

Industrial safety of hazardous facilities

Russian Railways operates 5,805 hazardous facilities, including 582 facilities of hazard class 3 and 5,223 facilities of hazard class 4. None of these facilities reported any accidents in 2021.

In 2021, the Company developed the Risk Management Guidelines for Hazardous Facilities. Risk assessment methods for hazardous facilities set out in the Guidelines enable the Company to substantiate and specifically plan activities on industrial safety in order to reduce accident and non-compliance risks.

Fire safety

Russian Railways has a fire safety management system aligned with the Company's "to-be" state. Various units within the Company follow a unified

Traffic safety

Russian Railways has in place the Strategy for Guaranteed Transportation Safety and Reliability, which lays out the general principles that are underpinned by safety management and culture. The strategy seeks to develop a safety management system throughout the life cycle of infrastructure facilities and rail vehicles and to create a methodological framework for transportation safety management by introducing digital platforms and improving the offering of quality, highly reliable and safe services.

approach to fire safety thanks to the efforts of central and regional fire safety commissions. Fire prevention activities at the Company's facilities and rolling stock, along with fire extinguishing in the traffic area, are the responsibility of the Departmental Security Service of the Railroad Transport.

Fire trains

Fire trains are classified as part of a single public system for emergency prevention and response and are engaged by the EMERCOM of Russia in order to extinguish fires across the country. Fire trains are designed for fire extinguishing and ensuring fire safety as part of response to emergencies with hazardous cargos at facilities of structural units of Russian Railways branches, at all types of rolling stock, and in railway infrastructure areas where possible. The rolling stock of fire trains is updated as part of the Fire Safety project.

Traffic safety priorities include:

- improving the reliability and safety of equipment that is part of infrastructure and rolling stock;
- reducing the likelihood of traffic accidents;
- preventing or reducing fatalities and injuries;
- reducing property damage and other losses;
- preventing any adverse impact on the environment.

In 2021, a new fire extinguishing module was launched for an MTSO-2-based fire train.

Emergencies with environmental implications

In 2021, the Company's infrastructure saw five major emergencies with environmental implications, including:

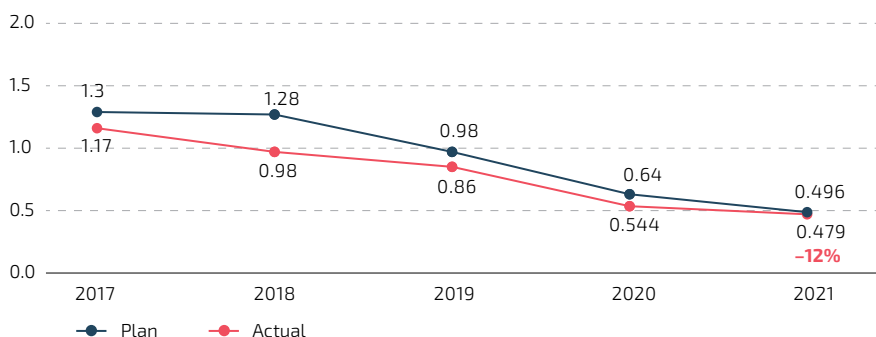
- railcar derailment with oil product spills
- railcar derailment with diesel fuel spills
- railcar derailment with aviation fuel spills, etc.

Clean-up measures helped to respond to the emergencies as needed. All emergency sites are subject to ongoing laboratory monitoring of water resources and soil, with samples taken and tested on a regular basis.

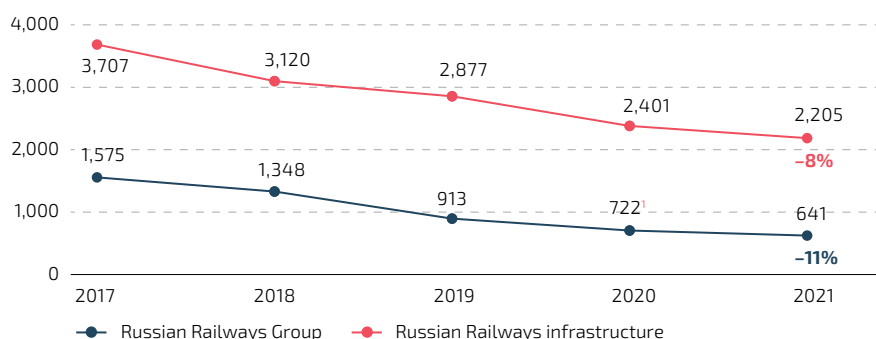
2021 results

In 2021, the target safety level across the Russian Railways Group was achieved, with a 12% reduction vs 2020. The number of traffic accidents and incidents across the overall railway infrastructure and those caused by the Russian Railways Group shrank by 8% and 11% y-o-y, respectively.

Traffic safety target, accidents per million train kilometres



Safety violations across Russian Railways infrastructure¹



The risk level with respect to traffic safety across Russian Railways' infrastructure is by 27% below the acceptable level. Among major external events that influence this risk is the environmental and climatic factor (87% of all losses caused by external events) based mainly on hydrometeorological hazards. At the same time, our efforts reduced the above hazards by 72% y-o-y.

In 2021, Russian Railways fully implemented the programmes to ensure traffic safety and bring its infrastructure in line with operations and maintenance requirements. The programme costs amounted to RUB 223.2 bn.

The Company annually certifies the traffic safety management system in order to engage employees and ensure continuous improvements in traffic safety and railway transport operation. In 2021, the safety culture's maturity gained 3.89 points, which means that safety procedures are consistent, documented and follow the existing practice; however, diversions from the procedures can be observed.

For the fourth year in a row, the Company's safety level is benchmarked against European and North American railways based on international indicators. At Russian Railways, Global Safety Index (GSI) measured as an integral traffic safety indicator amounts

to 5.15, which puts us among top global railway companies when looking at safety of our services. The index includes 1,800 incidents at Russian Railways infrastructure, of which 97% were caused by external factors: incidents involving individuals in the train traffic area and incidents at level crossings.

When benchmarked against the Russian passenger transportation industry (based on insurance companies' data), the number of injured Russian Railways' customers is at 2.9 per 10 m passengers. It is only the urban electric transport that has a lower per unit indicator. The findings confirm Russian Railways' leadership among foreign railway companies and in the Russian transport industry when it comes to service safety.

In line with our innovative project aimed at boosting traffic safety, the following initiatives were implemented:

- 28 units to control passing trains and 82 safety units to prevent runaways were purchased, four level crossings were equipped with barriers, 17 locomotives were retrofitted with dedicated safety devices;
- equipment for transport accident recovery work was upgraded, including two breakdown cranes with a lifting capacity of 150 t, 30 special freight cars to transport traction equipment, and eight sets of hydraulic equipment.

¹ The benchmarking draws on comparable data and excludes violations by RRC-2 (no longer part of the Russian Railways Group).