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**ІТТ** | ІНТЕЛЕКТУАЛЬНІ  
ТРАНСПОРТНІ  
ТЕХНОЛОГІЇ



# ІНТЕЛЕКТУАЛЬНІ ТРАНСПОРТНІ ТЕХНОЛОГІЇ

V МІЖНАРОДНА НАУКОВО-ТЕХНІЧНА КОНФЕРЕНЦІЯ

ПРОГРАМА КОНФЕРЕНЦІЇ



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Збірник містить тези доповідей науковців вищих навчальних закладів України та інших країн, підприємств транспортної та машинобудівної галузей за чотирма напрямками: розвиток інтелектуальних технологій при управлінні транспортними системами; транспортні системи та логістика; інтелектуальне проектування та сервіс на транспорті; функціональні матеріали та технології при виготовленні та відновленні деталей транспортного призначення.

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**ПИТАННЯ ЕФЕКТИВНОЇ ПЕРЕРОБКИ МІСЦЕВИХ ВАГОНІВ НА  
ПРИПОРТОВИХ СТАНЦІЯХ**

**THE ISSUE OF EFFECTIVE PROCESSING OF LOCAL WAGONS AT  
PORT STATIONS**

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The analysis of modern transport processes of international cargo through the territory of Ukraine by sea and rail transport showed that the share of cargo export through port railway stations in the total volume of international cargo transportation is growing every year. At the same time, the policy of attracting customers to the railway takes into account the quality and convenience of their service, but does not correspond to the convenience of port stations. Significant wear and tear of the technical means of the stations and their low capacity are the reason for the inability of the stations to process the volumes of wagons arriving from the railway to ports and access railway tracks. As a result, there are situations of non-acceptance of trains at the station, an increase in the unproductive idle time of cars waiting for technological operations, an increase in the number of hostile routes on the tracks and in station parks, which reduces the efficiency, throughput and processing capacity of the stations.

Among the possible negative consequences of this, the issue of effective processing of car traffic at port stations requires special attention, taking into account the current export orientation. In the absence of hill sorting devices at many port stations of Ukraine, local wagons are sorted on extraction tracks by sedimentation with further sorting on separate station tracks or parks. The limited length of the exhaust tracks, the inconsistency of their longitudinal profile with the requirements for modern volumes of sorting work leads to the occurrence of additional operations for dividing trains into parts, runs of shunting locomotives and trains at stations, which increases the duration of technological operations and the level of loading of station devices.

Time costs for the total duration of processing local wagons at port stations, which may cause additional downtime, occur when:

- sorting and picking groups of wagons on tracks;
- delays due to crossing hostile routes;
- change of wagon runs;
- increased loading of shunting locomotives due to multiple sorting;
- serving places of general and non-general use while waiting for delivery and removal from cargo fronts, especially in dead-end schemes of cargo areas.

The need to re-sort wagons to select groups of wagons for freight fronts increases the amount of sorting work, complicated by the limited number of tracks and the significant fragmentation of the number of assignments of local wagons. Unproductive idle time is associated with delays at the intersection of shunting routes, since a certain number of shunting locomotives is required for disbanding trains and moving to freight areas and ports, and shunting work for the maintenance of common areas and for disbanding trains is usually concentrated in one station entrance.

The number of shunting half-tracks at station entrances, in turn, depends on the mutual location of the main devices at the stations, the technology of operation of various technological lines, and on the share of the total volume of local car traffic that moves to the cargo fronts of the stations.

As a result of the lack of shunting locomotives at port stations, which has been observed in recent years, there are additional downtimes due to the unevenness of the arrival of gears, significant volumes of work on the selection of groups of cars on a limited number of sorting tracks or their absence at all at the station.

The identified reasons for the increase in the duration of the processing of local wagons at port stations require the development and implementation of measures to eliminate them in organizational, technical and technological aspects.

Given the significant limited resources and the territory of port stations, the lack of sufficient funding for the development of railway infrastructure, it is necessary to develop an approach aimed at the effective redistribution of the volume of sorting work with local wagons to the nearest technical stations in port railway hubs. This will help to reduce the load on port stations, to use their technical devices more efficiently and to reduce the processing time of local wagons.