

ADDITIONAL EDUCATION OPTIONS FOR FLYING PERSONNEL

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The article "Additional education opportunities for flying personnel" focuses on training of flying personnel, personnel requirements, specifically pilots. The main attention is drawn to the needs for further training in communication.

Key words: pilot, license, pilot training, CRM communication

1 INTRODUCTION

Air transport is currently the safest and fastest method of transportation. The result of continual improvement of aircraft technology, security technology and the development of aviation legislation is relatively reliable for air traffic, but accidents still occur. Their main reasons have not been the shortcomings of a technology, but the human error. It is therefore extremely important to pay attention to the education and training of personnel.

The article describes the air staff, also their licenses and qualifications. The next section describes the flying schools abroad and in Slovakia. The CRM training program, the communication is a part of it, plays an important role in education. The finally the article includes a proposal for a communication course as a supplementary training for pilots.

2 FLYING PERSONNEL

The term "flying personnel" refers to individuals who perform activities related with ensuring safe and smooth air traffic or carrying out specific work tasks on the aircraft. Flight crew member is a person with an appropriate license, who is responsible for duties necessary for flight during the flight duty period.

2.1 Classification of personnel

Flying personnel under the regulation L1:

- airplane private pilot PPL (A);
- airplane commercial pilot CPL(A);
- airplane transport pilot ATPL(A);
- helicopter private pilot PPL(H);
- helicopter commercial pilot CPL(H);

- helicopter transport pilot ATPL(H);
- glider pilot GPL;
- balloon pilot;
- air navigator ;
- flight engineer ;
- pilot students are members of a flying personnel.

The civil aviation flight crew member must be a holder of a valid license. The license must be issued by the State where the aircraft is registered or another contracting state and approved by the state registering the aircraft.

2.2 Licences and Qualifications

The basic condition for issuing a pilot license or qualification is to meet all requirements relating to the age, knowledge, experience, flight training, skills and medical fitness set for the given license or qualification.

The applicant for a pilot license or qualification must show that they have such knowledge and skills necessary for the issuing licenses or qualifications. Also, an applicant for aircraft navigator or flight engineer license is required to show that they have such knowledge and skills as are necessary for the license or qualification.

3 FLIGHT SCHOOLS

The portfolio of a professional flight school consists of pilot training. The main difference between professional flight school and "recreational" school is the name and a philosophy of training provision. From the aviation regulations terminology, professional flight school has a designation FTO (Flight Training Organization)

and "recreational" flight school is designated as RF (Registered facility).

3.1 Educational institutions in Slovakia

In Slovakia, there are two important educational institutions providing higher education of pilots and aviation technicians.

The Faculty of Aeronautics, Technical University of Kosice was established on 1st February 2005 and is the successor organisation of the Air Force Academy of General Milan Rastislav Stefanik in Kosice. The goal of the Faculty of Aeronautics is to provide, organize and ensure university education in accredited degree programs - bachelor, master and doctorate in different aviation study programs and make creative scientific investigation in the areas of management and security of aviation, aviation engineering, avionics and their related issues. The Faculty of Aeronautics offers bachelor's degree in the professional pilot study program which is provided by the Department of Flight Training. This department also provides the study of air traffic controller program.

The Faculty of Operation and Economics of Transport and Communications, University of Zilina has relatively long history, dating back to the fifties of the last century. Department of Aviation is working closely with the aviation training and educational centre of Zilina University, which provides flight training for the Department. The Department of Air Transport, University of Zilina (DAT) is a centre for education, research and training in civil aviation. DAT provides accredited degree programs in a three-cycle system of higher education - bachelor, master and doctorate. On a commercial basis DAT also provides opening course of air traffic control and pilot training to the levels CPL / IR / MEP (commercial pilot with multi-clause for multi-engine airplane and qualification for flight according to instruments) and theory to the level of frozen ATPL (pilot of transport airplanes).

3.2 Training abroad

Completing training abroad, a person gets new experience, learns about new environment, sees new scenery, but on the other hand, they must take into account the increased costs for food, accommodation, transport and the actual training.

It is not appropriate to carry out basic training - PPL (A) abroad. If the candidate decides for training abroad, it is recommended to attend trainings in instrument qualification - IR (A), for obtaining a multi-engine qualification - MEP (L) and other, but only within the European Community countries.

A major contribution to the training abroad is to acquire the special aviation English. On the other hand, the completion of training abroad with language skills of Slovak high schools or universities is very difficult. Students in addition to a huge concentration during physical and psychical performance, aircraft control, communication and navigation must communicate with an instructor in a foreign language using special technical terminology concerning flight and piloting techniques.

Training abroad is worthwhile in the case of Slovaks only if they are financially solvent and do not plan to fly commercially. Such a candidate may obtain a private pilot license abroad without much hassle. Individual qualifications can be obtained only on the airplane and in the presence of an examiner of a particular country, which also leads to cost increasing not for the obtaining, but the annual extension of qualifications.

Training abroad is not recommended for novice pilots and also for those interested in a professional pilot license.

4 CRM

The very concept of CRM has not been defined yet, but the importance has always been attributed to improvement of crew coordination in all considerations. Simply put, CRM optimizes the work of the crew. The concept of CRM was defined for the first time in 1984 by John Lauber: "CRM is the effective use of all available resources by crew - hardware, software and liveware - to achieve safe and efficient flight operations."

In 1984, the notion of efficient air traffic was understood as a speed and smoothness for the maintenance. Currently, the emphasis is on economics. The flight crew are managers when selecting the flight level and preserve the smallest fuel consumption. Of course, never at the expense

of safety this is always primary. Laubert's definition contains more than just relationship with the SHELL model. CRM means for each pilot long-term process of development of their approach to flying and also optimization of pilot's activities in all areas of their work, over a period of time in aviation, in the performance of each flight, flight preparation and all training. Optimizing means choosing the best variant from the options offered. In aviation, time is crucial when solving the emergency or critical situations because the airplane is always moving - constantly flying. Therefore, for the efficiency it is essential to ease pilot's work and realisation of necessary actions as soon as possible. It is also important to ensure perfect access to information related to the aircraft operation (NOTAM, METAR, TAF, AIP, etc.). Perhaps the most important principle of CRM is cooperation of the whole crew of a transport aircraft, which represents the mutual cooperation of pilots, cabin crew and flight crew. CRM is concentrated on security which is the result of the above points.

CRM also deals with the issue of communication between the cockpit crew, which is necessary for the maintenance of an effective teamwork, since the crew is made up of diverse cultures, religions and mother languages. As already mentioned, the role of CRM is to optimize and put together various types of people and proper communication in the cockpit helps to create a real judgement on an issue that needs to be solved. Communication plays an important role when effectively resolving the problem by all crew members and assists in decision making. To build a professional and peaceful atmosphere is important, too, and therefore the communication is a primary key to realisation of a safe flight. Body language, way of speaking, tone of voice for example of a captain towards the second pilot, that all belongs to important indicators of communication and CRM training is focused on such things.

5 COMMUNICATION

Communication in aviation was not common a century ago. After World War II the number of aircraft in the air grew and the situation

has changed. With the arrival of the first commercial company to the market, the sky was filled with aircraft and they had to be managed.

Today, communication is an integral part of aviation, because it is necessary to ensure a minimum spacing between the planes, or to know what route they have to take.

Communication, transferring of information, its speed is very important. In the spontaneous, untrained speech, vague and ambiguous terms are used with different meaning. For this reason, standardized terminology has been created for the in professional communication. In some non routine procedures it is impossible to avoid improvisations, but in routine, standard situations it is not necessary. Pilots must have knowledge of radio communication in accordance with JAR-FCL 1 and L9432 regulations.

5.1 Communication within the pilot training

Pilots - students in initial training PPL communicate with the help of instructors. In Slovakia, the training is usually conducted in the aero clubs, flying schools, or in the certified FTO. Almost all of these organizations use Slovak language during the training of pilots. This is a great advantage, because the pilot communicates in the mother language and understands all information. The student has to know the radiotelephonic alphabet before training, which is set for the air communication in Slovak. Continuous improvement of students' communication is an important part of training. Regulation L9432 - Radiotelephone procedures and aviation phraseology includes the complete phraseology of aviation communication, which pilots use for the communication. It is up to training school what way they choose to teach communication and to what extent.

5.2 Communication and stress

English is the language used not only in aviation but also in other spheres of life. All commercial flights and also some domestic flights are managed in English. There is an exception that flights to the Czech Republic are allowed to be in the Slovak language. If the pilot is interested in flying abroad he must attend the English course. The course is divided into 6 levels and a pilot obtains a communication certificate of the fourth

level at least. English communication in the training is a problem for every pilot. It does not matter whether you had two, four or seven years of English classes. Since this is not a mother language, even the simple expression can be perceived completely different.

In the control area of large international airports an air traffic controller gives information to several airplanes on the ground or in the air. Pilots must distinguish the information and absolutely understand it. If there is misunderstanding of any reason it may lead to a tragic end. Pilots are aware of that and therefore they should listen to the information repeatedly, if necessary.

6 COMMUNICATION COURSE

In the previous section, the article emphasized the importance of the communication. As the possibility of further training of personnel, particularly pilots, communication course is designed. The course includes 40 hours and is divided into several parts; each part covers a different topic of communication. The course will be guided through lectures and some exercises to concrete issues. The communication course will be completed by the final test. After passing the final exam the course participant receives certificate of completion the communication course.

The course aim is to teach participants how to communicate effectively and to recognize their errors in communication. The purpose of this course is to master a difficult situation and respond rapidly to various stimuli. The course includes the following lessons:

Introduction to communication – introductory lesson will be devoted to communication in general, basic information of the communication. Candidates will be familiarized with the theoretical aspects of communication, purpose of the communication, the role of communication, types of communication etc. Students will be instructed about the elements and the process of communication. Interpretation of a social communication will be a part of the lectures, because communication as a process has some peculiarities that must be respected when pursuing the profession. Communication is not only the

transfer or exchange of information, but it is a complex process of mutual perception, understanding and influence. In the second part of the lesson, students will be informed, based on a survey, about the importance of the communication in air traffic and communication methods used in aviation.

Effective and clear communication - effective communication covering all forms of information exchange is a key element to ensure safe flight operations. The quality and effectiveness of communication is conditioned by its clarity, i.e. a degree of message clarity for recipients. The aim of this is clear and effective communication, acquiring knowledge about the feedback, principles of effective communication, art of listening to another person. The intention is that the candidates should realize that communication is power which can help not only at work but also in their personal life. Candidates will practice communication skills in concrete model situations.

Problematic communication and possible barriers - communication problems occur in situations where the form of understanding and agreement is disrupted. This may be due to inappropriate behaviour of co-workers, or the consequences of conflicts among flying personnel. Therefore, criticism and conflict resolution has a great significance in cabin. Variety of distractions or obstacles affects the communication and they need to be eliminated. It is essential when students spot any communication barriers, talk about them and seek appropriate ways to deal with them. This will create good conditions for effective communication. In this part, of the course, the communication barriers will be discussed which means different internal and external influence that prevents pilot's concentration and effective communication. It is a whole spectrum of disturbing elements, resulting in reducing the quality of communication.

Listening and feedback - This lesson will be devoted to a concept of listening and feedback, because listening is the main function of the recipient, through which they receive messages. The pilot should listen intently and intensely and minimize filters that may distort the communicated content. One of the conditions of the effective communication is active and intensive listening by

all interested parties. We have to realize that listening is an integral part of communication and therefore the course participants undergo listening exercises. Students will be familiarized with the principles of effective listening, forms of active listening and listening problems. Feedback is important in communication because it is a test of accuracy and helps get a sense of safety if the decision of the crew member is criticized by another member of the crew.

Speech and frequent errors associated with speech – the content of words, time, or the way they speak play an important role in understanding or possible misunderstanding. Pilots, when performing their job, have the power associated with the use of words which makes them responsible for what they utter. The aim of the lesson is to teach pilots proper communication and instruct them about its principles. These principles may contribute to the fact that their communication either with air traffic controllers or communication within the crew members will lead to mutual understanding.

Assertiveness - Assertive behaviour is a prerequisite for group attitude in the crew. The assertive approach assumes the peaceful and balanced behaviour, but with the respect of the possible error of the crew member, whereas communication is led in a quiet, peaceful and balanced style. The subject of assertiveness training is to support effective communication among flying personnel because assertiveness helps manage and avoid conflict situations. Enforcement of the requirements and needs without harm to the others and maintaining the self-esteem in anxious situations when person is exposed to the crisis situations may be achieved by training of the assertive techniques.

Communication practice—a communication exercise will be carried out in two ways - using a radio simulator Comm1 IFR and using a flight simulator. Comm1 IFR Radio Simulator simulates ATC communications. The pilots will train communication with ATC. If participants are able to properly use the means of communication and handle radio-communication skills, it is assumed that the problems with ATC communication do not occur during the real flight. By completing the exercises in the flight simulator, the participants will practice their communication skills in stressful

situations. This exercise will show if the participants are able to apply all the theoretical knowledge they acquired during the course.

Final test - consisting of 30 questions. For successful completion it is necessary to obtain at least 70% of the total marks.

7 CONCLUSIONS

Air transport has a crucial role in the development and economy of advanced countries. The aviation is currently rated as the fastest growing transport sector. Revolutionary development of civil aviation occurred mainly after World War II. At that time, many military aircraft and military pilots transformed the requirements of civil aviation into the passenger and cargo transportation. As a result of rapid development of aviation technology, pilots are forced to continually develop their knowledge, skills and abilities used in their profession. This is why it is important for the members of aircrew to participate in training programs and courses that improve their job performance, support the career development and qualification improvement.

Several analyses showed that the main cause of accidents was not technical malfunction of the aircraft or its systems, even not deficiencies in aircraft control, or insufficient experience of the flight crew. The air accidents were caused by the inability of the crew to communicate adequately and appropriately. For these reasons, the part of the article is devoted to the communication and communication course. After the completion of the course, participants should be able to communicate appropriately and effectively, which would not lead to the loss of situational awareness, degradation and a of teamwork failure in the cockpit.

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