



RECOLLECTION OF AVIATION PSYCHOLOGISTS FROM THE PERSPECTIVE OF THE JUBILEE OF THE 90TH ANNIVERSARY OF THE MILITARY INSTITUTE OF AVIATION MEDICINE IN WARSAW

Janina MACIEJCZYK

Jan F. TERELAK

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Author's address: J. Maciejczyk, Warsaw, Poland, e-mail: janka.123@interia.pl

Abstract: The work has a historiographical nature, documenting the biography of aviation psychologists working for Polish aviation in the years 1928-2018. At the same time, the authors document the institutional activity of aviation psychology on the occasion of the jubilee of the 90th anniversary of the Military Institute of Aviation Medicine in Warsaw and its institutional predecessors.

Keywords: aviation psychologists, historiography, 90th anniversary of the Military Institute of Aviation Medicine in Warsaw, biographies of Polish aviation psychologists

INTRODUCTION

The work has a historiographical nature, documenting the biography of aviation psychologists working for Polish aviation in the years 1928-2018. At the same time, the authors document the institutional activity of aviation medicine and psychology on the occasion of the jubilee of the 90th anniversary of the Military Institute of Aviation Medicine (MIAM) in Warsaw and its institutional predecessors.

Established in January 1928 by Marshal Józef Piłsudski, the Center for Medical Research in Aviation (CMRA) was to conduct preliminary, periodic, occasional examinations, scientific and research works in the field of flight physiology, aviator health prophylaxis, training of doctors for military and civilian flying personnel, as well as the selection and elimination in the field of psychophysical predispositions to perform the profession of a pilot. The CMRA has started its work within the premises of the Ujazdowski Hospital. It was not until December 1928 that it moved to the building at Rakowiecka str. 2/4 in Warsaw.

PRECURSORS OF MIAM AVIATION PSYCHOLOGISTS

The establishment of the Center for Medical Research in Aviation (CMRA) coincided with the growing interest in the problems of aviation psychology as one of the subdisciplines of occupational psychology in the global aviation. Many countries have developed methods for measuring response times and emotional resilience. Since the World War I to 1926, there were 20 centers in the world dealing with psychological examinations of pilots. On the basis of these experiences, in May 1928, the Psychotechnical Laboratory was opened at Okęcie, subordinate to CRMA. The manager was a physiologist mjr dr Włodzimierz Missurio, who, together with dr Bohdan Zawadzki - a psychologist, edited a paper entitled "Psychotechnika w lotnictwie" ("Psychotechnical research in aviation"), which presented the genesis and tasks for the work of psychologists, as well as a review of psychotechnical research in aviation [9]. In the following years the psychologists of the Psychotechnical Laboratory, a holder of PhD in philosophy Piotr Macewicz, a medical practitioner captain Stefan Knappe, improved the works for the benefit of aviation judicial practice and conducted scientific research. In psychotechnical research, the suitability for the profession of a pilot was determined on the basis of the speed and accuracy of the assessment of an object in motion, the

speed of response to visual and auditory stimuli, intelligence and resistance to emotional stimuli. In 1938 -1939, mgr Elżbieta Dębicka together with dr S. Knappe developed a series of tests for psychological examinations of groups of pilots. This series was called "Knapp". They are worth mentioning here, as most of these tests were still used in aviation psychology in the late 1960s. These tests include, among others: "Area" - for the examination of visual memory; "Report"- for the examination of auditory memory and spatial imagination; "Scale" - for the examination of spatial orientation; "Drawing rotation" - for the examination of spatial imagination; "Airplanes" - for the examination of the multitasking; "Horizons" - for the examination of perceptiveness. The results of individual tests were standardized. It is also worth mentioning that apart from psychological research in the Laboratory, psychologists also participated in the so-called field research, during the glider or aviation training. In 1937, dr Stefan Knappe published a paper in which he described the methods of psychological selection of candidates for glider flights [3].

On August 1, 1936, the Center for Medical Research in Aviation was renamed the Institute for Medical Research in Aviation (IMRA). The outbreak of the Second World War interrupted the Institute's activity. On the night of September 4 to 5, 1939, the Institute's personnel was ordered to evacuate to Lviv with their families. Here, the Institute was dissolved and the personnel put at the disposal of the Head of Health Service of VI Corps District Command. The Polish health service in aviation in the West started its activity in France. After the capitulation of France, Polish specialists in medicine and aviation psychology moved to Great Britain. In Great Britain, the Polish health service in aviation operated since July 1940 as the Inspectorate Section of the Polish Air Force and was subordinate to the health service of the RAF. Since August 1942, the Aviation and Medical Scientific Council was operating at the Inspectorate of the Polish Air Force. The works of the aviation physicians were published in the "Journal of The Polish Army Medical Corps: Organ of The Polish Military Medical Society". After the war, some of the medical staff returned to Poland, some remained in exile, such as prof. Bohdan Zawadzki, who came to Poland only in 1968 from the USA, where he was a professor at the City College of New York. Here he gave and published a series of 30 lectures on the achievements of American psychology, including clinical psychology. Bohdan Zawadzki



Fig. 1. The Laboratory of Physiology and Aviation Hygiene with Hospital in Otwock.

later supported psychologists in Warsaw with psychological tests and offered them his library. He invited young psychologists to take advantage of scholarships at American universities. His name was given to the Laboratory of Diagnostic Techniques at the University of Warsaw.

Unfortunately, during the war period 1939-1945 both Polish psychology and aviation psychology practically ceased to exist. Psychology was practiced in private offices, by writing monographs or textbooks, which started to appear only after the Polish Thaw in 1956. After 1947, at three state universities, the reduced studies in psychology were held at the faculties of pedagogy and at the Catholic University of Lublin - at the Faculty of Philosophy.

Already in September 1945, works began on the establishment of a new medical and aviation facility called the Laboratory of Physiology and Aviation Hygiene. On June 1, 1946, the Aviation Hospital in Otwock was incorporated into the Laboratory and the Central Aviation Medical Laboratory with the Hospital and the Aviation and Medical Commission was established.

On May 1, 1947, the Central Laboratory of Aviation Medicine was transformed into the Central Institute of Aviation and Medical Research (CIAMR) with their seat in Warsaw. The Institute functioned in this organizational state until 1954, with a small participation of psychologists. Stanisław Trębaczewicz, holding a PhD in psychology,

who was employed at the time, should be mentioned here. On January 14, 1955, the Central Institute of Aviation and Medical Research was renamed the Military Research and Experimental Institute of Aviation Medicine (MREIAM), with its seat in Warsaw, without the Aviation Hospital and the Main Military Aviation and Medical Commission.

PSYCHOLOGISTS WORKING AT THE MILITARY INSTITUTE OF AVIATION MEDICINE

Krystyna Galubińska - a graduate of the University of Poznań, she was employed in 1953 as a psychologist at the Department of Psychophysiology of the Military Scientific and Experimental Institute of Aviation Medicine, with its registered office in Warsaw. In 1965, she obtained her doctorate degree in humanities at the University of Warsaw under the scientific direction of Prof. Mieczysław Kreutz. She worked at Military Institute of Aviation Medicine (MIAM) until September 1973. Dr. K. Galubińska was dealing with adaptation of American tests (based on the Guilford Intelligence Model) to qualify candidates for military air service, including: pilots, navigators, flight managers, flight mechanics, etc. [1]. Dr. K. Galubińska also initiated research on the phenomenon of loneliness of pilots at high altitudes of flight and spatial disorientation in flights with-

out the visibility of the Earth. On May 28, 1958, the Military Research and Experimental Institute of Aviation Medicine was named the Military Institute of Aviation Medicine (MIAM) with its seat at Krasieńskiego 54 street.

After 1956 the importance of psychology in aviation increased and in addition to Krystyna Galubińska, M.A., in 1959 a position of psychologist was created at the Main Military Aviation and Medical Commission and Jolanta Walicka, M.A., was employed.

Romuald Błuszczński - a major of the air force in 1960, after graduating in military pedagogy from the Political-Military Academy (WAP), he started working initially as the head of the laboratory and then as the head of the Department of Aviation Psychophysiology at WIML. He obtained his doctorate degree in humanities in 1966 and the habilitatus degree in 1973 at the WAP. In 1977, under the supervision of col. Romuald Błuszczński, a monograph entitled "Psychologia Lotnicza" ("Psychology in Aviation") was published, co-authored by the employees of the Department of Psychophysiology (Z. Baranowski, J. Maciejczyk, P. Pokinko, H. Świątek, J. Terelak), for which in 1978 they received the 3rd degree prize of the Minister of National Defense. Doc. Romuald Błuszczński together with a team of psychologists took part in the research in the international program "Interkosmos". As part of aviation psychology, he was involved in psychological analysis of pilot activity, the influence of physical factors of flight environment on pilot activity, fatigue in pilots, explaining the psychological causes of air accidents. Together with J. Terelak, R. Kurzyński and J. Stender, R. Błuszczński developed and constructed a device for automatic exposition of visual tests [15]. In 1980 he was transferred as a reserve colonel to the Academy of Internal Affairs.

Piotr Pokinko - a major of the air force, was sent to WIML in 1961 after completing the Master's studies at the Political-Military Academy. Initially, he was an assistant professor, the head of the psychology department at the Main Military Aviation and Medical Commission, and subsequently an acting independent researcher, temporarily acting as the head of the Department of Aviation Psychophysiology. In 1976, he obtained his PhD degree in pedagogical sciences at the WAP and habilitatus degree from the General Staff Academy in 1983. Dr. Piotr Pokinko and mgr Jan Terelak were involved in the application of aviation psychology to judicial examinations and in the development of a battery of psychological tests for psychological examinations of the flying personnel. Together with Lt. col. eng. Jerzy Stendera they have developed electronic equipment for group psychologi-

cal examinations of flying personnel, which shortened the time of examinations and allowed to examine a larger number of people at a time. For the development of methodology and equipment, the authors received a 3rd degree group award from the Minister of National Defence [10]. Col. dr. Piotr Pokinko has repeatedly been a member of the team of experts investigating air accidents and catastrophes. He worked at WIML until 1987, when he joined the Political-Military Academy as the head of the Department of Military Psychology.

Juliusz Gazda - a major of the air force, came to the Department of Aviation Psychophysiology in 1963 after training at the Kirov Medical Military Academy in Leningrad and as a medical practitioner he took over the management of the MIAM Aviation Psychophysiology Laboratory. He was dealing with aviation and medical problems of flight safety. Among other things, he has developed principles for accident investigation from the point of view of aviation medicine. He cooperated in the development of equipment for psychological examinations in the low-pressure chamber. He was also involved in accident hygiene and prevention. In 1974, he defended his doctoral thesis in aviation medicine at MIAM and in the same year, due to his health condition, with a title of a lieutenant colonel, he joined the military reserve force. He passed away in 1975.

Zbigniew Baranowski - an officer, he graduated in pedagogy from the Military Political Academy, started his work at the Department of Psychophysiology in 1964. During his work at MIAM, he was promoted to the rank of a lieutenant colonel. He wrote his doctoral thesis at the Political-Military Academy. He dealt with flight hygiene and safety. After about 10 years of work at the Department of Psychophysiology, in 1978 he became the head of the Military District Psychological Laboratory in Płock.

Henryk Świątek - pilot, with the rank of a major of the air force, for many years an aviation instructor at the Officer Aviation School in Dęblin. He was flying 18 different types of piston and jet aircrafts. His flying time was 2960 hours, including 1600 hours on jet planes. After graduating from Military Political in 1967 with a Master's Degree in Pedagogy, he joined the Department of Aviation Psychophysiology as an assistant professor. After obtaining a doctor degree in 1977, he took the position of the head of the clinical psychology laboratory. He was dealing with flight hygiene and safety as well as prognostic accuracy of tests of visual and motor coordination from the perspective of actual flights [12].

Janina Maciejczyk - started working at MIAM in 1963, a graduate from the Faculty of Philosophy in Psychology at the Catholic University of Lublin. Previously, she worked at the Psychiatric Clinic of the Medical Academy and the Department of Child's Neuropsychiatry. At the Department of Psychophysiology she was involved in diagnostic activities, i.e. examination of pilots undergoing hospital observation for some reasons or after air accident. In addition to diagnostic activities, she conducted qualification and selection tests for candidates to the Officer Aviation School, developed psychological examination programmes for candidates for aircraft training, as well as for pilots for particular types of aircrafts [7]. These programmes were implemented for use. In the years 1964-1967, Janina Maciejczyk participated in the Polish-American cardiac examination programme (WRA-POL) led by professor Zdzisław Askanas. She has obtained a second degree in clinical psychology. In 1973, she defended her doctoral thesis at the University of Warsaw, entitled "Reaktywność a odporność pilotów na stres" ("Reactivity vs. resistance of pilots to stress"), written under the scientific direction of prof. dr. Jan Strelau. In her scientific work she dealt with the psychology of temperament and stress in case of aviation personnel [8]. In the years 2000-2003, she implemented an individual grant from the State Committee for Scientific Research, from which several electronic tests of the Viennese Test System were purchased for the Department of Psychology. This allowed to examine several pilots at a time. At the same time, she was involved in didactic activities during courses for aviation physicians and flight safety conferences. Dr. Janina Maciejczyk has published about 80 works, mainly experimental ones in Polish and foreign journals. She has actively participated in 20 national and international conferences and congresses. She has obtained certificates to examine people applying for weapons, as well as for the examination of drivers. She worked at MIAM until 2006. She was a valued employee, awarded with a military badge "Distinguished in aviation" as one of the few women.

Jan F. Terelak - a graduate from the Faculty of Philosophy, specializing in psychology at the Catholic University of Lublin. He started his work in 1968 as a psychologist at the Main Military Aviation and Medical Commission at MIAM. Previously, he worked at the State Sanatorium for the Sick with Neurotic Disorders in Komorów near Warsaw as a clinical psychologist and researcher in the Polish-American Research Programme VRA-

Pol-65 on the rehabilitation of people suffering from chronic schizophrenic diseases.

After three years he was transferred to the Department of Aviation Psychophysiology for the position of a scientific assistant and researcher. In 1970 he began his doctoral seminar under the direction of prof. Jan Strelau at the University of Warsaw, where in 1973 he defended his doctoral thesis entitled: "Reaktywność mierzona indeksem alfa a cechy temperamentalne u pilotów" ("Reactivity measured with the use of Alpha index vs. temperamental feature in pilots"). In 1985, he received the Second Degree Award from the Minister of Higher Education and Technology (team award) for the book edited by J. Strelau entitled: "Rola cech temperamentalnych w działaniu" ("The role of temperamental features in action", Wrocław: Ossolineum, 1984). After his doctoral studies, he was appointed to military service in a group of medical psychologists at the captain's level and started working as an assistant professor at MIAM's scientific and research facilities. In the years 1978-1980 he took part in the Third Antarctic Expedition and as one of four psychologists in the 20th century he stayed for winter, together with a group of 20 people, at the Antarctic Station of the Henryk Arctowski Polish Academy of Sciences on King George Island, where he conducted unique research on the psychological effects of long-term social isolation from the perspective of astronautical needs. Research results of the research published in the book entitled: "Człowiek w sytuacjach ekstremalnych – izolacja antarktyczna" ("A man in extreme situations - Antarctic isolation") was the basis of habilitation, which was carried out in 1983 at the Faculty of Psychology of the University of Warsaw. After his habilitation, he was appointed to the position of assistance professor and head of the Department of Aviation Psychology.

During his work at MIAM, Jan Terelak published over 200 scientific publications, both in domestic and foreign journals, both original [19] and review ones, as well as over a dozen books (monographs, textbooks and scripts), including those on aeronautical and space topics [22,26,27,31]. He participated in the international research programme "Interkosmos" in the Section of Biology, Psychology and Space Radiobiology, within the scope of which he participated in numerous scientific conferences, and in the following years he was a member of the Working Group of Psychologists of NATO and has actively participated in congresses and scientific conferences in Western countries. He has been a member of many prestigious sci-



Fig. 2. Department of Aviation Psychology in 1968 (first row, from the left: Janina Maciejczyk, MSc., Jan Trojanowski, MSc., Krystyna Galubińska, PhD., Professor Mieczysław Kreutz (consultant of the Military Institute of Aviation Medicine), major Juliusz Gazda, MD (department head), major Pilot Henryk Świątek; (second row, from the left: lieutenant colonel dr. Romuald Błaszczński, Jan Terelak, MSc., lieutenant colonel Piotr Pokinko, major Zbigniew Baranowski, MSc. (J.F. Terelak's own archives).

entific institutions and organizations, such as: Polish Association of School and Vocational Advisers - (2010 to date); Polish Geographic Association (Polar Club) - (1981 to date); European Association for Aviation Psychology - (1991 to date); The International Military Testing Association - (1993 to date); Polish Scientific Association Human in Extreme Conditions, Polish Association of Psychology of Organization, Polish Psychological Society, Polish Ergonomic Society, Committee for Space and Satellite Research at the Presidium of the Polish Academy of Sciences, Committee of Ergonomics at the Presidium of the Polish Academy of Sciences, Committee of Psychological Sciences.

In 2000 he received the title of a professor and so far is the only military psychologist with the title of a professor in the entire 100-year history of the Polish Army. He published dozens of articles and monographs in the field of aviation psychology, chronopsychology, stress psychology, work psychology, ergonomics. He presented his scientific and research achievements at several dozen scientific conferences in Poland and abroad and took part in numerous scientific search queries at foreign universities and scientific institutes¹.

¹ E.g.: Military Selection and Training Centre in Split (Croatia, October 2000), Defense Security Service and Defense Manpower Data Center (USA, November 1999), Ministero della Difesa, Direzione Generale della Leva - 3 Divisione Selezione Attitudinale, Firenze (Italy, May 1999), Centre d'Etudes en Sciences Sociales de la Defensa in Paris (France, May 1998), Directorate of Psychology - Air Force Suite of Department of Defence in Sydney (Australia) and University of Sydney (October 1997), Military Institute of Aviation Psychology in Vienna (Austria, May 1997), Recruitment and Selection Centre in Brussels (Belgium, May 1996), Centro de Psicologia Aplicada do Exército in Lisbon (Portugal, May 1995), Royal Netherlands Army Selection Center in Amsterdam (Netherlands, October 1994), Università Salesiana in Rome (Italy, May 1993), Ohio State University in Columbus (USA, April 1993), University of Cincinnati in Cincinnati (USA, July 1993), Wolfson College in Cambridge (England) (July 1992), Russian Academy of Sciences in St. Petersburg (Russia, September 1991), German Academy of Sciences in Berlin (Germany, May 1987), Centro de Psicologia Aplicada do Exército Militar in Havana (Cuba, April 1986), Slovak Academy of Sciences in Košice (Slovakia, May 1985), Institute of Aviation Medicine in Prague (Czech Republic, July 1984), - Institute of Aviation Medicine in Ketchkemet (Hungary, June 1983), Institute of Aviation Medicine in Bucharest (Romania, May 1982), Institute of Medical and Biological Problems of the Ministry of Health in Moscow (December 1982), Institute of Aviation Medicine in Sofia (Bulgaria, May 1981), Institute of Aviation Medicine in Kënigsbridge (Germany, June 1981).

Prof. Jan Terelak has supervised 19 PhDs, including 4 in aviation psychology (Zdzisław Kobos, Tadeusz Jasiński, Adam Tarnowski, Olaf Trusczyński). During military service, the scope of duties included participation in the investigation of accidents, air catastrophes of military aviation, the data of which were presented at conferences and ministerial symposiums [17]. In 2002, he left MIAM to work at the Academy of Catholic Theology, now Cardinal Stefan Wyszyński University (CSWU) in Warsaw, where he is the Head of the Department of Psychology of Work and Stress and the Director of the Inter-institutional Central Psychological Laboratory, consisting of 8 direct laboratories, and for two terms he was a member of the Senate of CSWU. He was employed again at MIAM between 2008-2018, where he held the position of Scientific Consultant of the Institute Director, and later of the Department of Aviation Psychology, for many years holding also the position of editor-in-chief of the scientific journal: "Polski Przegląd Medycyny i Psychologii Lotniczej" later issued under the name of "The Polish Journal of Aviation Medicine, Bioengineering and Psychology". He was also editor-in-chief of the journal titled "Zeszyty Naukowe WSSM" and co-editor of "Studia Psychologica" as well as a member of editorial committees of many scientific journals, such as: "Studia Leopoliensia" (Lviv), "Studia Ecologicae et Bioethicae", "Kultura Fizyczna", "Postępy Astronautyki", "Medycyna Lotnicza". Apart from his work at MIAM and Cardinal Stefan Wyszyński University in Warsaw, Jan Terelak, in the years 1996-2001 was the Deputy Dean of the Faculty of Administration at the Suwalsko-Mazurska University in Suwałki, in the years 2002-2004 the Dean of the Faculty of Psychology, and later in 2004-2010 its Rector. Moreover, in the years 2010-2014 he was the director of the Institute of Psychology and a member of the Senate at the College of Public Administration in Białystok. His specializations include: clinical psychology (second degree specialist and in 1999-2002 a consultant to the Minister of Health and the Ministry of National Defence in the field of clinical psychology), aviation and space psychology, transport psychology (certified specialist).

Research interests of prof. Jan Terelak concern clinical psychology, methodology of psychological research, psychology of stress, psychology of work (aviation, space, road transport psychology), ergonomics, psychology of organization and management. For example, the issues of stress psychology include: psychological mechanisms of human functioning in extreme situations (social isolation, monotony), the psychological cost of adaptation to extreme situations, especially long-term, the dynam-

ics of small task groups in isolation situations, the criteria for psychological selection of the so-called stress-resistant people (cosmonauts, pilots, polar explorers, professional athletes, directors, surgeons, etc.) [16]. In the field of occupational psychology, research interests focus on the oculomotor mechanisms of visual attention and psychomotor coordination. In turn, within the scope of organizational psychology and interest management, they concern modern human resources management systems (CRM - Crew Resource Management), mainly in small task groups (e.g. flight crews, space crews, high-level managers, etc.) [25,28]. The issue of stress psychology covers the characteristics of various stressful professions, including aviation and uniformed professions, and many years of research in this field are the subject of numerous monographs [20,21,24,32].

Jacek Szczechura - employed in 1978 at the MIAM Department of Aviation Psychophysiology as an assistant professor as he came there as a PhD in natural sciences from the Department of Neurophysiology at the Institute of Experimental Biology of the Polish Academy of Sciences. Initially he was employed as a civilian worker and then as a military worker. While working at MIAM, he dealt with the issue of eyeball movements in the perception of visual information by pilots. He presented the results of his research at international conferences as well as in articles in Polish and foreign magazines [11]. Moreover, the activity of dr. Szczechura was related to the profile of the ministerial institute and concerned psychological measurements of the effectiveness of pilot fitness training, application of tests for the study of spatial orientation in a flight simulator and selection of candidates for aviation as well as application studies in the field of aviation ergonomics [18]. In 2002, Jacek Szczechura, PhD, with a title of a lieutenant colonel was transferred to the military reserve force and left MIAM. Currently, he is the head of the Visual Psychophysiology Laboratory at the Faculty of Interior Design of the Warsaw Academy of Fine Arts.

Zdzisław Kobos - a graduate of psychology at the Jagiellonian University in Cracow, he began his professional military service in 1980 as a senior psychologist at the 6th Military Aviation Hospital in Dęblin, then became the head of the Psychological Laboratory. In 1987 he was sent to work at the Main Military Aviation and Medical Commission at MIAM. In 1992, he was writing his doctoral thesis at the Jagiellonian University in aviation psychology on the basis of a doctoral dissertation entitled "Typologiczne determinanty efektywności praktycznego szkolenia lotniczego" ("Typological determinants of the practical avia-

tion training effectiveness”), written under the scientific direction of doc. dr. hab. Jan Terelak. Apart from certification work, he also dealt with aviation psychology, occupational psychology and ergonomics, as well as flight safety. He has numerous scientific achievements in the form of articles in national and foreign magazines and has actively participated in many conferences and scientific congresses [4]. As lieutenant colonel, he left MIAM in 2012. Currently, he is working at the Institute of Psychology at the Cardinal Stefan Wyszyński University in Warsaw and at the Military Aviation and Medical Commission.

Jan Turlejski - a graduate of the University of Poznań in 1968 and a specialist in second-degree clinical psychology, worked at the Main Military Aviation-Medical Commission at MIAM in 1978-1989. He wrote his doctoral thesis in 1988 at the University of Warsaw, on the basis of a doctoral dissertation, written under the scientific supervision of prof. Jan Strelau. After his doctoral studies he was employed at the Department of Psychology of the Academy of Physical Education in Warsaw. In 1997 he returned to work at MIAM, the Main Military Aviation-Medical Commission, where he worked until his retirement in 2006. He has been dealing with aviation-medical reports, psychological diagnostics and psychometrics. He had a great and well-established psychological knowledge, unfortunately, he published little. He died on April 8, 2017.

Tadeusz Jasiński - worked at the Department of Aviation Psychology at MIAM in the years 1991-2005. He defended his doctoral thesis entitled “Wpływ stresu przyspieszeń +Gz na funkcjonowanie operatorskie pilotów” (“Influence of +Gz acceleration stress on the operation performance of pilots”), written under the scientific direction prof. Jan Terelak, at the Academy of Physical Education in Cracow. Research interests concerned the impact of aviation acceleration on the well-being and efficiency of piloting the high performance aircrafts [2]. He has published many works, mainly in “Medycyna Lotnicza”. After leaving MIAM, he habilitated and took up employment in private universities.

Olaf Truszczyński - a psychology graduate from the University of Łódź and from the Military Medical Academy, after which he was promoted to an officer's degree. Firstly, he worked at the Department of Labor Psychology and Military Service of the Institute of Psychological Hygiene, in a branch of the Military Medical Academy in Warsaw, and then in 1991 he took up a job at the Department of Aviation Psychology at MIAM. In 1998, he defended his doctoral thesis at the

Academy of Catholic Theology, entitled “Wpływ stresu hipoksji na funkcjonowanie psychomotoryczne pilotów” (“Influence of hypoxia stress on psychomotor operation of pilots”), written under the scientific supervision of prof. Jan Terelak. After his doctorate, he was promoted to the positions of assistant professor and head of the Aviation Psycho-diagnostics Laboratory at the Department of Psychology of MIAM, and in 2001 to the head of the Department of Safety of Flights at MIAM. He completed a course in investigation of aviation accidents and disasters in the UK and Sweden. He completed an internship at the Air Force base of the United States Navy. He is the author or co-author of about 50 scientific articles on aviation and military psychology [34]. He has presented the results of his research at numerous national and international conferences [33]. In the years 2003-2016 he was the director of the Military Institute of Aviation Medicine in Warsaw. In 2004 he was the organizer of the European Association for Aviation Psychology Conference (EAAP) in Warsaw. He is a member of numerous scientific associations, among others: “European Association for Aviation Psychology” and “The International Military Testing Association”.

Adam Tarnowski - graduated in psychology from the Academy of Catholic Theology in Warsaw, then started working in 1992 at MIAM, where until 2002 he worked as an assistant at the Department of Aviation Psychology at MIAM. In 1998, after completing his doctoral studies at the Faculty of Psychology of the University of Warsaw, he received a doctoral degree in humanities from the Jagiellonian University in Cracow, on the basis of the doctoral dissertation entitled “Wpływ uwagi na skokowe ruchy oka w sytuacji decyzyjnej” (“The influence of attention on saccades during the decision-making situation”), wrote under the scientific supervision of prof. Jan Terelak. His scientific interests concerned the oculomotor mechanisms of visual attention and psychometric issues related to validation of psychological tests [13,14]. After obtaining the degree of PhD habilitatus and after retiring from MIAM, prof. dr. Jan Terelak, was appointed the head of the Department of Aviation Psychology at WIML, which he held until 2016, while taking up at the same time a position at the Faculty of Psychology at the University of Warsaw.

Marian Macander - lieutenant colonel dr. Marian Macander graduated from the Military Medical Academy in Łódź and from the Faculty of Psychology of the University of Łódź in 1982 with a specialization in clinical psychology. He received his doctoral degree in medical sciences in 2003 at the Medical University of Łódź, on the basis of a thesis entitled



Fig. 3. Department of Aviation Psychology in 2002 (first row, from the left: Janina Maciejczyk, PhD, professor Jan F. Terelak, Jerzy Achimowicz, PhD (Eng), Jacek Szczechura, PhD, Tadeusz Sojka, MSc., ass. professor Kazimierz Migdał, Zdzisław Kobos, MSc., Tadeusz Jasiński, MSc.; sitting, from the left: Wiesława Domańska (Strupińska), technician, Teresa Ochalska, technician, Janina Szymańska, technician) (J.F. Terelak's own archives).

“Wpływ katapultowań i poważnych zagrożeń życia na występowanie stresowych zaburzeń pourazowych u pilotów lotnictwa wojskowego” (“Influence of catapults and serious threats to life on the occurrence of post-traumatic stress disorders in pilots of military aviation”). In the same year he passed an exam in specialization in clinical psychology. For many years he worked as a psychologist at the 6th Military Hospital in Dęblin, and at MIAM he has been working since 1998. Throughout his stay in Dęblin, he was responsible for choosing and selecting candidates for the Polish Air Force Academy in Dęblin and the Aviation High School in Dęblin and Zielona Góra. To date he has been involved in, among others, the psychological diagnosis of intellectual and psychomotor skills of flying personnel and is an expert in psychology at the Committee for Investigation of National Aviation Accidents. His scientific activity includes psychological analysis of causes of catastrophes in military aviation in the years 1945-2017 and civil aviation in the world in the years 1935-2017 as well as causes of catapults in the Aviation of the Polish Armed Forces in the years 1951-2017. Dr. Marian Macander deals with the investigation of the causes of air accidents on various types of jet planes in the years 1951-2014 [5]. He is, among

others, an appeal psychologist in the field of psychology in the Aviation of the Polish Armed Forces for the needs of the Central Military Medical Commission and in the Civil Aviation Office for the needs of the Chief Civil Aviation Physician.

Other aviation psychologists working for MIAM in the last half century should not be ignored, such as: dr. Leszek Radomski (a graduate from the Jagiellonian University), dr. Kazimierz Migdał (graduate from the University of Warsaw and Political-Military Academy), commander dr. Julian Wonicki (graduate from the Political-Military Academy), Krystyna Otrócka, MA (graduate from the University of Warsaw), Mariusz Turek and Tadeusz Sojka, MA.

The last decade of the 90 years of existence of MIAM is represented by the following aviation psychologists working in the Department of Aviation Psychology: dr. Piotr Zieliński (head of the department), dr. Marcin Biernacki, Marta Szlakowska, MA, Magda Bicka-Capała, MA, Alicja Kamińska, MA, Marta Górska, MA and Katarzyna Łapkiewicz, MA, who focus on examination of candidates for the Air Force High School in Dęblin, candidates for the Polish Air Force Academy in Dęblin, examination of air traffic controllers, ground staff and periodical exam-

ination of air personnel. In addition to the Department of Aviation Psychology, the following people work at MIAM: mgr Michał Janewicz (Department of Simulator Research, Training and Aviation-Medical Practice), dr. Paulina Baran, (Department of Air Simulators Innovation). Undoubtedly, the leaders in this group of aviation psychologists, among others, are: P. Zieliński and M. Biernacki, whose scientific profiles are presented below.

Piotr Zieliński - defended his Master's thesis at the Department of Psychology of the University of Warsaw in 2003 and his doctoral thesis in 2008 at the same University, devoted to the influence of colorful stimuli on human functioning. He came to the Department of Aviation Psychology at MIAM from the Police Training Centre in Legionowo. Since 2008 he has been employed at the Department of Aviation Psychology at MIAM, where in 2013 he became the head of the Diagnostics and Psychological Reports Laboratory and after dr. Adam Tarnowski left his work, since 2016, he has been the Head of the Department of Aviation Psychology. He is a member of the European Association for Aviation Psychology. He is an active participant of international and national conferences on aviation psychology and psychological diagnosis, he publishes in scientific journals. He specializes in psychometrics and the influence of various flight factors on the operational efficiency of pilots [36]. His scientific interests also include assessing the accuracy of diagnostic tools used in examination of pilots. He is a co-author of detailed methods of psychological research of various groups of aviation personnel and candidates for aviation. On a daily basis, he deals with psychological diagnostics, mainly of military air force personnel, as well as psychological examinations of candidates

for the General Aviation High School and the Air Force Officer School in Dęblin. He also uses his knowledge and experience as a teacher, conducting classes in psychometrics and standard diagnostics, cooperating with the Faculty of Psychology at the University of Finance and Management in Warsaw and with the Faculty of Psychology of the University of Warsaw.

Marcin Biernacki - defended his Master's thesis in 2004 at the Faculty of Psychology of the University of Warsaw and his doctoral thesis in 2013 at the same university. Immediately after graduation he started working at the Department of Aviation Psychology at MIAM, and in 2013 he became the head of the Experimental Psychology Laboratory. In 2007, he participated in the "International Summer School on Aviation Psychology" at the University of Graz, where he obtained a certificate of aviation psychologist and became a member of the European Association for Aviation Psychology (EAAP). Marcin Biernacki, PhD, actively participates in international and national conferences on aviation psychology and psychological diagnosis. He has published several dozen articles in prestigious aviation magazines, such as: "Aviation, Space and Environmental Medicine", "Journal of Gravitational Physiology", "Polish Journal of Aviation Medicine, Bioengineering and Psychology". His research interests focus, among others, on the environmental conditions of operational efficiency, including +Gz overload and hypoxia (simulator disease). The application tests concern the diagnosis and selection of persons performing operator tasks (pilots, drivers of road vehicles) within the scope of cognitive tasks [35].

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