.S. Army in Japan for 2 years. Later, he attended the University of Wisconsin-Platteville and the University of Wisconsin - Madison, graduating with a degree in Civil Engineering in 1960.



Wolf began his career as a highway engineer for the Wisconsin Department of Transportation, then joined the UW-Madison as an instructor in 1963, and completed his master’s (1965) and doctoral (1967) degrees in the area of surveying and analytical photogrammetry. In 1967, he joined the civil engineering faculty at the University of California-Berkeley. In 1970, he returned to continue his teaching career at his alma mater. He was known as an extremely gifted teacher and mentor, and enjoyed a wonderful relationship with his students; not only a “teacher-to-student,” but as “friend-to-friend.” Virtually all of his approximately 50 graduate students now hold distinguished positions in education, government, and business throughout the world. Wolf’s global impact on education in the broad fields of surveying, mapping and photogrammetry was also accomplished through his authorship of multiple editions of three standard-setting textbooks on these subjects: *Elements of Photogrammetry* (with B.A. Dewitt), *Elementary Surveying* (with R.C. Brinker and C. D. Ghilani), and *Adjustment Computations: Statistics and Least Squares in Surveying and GIS* (with C. D. Ghilani). These books have been translated and published internationally in several foreign languages.

From 1979 until his retirement in 1993, Wolf was head of the Surveying, Photogrammetry, and Remote Sensing Division at UW-Madison. In ‘retirement,’ he continued his extensive writing activities and working as a consultant, becoming an internationally recognized expert in accident reconstruction and forensic applications of surveying and photogrammetry. He was a frequently invited lecturer to a variety of professional and academic programs around the world.

Over the years, Wolf published over 120 research papers and received numerous professional awards, honors, research fellowships and citations from various

professional organizations. These included the Keuffel & Esser Surveying Fellowship, the National Science Foundation Geometrics Fellowship, the Cubic Corp. Fellowship, the Bausch and Lomb Research Award, the Talbert Abrams Scientific Developments in Photogrammetry Award, the Earle J. Fennel Award for Outstanding Contributions to the Profession of Surveying, the Surveying and Mapping Award of the American Society of Civil Engineers, the UW College of Engineering Alumni Teaching Quality Award, and the Wisconsin Society of Land Surveyors Honorary Award for Educational Contributions.

Even though he was busy with his teaching, writing, and lecturing, Wolf found time to participate in ASPRS activities. He served as Charter President of the Wisconsin Chapter of ASP, was Chairman of the Nomenclature Committee, authored chapter 19 of the *Manual of Photogrammetry* Fourth Edition, served as National Director of the Great Lakes and Western Great Lakes Region for six years, was on the Compass Committee for three years, was ASPRS Representative to Commission VI of ISPRS from 1972 to 1980, ran for ASPRS Vice President in 1982, attended every ISPRS meeting since 1972, and was Chair of Working Group-3 of ISPRS Commission VI (Education in Photogrammetry) from 1976 to 1980.

Wolf was a devout member of his church and especially enjoyed the time he spent with his family, friends, and faithful dog Gracie. He was also an avid fisherman, wood worker and gardener, and loved spending time at his cabin near Minocqua. To friends who visited his home, he regularly sent along a jar of Professor Paul’s Perfect Pickles.

Aside from family, Wolf’s greatest pride was for the accomplishments of his students. He subscribed to the philosophy that “All members of society bear responsibility for educating our young people, not just professors and teachers. All members of society benefit from well-educated students to replenish our ranks in all professions, and engineering is certainly no exception.”

Paul Wolf will be missed by all who knew and loved him. He is survived by his wife Lynn, and his children Paul (Ann), Timothy (Pam), Jodie, his stepchildren, Lane (Ellen), Kara (Dave) and Marc (Karen), 9 grandchildren, 6 siblings: Frank (Eva), John (Alena), Mary, Josephine, June, and Lucille (Don), and many nieces and nephews. He was preceded in death by his parents Frank and Gertrude Wolf, his baby sister Ellen Gertrude and brother Leonard. Wolf often said, “It’s not what you take in life, it’s what you give.”