

**DECLINE OF RESISTANCE TO MOTION ON RAILWAY
ROLLING STOCK DUE TO THE USE OF WHEELS OF
PERSPECTIVE STRUCTURAL CHART**

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To increase the energy efficiency of railway transport, it is expedient to implement activities aimed at reducing resistance to the movement of

trains. One of the ways to solve the mentioned problems can be improving the construction of running gears of rail vehicles.

Therefore, it is advisable to consider the possible advantages, a fundamental change of the constructive chart of the wheels, for example, the chart, which allows the comb to rotate relative the wheel around their common axis. The authors propose several variants of construction these wheels for railway rolling stocks [1, 2]. Benefits of using wheels promising construction charts were analyzed in [3,4].

The efficiency of wheels promising a constructive chart, which is a part the undercarriage of wagon, was estimated as a percentage using the factor

$$\Delta S_{sum} = \frac{W_{B_TK} - W_{B_ПК}}{W_{B_TK}} \cdot 100\% \quad (1)$$

$W_{B_ПК}$ – the total resistance to movement of wagon with wheels is a promising construction charts;

W_{B_TK} – the total resistance to movement of wagon with wheels traditional construction.

In Fig.1 shows some results. They contain assess the impact of the wheels perspectives of the constructive chart at the resistance to movement wagon. The charts show the proportion of reduction the total resistance under given modes of motion the loaded and empty wagon, which is composed of the wheel a promising constructive charts, relative to the total resistance to movement wagon with wheels of traditional construction.

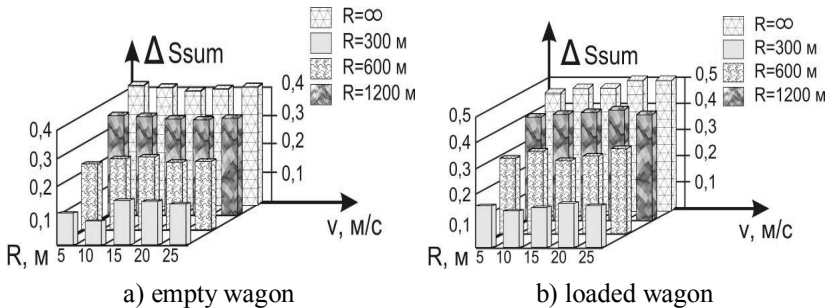


Fig. 1. Share reducing the total resistance to movement of a freight car with wheels promising construction charts

The analysis of diagrams shows that when used in the undercarriage of a freight wagon wheels promising structural chart of the values of the resistance to its movement is significantly lower than with wheels of traditional construction. This gives grounds to expect and also smaller amounts of wear the surfaces that interact (flanges and side surfaces of the rail).

References:

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