

FLIGHT DISPATCHER AND LICENSING

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The contribution deals with the basic requirements for Flight Dispatchers as a member of aviation personnel. The first part gives an account of basic information involving his duties in line with his work placement as well as the structure of the standard training required for the Flight Dispatcher to be able to obtain his license. The second part of the contribution is dedicated to the structure of the aviation academy or training organization as well as general information about training course.

Keywords: Flight Dispatcher, theoretical training, licensing, organizational structure, automatization

1 INTRODUCTION

Frequency of flights dispatched by airlines is increasing so the requirements for Flight dispatchers increasing too. Those include the requirements for safety, speed, accuracy and efficiency. One of the best ways how to fulfill these requirements is training of personnel approved by state which includes the Flight Dispatchers and their licensing. Nowadays there are no offers for the courses oriented directly to training of Flight Dispatchers in Slovakia. Deficiency of the state approved courses for the dispatcher is the reason of their failures in real operation.

2 AVIATION PERSONNEL

ICAO members countries, including the Slovak Republic, have determined the classification of the aviation personnel by ICAO Annex 1: Personnel licensing, the slovak version is known as L1. This regulation can be modified according to the individual needs of countries, but not on substantive issues as a aviation personnel capability to the operations they perform. Aviation personnel is classified as a flight crew and other staff.

Flight crew consists of:

- private pilot of airplanes and helicopters
- commercial pilot of airplanes and helicopters
- airline transport pilot of airplanes and helicopters
- glider pilot
- pilot of free balloons
- flight engineer
- flight navigator

Other staff consists of:

- maintenance technician
- Air traffic controller
- Flight Dispatcher
- Aeronautical station operators

2.1 Flight Dispatcher

The flight dispatcher is the employee of airlines, who is responsible for planning and monitoring of flights so he helps to provide the running of company. Flight Dispatchers are the ground equivalent to the Airline Captain. Captain and Dispatcher exercise joint decision making and shared authority during the airline flight

operation. Some of states, especially in USA believes in concept, that two heads are better than one"

He helps to pilot in command with the planning of flight by preparing all the necessary materials and documentation for the flight. Flight dispatchers are employed for planning, providing, processing and monitoring flights, they are also the connection between aircraft and ground in common situations and also when the pilots request the assistance during the flight from the ground station. The Flight dispatcher is the representative of operative part of the airlines. Flight dispatchers are requested to complete the prescribed training and to obtain the license of flight dispatcher, to carry out all their duties. All of the applicants should know the job profile and flight dispatcher' duties in real operation, before the joining the training.

The principal duties of the flight dispatcher can be classified as:

- duties including the assistance to the pilot-in-command in flight preparation, the dispatcher is preparing all necessary and required information needed for the flight, also assistance to the pilot-in-command in preparing the Operational and ATS flight plans, signs when applicable and file the ATS flight plan with the appropriate ATS unit, furnishes the pilot-in-command while in flight, by appropriate means with information which may be necessary for the safe conduct of the flight
- duties focused on flight planning which involve the activities from creation of the new flight to the dispatched release. In the planning process he must analyzes the situation in air traffic, information about meteorological conditions and forecasts, selects the optimal route for the flight, calculates the fuel consumption, schedules the loading and manages the balances.
- duties in non standards situations that require specific procedures and solutions, such is an emergency situation, when the dispatcher is required to use the procedures specified in Operational manual to prevent any possible actions that would be contrary to the regulations and rules of Air traffic management and continues to provide the necessary information to the pilot.
- duties associated with the constant monitoring and evaluation of the flight from starting up until the landing on the airport in final destination. Flight dispatcher is analyzing and evaluating retrospectively the information recorded during the monitoring by

available systems to be sure about the credibility of sources of all the information and procedures he did during planning, such as choosing the route, calculation of fuel consumption and finally the efficiency, economy and safety of all his decisions.

2.2 Licensing of Flight Dispatchers

The flight dispatcher performs the duties associated with approved methods of the supervision and controlling the flight operations, which require his services, with the permission obtained in Slovakia complying with the requirements in L1, as a license of Flight dispatcher approved by Civil Aviation Authority of Slovak Republic. The applicant which requests the license must be able to satisfy the following requirements and conditions according to Annex 1:

- requirement of the age (applicant must be at least 21 years old)
- requirement of the minimum school attendance (10 years in Slovakia)
- requirement for the level of English (flight dispatcher is required to speak at least at communicative level of English, because most of his operations are based on English)
- requirement for the health (flight dispatcher should not suffer by serious diseases that could be a threat for his job running and also the safety of flights)
- the knowledge requirements on reasonable degree (the knowledge in the subjects needed for the job of flight dispatcher what means the aviation law and regulations, general knowledge about aircraft, air traffic management and control, planning procedures, human performance, meteorology, navigation, principles of flight etc.)
- the requirements of the proven skills in dispatching the flights for example the skills gained during the training or assistance to the qualified dispatcher. Dispatcher is required to successfully complete approved training also in real traffic including the 90 days of active operations in past six months, or to show the proven documentation that he worked as a dispatcher at least 2 years.
- The requirement for skills (dispatcher is required to demonstrate the ability of developing weather forecasts, of planning the route, which he must determine along with the final destination and the alternative airport and to achieve this by analyzing and processing the weather information obtained from weather maps, messages and conditions in the flying area. The mission of the applicant is also determine the optimal route and develop detailed flight plan based on previous informations.

Flight Dispatchers are recruited to the airlines on the basis of the competitions results. In most European countries is recruitment based on the licensing and experiences gained from the job training or previous professions as a flight dispatcher. However, the licensing

for flight dispatchers is not required in every state respectively the licensing approved by state is not required to join the flight dispatcher job (Figure 1). Although a high percentage of potential employers, airlines, require from applicants the license obtained and approved in the territory of their own state.

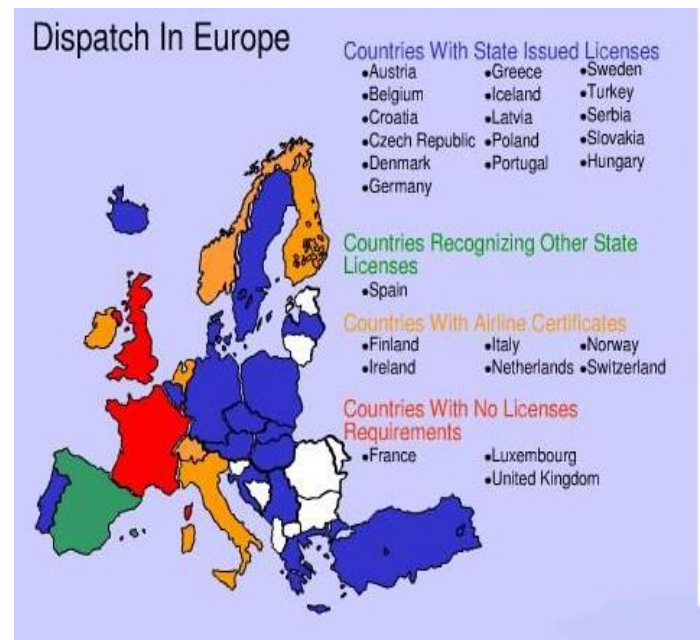


Figure 1: Dispatch licensing in Europe

3 TRAINING OF THE FLIGHT DISPATCHERS

The successful application of regulations concerning the safety and regularity of aircraft operation and the achievement of regulatory objectives are greatly dependent on the appreciation by all individuals concerned of the risks involved and on a detailed understanding of the regulations. This can only be achieved by properly planned and maintained initial and recurrent training programmes for all persons involved in aircraft operation. Annex 1 mentions various forms of past aviation experience that are adequate for the flight dispatchers and many states select them from personnel who have had such aviation experience. However, other states have found it necessary to train persons who do not have such previous experience and who must, therefore, be trained from the very beginning and allowed to obtain the necessary experience either during their training or immediately after it. It is obvious that the training requirements of these two groups of trainees will vary. The applicants without flight dispatcher license accomplish the examination on the CAA SR. The applicants with flight dispatcher license issued by CAA SR accomplish the examination with CGL examination board.

Flight dispatchers play a significant role in the safe operation of an aircraft, and international regulations require that they be appropriately trained. The training for Flight Dispatchers consists of two parts. First part is basic

training and the second part is periodic training, respectively recurrent training. Initial basic training is like preparation for dispatchers to be able to obtain a license and it is focused on theoretical training and practical training of applicants. Theoretical training takes place under the supervision of a flight school or training organization that has permission for that granted by the Civil Aviation Authority of Slovak republic. The scope that are set for the theoretical training of Flight dispatchers are also required for final exams conducted by the CAA SR.

Subjects that are essential in theoretical training of Flight dispatchers are:

1. **Civil air law and regulations** (basic information about history and creation of the law and regulations; the validity of law and regulations; international organizations of civil aviation; certification of operators;
2. **Principles of flight** (important parts of aircraft; aircraft processes during the flight; processes and systems used to perform the flight)
3. **Aircraft mass (weight) and performance** (aircraft performance in individual phases of the flight; basic weights used in aviation; mass and speed limitations)
4. **Navigation** (basic information about the Earth; positions and distance; time; charts and charts projections in navigation; navigational aids and equipment; basic principles of navigation)
5. **Air traffic control** (air traffic management; airspace; controlled airspace; flight rules; air traffic control clearances; flight plans; flight information service; aeronautical information service)
6. **Meteorology** (basic definitions in meteorology; atmosphere and its characteristics; important meteorological factors affecting to the flight operations; clouds and precipitations; thunderstorms and wind; visibility and runway visual range; causes of reduced visibility; weather and fronts; weather forecasts; weather reports and charts)
7. **Weight and balance** (mass and balance control; mass and balance calculations; payload; operating mass and passengers mass; maximum take-off weight; aircraft balance and longitudinal stability; moments and balance; load restraints and loading)
8. **Transport of dangerous goods by air** (classification of dangerous goods; procedures for the handling and loading; other special CARGO; transportation responsibilities)
9. **Flight planning** (planning procedures; operator's flight planning objectives; role of the dispatchers; route selection; planning situations; clearance and re-clearance; documentation carried on flights; dispatch release)
10. **Flight monitoring** (monitoring procedures; systems used for monitoring; activities during the flight; in-flight help; analysis and evaluation of information obtained from monitoring; emergency situations)
10. **Radio-communication** (elementary radio theory; aeronautical fixed and mobile service; radio navigation systems; standard radio-communication; pronunciation;

aviation alphabet and numbers; standard phrases; connecting regulations)

11. **Human factor** (human performance; factors affecting the performance of flight dispatchers; stress; consequences of human errors)

12. **Security** (security measures; security procedures; responsibility for processes carried within air traffic).

13. **Practical exercises of theoretical training** (practical exercises to gain a practise and skills of theoretical knowledge such as loading the goods, planning and filling the flight plans)

Practical training of applicant for flight dispatcher is focused mainly on the activities from everyday common practice in the airlines. During the practical training is necessary for instructors who are responsible for this part of the training to supervise in particular on accuracy and speed in solving the current situation, but also situations where there is a problem or unexpected change, which could cause a potential hazard to aircraft, passengers or load. The practical training consists of practical exercises and experiences gained in the real operation. Training required to obtain a license of flight dispatcher is aimed in particular at:

1. **Practise in planning** (To provide the trainee with practical experience in aircraft dispatch and the associated duties and responsibilities of the flight dispatchers such as: creation the new flights; actions for calculations of various data; ensuring information from external sources; processing of received information from the sources; map orientation; flight plans filling and dispatch releasing)

2. **LOFT simulator** (To provide trainees with a better understanding and awareness of the working environment in the cockpit of a commercial air transport aircraft and the practical duties of the flight crew under normal, abnormal and emergency operational situations. It offers to dispatchers various simulated situations during the flight that can occur and must be solved. Simulator training is divided to observation and synthetic flight training)

3. **Flight dispatch practises** (To develop trainee confidence by providing him with an opportunity to apply his newly acquired knowledge in an actual operational control environment. After the completion of the training it is essential that the trainee be assigned to actual operational control duties under supervision. On-the job training must be provided for at least 90 days.)

4. **Route familiarization** (To allow the trainee to appreciate the route characteristics in the selected area of operation and familiarize himself with the different procedures and services available over different route sectors.)

The initial training have to be finished with an CAA SR examination of the following subjects:

- English language – verbally and by written
- meteorology – verbally and by written
- navigation – verbally and by written
- air law – verbally and by writing

- wireless technology, electronics, electrical and
- with practical initial training examination of the following subjects: flight planning, pre-flight documents preparation, meteorology using of operation and flight documentation, radio using, operation control

After obtain the license Flight dispatcher has to complete the recurrent training once in twelve months. The recurrent training shall complete not earlier than 11 months after last training and it is performed according to specified training plan. This training has to cover all initial training chapters in three years, except human factor training, that has to be repeated each year. Training is finished by written exam test and for passing the exam is needed at least 75 percent of correct answers. Completing of the recurrent training will be recorded into recurrent training protocol.

3.1 Organizational structure and running of the training course

The training for obtaining the license of Flight Dispatcher, must be under the guidance of a certified flight school or training organization that is accredited for this kind of training by the Civil Aviation Authority. Since there is no such flight school or organization in Slovakia here's the possible suggestion of the organizational structure (Figure 2), which may be established as an independent organization, or may be included in already created organizational structure by connecting linkages through the responsible manager of training.

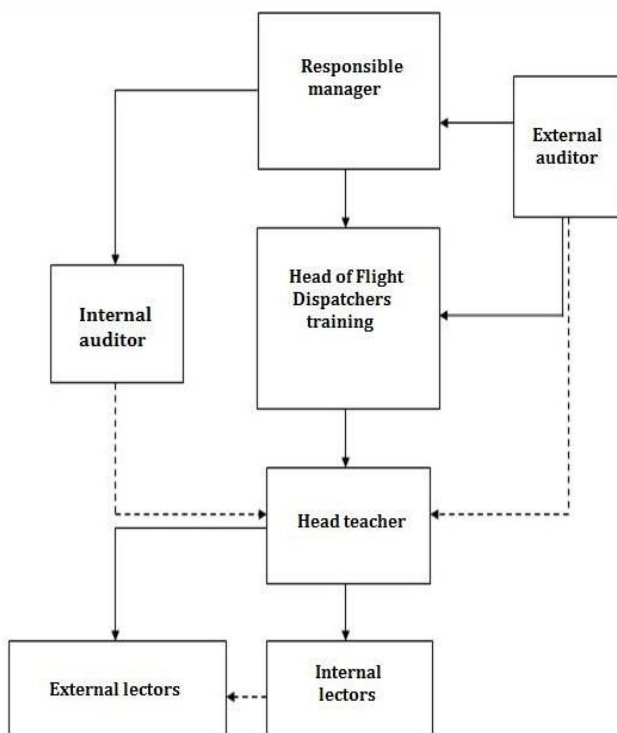


Figure 2 Possible Organizational structure of training school

Within the organizational structure are illustrated ties and linkages between different levels. Full lines represent direct linkages between the two arms of the structure. Dashed lines do not appear as such ties, rather linkage between fluence of activities of one arm to the other arms and the way how do they determine the continuation and changes in other actions. Each member of the organizational structure is asked for certain requirements under the terms of CAA SR.

As there are defined conditions for running flight school and applicants are also required certain characteristics related to the training itself. The training of flight dispatchers has exactly defined the minimum of hours per subject which is needed for the licence. The applicants from the related positions in aviation, for example pilots or air traffic controllers, have an advantage over the applicants with no experiences. The advantage in practise means reduced requirements for the time schedule in subjects of training curriculum.

As a part of each subject is defined the time for the exercises, which is specified by follow lessons. There is also one lesson intended for the final test, which is served for the verifying the knowledge of students. Succesfull passing does not depend only on the result from the final test, but also on the fulfillment of the hours attendance during the training, which is specified for 85% of the total course subject horus.

The part of practical training is included into the training. The purpose of introducing the practical training of common duties is to gain as much experiences as possible with mentioned duties and basic activities which are the filling of the dispatcher profession. It is very good and important for applicants to have experiences with those actions such as filling the flight plan, planning the load and loading or planning and monitoring flights just before they start with the training on simulator or in real operations at flight dispatch department.

4 AUTOMATIZATION IN FLIGHT DISPATCHING

In fulfilling of the duties based on requirements and job profile of Flight dispatcher is time the most important indicator for efficiency of the work. The quality and speed of performing the assigned tasks increase in proportion to the experiences acquired by the experiences in real traffic operation. Time spent by preparing, planning, realising and monitoring the flight depends on various factors. The most important thing that determines the time interval of those activities is automatization in planning and dispatching the flights.

In some smaller companies flight dispatchers still plan all the circumstances of the flight manually and flight monitoring is really time consuming and impractical. It is common that the dispatchers spend most of the time by dispatching a small number of aircrafts. For larger airlines where the traffic is intense are the duties of planning and monitoring supported by automation systems, which greatly facilitate the duties of dispatchers and allow them work with multiple flights at once. The

most critical activity carried out by dispatcher in terms of durations is monitoring the flight, which is used for subsequent evaluation of planning and preparation for the flight. With automation systems is the time devoted to monitoring and obtaining the information reduced to minimum as opposed to manual recording and processing of all information. Automatization of all systems in the processes of dispatching, planning and monitoring the flight is a significant factor in improving the performance of dispatching department. One of those automation systems is ACARS system. ACARS is a digital datalink system for transmission of short, relatively simple messages between aircraft and ground stations via radio or satellite. It was produced to reduce the flight crew's workload by using modern computer technology to exchange many routine reports and messages. This improves the safety and efficiency of modern air travel. It is a system that facilitates communication between the operational center of the airline and the aircraft itself, wherever they are in the world, using digital transmission. The system operates by sending messages from the ground to the aircraft and also the opposite from the aircraft to the ground (Figure 3). Broadcast messages are mostly automatic and used for monitoring the flight by Dispatcher, from preflight preparation to shutdown of the aircraft on the ramp of final destination airport.

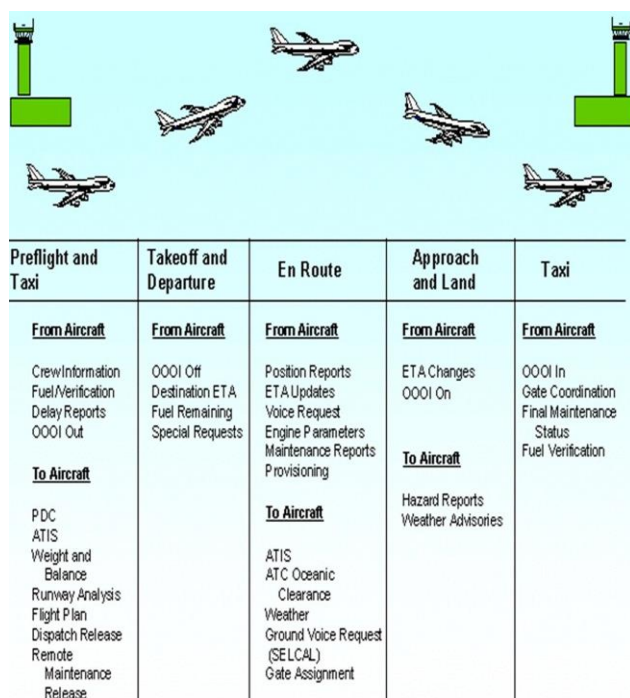


Figure 3 The ACARS system reports to and from the aircraft

The system consists of many ground stations and other devices located throughout the countries which ensure contact with the aircraft and the information about fuel remaining, speed, ETA and other information from the aircraft wherever it is.

5 CONCLUSIONS

Due the fact that the testing by Civil Aviation Authorities for obtaining a license of Flight dispatcher consists from essentially the same knowledge as in testing for the licensing of Air traffic controllers or pilots, the country still misses the courses devoted mainly to dispatchers. The CAA SR approves those courses as a sufficient to obtain the license of flight dispatchers. The training is mostly focused on knowledge as in mentioned courses, but independent training dedicated to dispatchers offers the connection between knowledge and skills needed for real operation. There are still some states which do not require any license for flight dispatchers in Europe or they have reduced requirements for them such as authorization of airlines which employs them. This fact may have by the time and by increasing of the air traffic within the efficiency and economic requirements the huge impact to safety caused by lack of fully trained and licensed dispatchers. One of the possibilities to avoid this situation is the introduction of licensing by passing the course which is specified for the preparation of flight dispatchers.

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