

Janusz Poliński: Exploring the Railway of the Future – Maglev

The technical development of rail transport based on the wheel-rail system has, over the past seventy years, been enriched by unconventional solutions, eliminating the traditional railway route with its main element – the rail track and the wheels of the vehicles. The efforts of some designers have been directed towards exploiting the phenomenon of magnetic levitation. Such solutions were called the Maglev system. In operational practice, it led to replacing the traditional track with a system of electromagnets, and the driving and rolling wheels of the vehicles, together with the suspension system, with magnetic levitation. The article presents the effects of the practical use of magnetic levitation in passenger transport vehicles in Europe, Asia and the USA. Advanced work is also presented on the use of the system in rail passenger transport, eliminating air traffic over short and medium distances, as well as in urban transport, which is part of environmental protection measures.

Keywords: rail transport, high-speed rail, magnetic levitation, maglev system