

A. Azarko, K. Chepikov, Supervisor A. Bolvanovich

Transport of the Future

Belarusian National Technical University

Minsk, Belarus

Our civilization has evolved due to transport. The more sophisticated means were transporting people and goods, the greater was the progress. In the last century, a real technological revolution was accomplished. The aircraft, trains, automobiles have become an essential part of our lives. Today getting from one place of the planet to another takes only a few hours and traveling around the world no longer takes 80 days, as it was in the XIX century.

Today people are in need of fast, convenient, and mobile transport, and more and more are currently available, but something is just beginning to appear.

For example, widely known electric cars have a great future, despite a slow start with ongoing problems over battery capacity, weight and cost. Electric vehicles are one of the most important ways to reduce motoring costs, decrease carbon use in transport, improve air quality and reduce global warming. According to some car-making factories battery-powered vehicles will be on the road by 2020. Models like Nissan's Leaf and Chevrolet's Volt have led the way [1].

Now is not a secret that using the vehicles running on solar energy is very convenient and environmentally-friendly. Solar vehicles aren't sold as practical day-to-day transportation devices at present, but indirectly solar-charged vehicles are widespread and available commercially. The progressive project named SolarBullet is a high-speed railway, which will run on solar energy and accelerate to 354 km/h. The project

investment is estimated at \$27 billion. When the first such train will appear isn't quite clear, but initially it will happen in the United States: Arizona authorities support this project. The location is logical: Solar Bullet will effectively work only where there is a lot of sunshine [1].

One more revolutionary concept – Skytran Unimodal Systems – it is something in between a taxi and monorail. Individual cabins hung by magnetic levitation to the guide rails will deliver passengers into necessary point of the city – we only need to specify the address on the onboard computer.

All these projects and many others are being developed mainly in the United States. So could you imagine that here in Belarus revolutionary project called SkyWay is being developed too?

SkyWay is a fantastic transport project, the embodiment of which will be possible to see in our country. The author of this design is a Belarusian engineer Anatoly Unitsky and practical realization of this project has started in Belarus [2].

String transport is the concept of the overground transport system, in which the cabins move on rails, stretched between supports. The idea is to pull a "string road" at a height of several meters above the ground and move the unibuses – special transport. The drive unit can be both electric and combined, or diesel, gasoline, turbocharged. This transport can be used for passenger and for freight transportation. The speed of moving: city transport – up to 150 km/h, freight transport – up to 120 km/h, high-speed – up to 500 km/h.

String transport can solve a number of problems:

1. On the Earth there are places where it is impossible to build a road on the existing technologies, or it is very expensive: mountains, jungles, deserts, swamps, areas of permafrost, island nations – all areas with a difficult relief. String technology can help to organize freight and passenger flow in such case.

2. Development of new fields or fields located in distant places.

3. Problems with port transport. Field of application – cargo transshipment from rolling stock to bulkers, tankers, container ships, transfer of passengers from a rolling stock to passenger ships.

4. To ease congestion. It is assumed that unibus capacity will be up to 28 people, and these vehicles can be assembled to the train, with a capacity of 100 passengers. High-speed transport in the long term allows to relieve the city, as people will be able to overcome 500 km in one hour and it will be no need to live "closer to the center".

5. Low cost. According to calculations, the cost of urban transport will be 2 times less than the cost of transportation by the subway, 3 times – the tram, 5 times – monorail. The developers claim that any high-speed SkyWay track in overpass version will cost \$3 million per kilometer, while any known overpass roads at lower speeds – automobile, steel, magnetic pillow, monorail – cost 100 million dollars per kilometer [3].

So where is the place where dreams come true?

It seems, the fourth generation of string technologies in the near future will be embodied into reality. Near Marina Gorka "EkoTehnoPark" project has been launched – there will be built cargo (1 km), the city (1 km) and long-distance high-speed (15 km) overpasses with a corresponding rolling stock and infrastructure.

Of course there are some problems with the implementation of this project. For example, the creation and installation of such type of transport will lead to reducing the number of ordinary transport, what would harm today's transport companies. The amount of working places also will reduce, if the SkyWay according to the engineers will be almost automated.

Other disadvantages and risks: bending of strings and potential accidents, problems with the state of the passengers due to high speeds and if to consider an economic point of view – the big cash costs. Unfortunately, this aspect of the issue is not commented by official representatives of SkyWay company, and we are still in the dark about terms of realization of the project.

Well, all these projects seem to be some kind of unreal, especially for our country, but in fact an engineering idea is being developed with giant steps, and transportation future of our country may be similar to these ideas. And yet, to put into force these ideas is easier than flying cars or intertemporal portals. However, we believe the courage of this project can serve as a source of pride for our Belarusian engineers who seek to improve the living conditions and comfort during transportation of passengers introducing innovative ideas to the state plans.

References:

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