

RULES FOR THE ALLOCATION OF SLOTS AT EUROPEAN UNION AIRPORTS

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The article focuses on the issue of slot allocation, the related solutions lack of capacity at European airports, which are currently in such fast-growing industries such as aviation, very important elements to maintaining a safe and smooth air traffic. Its content includes allocation of slots under the existing EU rules on mutual cooperation with IATA organization, providing insight into the capacity of airports and finally proposes solutions to improve the current situation in the European aviation market.

Keywords: Operation, slots, allocation rules, airports, air carrier.

1 INTRODUCTION

History gives only few industries that would develop and grow as fast as aviation, which has become a global mass transport industry available to all layers of the population in economically developed countries. Over the last two decades, the European Union (EU) removing historical barriers transformed and integrated the fragmented national markets into a single airline and the largest most opened regional aviation market in the world. However, Europe must maintain a strong and competitive aviation sector in the center of a global network that connects the EU with the rest of the world.

2 AIR TRANSPORT SYSTEM AND LEGISLATION IN MANAGEMENT OPERATIONS

In real air traffic is dynamic aviation system consists of a set of all elements in defined airspace, aircraft operated various air carriers using the airport services and resources designed to guide the lines of air traffic road.

The system consists of two main elements, namely:

- means of transport - planes
- air route networks

The system monitors, the four elements aviation infrastructure and they are :

- Airports
- Air Traffic Services ATS
- Carriers
- Controller

Between these components constant interaction must be ensured for proper functioning of the system. If there is a fault such interaction, the result would be a deficit airlines operating at the airport, unsatisfactory working conditions as for the airline, as well as for passengers and airport employees, flight delays or inadequate connections to cities. Such failures to satisfy user needs may result in declining interest in the use of airport services.

2.1 The role and operation of airports

Airport is termed as "A defined area on land or water intended either wholly or in part for departures, arrivals and ground movement of aircraft." Foreign sources give many other definitions, each of which defining an airport from another point of view, but the essence is the same. Airports play a key role in the aviation chain linking airlines to passengers and customers using freight services. They have become increasingly important to the European economy, providing a wide range of connections within the EU and joining Europe with the world. The system LD perform initial area airports when the endpoint transport process, allowing air carriers to ensure entry and exit of passengers from the aircraft, loading and unloading of baggage, cargo and mail. At the same time, however, the point of transfer between land and air transportation. Another function is to allow airport stopover routes (transit) and the transfer of passengers or cargo between translation Airlines (transfer).

Air traffic is a set of activities, which is a major part of flight planning, flight operations and flight crew, ensuring the implementation of the Air Regulations. Given the international nature of aviation was no longer in its infancy need for international coordination and cooperation to establish standard rules applicable to all parties involved in the air transport process. Ensuring the safety of flying dates back to council services, which are referred to as air traffic services. It is a set of activities performed and provided essential to safe, efficient and trouble-free flight operations.

2.2 The EU's busiest airport

Since the inception of aviation airports have been integral part of the company that operated them, thus helping them to develop their strong economic potential and guarantee the steady growth to promote trade promotion and create new jobs.

2.3 The busiest airports in Europe

The recently given statistics in 2011 found more than forty airports, service operating 24 hours a day. Near the top settled airports as London - Heatrow in the UK, airport Paris - Charles de Gaulle in France, ranking third in the Frankfurt airport in Germany, other airports are Amsterdam - Schiphol in the Netherlands, Madrid - Barajas in Spain. The list can be found at 18 Place the airport in Vienna - Schwechat and the Czech Prague - Ruzyně Airport to 35th place.

Our Slovak airports compared with those are small. The importance and volume of air traffic has grown Slovakia after the accession to the EU. Comparison airports depending on the number of passengers and the number of aircraft movements, which greatly affect not only the development of the airport, but also to control the plant.

2.4 Legislation for the management and coordination

Air Force creates large numbers of jobs and every million passenger movements will create 1,000 jobs at the airport and another 2,100 in the national economy. Recent developments in this field for airport operators opens up new perspectives for growth in air traffic demand and capacity, and security options of airports in ensuring air traffic.

Novel methods of operation at airports, more advanced methods operated on the flow of goods and passengers, cargo. Ensuring requires a long-term strategy with effective planning, which should take into account all causes of delays, including flow management, capacity management and scheduling at the airport. At airports where demand the airlines slots for takeoff and landing exceeds the capacity of the airport, the mechanisms for the allocation of slots used to define a set of rules to be followed for this purpose. Obtaining slots at airports means for the airline, it can use the entire airport infrastructure, necessary for the operation of the flight at the time. The aim is to ensure access to congested airports under fair, non-discriminatory and transparent rules for the allocation of slots for takeoff and landing, thus allowing optimal use of airport capacity and fair competition. The main aim is to achieve f coordination of the airports through the allocation of slots and efficient use of the limited airport resources for the benefit of the greatest number of airport users and passengers. All such activities are operated under the same fair, non-discriminatory and transparent rules and are produced by the European Union and the Organization IATA by establishing common rules for the allocation of slots or seeking new ways to address the issue of airport capacity.

The European Community adopted Council Directive No. 95/96 of 18 January 1993 on common rules for the allocation of slots at European airports únie.4 In Europe, Slot Regulation is based on global guidelines set

by the International Air Transport Association, which in the coordination of airports issued a document titled Worldwide Slot Guidelines developed in 1974.

Early on in the development of aviation and the system for managing air services, there arose the need for operation and co-ordination for the proper functioning of the process. At all EU airports, in which the average for equipping tens of millions of passengers is very important to focus on safety and fluidity of air traffic to avoid large number of delays.

3 PROCESS OF SLOT ALLOCATION AND AIRPORT CAPACITY

The allocation of slots and airport capacity is based on the need for certain rules under which such a process will be created and coordinated.

Principles of allocation

The current system of slot allocation is based on the following main characteristics:

- The Member State shall designate an airport as coordinated as in-depth analysis of capacity demonstrates that the capacity of the airport is clearly insufficient
- Slots are allocated on summer and winter scheduling seasons. If the carrier used a series of slots at least 80% of the time during the season, will be entitled to assign the same series of slots in the next reference period. But if this is not achieved, the slots are inserted into the slot for the allocation.

Conditions for allocating

A member state may provide for any airport as coordinated, subject to the principles of transparency, neutrality and non-discrimination. Given certain conditions, it is necessary to also ensure that it is the first thorough analysis of the capacity of the airport, according to commonly accepted methods. These conditions are:

- if air carriers representing more than half of the operations at the airport and the airport's capacity is insufficient for actual or planned operations at certain periods,
- when new entrants encounter serious problems in securing slots,
- if a Member State deems it necessary.

There are currently 89 fully coordinated airports (European Economic Area and Switzerland), 62 of these airports are coordinated throughout the year and 27 airports are coordinated on a seasonal basis. 6
3.3 Importance of the IATA slot allocation process

solution for unbalanced load of airport slots are therefore also called slots. According to ICAO and IATA slot is defined by predetermined time of arrival or departure of the aircraft from the airport. Slots are related not only to aircraft but also ground clearance, fuel services performance, stands, check-in desks and vary depending on whether national or international flights, general aviation or military, scheduled or non-scheduled services and also depending on whether the company in the market for longer-acting or a new company.

The capacity of the airport is said to be limited when demand for slots is greater than the supply. IATA publishes the WGS document, which contains the procedures for the coordination and management of slots and are a comprehensive set of procedures for the allocation and management of airport capacity. This document is used in conjunction with IATA Standard Schedules Information Manual. It is an essential informative guide of the IATA, containing all the standards for the exchange of information for coordinating airport using standard-format messages. IATA also ensures meetings of the Slot Conference twice a year, where the necessary information is available to all airlines and coordinators. Due to the size of the capacity constraints, IATA categorized into three major airports congestion levels, namely:

- **Level 1** - Coordinated airport
- **Level 2** - Partially coordinated the planned operation
- **Level 3** - coordinated airports

Process control

The process of coordination of airport slots and their allocation process begins with a request for slot, which the airline sends airport slot coordinator in writing by the deadline. The application shall state the name of the carrier and its registered office or permanent residence, type of aircraft and its seating capacity, the desired date or time, day of operation, the estimated time of landing or take-off ETD ETA, former airport takeoff or landing following an airport and not the end of the series flight.

The entire process of allocation takes place for each season according to the same procedure. To a certain, fixed term transmit airline companies coordinator requirements for slots, which are planning to operate in the season. According to the date of adoption of the requirements of coordinator assigns individual needs adequate priority. In due time then the coordinator received requests evaluate and draw up a preliminary timetable for the purposes of slot co-ordination.

Operational capacity of airports

Since airports are one of the cornerstones of the aviation system, and an increase in its volume, it needs to be capacitated adapted the system and the capacity of

airports.

Currently, more than 40 European airports, which affects 85% of European air transport are considered overcrowded, and flow through them reaches the capacity limit. The efficiency of aircraft movements and passengers between airports is essentially dependent on two basic operational characteristics airport:

Runway capacity

Use of runways plays a very important and indeed decisive role for operators and also for organizations that provide flight management. In assessing the capacity of LRT, in addition to the basic parameters such as length, width and strength, of great importance to arrange the track with, quick turn or Whether waiting jobs. The objective is to minimize the residence aircraft on the runway and thus maximize its use to the number of movements.

Ramp capacity ramp and stand solutions

This apron is the most loaded of all movement areas and to ensure minimal delays caused by insufficient capacity, shall be so designed as to preclude waiting aircraft in the air. One of the most important and frequently required aspects of the planning and management of this capacity is to ensure the efficient and effective operation of the aprons in relation to the number of aircraft stands. Number of stands should be such that it was delayed more than 2% of the flights.

Capacity can be increased by setting up so-called. parking stands. In the present work the following division stands depending on the airport: developed, open space, finger platform and island platform.

Terminal capacity

Fluency clearance decisively affects the internal organization of the terminal and how to carry out various activities. When the terminal arrangement must be addressed to achieve optimal ratio between operational and commercial areas, as revenue from commercial areas for the effective functioning of the airport infrastructure is very dôležitá.¹⁰ for each airport very success factor. Several airports in Europe, but also in the world are almost chronically overcrowded and traffic carried on the upper limit of its capacity - as an example, the aforementioned airport London Heathrow, which is one of the largest airports in the world. Adequate capacity of airports, ground handling and efficient use of capacity are essential for the economy and must be protected. Since the management of airport capacity utilization using the developed system for the allocation of slots, you must now also develop plans to increase the capacity of airports to ensure the smoothness and speed of air transport in the future because of the development of air transport is still in progress.

4 METHOD ALGORITHMS AND USE OF INFORMATION TECHNOLOGY

Process that performs operations can be called a kind of calculation airport process, where their assignments and problem is formulated in a certain sequence of these operations. Such a process, which in itself uses and processes information in information systems, airport called algorithm. To solve each task it is needed to find a single procedure algorithm therefore, that we understand the sequence of activities that we perform in order to resolve the final outcome of the problem and obtain input from the search result airport process. Each algorithm is accurate and clear system of rules that specifies the procedure for solving a given task and can be viewed using a flowchart.

4.1 Information systems used at EU airports

Effective management of airport operation is not possible without an adequate amount of quality information. Such management is conditional to the processing of vast amounts of diverse information. Growing importance of acquiring information systems, which are based on computer data processing.

At airports, information systems are defined as systems used for the collection, maintenance, processing and provision of information to ensure the operation and safety of civil aviation. Systems that are installed at international EU airports are used to control all workplaces necessary to all acts of smooth air traffic management. The work is focused exclusively on systems related to schedules, necessary to manage the allocation of slots.

AFTN

Worldwide system of aeronautical fixed telecommunication circuits established between individual AFTN centers connecting to the transmission of information. This network is worldwide and is formed by the direct circuit. Regards the telex network, which uses international telegraph alphabet. station is installed at the airport dispatchers' workplaces and the ability to send and receive these messages AFTN:

Received messages:

- Flight plans
- Changes flight plans
- Slots Outgoing messages
- NOTAM
- SNOWTAM

CLIS - Planning client

Complex airport information system, which can be defined as logical - control unit that provides database administration system displays flight information to passengers following flight plans for further processing, processing data for land management and operation of data for statistical development indicators. Planning Application Client application serves to schedule traffic.

SITATEX

The communication system in aviation, which serves as a means for disseminating information between airports and airlines can receive and send traffic reports to serve for providing handling services. SITATEX (Fig. 8) is a specialized form of e-mail security, which replaced the previously used telex network and is used for communication between companies aviation industry.

In practice, therefore, the issue of allocation of slots and the related issue of airport capacity and as the process can ensure portraying and also use flowcharts. All the activities that we need to find suitable alternatives for a final solution to the airport's role involve a process without the use of appropriate information technology would be impossible to smoothly manage air traffic, create flight plans and most importantly given the necessary information between all stakeholders and the authorities involved in such a complex process characterized by a main characteristic of which is security.

5 SUGGESTIONS FOR IMPROVEMENT

In 2010, benefited from EU airports in nearly 800 million passengers, i.e. one third of the world market, which is almost three times more than at the time of liberalization of air transport early nineties. By 2030 it is expected that air traffic will double our continent in a way that Europe due to the lack of airport capacity will not be able to meet a large part of these requirements. It is now fully excavated at full capacity utilization five major European hubs between, which include the airport Frankfurt or London Heathrow. With the present trend may 2030 to achieve full occupancy to 19 key European airports, which will also include airports Paris - Charles de Gaul and Vienna Schwechat. The resulting congestion could cause delays that will affect 50% of all passenger and cargo air transportation.

5.1 Current issue

The current system of slot allocation is inefficient and the existing rules laws do not serve this purpose because it allows the capacity remained unused. In general, a slot does not have a specific monetary value that could serve as an incentive to sell slot another airline that could make better use of capacity. Such a system also hinders the mobility of slots, which is important for the

dynamics of the aviation market.

5.2 New proposals for improving the situation

Changes and challenges facing the European airline market in order to take the lead in promoting a coherent international aviation policy in order to manage the problems described above are to be adjusted for the new EU regulation on slots that have set clear conditions for transparent trading slots. The Regulation provides a clear and coherent (continuous, continuous) mode to ensure transparency in the trading of slots, which will oversee the national authorities.

The new design would focus on the use and value of slots and the introduction of stricter discipline on airlines. Airlines will have more stringent rules under which demonstrate sufficient use of slots during the season to ensure use of allocated capacity airlines wishing to retain the slots in the following season. This implies that it is possible to increase the value of use of slots from 80% to 85% and the duration of the series of slots from the current 5 to 10 for the winter season, and 15 for the summer season. At the same time, since slots have their financial value and cannot be sold to airlines, airport capacity which would use completely different, so it would be possible to introduce trading of slots between airlines in the EU. The concept of the EU in 1993 makes it is possible to see that while the space for such trade does not, but it is not written anywhere that is prohibited. Problems with delays and congestion, however, cannot be managed successfully if they do not improve the performance of airports in the country. EU proposes measures that are intended to:

- ensure greater choice options to address ground handling for airlines at airports in EU
- provide greater control over the coordination of ground handling services for airports
- clarify the legal framework for training and redeployment of staff.

The crucial factor that determines the long-term attractiveness and perspectives of the airport is thus its capacity limitation in time and space and expansion options. Airports without the capacity constraints are emerging in terms of transport handling quality and service, as well as the economic development of the airport complex.

6 CONCLUSION

In this day and age, where we are seeing a competitive fight given the growth in air transport is to achieve the objectives of the European aviation is very important to continue to develop and find new solutions for the proper functioning of not only the airport but also the airlines. The statistics maintained aircraft in the near term until 2020 when major changes are waiting to grow

passenger volume and the density of traffic. The objective of this sector is mainly to minimize the time required movement of passengers at the airport on arrival after boarding the plane and avoid delays.

Current reality is about maximum utilization of airport capacity, which means that possession of slots is of great value to airlines and its importance is still growing. Given the lack of capacity of the central airport and its impact on the mobility of European citizens, it is necessary to adopt a new resolution, which called for the construction of new runways, airport infrastructure. It is of paramount importance to find more efficient and cost-effective solutions to eliminate congestion of European airports.

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