



A TRIBUTE TO PROFESSOR MIECZYŚŁAW WOJTKOWIAK

This year marks the end of the professional career of the legend of Polish aviation medicine, Professor Mieczysław Wojtkowiak of the Military Institute of Aviation Medicine. On this occasion, *The Polish Journal of Aviation Medicine and Psychology* is presenting the following biographical note.

Mieczysław Wojtkowiak was born in Poznań on 21 December 1928. The Center of Medical Examinations for Aviators, the predecessor of the Military Institute of Aviation Medicine to which Professor Wojtkowiak would later devote his entire professional life, was established by Marshal Józef Piłsudski in the same year. Aviation became Mieczysław Wojtkowiak's passion at an early age. In 1939, he witnessed an air combat in the early days of World War II. *This was the moment when my passion for flying and the will to learn it were born*, he recalls. After the World War II, as the Poznań Flying Club was reactivated, it became his first aviation training center.

Following fast-track completion of Karol Marcinkowski Secondary School in Poznań, he received his matriculation certificate in 1948. In the same year, he started his medical studies at the Faculty of Medicine of the Medical Academy of Poznań. In study-free time, he continued his aviation training using the gliders and powered planes available at the Flying Club to receive the qualifications and a certificate of a glider and powered aircraft pilot as well as a second-class parachute jumper.



Fig. 1. Professor Mieczysław Wojtkowiak in his youth.

In 1950, he was employed as an assistant at the Department of Physiology of the Medical Academy of Poznań, giving lectures and classes for medicine and dentistry students while also holding the duties of a tutor for student groups. He also

continued his aviation training at the club. "Being aware of my interests in aviation, my superior, Professor Edward Czarnecki, decided to pursue aviation medicine-related subjects at the Department of Physiology of the Medical Academy of Poznań. To this end, he established collaboration with the Director of the Central Institute of Medical Examinations for Aviators in Warsaw, Professor Władysław Okniński, and in October 1950 I was sent there for my aviation medicine training", continues Professor Wojtkowiak. While still a student, Professor Wojtkowiak completed a course in aviation medicine (Fig. 1.) which was his first contact with this area of medicine. By that time, he had already become a fully qualified aviator. His teachers included Professor Stanisław Marczewski, an ophthalmologist Professor Władysław Pol, and other specialists employed at the institute. Professor Wojtkowiak retook this course in 1952 and received the befitting certificate.

His stay at the Institute deepened his interest in aviation physiology. Having obtained the knowledge in aviation medicine, Professor Wojtkowiak was fully prepared for educational activities at the Medical Academy of Poznań.

He graduated and received his medical degree in 1953. After graduation, in November 1953, he was drafted for military service. Following the necessary military training, he was appointed senior physician at the Military Academy in Legnica. After a year's work at this position, owing to his aviator qualifications and by the decision of the Commander of the Air Force Medical Service, Col. Bielicki, and the Air Force Commander, Gen. Turciel, he was transferred to continue his service in the Air Force. In 1955, he became the senior physician of the Aviation Training Regiment in Krzesiny. There, having received the approval of the Air Force Commander, Gen. Frey-Bielecki, he underwent aviation training on JAK-18, JAK-12, JAK-11, and TS-8 planes and received the military pilot certificate. Most of his flights were performed on TS-8 BIES planes (Fig. 3.).

During his service at Krzesiny, besides carrying out routine examinations of the airborne personnel, he also carried out his first research studies involving the analysis of physical burden of pilots at different flight conditions, mostly in relation to pre- and post-task reaction times.

In 1957, having obtained practical expertise in the medical service to the air force, he started his

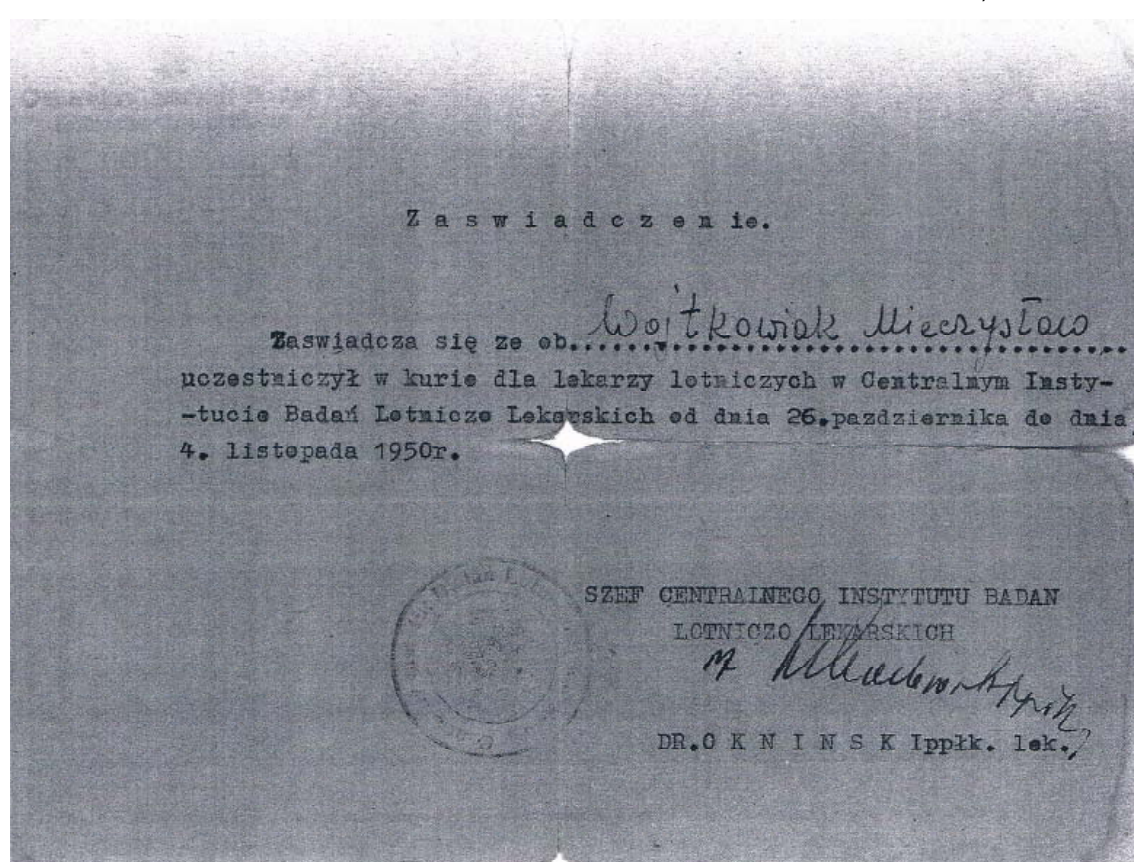


Fig. 2. Certificate of completion of the course in aviation medicine at the Central Institute of Medical Examinations for Aviators.



Fig. 3. TS-8 BIES airplane (source: TS-8 BIES during Air Show Góraszka 2007, CC-BY: Wikipedia User: Lukas skywalker).

research career at the Central Institute of Medical Examinations for Aviators in Warsaw (currently the Military Institute of Aviation Medicine) as a senior assistant at the Department of Physiology. In 1959, he was appointed an Associate Professor at the Aviation Pathophysiology Division. In the same year, he obtained the second-degree medical specialization in aviation medicine.

In 1965, he received his title of a Doctor of Philosophy in Medical Science from the Scientific Board of the Medical Academy of Warsaw having presented a dissertation titled *Selected physiological reactions in pilots subjected to in-training punch-outs*. In 1972, Professor Wojtkowiak was appointed the head of the Aviation Pathophysiology Division of the Military Institute of Aviation Medicine. Being simultaneously interested in aviation ophthalmology, he also obtained 1st degree specialization in ophthalmology in 1974.

In years 1977-78, Professor Wojtkowiak was delegated to Iraq, where he stayed for a year and a half as an expert and lecturer in aviation medicine. Being an experienced specialist, particularly in the pathophysiology of accelerations, he engaged in consultations and collaborations with researchers from the USSR, German Democratic Republic, Bulgaria, and Czechoslovakia. He systematically improved his scientific knowledge during numerous international research internships. In the same period, he was appointed by Professor H. Bjurstedt (Karolinska Institute, Department of Environmental Physiology) a corresponding expert of the International Union of Physiological Sciences, Commission on Gravitational Physiology.

In 1982, by the decision of the Scientific Council of the Military Institute of Aviation Medicine and on the basis of his previous research accomplishments and a dissertation titled *Studies of the systemic tolerance to gravity loads as assessed by*

means of temporal artery blood flow rates and the visual disturbances, he received his habilitation in medical sciences.

On 20.01.1993, he obtained the title of the Professor of Medical Science.

In the 1990s, the research interests of Professor Wojtkowiak focused on the uses of various types of anti-g suits protecting pilots from excessive acceleration. In years 1991-1994, as part of his consultations with the researchers at the German Air Force Institute of Aviation Medicine in Königsbrück, he had the opportunity to study the effectiveness of LIBELLE anti-g suit.

In years 2002-2006 he collaborated with researchers from the US and Germany. In this period, he performed periodic health examinations of German pilots, assessing their G-load tolerance limits using a Polish human centrifuge. It should also be noted that he attended a consultation trip to the US where he gained expertise in anti-g suits and performed experiments using an American human centrifuge. Having completed his stay in the US, he signed an individual research contract for joint Polish-American studies on the efficacy of various types of anti-gravity suits.

He was also a reviewer of numerous research studies. In years 1980-1990, he was a scientific expert involved in consultations concerning certain modifications in the design of pilot chairs ejection. He also assessed prototypes and ergonomic properties of THL helmets. He was the author of technical and medical guidelines for the new human centrifuge which was installed at the Military Institute of Aviation Medicine.

Since the beginning of his work at the Institute, he provided training to physicians applying for specialization in aviation medicine (lectures and training of physicians studying to obtain the 1st and 2nd degree of specialization in aviation

medicine) as well as lectures and simulator trainings for the airborne personnel. He supervised the specialization proceedings of about 50 physicians. He was also a reviewer of several aviation-related studies and doctoral dissertations. He was an active member of examination committees for the granting of higher scientific titles.

Since 1982, he has been a member of the Scientific Council of the Military Institute of Aviation Medicine in Warsaw. Besides his affiliation at the Institute, Professor Wojtkowiak was also an active member of numerous scientific associations. In 1962, he joined the Polish Astronautical Society, where he served as the head of the Bioastronautics Committee, treasurer, secretary general, and vice-president. In 1964, he joined the Polish Physiological Society and in 1989, the Polish Ergonomics Society. Starting from 1988, he was a member of the International Astronautical Federation and International Academy of Astronautics as well as the scientific consultant of the Central Institute for Labour Protection. In addition, he was a member of a Commission of Astronautics and Space Technologies at the Committee on Space and Satellite Research of the Polish Academy of Sciences and as well as a member of the Commission of Space Biology and Medicine of this Committee. He was a member of the State Commission on Aircraft Accidents Investigation.

He received numerous awards and mentions for his research and educational achievements, including: in the period of 1962-1990: first-degree prize in the research competition of the Minister of Defense for the study of spinal injuries in pilots undergoing emergency punch-outs in 1973; second-degree prize for research on the effect of gravitational loads on the visual system in pilots in 1976, third-degree prize for co-authoring a handbook titled *Medycyna Lotnicza i Kosmiczna* (Aviation and Space Medicine) in 1977, and a honorary mention for the study involving the measurements of blood flow rate in the assessment of systemic tolerance to gravitational loads in 1980. In addition, he received four awards of the Commander of Air Force for his research studies and involvement in aviation, eight prizes in research competitions held by the Military Institute of Aviation Medicine, as well as the award of the editors of the *Lekarz Wojskowy* (Military Physician) journal for his study titled *Respiration of isolated liver tissues under gravitational loads of 40-8000G*. Besides the above, he received the second prize of the 33rd Convention of Polish Ophthalmologists for his study titled *Pneumotonographic assessments in*

orthostatic tests conducted in pilots before and after the effects of gravitational load.

For his achievements in research and educational work, Professor Wojtkowiak was awarded with:

- Gold Medal of the Armed Forces in the Service of the Fatherland (1973),
- Gold Cross of Merit (1978),
- Knight's Cross of Polonia Restituta (1985),
- Medal of the Commission for National Education (1988),
- Gold Medal of Merit for National Defense (1986),
- Medal of Merit for National Anti-Aircraft Defense (1987),
- Medal of Merit for Air Forces (1989),

as well as other medals. In addition, Professor Wojtkowiak was awarded the Badge for Outstanding Health Service Work and the Honorary Badge of the Polish Red Cross.

He was an active participant at numerous symposia as well as scientific conferences and congresses both in Poland and abroad. His professional achievements include a total of 128 publications in Polish and international journals as well as several textbook chapters including Chapter 22 of *Podstawy Medycyny Lotniczej* (Principles of Aviation Medicine) edited by J. Walawski, *Medycyna Lotnicza i Kosmiczna* (Aviation and Space Medicine) edited by S. Barański, *Medycyna lotnicza wybrane zagadnienia* (Selected Problems in Aviation Medicine), sign. WLOP 316/2001, edited by W. Kowalski, as well as a textbook titled *Wybrane problemy bezpieczeństwa załogi statku powietrznego w sytuacjach awaryjnych* (Selected problems related to the safety of aircraft crew in emergency situations) co-authored by S. Szajnar.

In years 1963 to 1993, Professor Wojtkowiak performed about 20,000 examinations and trainings of pilots using human centrifuges and was an instructor at about 1,200 ejections performed using land training devices at acceleration of 9-16G. As a professional soldier, and later as a scientific consultant, he worked for the Military Institute of Professional Medicine until the end of the year 2015.

We wish him the best of luck and thank him for all that contribution he has given our Institute over the last sixty years.

Thank you.