

official name of which is HB-SIB. To prove that this is not just a remote controlled model, Bertrand Piccard together with the Swiss pilot André Borschberg made round-the-world flight on the Solar Impulse 2. Pilots completed the mission their 2016 without any drop of fuel. And Solar Impulse 2 became the first device in history, which flew around the Earth on the sun energy.

Solar impulse works due to solar batteries which can charge during a day to fly all night and the next day again. But, as any invention, the plane has both advantages and disadvantages. Performance of its batteries is very high, but the plane is very sensitive to weather change. Solar Impulse can be in flight during many days and nights, but it has the low carrying capacity and relatively low speed. Solar Impulse 2 can carry only a person on board and speeds up only to 140 km / h that is the reason for the negative feedback from experts.

Researchers do not consider that Solar Impulse will transport more than 100 people in coming years, but at the same time it is essential for the future of aviation. After all, when Charles Lindbergh crossed the Atlantic there was enough power only for a man and some fuel. And in a couple of decades many crews flew across the Atlantic.

Engineers have shown that the time for transport of a new generation has come, particularly as there are other solar powered planes besides HB-SIB. For example, the British company QinetiQ has developed and built a drone Zephyr. It uses only the energy of the sun, as the Solar Impulse does. The British aircraft has already set a world record in flying without recharging among vehicles on clean energy.

Another "solar" airliner, Sunseeker Duo, was developed by the American company Solar Flight, which had previously built two other aircraft on solar energy. This device with a pilot and a passenger on board has flown across the Alps. When the plane landed, the battery was fully charged.

It is also worth mentioning the aircraft Hy-Bird, a project of the French company Lisa, which is planned to be used for a round-the-world trip. There are also other similar devices, less noticeable, but not less significant for the development of aviation.

The idea to fly using the power of nature not only encourages people, but opens new possibilities for the aviation. In the future airports can be built right in the centre of the city, because solar powered aircraft fly quietly and without air pollution.

Now Solar Impulse is more as a symbol, rather than a vehicle, because we still cannot abandon fossil energy sources. But it is certainly the thing, which makes the 21 century incredible.

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GLOBAL EXPERIENCE OF INTERACTION OF TRANSPORT ON THE BASIS OF AIRPORT COMPLEX

At the present stage, the ever-increasing demand for transport services, the need to implement a full supply chain "exactly in time" and "from door to door" requires the

use of efficient transportation process organization technologies that are built on the principles of integration and interaction of transport systems.

In the world practice, the effective interaction of main types of transport communications is to organize their coherent and coordinated work in general transport process, as well as to ensure the implementation of many conditions of legal, economic, technical, technological, organizational and managerial character [1]. The key place in the system of mixed transportation is occupied by transport and terminal complexes, which due to the existing infrastructure and built management system allow executing a wide range of transport-logistic tasks. Of course, in the context of active development of containerization, the competitiveness of marine and land transport has increased significantly, but despite this, the availability of modern airport infrastructure creates time-based advantages of air transport, which are vital for such groups of cargo flows as: short-lived goods (biological cycle); short-cycle goods; loads of instant demand; cargoes requiring instant delivery; goods, reduction of stocks of which depends on a significant reduction of capital; equipment that has production advantage significantly higher than transport costs; high-cost goods whose transportation speed can save unused capital.

Thanks to aviation transport, it is possible to provide the greatest time saving for transport process. At the same time, it should be emphasized that airports have fairly convenient location and, in large number of cases, are more accessible than, for example, seaports. In addition, the duration of technological cycle of cargo handling of certain groups of goods at the airport (unloading the aircraft, overload from one flight to another, loading, etc.) may take less time than sea transport. According to experts, the optimal model for the development of aviation business and market for airport services is the organization of centers for the interaction of different modes of transport based on airport complexes.

So, for example, one of the most powerful cargo hubs in the world that provides the opportunity to interact with different types of transport in its territory is Al Maktoum Airport in Dubai. Its strategic location, near the seaport of Jebel Ali, is one of the largest container ports between Asia and Europe, where the east meets the west and north the south. This makes it an attractive and ideal place to organize transport and logistics activities in the region. At the present stage, Al Maktoum Airport has become the most powerful multimodal transport and logistics center of United Arab Emirates, which combines various forms of transport, logistics and auxiliary industries, including warehousing. Al Maktoum Airport is now the first integrated, multimodal transport platform connecting air, sea and land.

There is a single customs licensing corridor to ensure an unhindered cargo transportation process between airport and the seaport [2]. This makes Dubai Airport one of the largest cargo airports in the world. Statistics show that the airports of Dubai in 2016 processed more than 2.8 million tons of cargo, and according to October 2017 freight traffic is already 2.5 million tons, which allowed Dubai to rank sixth in the world-wide rating of the most downloaded airports.

Thus, the organization of the interaction of modes of transport, namely, multimodal traffic on the basis of airport complexes – is the future development of the world transport system. Multimodal transportations allow cargo delivering economically and efficiently around the world on the principles of "door to door", "exactly in time" and at optimal transport and logistics costs.

References

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TRANSPORT LOGISTICS DEVELOPMENT IN UKRAINE

Transport is a multi-industry sector composed of various kinds of chains, services, communications, components and items, movement controls, repair bases, etc.. Transport has a space-based network locations and deployments, and is characterized by seasonal traffic. The main functions of transport logistics is to facilitate transport and economic relations, including international; provide rational distribution of productive forces in the country, industry, companies taking into account transport costs, social, cultural and other requirements.

Currently, transport logistics in Ukraine is at the stage of formation and consolidation in view of global logistics market trends, especially in highly developed countries. It should be noted that World Bank has rated Ukraine 102nd among 155 countries for logistics efficiency index. According to the Ukrainian Logistics Association (ULA), Germany earns 170 billion euros in logistics annually, when at the same time Ukraine has a profit of only 300 million euros in this sphere with logistics market potential of 300 billion dollars. So we can see that Ukrainian's enterprises are not encouraged to increase logistics efficiency and expand the Ukrainian market in this area. The investigation by the European Logistics Association shows that Ukraine's gross logistical operations account for approximately 35% of the total production costs. The further formation and development of a multi-faceted economy in Ukraine should be accompanied by the intensive development of transport and logistics market, the creation of a competitive environment in the field of goods movement and international cargo transportation, significant changes in the system of organizational and economic relations between the participants of the transport process amid the enhanced integration trends in the world's economy.

On the one hand, we should find out the main obstacles in Ukraine, which hinder to streamline the development of transport logistics in this country in order to meet the requirements for vehicles automation, logistics costs decrease, technology unification and improvement of transport complex efficiency. Therefore, we can highlight the factors that have a negative impact on logistics market development:

- weak government support and lack of regulated legislation that would enable the solution of many logistical problems and ensure certain control over the level of the logistics services provided;