

Introduction to Russian Railways

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Agenda

- Background
- Capacities
- Volumes
- Operations
- Corporate Culture
- Future

Background: Infrastructure vs. Brand

- Russian railways, or “Russian Railways”
- 2003 – “Russian Railways” launched
- 1837 – construction of railways began
- Further development:
 - Beginning 20th Century – Transsiberian Railway
 - 1957 – 1st high-speed train able to reach 134 km/h
 - 1965 – Moscow – Leningrad: 4h 59 min, 160 km/h max speed
- But ...

Downturn, 1990s

- No new railways were built
- Obsolete railway stations, local and long-distance trains
- Passenger transport subsidized by freight transport
- Decade of obsolescence

Reforms, 2003 - 2010

2003 – «Russian Railways»

- Freight and passenger transport
 - Infrastructure construction & services
 - Locomotive traction services
 - Rolling stock provision & repair
 - Research and Development
-
- 100% owned by the Government of Russian Federation

Stages

- 2001–2002 – Ministry of Railways to “Russian Railways”
- 2003-2005 – Public corporation
 - Structure by activities
 - Increasing competition
- 2006-2010 – 60% of rolling stock to private market

Notes

- “Russian Railways” – 18 years old
- Russian railways – 184 years old
- Preceding downturn – 10 years
- Today: 11 years since reforms are complete
- Visible but slow changes

Rail Capacity

Technical parameters	1000 km	Rolling stock	1000 units
Operational length of railways	85,3	Freight mainline locomotives (electric and diesel locomotives)	11,8
		Shunting locomotives (diesel locomotives)	5,9
		Freight cars of all types	196,3
Length of electrified lines	43,4	Passenger locomotives	3,1
		Long-distance passenger cars	21
		Passenger cars of commuter trains	14,3

Role in transport

- Railway freight turnover – 45,3 % (pipelines considered)
- Railway freight turnover, without pipelines – 80%
- Passenger turnover – 26,4 %

ЖЕЛЕЗНЫЕ ДОРОГИ РОССИИ И СОПРЕДЕЛЬНЫХ ГОСУДАРСТВ



УСЛОВНЫЕ ОБОЗНАЧЕНИЯ

Масштаб 1:2 700 000

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Room for improvement

- Extensive and mostly electrified in the West
- Railway infrastructure is available in 80 out of 85 subjects of Russian Federation
- Total length of the rail is 120 thousand km

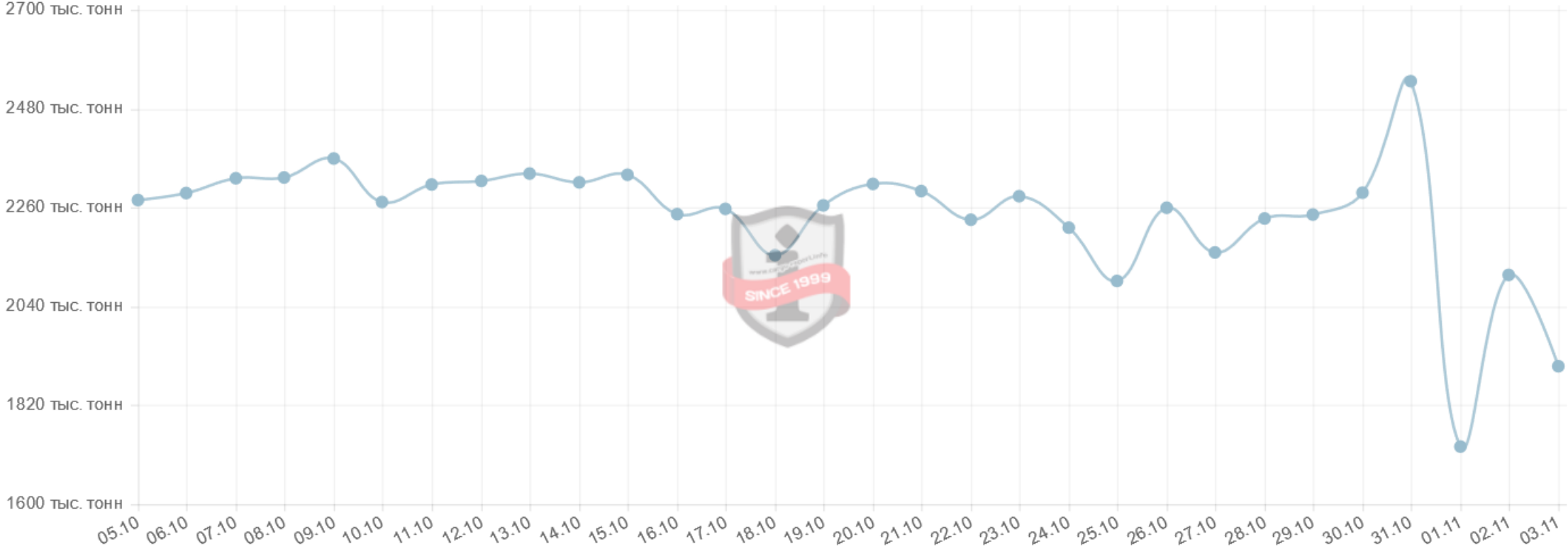
- Russian Railways = Passengers + Freight

Freight trains

- Inland
- Export
- Import
- Transit

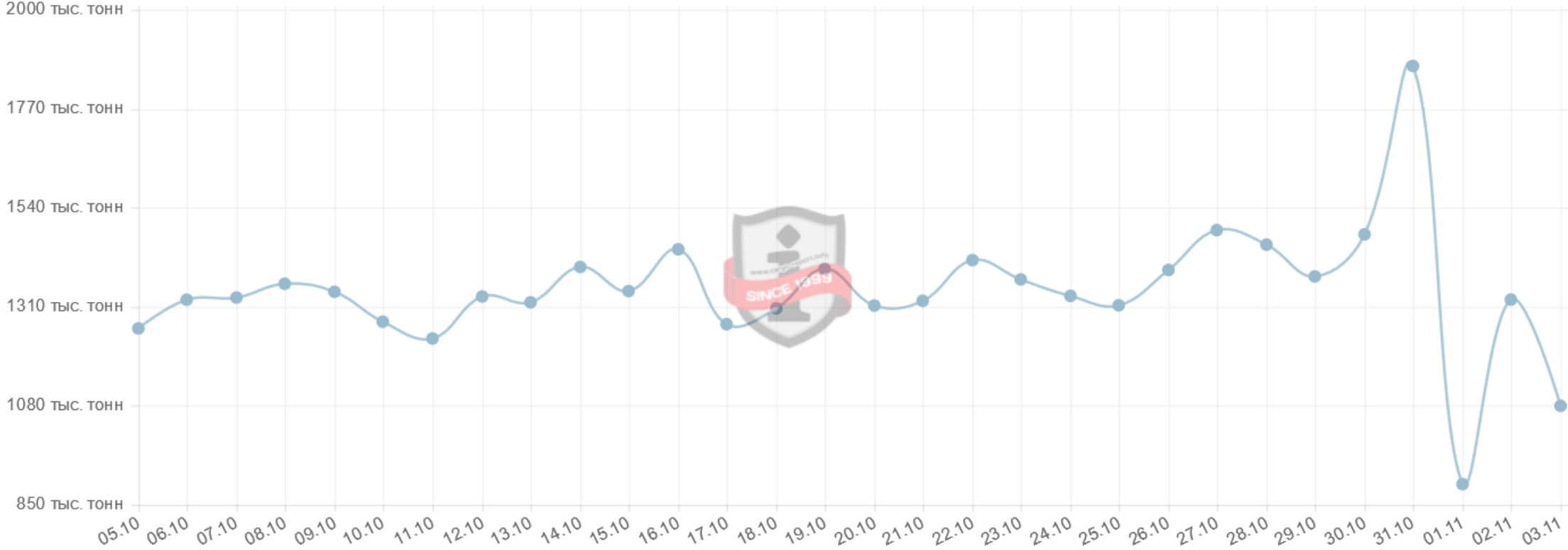
Total daily loading (inland shipment, 2020)

Thousand tons



Total daily loading (export, 2020)

Thousand tons



Inland shipments by cargo October 2018 (September 2020)

- Mineral construction materials - 18 mn tons (21 mn tons)
- Oil products - 12 mn tons (10 mn tons)
- Ores - 6 mn tons (9 mn tons)
- Black metals - 4.5 mn tons (4.2 mn tons)

Export shipments by cargo

October 2018 (September 2020)

- Coal – 17 mn tons (17 mn tons)
 - 2018: 25% - Cyprus, 20% - Japan, 10% - UK
 - 2020: 26.6% - Cyprus, 25.4% - Japan, 12.6% - China, 7.7% - UK
- Oil products – 7.5 mn tons (6.3 mn tons)
 - 2018: 48% - Netherlands, 23% - Italy, 10% - China
 - 2020: 48.9% - Netherlands, 24% - Italy, 8.7% - China
- Fertilisers – 2.5 mn tons (3 mn tons)
 - 2018: 26% - China, 22% - Switzerland, 17% - Brazil
 - 2020: 29.7% - China, 20.7% - Brazil, 16.7 - Switzerland
- Black metals – 2.5 mn tons (2.2 mn tons)
 - 2018: 15% - Turkey, 14% - Taiwan, 13% - Italy
 - 2020: 17.4% - Taiwan, 16.2% - Turkey, 10.6% - Mexico
- Timber – 2.5 mn tons (2.3 mn tons)
 - 2018: 58% - China, 14.5% - Finland
 - 2020: 57.2% - China, 16.4% - Finland

Notes

- Mineral construction materials for internal consumption
- Oil products crucial in internal consumption and for export
- Oil products, ores and black metals: internal consumption > export
- Coal mostly goes for export

Russian Railways = 16 railroads

1. Oktyabrskaya
2. Moscow
3. Gorkovskaya
4. North
5. North-Caucasian
6. South-East
7. Privolzhskaya
8. Sverdlovskaya
9. South-Ural
10. West – Siberian
11. Kuibyshevskayaya
12. Krasnoyarskaya
13. East-Siberian
14. Zabaikalskaya
15. Far East
16. Kaliningrad

Corporate structure

- **Monopoly**

- Subsidiaries / affiliated organisations:
 - Railroads
 - Operating units
 - Transporting companies
 - Technical procurement
 - Infrastructure development
 - Repair units
 - Track facilities

- **Competition**

- competitive development of each segment within the railway industry
- efficiency and quality of the offered services

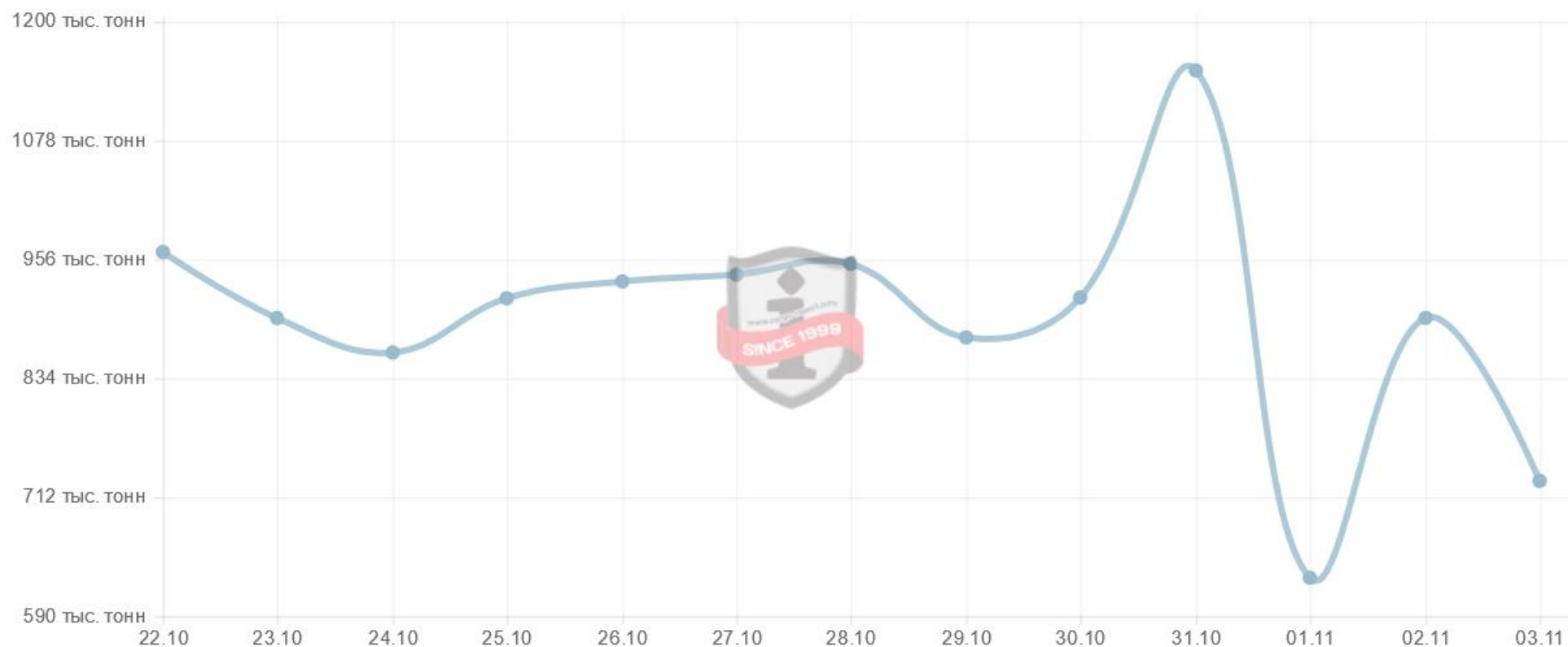


Subsidiaries by activities

- Logistics Service Providers
- Warehousing Providers
- Rolling stock services
- Maritime Logistics

Daily loading to sea ports October - November 2020

Thousand tons



Loading to sea ports by basin, 2017 (2020)

- Baltic Sea basin – 102 mn tons (84 mn tons)
 - 5 ports, including St. Petersburg
- Far Eastern basin – 88 mn tons (76 mn tons)
 - 7 ports
- Azov-Black Sea basin – 70 mn tons (49 mn tons)
 - 7 ports
- Arctic Sea basin – 23 mn tons (15 mn tons)
 - 3 ports
- Caspean Sea basin – 211.1 thousand tons (112.9 thousand tons)
 - 3 ports
- PS: River port – different story

Operations

Threads schedule – movement of the train in a Cartesian coordinate system, where the X axis is the time axis, and the Y axis is the distance axis

- Fixed routes / not connected to a cargo type
- Railroads receive / pass the freight train
- Change of locomotive brigades
- Change of locomotives

Challenges for performance:

- Priority to passenger trains
- Waiting for locomotives/ locomotive brigades
- Capacity limits (no technical documents)
- Repair works on tracks, so called 'windows'



Freight stations



- Freight stations of different class
- Sorting freight stations (e.g. St. Petersburg Sorting)



KPI: Journey speed

Journey speed – an average daily speed of a freight train, that takes into account the waiting time at all the stations on the way, except for the dispatch and the final station. In other words, it shows with what speed the train proceeds from the dispatch to destination, expressed as km/ day.

Actual vs. Standard:

- Avg. for each thread
- Avg. for all the trains proceeding over 24 hours (18:00 – 18:00)
- Avg. for each railroad
- Avg. / month, or year

Oktyabrskaya RR:

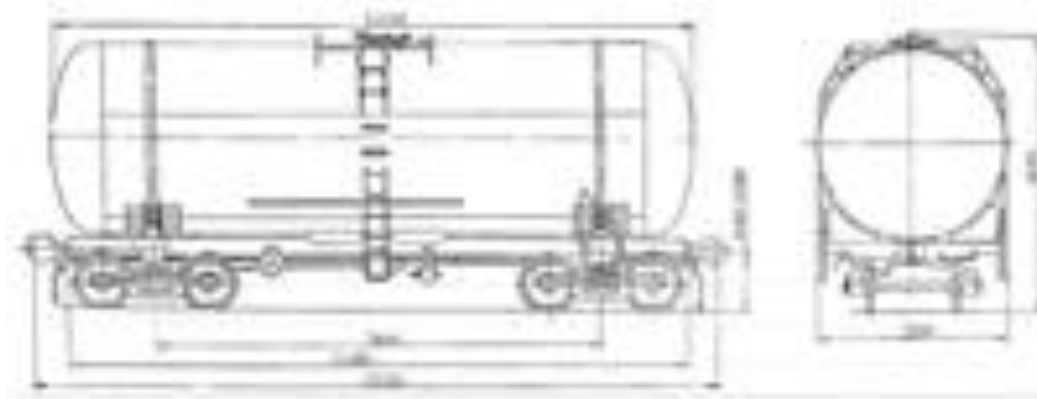
- ✓ 13 container trains per 24 h
- ✓ 2-3 export / import/ transit trains
- ✓ Delay over 36 hours called 'abandoning' the train
- ✓ Earlier/ later arrival within 30 min to standard time is not considered a delay

Rolling stock

- Tanks
- Open-box wagons
- Covered wagons
- Hopper wagons
- Refrigerators
- Car carriers

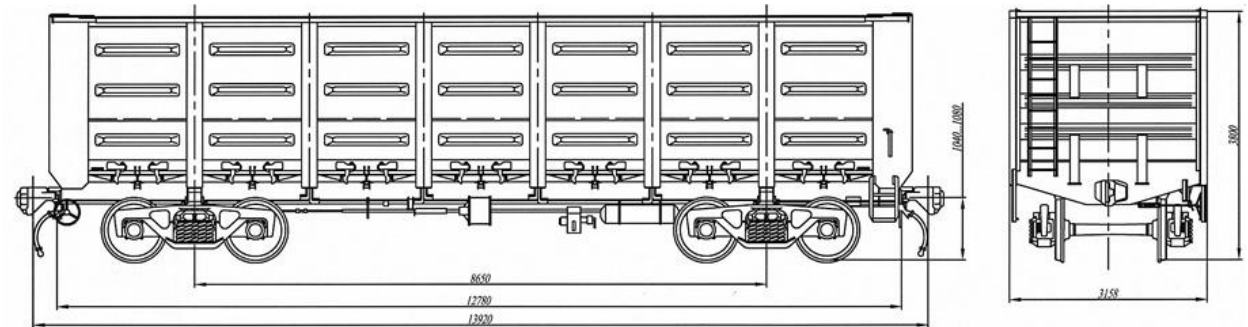
Tanks

- petrol
- oil products
- alcohol



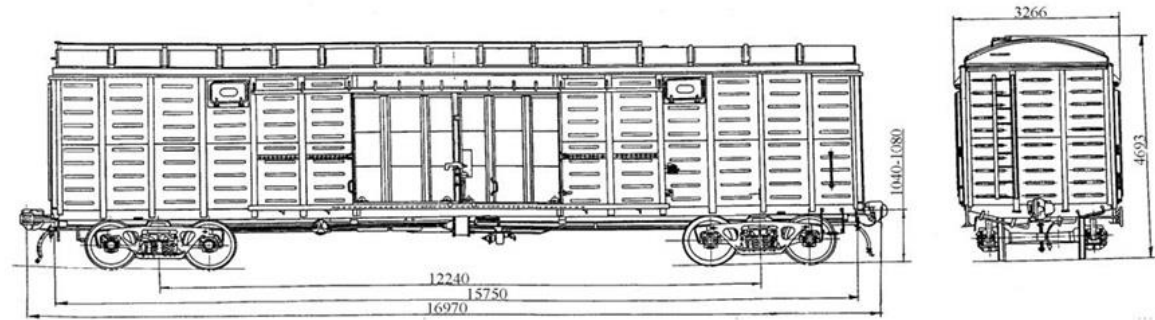
Open-box wagons

- nonaggressive bulk cargo
- requiring no protection from precipitation and weather
- loose non-dusty, bulk, stacked, piece and other goods



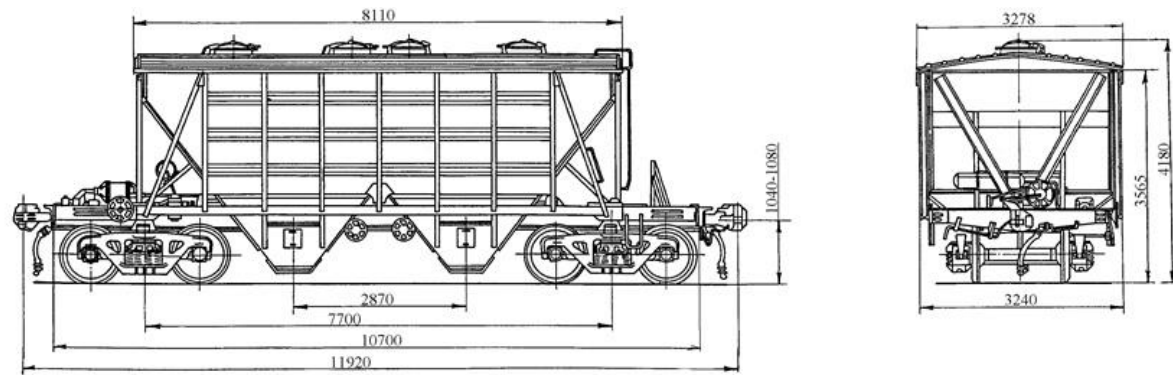
Covered wagons

- goods requiring weather protection
- grain and a wide range of other



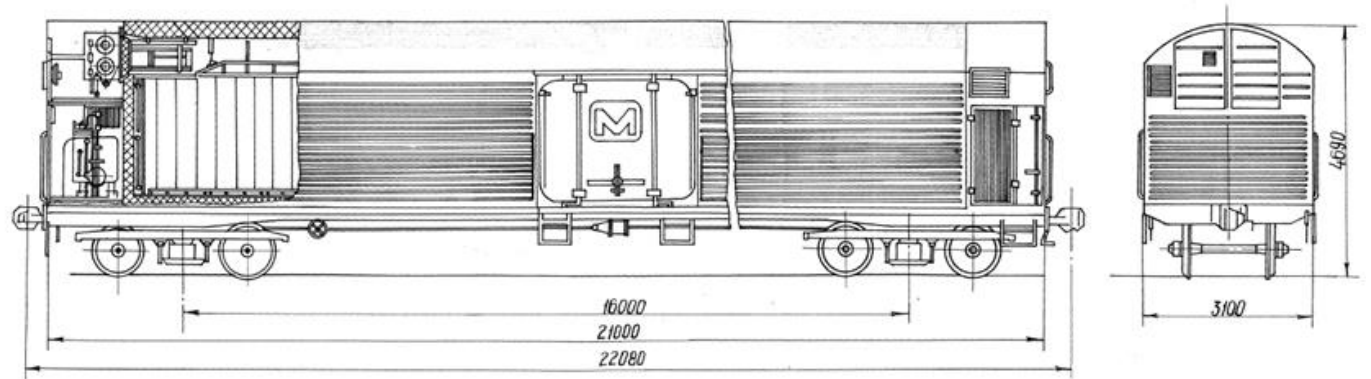
Hopper wagons

- Bulk cargo, e.g. grain



Refrigerators

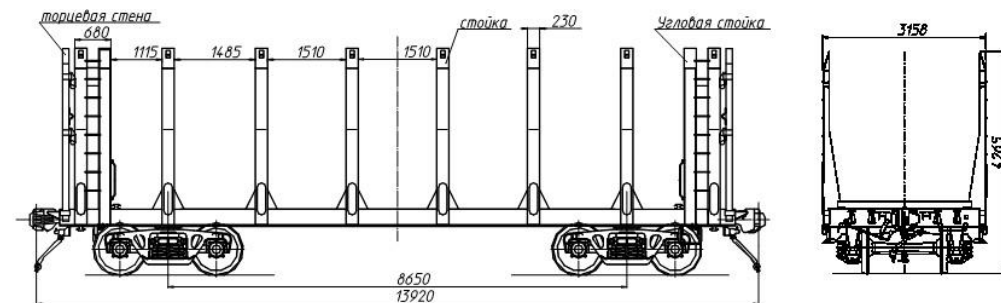
- perishable goods



Flat wagons

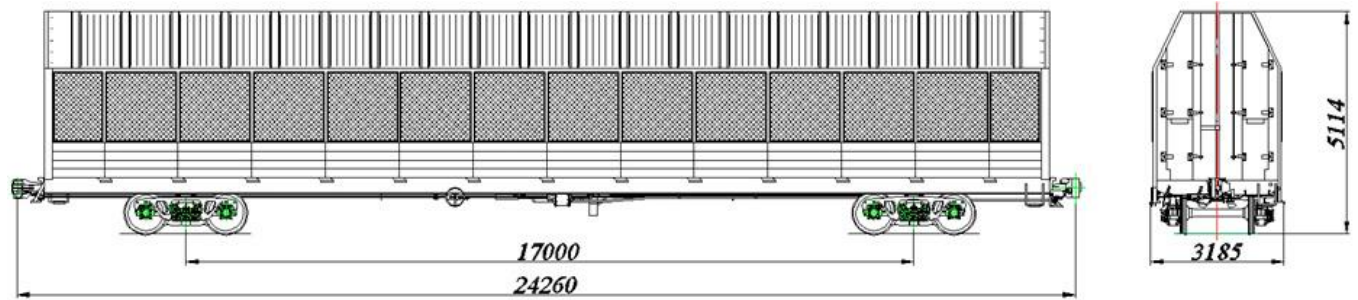
- timber products, wheeled machines within the internal dimensions of the wagon
- not requiring weather protection

4-осная платформа для перевозки лесоматериалов с 16-ю стойками, модель 13-198-01



Car carriers

- for transporting cars



Employment

- 759 028 employees (2016)
- Privileges for employees
 - Free tickets for a long-distance train once a year
 - Discounts when purchasing real estate
 - Free of charge commuter trains (up to 300 km)
 - Health care services
 - And other

Corporate culture

- **Semi-military company**

- Subordination
- Irregular hours
- Many conflicts and tense environment
- Creativity welcome for Strategy only, not operations
- Deviations reported in written, signed and delivered
- Men have better career opportunities
- Lunch separate for managers and employees
- Continuity of generations in professions

Role of Government

- Key, number 1 stakeholder
- Values - power and funds shift
- Development = economy + society + environment
 - Triple bottom line of CSR
- Government
 - decides what is included versus excluded within CSR domain

Strategic goals to 2030

- Economic
 - Developing single efficient transport system in the country
 - Increasing sustainability of rail transport and the safety
 - Expanding geographical presence in the transport services markets,
 - Increasing the investment attractiveness of rail transport
- Environmental
 - Technical re-equipment of railway infrastructure
 - Modernization of rolling stock and the acquisition of new rolling stock
 - Integrating environmental factors in management decision making.
- Social
 - solving the problems of economic and social development of the regions, where the company is a key employer

Social Responsibility

‘Northern Delivery’ – a complex of measures by the Government taken to ensure delivery of vital goods to remote areas of Far North of Siberia, Far East and of European part of Russia on annual basis before the winter. The priority is vital goods, like food and oil products. Purchase from South of Russia is centralized.

Reasons:

- Absence of own agricultural produce and industry in the Far North
- Remoteness of main industrial areas for thousands kilometers that makes delivery too complex and expensive for private companies even during the summer
- Absence of infrastructure (railway: 80/85 subjects of RF) in most arears of Far North, where air and maritime are the only means of delivery

Northern Sea Route

- Far North of Russia:
 - Northern Sea Route
 - Barents Sea
 - Kara Sea
 - Laptev Sea
 - East Siberian Sea
 - Exploration for natural resources



Key notes

- Connecting all the federal okrugs
- Safe transportation of freight over long distances
- High potential for extending infrastructure
- One of the biggest employers in Russia
- Semi-military company
- Integral to delivery of produce to remote areas of Russia
- Integral to developing Northern Sea Route

Thank you!

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