

DEVELOPMENT OF AIR TRANSPORT IN FAVOR OF LOGISTIC PARKS IN THE REGION OF KOŠICE

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The aim of this article is to clarify the issue of the use of passenger and cargo air transport in the industrial and logistics parks in Košice region. Introductory section is characteristic of industrial and logistics parks around Košice, specification of activities and use of passenger and freight transport in Košice International Airport compared with other modes of transport. The last part of the article is a summary analysis of the use of cargo air transport and the design of its development so as to meet the needs of investors and companies in the logistics and industrial parks.

K e y w o r d s: Industrial park, logistics park, cargo air transport, Kosice International Airport

1 INTRODUCTION

Industrial and logistic parks are huge complexes halls and factories that provide facilities for the production of any kind. Industrial zones in Slovakia gradually grow with the support of both the state and private investors who provide business space for lease. The basic requirement of industrial zones is the infrastructure. There are companies that have factories worldwide and various manufacturing components need to be imported on large distances. Air freight is therefore shown to be best suited for the needs of the immediate and rapid transportation over long distances. In the world the air cargo is seen as a matter of course, but in the Slovak Republic is still under development. My goal is to show the use of freight or passenger air transport by companies which are located near the second largest city of the Republic and the to produce the plan of development of this fastest mode of transport in favour of industrial and logistics parks in the area.

2 CHARACTERISTICS OF INDUSTRIAL PARKS

The industrial park is a defined area in which they operate at least two businesses. Industrial parks are characterized by uniform arrangement of objects, specific concept of buildings and by modifications and care for their environment. This area must be properly equipped by basic networks as water, gas, electricity, telecommunications and sewerage networks and access to quality infrastructure. When setting up the industrial parks communities and municipalities must follow Law no. 193/2001 Coll. on the promotion and establishment of industrial parks.

2.1 Industrial parks in Slovakia

Interest in the construction of industrial and logistics parks in Slovakia is relatively large. Mostly foreign investors come to us either because of favourable geographical position in the middle of Europe, or even because of relatively cheap labour. Phenomenon of our time is the mass production of various types of goods in huge factories. Global companies have factories in many countries around the world which means that the components that make up the production company produced in different places.

When opening new plants is therefore necessary to consider the possibility of traffic and transport manufactured products, as well as the import of materials needed for the production of finished products directly to the company. Investors decide on the location of new branches based on the information on industrial park facilities, technical and transport infrastructure. Industrial parks in Slovakia also operate under the assistance of the Ministry of Economy and European Union funds. These funds assist them in the establishment of such a zone, in the development and renovation of facilities, for investment in equipment and so on.

Industrial parks have been built mostly in the big cities, in any case in their peripheries, away from the city centre and residential areas because of their huge proportions. In Slovakia there are already more than 70 industrial complexes providing rental space domestic and foreign companies. Most of them are located in the south-western part of the country. It is a neighbourhood of the capital city, which should provide quality transport infrastructure and proximity to the border with industrialized countries such as Hungary and Austria.

3 LOGISTICS PARKS IN REGION KOŠICE

There are several industrial and logistics parks in the surroundings of the second largest city of Slovakia. Perhaps the best known is the huge industrial complex resident near the Hungarian border, Kechnec, or newly built logistic park Immopark, French company Faurecia, Valeo and finally steel giant U. S. Steel. Slovak investors and large foreign companies have logistics complexes in the rented premises, providing many jobs and help the region to increase interest in other businesses. In recent years, an increase of interest in the production is evident in the eastern region.

This is also thanks to funding from the European Union and the Ministry of Economy of the Slovak Republic assigned for the construction, development and operation of logistics and industrial parks. It aims to promote these less developed regions of the country. Support for the construction and development of industrial parks is also provided by autonomous region.

The city is Košice is second-largest city in Slovakia after the capital city.

For global companies producing products around the world is their transport one of the most important issues. Košice are connected with Bratislava by expressway E571 but are also located relatively close to the border with Hungary, which has built a really good network of highways.

Just a few kilometers from the city centre there is Košice international airport, which has adequate facilities for the landing and departure of passenger and cargo aircraft. The proximity of the airport for many investors is also one of the most important factors when deciding on the location of its production facilities. They use the service in both the field of freight transportation products and finished products or passenger transport of employees or management. Many of my respondent companies operating in the industrial park close to the airport Košice has experience, but most agreed that the cost of transporting goods by air are in many cases higher than they are able to spend within their budgets.

3.1 Immopark Košice

The logistics park is located on more than 60 ha of land in close proximity to the International Airport Košice. The company Immopark Delta Ltd., a sub company of Erste Bank, began its construction in 2007. Immopark is a modern logistics park that provides spaces of different sizes suitable for office work, but also for industrial buildings, manufacturing, logistics and distribution.

The first phase of construction of the industrial park is one production hall, two logistic and two flexible halls. During the second phase is planned completion of four and six flexible logistics halls. Overall Immopark Košice aims to provide its customers with 15 buildings. There are currently four tenants: Valeo, Faurecia, Dachser Slovakia and Raben Logistics.

3.2 Industrial park Kechnec

With the area of 332 hectares, the land is the largest industrial park in Eastern Slovakia, which falls under the administration of Kechnec. Kechnec Industrial Park is far from the city of Košice, about 20 km, but its advantage is its proximity to the border with Hungary and highway construction R4, which together with Hungary Košice.

One of the most important factors for investors is its proximity to the international airport Košice, which is from the industrial area just less than 18 km. An important element is also the available rail infrastructure. The industrial park is near to the railway line linking Poland, Slovakia and Hungary, which is the subject of the international European routes for international combined transport.

Industrial Area in Kechnec is divided into three parts:

- the first part of the space is an area of 80 ha designed for small and medium businesses

- The second part of the industrial zone is 200 ha and is open to strategic investors and large manufacturing companies
- The third part of the industrial park Kechnec is logistics centre about the size of 52 ha.

Industrial park rents space on the following companies:

- Getrag Ford Transmissions International, Ltd.
- SWEP International, Ltd.
- Schelling International, Ltd.
- V.O.D.S., Inc. Košice
- Evnas, Ltd.
- Kuenz-SK, Ltd.
- JISIMEX, Ltd.
- IEE Sensing International, Ltd.
- Doppelmayr International, Ltd.
- Dorsvet Plus, Ltd.
- Čamaj Transport, Ltd.

3.3 Faurecia

Faurecia, a French company, is one of the leading manufacturers of automotive components in the world. In its 274 manufacturing sites in 34 countries around the world provides more than 90 000 employees producing interior and exterior systems, emission control devices and various other automotive accessories. It works with the gigantic as well as starting car manufacturers around the world and gives them their high quality products. Globally, the production company Faurecia is perceived as the sixth largest supplier of components for the automotive industry.

It is focused on the automotive industry. These devices require huge spaces are not only for manufacturing, but also in the storage and transportation of course. Based on the fact that production is located near the airport Košice, airfreight shipment seems to be a commonplace. The opposite is true. Some components are due to the need for rapid transport sent by air, but today it is rather exceptional. The company started its operation from trying to use cargo planes, but gradually realized the high costs of keeping the traffic and how all the major manufacturing companies are trying to save money wherever it could. Faurecia, however, from time to time, carries out cargo flights, mainly due to the need of express services products, but to a maximum of 3 times a month.

3.4 Valeo

Another French company operating in region is the Valeo. This is an independent group focused on the production and sale of systems and components for the automotive industry.

With regard to transport goods within the Valeo, the situation is similar to the one in the previous company.

Air transport is the same for the company's management seems to be one of the fastest solutions, but to a number of influencing factors are used only sporadically. Several times a month, like the previous company, Faurecia orders Valeo charter flight, and only in the need for rapid delivery of products.

The high cost of air travel, the lack of logistics warehouses in the airport, or sufficient road infrastructure influenced the company's decision to ensure that the products are intended for production as well as finished products are transported by road haulage. The company does reject the eventual changes in the organization of logistics, but in this period the trucks transport is considered as more than sufficient.

3.5 U. S. Steel

Perhaps the biggest company in Eastern Slovakia is an engineering giant U. S. Steel Košice, Ltd. In November 2000, the whole production of the company "East Slovakian Steelworks" was taken over by U. S. Steel Group, a sub company of The United Steel Corporation, and thus created the largest steel company in Slovakia.

The production program U. S. Steel Košice are:

- Hot-rolled products
- Cold-rolled products
- Electronic sheets, electrical sheets isotropic
- Hot-dip galvanized
- plastic-coated sheet
- Electrolytic tinplate
- Spirally welded steel pipes
- Radiators brand KORAD
- By-products produced from blast furnace slag and steelmaking slag

Company U. S. Steel as the largest production factory in Eastern Slovakia employs about 12,000 people. The production of steel components does not stagnate despite the crisis and company exports its products to various countries. The transportation of products manufactured using almost all modes of transport. It is worth mentioning the rail transport, which leads straight through the area of U. S. Steel. This railway line is used to import iron ore and other factors of production, which it uses in the production of their products.

Regarding road transport, it is the transport of the products group U. S. Steel your firm, endangered status. The company is located in the suburb of Kosice, in direct connection to the E571 expressway, which is the connection between Košice and Bratislava. Despite the development of aviation in our country and around the world, road transport still has its strong point. In Slovakia, the quality of roads and infrastructure is in poor condition. Highway construction is constantly in progress and links the eastern part of the country with the capital city is still not perfect. Despite these negatives, the use of roads is

matter of course in such a huge company like the U. S. Steel. The number of lorries and trucks of various types, which are brought every day and weighed the various items within the company proves it. Even though truck traffic is limited in weight and dimensions, it is common for the company and its logistics.

Aviation itself is also an integral part of the logistics of the concern. As mentioned above, U. S. Steel is a sub company of American steel giant, and it is of course used for passenger flights. Kosice Airport which is only about 5 km from the U. S. Steel, has limited line and does not have direct links with overseas countries. Because of this, the management of U. S. Steel has its own plane, which is used exclusively for business activities and provides to the company a fast, flexible and convenient transportation. In the Košice airport, this private jet has its own hangar and technical staff.

The use of air freight is matter of course for the company, but we can say that it is still under development compared with other modes of transport. Anyway, it also contributes to the high costs of air transportation and U. S. Steel is like any big company trying to save wherever it can. Production of goods is typically large size and weight, which is not the best for aviation. The other problem is that the Košice airport does not have storage or transit shed, where goods could be temporarily stored. Goods have to be therefore loaded directly on the board, which represents the cost of the additional traffic from the campus to the airport.

4 KOŠICE INTERNATIONAL AIRPORT

The second largest airport of the Slovak Republic - Kosice International Airport from the city centre less than 6 km away and provides day-and-night operation of scheduled and charter flights in Slovakia and other countries of Europe and the world. Since Slovakia is one of the Schengen area, it complies with all airport procedures related to the transport of goods and persons within the Schengen area.

Regular flights from Kosice airport directed to these sites:

- Bratislava,
- Prague
- Vienna.

Kosice International Airport is operated by Airport Košice - Košice Airport, the owner of the second largest airport in Slovakia is an international airport Vienna and thus Vienna International Airport, which owns 66% of its shares. The owner of the remaining shares is the Slovak Republic represented by the Ministry of Transport, Construction and Regional Development that owns 34% stake in the airport.

The main activities of Košice International Airport include:

- operation of the airport,

- sale of air transport services
- Providing services for passenger and cargo
- aircraft ground handling,
- Maintenance of operational areas,
- ensure the security controls and operating regulations at the airport
- the operation of the fire department and security services
- technical clearance of aircraft
- Lease of premises
- rental of vehicles and machinery,
- the operation of the customs and tax warehouse,
- Operation of the garage and parking areas.

Runway has a length of 3100 m and a width of 45 m. It has asphalt surface and strength, which allows clearance, landing and departure and large cargo aircraft. Air cargo airport in Košice provide mostly cargo companies located in the area.

They are the following companies:

- R-Cargo, Ltd.
- Air Cargo Terminal Ltd.
- TNT Express

Its principal activity is the provision of air cargo airport in Košice, cooperation with airlines and manufacturing companies, the implementation of the technical handling and clearance of aircraft, as well as activities related to customs services.

5 OPTIONS FOR DEVELOPMENT OF AIR TRANSPORT

Based on the collected information and consultation with cargo companies to Košice airport, I can say that the interest in aviation increases from year to year. The experiences of these companies say they individuals or large companies use the services of the airport Košice in previous years more, and thus assume a growing tendency to use air transport passenger and freight. To get the air travel in the Košice region at a higher level it is necessary to make changes which ensure the increase in air traffic.

My primary objective is analyzed facts and facts on industrial parks Košice region to create a plan that concrete manufacturing companies in the region to help the new transport options to improve their logistics decision-making and facilitate the transport of products to the fastest and most reliable way, which is by far the airlift.

The possibilities of such a development are just a few:

- expansion of the airport facilities
- increase the capacity and potential construction of a new runway,
- creating new scheduled routes,
- construction of a cargo terminal at an airport,
- Construction of storage space,
- Construction of a container transshipment of goods.

5.1 Košice airport expansion

One way to contribute to the air transport in Kosice at a higher level is just the extension of the airport terminal space and rest of their airfields. This step, in addition to expending considerable funds require complex long-term planning involved in complying with the large number of laws, regulations and standards.

Due to the development of industrial production in the vicinity of the airport, I think that it is extending its capabilities and areas could be an incentive for future prospects. Enlargement of the airport and terminal facilities would automatically ensure the new airline, whether regular or irregular.

In the development of the airport, it is necessary to take into account the following factors:

- operational, economic and social aspects associated with the operation of the airport,
- the costs of running a business airport
- Addressing capacity constraints,
- compliance with the noise limits in the vicinity of residential areas,
- transport infrastructure in the vicinity of the airport,
- creating and maintaining the competitiveness of the airport,
- protection of the environment and health of passengers
- compliance with international agreements, treaties and regulations
- adherence to safety measures at an airport,
- Ensure the performance of services provided by air traffic control businesses.

The result, which will extend terminals, airport and public spaces of the space should provide increased operational and competitiveness airport, more space for air carriers and of course the new regular and irregular lines, space for cargo companies, extension services at the airport and in general more opportunities for investors, for whom the proximity of the international airport in deciding on the location of the plant one of the major factors.

5.2 Increasing the capacity and potential construction of a new runway

The most important part of any airport is undoubtedly the runway. It is a space designed for take-off and landing aircraft. Kosice Airport has one runway, which was first launched in 1954, and in its present form is long, 45 meters wide 3100 m.

By this time the airport in Košice landed quantity passenger and freight aircraft, among them the famous Hercules C-130, Antonov AN124-Ruslan, IL76 Ilyushin, Tupolev TU204, Antonov AN12 and AN26 but the largest airliner Airbus A380 is currently having a

maximum take-off weight is 560 tons. We can therefore say that the Košice airport is able to accommodate any aircraft and allows smooth landing and departure and a real giant in the aviation engineering. Its runway 3 100 m in length is regarded as the longest one among airports in Slovakia. The extension of runway is therefore unnecessary investment and should be addressed before building a new runway.

Runways airport can be routed differently, however, depending on the wind direction. Usually runways are being built parallel to each other or to the cross, which depends on the complex airport environment and opportunities for expansion. Kosice Airport is located near the town of Košice-Barca, so it is difficult to spread. As shown in FIG. 7, the only option in the construction of a new runway is a track that will be parallel to the existing track at the moment. Constraint to it are the surroundings of the airport. It is not about its proximity Barca, but the steel plant U. S. Steel and direction from the city of Košice high-ranking settlement Zeleznik, which can be an obstacle for aircraft landing at the airport. Planning for the development and expansion of airport facilities is therefore a very difficult thing.

Construction of the new runway is of course at the International airport of Košice not only plan for the future. The base is increasing interest in the use of air transportation by the public, as well as by industrial companies using freight. As long as the air traffic at the airport expanded to such an extent that it currently existing track than excavated, construction of a new runway is definitely one of the most important steps in the development of passenger and freight traffic in the region of.

5.3 Creating new lines and reducing of airport charges

One of the possibilities of developing the Košice airport operations is to create new airlines. New international airlines would benefit not only the airport, but in any case, would increase the attractiveness of the Košice region. One of the most basic factors affecting the shipping lines is in airport charges, of the Kosice Airport airport fees, which are comparable to Bratislava or Vienna airport. For such a small airport, we can say that it is a rather overstated finance. It would be to offer carriers suitable or reduced fees at an interesting discount.

Based on the information from the survey of industrial companies around Kosice, cargo airplanes is more interesting for them in the winter months. Snowy roads often slow delivery of goods to customers, and then using just air. Airport charges are determined by the airport itself, so I think that if they decrease ensure increased use of passenger or cargo air transportation is certainly in the interest of management of the airport, passengers and other users of air transport to reduce these fees.

5.4 Construction of a cargo terminal at an airport

In Kosice airport freight carriage used primarily surrounding factories and industrial plants. As has been mentioned several times in the vicinity of the airport are large manufacturing companies, which from time to time need to ship products as quickly as possible to the recipient. The principle of such services is based on an agreement between manufacturing companies and air carriers. As the company publishes a demand for freight transport their goods, the carrier sends its offer. If it is favourable for the company, it comes to an agreement with the carrier on freight carriage. Cargo airport Košice Company will take care of ensuring flight and aircraft handling. But the question still remains as to the aircraft imports of goods, or storing goods in the airport premises.

Large sized goods are to be carried out in any case by trucks. Goods are loaded aboard a cargo plane after completion of all necessary formalities to the consignee. It can happen but unexpected situation where goods will be for some time in an airport store. The airport has a storage space, but the development of air transport, the above-mentioned extension areas in construction would be appropriate cargo terminal.

This terminal would ensure technical equipment for loading, unloading and transshipment of goods, sorting and storing items, or their consolidation and deconsolidation. Shipments transported by cargo aircraft are usually transported in the form of air pallets, containers, pallets or conventional depending on the type of goods.

Cargo terminal should provide:

- plenty of storage space,
- the required number of loading docks,
- direct access ramp
- ramp capable of cleared cargo planes without limitation,
- sufficient number stands for cargo aircraft
- space for cargo handling,
- free zone area and the customs services,
- All facilities necessary for clearance of cargo aircraft.

Of these factors it follows that the cargo terminal is to be built near the apron, so that loading shipments is simplified. On the other hand, must have a terminal connection to quality road infrastructure that will enable the implementation of combined transport, i.e. import cargo trucks and subsequent storage or direct translation aboard cargo aircraft. The terminal must provide space for services and customs inspection of consignments.

5.5 Construction of warehouse space

When thinking about the development of air transport, a possibility that would increase interest in the carriage is sure to build a storage facility for transporting goods by airfreight. In the previous section I have dealt with the construction of the airport cargo terminal, which ensures

the operation. This property is managed by the airport operator, which can be time, space or financial limited. Construction of warehouse space outside the airport boundary can be financed by private investors or the logistics park. Nowadays a purchase of land in the vicinity of large cities may rise many problems. There Kosice airport is a huge space that would serve this purpose, but that's a matter for the owners of the land and of course potential investors.

Businesses located near the airport can transport items to the airport do not have problems, because really negligible distance. However, there are industrial plants that use air freight, but they are far from the airport. These companies need the logistics processes perform a combination of traffic and thus ensure road haulage trucks generally, accounting for certain business expenses. In the event that the goods are intended to be transported close to the airport and flight was postponed for example due to bad weather conditions, it would be the article for some time to store. In this case, I would therefore propose the construction of a spacious logistics centre associated with the operation of warehouse space.

The newly built storage facility near the airport, in my opinion, regardless of the ownership structure could cooperate with airport Košice and stored goods transported directly to the aircraft. Some of the cargo transportation options from the airport directly to the customer provide, but this is an exception. Warehouses would help storing large-scale producers of goods until such time as air traffic will be allowed, or until the shipment is ready for transportation.

5.6 Construction of a container transshipment of goods

One of the other options for development of air transport, which could attract mentioned factories in industrial parks is to build a container transshipment cargo. Transfer space is used to transfer cargo from one means of transport to another. Eastern Slovakia reloading mostly uses railways to ensure the transfer of containers or other packaged goods from trucks to rail cars and vice versa. Huge steel group U. S. Steel mostly used this option, and therefore close to the plant once built two such reloading. To build a modern container terminal with the aviation space is needed, which will include:

- enough space for parking vehicles on the road
- premises used for storage of containers and goods
- large enough space for handling technology and equipment to ensure the loading and unloading of goods
- Space for customs services.

In the transshipment of containers is necessary to ensure a handling devices that are able to move, load or unload any type of aviation containers and pallets. Use of the handling equipment is affected by many factors, especially the latter goods transported, the weight, size or

other characteristics. It is important to pay attention to the distance between the ramp and terminal transshipment or type of aircraft that transported the shipment. From these and other factors, depends on the amount and types of mechanisms transshipment. Transfer air freight operation is that in region currently exists. In the future, however, relies on the development of air transport and the corresponding increase of the airport Košice either the passenger or freight traffic. I think that companies located near the transfer of goods in the future, certainly used for the benefit of logistics to facilitate their trips. Transshipment of containers is also a good investment in order to increase investor interest seeking space for their factories. Its operation is certainly not easy and requires a lot of costs, but ultimately it comes to promoting aviation and the course of industrial production in the region of.

6 CONCLUSION

There are several proposals for the development of air transport in the second-largest airport in our country. The base is obviously the extension of its premises, which is ultimately the key step for all business operations and supporting the attractiveness of Kosice airport. No less important step is to increase the load, or direct construction of a new runway, which is actually the most important part of the airport complex and airport operations as a whole. For production facilities is an important factor in resistance pathways and opportunities for landing large cargo aircraft. Creating new, whether regular or irregular lines would certainly help to increase airport traffic, and of course with the related interest on the part of private individuals or large manufacturing companies. So, the proposals to build cargo terminal, storage and transshipment of containers and goods are also to support air cargo and the closely related manufacturing support in region.

Several mentioned factories do not concern the implementation of the import and export of goods by airfreight. The submitted proposals for the development of air transport would in any case have contributed not only to improve the reputation of the Košice airport, but mainly to develop of industrial production in the region, so as to ensure the influx of new foreign investors and manufacturing plants, with the attendant reduction in unemployment, increasing the attractiveness of the surroundings of Košice and ultimately extending operation of passenger and cargo air transportation from International Airport Košice.

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