



REMINISCENCES CONCERNING THE ADAPTATION OF MEDICAL REQUIREMENTS AND MEDICAL CERTIFICATION REGULATIONS OF THE MILITARY INSTITUTE OF AVIATION MEDICINE TO INTERNATIONAL AND EUROPEAN AVIATION LAW IN THE PERIOD OF POLISH INTEGRATION WITH THE EUROPEAN UNION

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Abstract: The article presents the reminiscences of the author concerning the adaptation of medical requirements and medical certification regulations in use at the Military Institute of Aviation Medicine to the international and European aviation law, in the process of licensing the aviation personnel of the Polish Air Force and civil aviation personnel, in the period of integration with the European Union. The article emphasizes organizational changes in Main Aero-Medical Commission in order to improve methods of health promotion and prevention of civilization diseases among members of the aviation staff.

Keywords: aviation medical certification in Poland, health promotion, European medical standards

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INTRODUCTION

The article presents the reminiscences of the author concerning the adaptation by the team of Military Institute of Aviation Medicine (MIAM) employees of medical requirements and medical certification regulations to the international and European aviation law, in the process of licensing the aviation personnel of the Polish Air Force and civil aviation personnel, in the period of integration with the European Union. The article emphasizes organizational changes in Main Aero-Medical Commission in order to improve methods of health promotion and prevention of civilization diseases among members of the aviation staff.

Since the beginning of the establishment of the MIAM, its main tasks were scientific activity, prevention and treatment activity, assessing the capability of military aviation candidates to serve in the air as well as assessing members of military and civil aviation personnel and performing tasks related to the investigation of the causes of air accidents. Prior to Poland's accession to the European Union (EU), certification tasks were performed by Main Aero-Medical Commission (MMAMC) based on Polish medical requirements as well as aviation and medical regulations [1].

The process of Poland's integration into the EU began in 1994 at the moment of Poland's submission of an application for EU membership and its confirmation by the Member States at a conference in Essen, and continued until 2004, when Poland became a full member of the EU. The then authorities of MIAM, the Commander of MIAM col. prof. Krzysztof Kwarecki, Deputy for Scientific Affairs col. prof. Krzysztof Klukowski, as well as members of the Scientific Council, undertook multidirectional activities aimed at establishing contacts with EU aviation centers, exchanging experiences and results of scientific research as well as adapting aviation and medical regulations and requirements to NATO and EU standards. Intense scientific contacts with aviation medical institutes in NATO member states were established. Young physicians specializing in aviation medicine working for MIAM have been given the opportunity to study at renowned aviation medical centers around the world (USA, Canada, UK, France). The training in aviation medicine completed with a diploma or certificate from one of the foreign aviation medical centers, was completed by 11 officer physicians from MIAM. At the same time, aviation physicians from MIAM took part in refreshing courses abroad, where current standards of NATO aviation medicine were presented. Establishing direct contacts with aviation medicine physicians

has also resulted in the organization of training courses for a wide range of aviation physicians, especially physicians of aviation facilities, by experts from the UK and Canada visiting MIAM.

The management of MIAM, observing the organization of aviation-medical research and certification in NATO and EU countries, stated the need for urgent adjustment of the Polish regulations on certification for aviation staff to European and global standards. In 1995, I was offered the position of Deputy Commander of MIAM for Certification and Chairman of Main Aero-Medical Commission, as well as taking up the task of modernizing the certification and medical activity. Since 1975 I have been working in the Department of Internal Medicine at MIAM, where I gained specialization in internal diseases and cardiology and a PhD degree in medical sciences based on the thesis "Badania adaptacji wysiłkowej układu krążenia u pilotów w warunkach oddychania mieszaniną ubogotlenową z zastosowaniem metod polikardiograficznych" ("Examination of adaptation of the cardiovascular system to physical activity in pilots in the conditions of breathing a mixture with small amount of oxygen using polycardiographic methods"). The decision to take up the offered position was difficult as it entailed the resignation from clinical work. After taking up the position, the Health Promotion and Primary Prevention Center was established at Main Aero-Medical Commission with specialist diagnostic laboratories: cardiology, psychology, musculoskeletal system and urology. Diagnostic laboratories have been equipped with modern diagnostic devices. The particular laboratories were managed by physicians with clinical and aviation medicine specializations.

An important organizational element was the creation of an electronic database at Main Aero-Medical Commission. Since then, each member of the aviation staff has had his own electronic medical certification card, which has greatly facilitated the archiving and access to personal and medical data, especially in the context of the implementation of the health promotion and prevention programme for civilization diseases. The first stage of prevention activities was to improve and adjust to international requirements for the selection of candidates for the Polish Air Force Academy (PAFA) in Dęblin. In 1996, the Health Promotion and Prevention Programme for Civilization Diseases of the Aviation Personnel has been introduced at Main Aero-Medical Commission, which primarily concerned the aviation personnel of the Polish Air Force (PAF), but also included civil aviation

personnel. The health promotion and disease prevention programme for PAF was implemented on the basis of the existing organizational structures in the air force, i.e. on the level of: MIAM, Military Training and Fitness Centres (MTFC) in Zakopane and Mrągowo and in aviation facilities [6].

CENTER FOR PROMOTION AND PRIMARY PREVENTION

Based on specialist offices and the laboratory of Main Aero-Medical Commission, the Center for Promotion of Health and Primary Prevention under the leadership of dr hab. med. Krzysztof Mazurek was established, which consisted of diagnostic laboratories of: cardiovascular system (the head: dr. Andrzej Orzeł), psychology (the head: dr. Zdzisław Kobos), urology (the head: dr. Andrzej Modrzewski) and the musculoskeletal system (the head: Tomasz Kozicki, physician). The main tasks of CPHPP included: epidemiological research of aviation personnel, improvement and implementation of the health promotion model, training of aviation physicians, examination of the effectiveness of promotional and preventive activities. The Center's specific tasks included: analyzing the causes of morbidity and inability to perform the profession of aviation personnel, defining priorities for promotional and preventive actions, isolating informal prevention groups (groups with higher risk) from aviation personnel, training of aviation personnel in the field of health promotion. People with an increased risk of disease were referred to use extended medical diagnostics in clinical conditions. Preventive recommendations recorded in the electronic database were communicated to the members of aviation personnel and to the physicians of the aviation facilities concerned. During the preventive and certification examinations, individual advices and educational brochures on low-cholesterol diets, smoking risks, the role of physical activity in disease prevention, etc. were given [5].

Based on the results of research obtained during periodical and occasional medical examinations of the aviation personnel of the Polish Air Force, the following programmes were implemented in CPHPP: (a) cardiovascular disease prevention programme, (b) programmes for the prevention of emotional disorders, musculoskeletal disorders and prostate diseases. The programme of promotion of health and cardiovascular disease prevention, managed by the author of the article, was divided into two tasks: (1) health promotion and cardiovascular disease prevention programme including pilots of supersonic planes (CORO), (2) cardiovascular dis-

ease prevention programme including all the remaining aviation personnel (CHOS) [4]. Within the scope of health promotion, the issues of treatment and prevention of diseases of aviation personnel were discussed under the training of aviation medical staff. This subject matter was also included in the programmes of pre-examination courses in aviation medicine and in training courses. Moreover, CPHPP organized seminars for aviation physicians twice a year, during which selected clinical problems of aviation medicine, epidemiological problems of PSP and actions taken for the benefit of health care were presented [3].

CARDIOVASCULAR DISEASE PREVENTION PROGRAMME IMPLEMENTED IN MILITARY TRAINING AND FITNESS CENTERS AND AVIATION FACILITIES

A system of exchange of medical information between MIAM and physicians of the Military Training and Fitness Centres (MTFC) has been introduced. Physicians at MTFC sent to the chairman of Main Military Aviation and Medical Commission (MMAMC) a list of aviation personnel, participants of the recreation and training camp and in turn received data on health indicators of individuals obtained during the last examination at MMAMC, together with preventive recommendations. In accordance with these recommendations, pilots received at MTFC a low cholesterol diet, appropriately selected sets of physical exercises and physiotherapeutic treatment. At the end of the camp, medical check-ups were performed, including performance and fitness tests, the results of which were transferred to the MMAMC computer database [2,7]. Within the framework of preventive tasks carried out in selected aviation facilities (training regiments in Dęblin, Biała Podlaska and Radom), selected working groups of MIAM specialists, consisting of: cardiologist, psychologist, neurologist, urologist, orthopaedist, implemented the following health promotion activities twice a year: (a) lectures on diseases most common at PSP and their prophylaxis, (b) individual medical advice and consultations, (c) discussion of the epidemiological state of the aviation personnel and suggested recommendations with the authorities of the facility, (d) introduction of low calorific diets into the aviation canteens, (e) anthropometric measurements (f) periodical assessment of the energy balance performed by the PE instructor [3,6].

ASSESSING THE EFFECTIVENESS OF THE HEALTH PROMOTION AND PROPHYLAXIS PROGRAMME

Epidemiological research carried out in the first year of the programme's operation showed, among other things, that 70% of the causes of inability to serve in the air at the PSP in the period 1992-1998 were related to three groups of diseases: cardiovascular diseases 35%, neuroses and psychological disorders 20% and overload and pain syndromes of the spine 15%. It has also been shown that the above diseases correspond to the incidence of atherosclerosis risk factors, health risks associated with lifestyles, working conditions as well as ageing process. The level of risk factors for cardiovascular diseases turned out to be high and close to the one of general Polish population. On this basis, priority directions of preventive actions were established, covering: cardiovascular diseases, neuroses and emotional disorders, spine diseases and prostate diseases. One of the important prophylactic issues turned out to be prostate diseases. About 50-60% of men aged 45-50 were proven to have benign prostatic hyperplasia. The programme of urological prophylaxis covered the PSP in age groups over 45 and members of civil aviation personnel performing tests in CML MIAM, and in the above activities a leading physician was dr. Andrzej Modrzewski [9,10].

The assumptions of the health promotion and disease prevention programmes were presented at many scientific conferences in Poland and abroad. Detailed information on the effectiveness of promotional and preventive activities carried out at Main Military Aviation and Medical Commission (MMAMC) can be found in the monograph by col. dr. Krzysztof Mazurek [4].

ADJUSTMENT OF THE CERTIFICATION PROVISIONS OF THE MILITARY AVIATION PERSONNEL WITH NATO STANDARDS

Representatives of MIAM systematically participated in meetings of NATO working groups preparing medical standards for military pilots (standards agreements - STANAGS). In accordance with these requirements, the following were introduced in the process of selecting candidates for Polish Air Force Academy: the assessment of aviation predisposition of candidates using aircraft simulators, training of military pilots in aircraft simulators and training in selected issues of aviation medicine. Training on simulators included: overload centrifuge training, spatial orientation

training on HIPERION simulator, simulated flights on JAPETUS simulator and catapulting training. In accordance with requirements of NATO, search and rescue teams were established, trained in providing first aid to the victims of air accidents [6].

ADAPTATION OF EUROPEAN CIVIL MEDICAL AND CERTIFICATION REQUIREMENTS FOR USE IN POLAND

In 1990, the European Civil Aviation Commission (ECAC) established the Joint Aviation Authority (JAA), which developed European medical requirements for licensing of civil aviation personnel (Joint Aviation Requirements Flight Crew Personnel - JAR FCL), published in 1997. In 2003, an executive organization of the European Union, the European Aviation Safety Agency (EASA), was established and took over the certification responsibilities of civil aviation personnel from the JAA.

On July 3, 2002, the Aviation Law Act was passed in Poland, a legal act adapting Polish licensing regulations to the EU regulations [11]. A medical certificate issued by one of the EASA member state remains valid in other EU member states. Pursuant to the Aviation Law, the Civil Aviation Authority (ULC) - the aviation authority responsible for complete supervision over the civil aviation in the country was established. The Chief Medical Officer was responsible for the organization and supervision of certification and medical examinations in Poland.

Certified medical examiners and Centers for Aviation Medicine were authorized to perform medical certification examinations. The Center for Aviation Medicine (CML) was established at MIAM, headed by dr med. Marian Pawlik. CML is currently carrying out medical and certification tasks on the basis of the amended European regulations Part - MED, issued in 2013. The following posted MIAM personnel took systematic and direct part in the work on the development and implementation of common European certification requirements for civil aviation: dr. Krzysztof Mazurek, physician Edward Wielgołaski, dr. Mariusz Żebrowski, dr. Marian Pawlik, dr. Tomasz Setny, physician Robert Powierża [8].

AUTHORS' DECLARATION:

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