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Opinion regarding Environment Protection

In relation to the concept of the metropolitan aerial transportation system „MISTER”

Information regarding this project was presented to the Directorate of The Centre for Ecological Environment Research, in April of 2006 by Mr. Olgierd Mikosza. This opinion is not quoting details of the project. Generally, it is about the gondola vehicles for up to four people, travelling under an aerial infrastructure of a fixed rail network. The gondolas are controlled by a complex electronic system and have an ability to stop programmatically at any off-line station, which allows for uninterrupted and efficient traffic flow (average of 40 km/h). This text has been prepared on the request of the Author, as the Centre's contribution for its declared support for the project.

The system appears to be an original, technically correct and ecologically worthwhile solution in the area of city communication. It is competitive in relation to mass ground transport, taxis, and foremost, private cars. It is capable of solving communication problems in city centres and also in areas of unstructured traffic (sea ports, airports, recreational and shopping centres etc.). It may also find its use in suburban traffic or in border areas.

In polish conditions, MISTER may solve communication problems in the centres of large cities, inclusive of the vicinities of historic quarters and tourist-shopping areas, recreational complexes, suburbs which do not have good communication links with the centres, average size cities without effective ground communication, or in cases of ineffective communication. The system complies with the main ecological criteria, which are currently challenging mass transportation means. Below are the most important of them :

1. Low payload energy consumption resulting from significantly higher utilization of transportation capacity. Gondolas travelling under aerial rails will be occupied in 2/3 by passengers and, in principle, there will be no movement of empty gondolas. Those which are waiting practically do not consume energy. It can be estimated that the unitary energy consumption (electrical) by one person to travel 100 km, will be smaller than the energy in one litre of the conventional fuel. This is comparable to the energy calculated for a cyclist.

2. Low ground space requirement. Practically, there will only be a need for about 50 m² per km of the track. External infrastructure will require an additional 10-25% of the space. Tramway lines requires 3 times more space and the necessity of a continuous, exclusive strip of land.

3. Low material requirements. Calculated in total (suspended rails and gondolas) are less than the needs of tramway line (for the same throughput in the time unit). Therefore the project fulfils a very desirable rule of reduction of material production.

4. Permitted parameters of the acoustic wave intensity and noise emissions within the line vicinity. Communication noise associated with the operation will be limited to the stops, and perhaps can be eliminated. Noise nuisance for the passengers – negligible, decidedly lower than the one experienced in buses and tramways.

5. Dust emissions, small, related to the friction against guideway.
Negligible gas emissions.

6. No electromagnetic field effect, or their parameters are 2 orders of magnitude below the permitted levels. Lower than in the case of tramways or railways.

7. No vibrations.

8. MISTER lines are only a partial (incomplete) barrier to the biosphere.

9. Ecological safety due to the lack of cumulative, synergic effects.

10. Wide opportunities for the tailoring of installations to the character of the environment and scenery. In places, it may even enhance city landscapes and infrastructure.

11. Pollutant production during the operation – None. Opportune possibility of refuse segregation at the stops.

12. Large potential for quick and varied modifications and extensions of lines. Easy creation of emergency or periodical bypasses.

13. Simple and ecologically non-demanding line dismantling.

14. General and easy accessibility, inclusive of disabled persons.

15. Possibility of direct connections with the air and rail transport centres, as well as carriage of bicycles.

16. Attractive views from the windows. Tourist functions.

17. Beneficial logistic operation for the travellers.

18. Possibility for installation of the lines along land strips unusable for other purposes, inclusive of parks and green areas.

Many of the mentioned points above combine into a very ecologically desirable quality - being the limitation of the utilization of non-renewable resources per payload unit of city transportation.

The MISTER system complies with the obligatory reduction of green house emissions and also presents an opportunity for the spatial restructuring of crowded cities in the direction of the creation of more peaceful mass transit and areas.

It should be noted, that the introduction of such a system should reduce the number of communication accidents and numerous stresses associated with transportation.

Another very important benefit of the system is the flexibility in the placement of the lines, allowing for true public consultations and negotiations.

From the environmental point of view, the MISTER system is very competitive in relation to other ground and underground systems. This Opinion does not deal with very important issues of technical and personal safety, costs and organization. In my opinion, they should be solvable, having in mind the unquestionable ecological benefits.

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Witold Lenart