ASSETS OF THE COMPANY

Structure and Dynamics of Assets

Passenger rolling stock is FPC's key asset, making up 90% of total assets. As at the end of 2022, the Company's carriage inventory totalled 16,000 carriages.

Structure of the Company's assets as at 31 December 2022

RUB billion

Assets	Book value
Passenger carriages	266.24
Fixed property	22.58
Other movable property	7.74
Intangible assets	0.41
Land parcels	0.14
Total	297.11

Changes in the carriage fleet structure

carriages

Carriage type	Description	Fleet as at 31 December 2021	Acquired	Retired	Fleet as at 31 December 2022
Deluxe	Compartment carriages, each compartment featuring a shower room, a washbasin and a toilet	114	–	–	114
First-class sleeping carriages	Compartment carriages with double berth compartments	470	–	6	464
РИЦ (RIC)	Second-class sleeping carriage, Euro standard size	266	–	1	265
МИКСТ (MIXED)	Compartment carriages with deluxe and first-class sleeping compartments	13	–	–	13
К	Second-class sleeping carriages (with four-berth compartments)	7,013	409	154	7,268
О	3-class open sleeping carriage	6,549	117	48	6,618
МО	Interregional carriages	599	–	28	571
Б	Baggage carriages	112	–	21	91
Р	Dining carriages	662	14	33	643
Other carriages	Power stations and ancillary carriages	37	7	–	44
Total		15,835	547[1]	291	16,091

Current condition of the passenger carriage fleet

16,091 carriages

FPC's passenger carriage fleet as of 31 December 2022

FPC operates highly diverse rolling stock:
- by type and age (average age is about 17 years)
- by wear – approximately 54%
- by air-conditioning equipment – 89.5% of the fleet
- by eco-friendly toilets – about 82% of the fleet

The average carriage age, a key metric showing the technical condition of a carriage fleet, was 17.3 years as at 31 December 2022.

[1] Taking into account the commissioning of carriages built in 2021.

Changes in the carriage fleet structure

carriages

Carriage type	Description	Fleet as at 31 December 2021	Acquired	Retired	Fleet as at 31 December 2022	Average age of carriages as at 31 December 2021, years	Average age of carriages as at 31 December 2022, years	Average wear, %
Deluxe	Second-class sleeping carriage (each featuring a shower room, a washbasin and a toilet)	114	–	–	114	14.2	15.2	50.4
First-class sleeping carriages	Compartment carriages with double berth compartments	470	–	6	464	14.8	15.6	51.7
РИЦ (RIC)	Second-class sleeping carriage, Euro standard size	266	–	1	265	12.8	13.7	39.4
МИКСТ (MIXED)	Compartment carriages with deluxe and first-class sleeping compartments	13	–	–	13	9.0	10.0	25.7
К	Second-class sleeping carriages (with four-berth compartments)	7,013	409	154	7,268	18.4	18.1	57.9
О	3-class open sleeping carriage	6,549	117	48	6,618	15.3	15.9	47.1
МО	Interregional carriages	599	–	28	571	15.4	15.8	44.7
Б	Baggage carriages	112	–	21	91	22.6	23.0	80.4
Р	Dining carriages	662	14	33	643	27.0	27.0	68.2
Other carriages	Power stations and ancillary carriages	37	7	–	44	22.1	24.2	63.3
Total		15,835	547	291	16,091	17.1	17.3	53

Modern, higher-performance rolling stock

To meet the demands of increasing passenger traffic as well as reduce travel times and ticket prices, JSC FPC purchases carriages with advanced technical features and improved interior design. All new rolling stock is equipped with environmentally friendly toilet facilities (bio toilets) and air conditioning units.

Double-decker carriages

801 double-decker carriages

in the Company's rail fleet

The fundamental advantage of a double-decker carriage is its increased passenger capacity, allowing to carry more passengers on busy routes, especially to southern resorts. Double-decker carriages are as comfortable and equipped as modern conventional carriages, and even surpass them in many other respects.

Depending on the class, double-decker carriages have double-berth or four-berth compartments. Air conditioning and heating units in each carriage help constantly maintain a comfortable microclimate. Environmentally friendly toilet facilities with three cabins allow passengers to use toilets at stops and within resort areas. Slackless couplings and pressure-proof gangways helped reduce noise and vibration in carriages and increase the safety of passengers when moving from carriage to carriage. The demands of disabled passengers have also been considered: one of the carriages in each train (administrative carriage) is equipped with special lifts for boarding wheelchair users from low platforms and has a special compartment and toilet.

In addition to two-berth and four-berth compartments, the train running between Moscow and Voronezh now has double-decker carriages with seats in standard and improved interiors. The Russian-made double-decker seating carriage features curved glass windows on the second deck, used for the first time in the history of Russian carriage building.

The carriage is equipped with new modern rigid slackless couplings and pressure-proof gangways. For visually impaired passengers, all signage in carriages is duplicated in Braille.

РИЦ (RIC) type carriages

200 RIC carriages

in the Company's rail fleet

The RIC sleeping carriage, model 61-4476 (WLABmz), is intended for international passenger services in the UIC countries (from French – Union Internationale des Chemins de fer, UIC) (1,435-mm gauge), the European part of the Russian Federation, the CIS, and Baltic countries (1,520-mm gauge).

The carriage complies with mandatory standards of the Russian Federation (GOST, NB ZhT — Railway Transport Safety Regulations) and the European Community (Technical specifications for interoperability, TSI; European Norm, EN, and UIC) in terms of design and construction, as well as exterior and interior design.

Operation between railway networks with different track gauges is carried out by replacing bogies at gauge-changers using existing infrastructure facilities (gauge changing station at Brest).

The maximum operating speed is 200 km/h on 1,435-mm gauge tracks and 160 km/h on 1,520-mm gauge tracks.

Carriage-2019

997 carriages

in the Carriage-2019 model range in the Company's fleet

The carriages are used by all branches of the Company.

The Carriage–2019 model range was designed by a supplier. The model range includes model 61-4516 (third-class open-plan sleeping carriages), model 61-4517 (second-class sleeping carriages) and model 61-4529 (administrative carriages). The carriage designs have incorporated the most advanced features popular with passengers.

Specific features of the new model range carriages:
- Use of semi-automated customer service technologies with a single service compartment for two carriages
- No redundant vestibules, which allows creating additional areas for extra passenger comfort during travel (shower, multifunctional service area with vending machines, hot and cold drinking water purifiers, and other equipment)

This design means that new carriages are included in a train set as twin units: one carriage with a service compartment plus one carriage with no service compartment.

The design features of the new model range carriages also include:
- Pressure-proof gangways
- Full LED lighting
- Power sockets (220 V) and USB ports at each berth
- Sensor taps, hand driers and baby changing tables in toilets
- Convertible tables and personal safes for each passenger in compartment carriages
- Automated sliding interior doors
- Renovated interior design

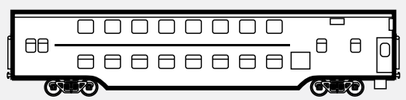
The administrative carriage features a compartment to accommodate two wheelchair users along with their travelling companions, a specially designed toilet with shower and boarding lifts in the redundant vestibule. The disabled passenger compartment is equipped with a passenger information display featuring a text-to-voice service activated by a button.

New carriage types

40 years

average carriage life

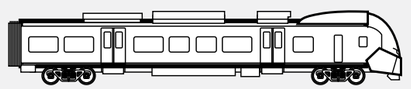
Double-decker compartment carriage with berths. Model 61-4465



64 passengers | 160 km/h

- Environmentally friendly toilet facility
- Air conditioner
- Water cooler
- Audio and video system

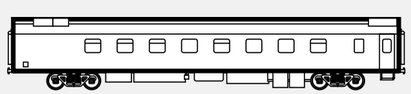
Lastochka higher-speed electric train (Desiro RUS)



443 passengers | 160 km/h

- Environmentally friendly toilet facility
- Air conditioner (an individual unit in each driving cab and each passenger compartment)
- Retractable steps for easy boarding from and alighting to low (220 mm) platforms
- Passive safety system for passengers
- Floor-mounted racks for large hand luggage

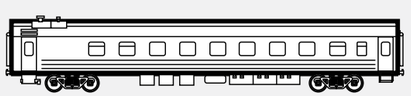
RIC type sleeping carriage for use on international routes. Model 61-4476



32 passengers | 160–200 km/h

- Environmentally friendly toilet facility, including a shower
- Climate control (heating, ventilation, cooling)
- Water supply system
- Reading lights
- Power sockets to charge mobile phones or laptops
- Public address system with a volume control

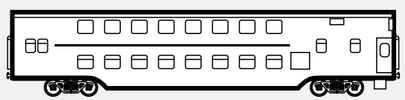
Passenger seating carriage. Model 61-4458



60 passengers | 160 km/h

- Environmentally friendly toilet facility
- Air conditioner
- Water cooler
- Audio and video system
- Attendant call buttons

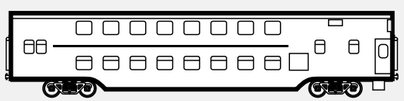
Compartment carriage for train sets. Model 61-4465



64 passengers | 160 km/h

- Environmentally friendly toilet facility
- Air conditioner
- Water cooler
- Audio and video system

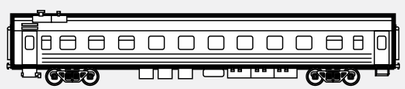
Double-decker carriage with seats. Model 61-4492



60 berths in first-class carriage
104 berths in second-class carriage | 160 km/h

- Environmentally friendly toilet facility
- Air conditioning and purification system
- Passenger information displays
- Audio and video system
- Fire alarm system
- Train security and communication monitoring and control system

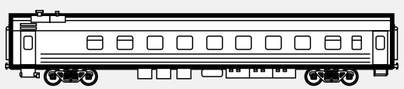
Double-decker compartment carriage with seats. Model 61-4462



36 (18) passengers | 160 km/h

- Environmentally friendly toilet facility
- Air conditioner
- Water cooler
- Audio and video system

Open sleeping carriage. Model 61-4447



54 passengers | 160 km/h

- Environmentally friendly toilet facility
- Air conditioner
- Fire-extinguishing system connected to the on-board water supply system

Carriage-2019

- Twin units: transition to semi-automated customer service technologies with a single attendant team per two carriages; smart use of the carriage space (including service areas and shower cubicles)
- Single-vestibule body: reduced labour intensity of carriage equipment maintenance
- LED lighting: reduced energy consumption and operating expenses
- Autonomous operation of bio toilets: continued operability of toilet modules, translating into improved equipment reliability
- Improved soundproofing and vibration insulation
- Wi-Fi hotspot
- Intercoms for communication with a train attendant
- Full-fledged self-service area with vending machines and a purifier
- Convertible tables and personal safes in compartments
- Automated sliding interior doors
- Individual temperature control at each compartment
- Shower cubicle in each carriage

Carriage–2020, model 61–4523

115 of 801
double-decker carriages –
are from Carriage–2020 range

Carriage–2020 is a new design of double-deck carriages. The project features:
- Use of twin units
- Increased double-decker height in size Tpr under GOST 9238-2013 (upper outline along the a-b-b1-a2 line), improving passenger comfort on upper berths of the second deck by increasing the distance between the berth and the ceiling
- Refreshed interior and modern design
- Bogies with air suspension system (improved smoothness and passenger comfort)
- Next-generation system for detecting potential failures (mechanical parameters monitoring, real-time data transmission to the situation centre, mileage intervals before first maintenance (or TO-1) increased to 10,000 km)
- Semi-automated customer service technologies with a single service compartment for two carriages (improving train crew productivity)

Features to provide additional comfort for passengers in the carriage:
- Modern design developed using international best practices and high-quality finishing materials

Dining carriage–2020, model 61–4525

The design of 61-4525 double-decker dining carriage is based on a comprehensive analysis of the operating experience of the previous model carriage – 61-4473.

The ground floor houses the kitchen, washing room and bar, while the first floor houses the dining room. Some of the equipment such as induction hobs and dishwashers has been installed for the first time. There is a lift to move hot food and used dishes between the first and second floors. The sanitary part of the carriage accommodates two eco-friendly toilet facilities, a shower and a separate waste collection area.

The dining carriage is designed to operate as a part of double-decker trains, made up of carriages of the new 2020 model range: these are 61–4523 and 61–4524 models. For the first time, the double-decker dining car is equipped with air-cushioned suspension that provides smoother riding when the train is in motion. The new dining carriage has a first-ever ticket option for passengers – all seats in the dining room on the first floor are designed as separate seats, are numbered, and the seats are equipped with armrests and the longitudinally-arranged seats have a swivel mechanism. The dining room is also fitted with individual lights with adjustable colour and brightness, 220 V and USB sockets, wireless charging points for gadgets and a waiter call button. The dining car has baggage racks and a shelf for bulky baggage. The process chain of the installed equipment is selected so to implement the Catering Concept.

Rolling stock improvement in 2020–2025

JSC FPC is continuously working to improve passenger carriage design with a particular focus on the comfort and functionality of a passenger seat.

The Company, together with JSC Transmashholding and JSC Tver Carriage Works, is working on the development of new types of T-gauge open-plan carriages in Tver. The following types of carriage layouts were designed and evaluated by experts and potential passengers: modular, capsule and herringbone.

These carriages are of interest because they are innovative and modern.

In terms of all metrics and evaluation criteria, including functionality, emotion, and aesthetics, a capsule carriage with a capacity of up to 56 passengers and a longitudinal staggered arrangement of passenger seats tops the ranking of conceptual carriage layouts under consideration.

However, none of the examined layouts properly satisfies the needs of the contemporary passenger, and they all scored poorly in terms of serviceability.

The factors that are completely unconnected to the new concept, such as individual lighting, tables, curtains, and gadget charging, received the highest ratings for the layouts that were assessed.

All of the layouts under study had much worse ergonomics than a conventional third-class open sleeping carriage, as shown by a comparison. Subject to the introduction of new materials and technological advancements in terms of space optimisation and increased passenger comfort (curtains, design of tables and stairs, individual light and ventilation, space for baggage accommodation), the conventional third-class open sleeping carriage is still in demand and looks promising for production.

Capsule carriages may be of interest to passengers as an addition to current carriage types rather than as a replacement for the traditional open-type carriage, particularly in regional trains on a select few routes with night travel modes. They may also be of interest to those travelling with small kids who do not occupy a separate seat.

Launching a new type of car on a network-wide scale is associated with high financial risks, that's why we consider an option of fine-tuning the carriage layout to accommodate the results of the evaluation with subsequent re-testing of resultant prototype carriages. The final decision on their possible purchase and trial operation will be based on the findings obtained.

Upgrading the carriages

In addition to new rolling stock purchases, JSC FPC focuses on upgrading and improving the equipment of carriages built earlier.

In 2019, a new concept for an open-plan carriage was introduced. The new carriages were converted from traditional series-produced carriages during overhaul reconditioning.

The main feature of the new concept is the personal space optionality offered to each passenger by using partitions installed along the aisle, and individual curtains. The refreshed third-class open-plan sleeping carriage provides for a modular replacement of interior elements, which will help reduce repair time and costs and also enable changes to the interior over the service life of the carriage.

Throughout 2020 and 2021, the Company kept expanding its fleet with upgrade third-class open sleeping carriages. A total of 67 carriages of this type underwent overhaul reconditioning.

Based on the successful projects for overhaul reconditioning of third-class open-plan sleeping carriages with interior renewal, a refreshed interior design was developed for second-class sleeping carriages 47K subjected for overhaul reconditioning. All innovations successfully used in the overhauled third-class open-plan sleeping carriages were also leveraged for second-class carriages.

In 2021–2022, the overhaul reconditioning programme refreshed the interiors of 274 second-class sleeping carriages.

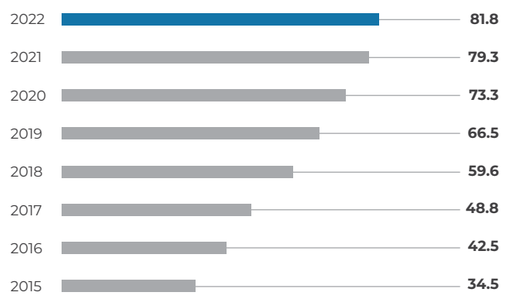
In 2020–2022, the Company launched branded carriages for the Ruskeala Express, Urals Express and Sochi trains as part of efforts to develop rail tourism. The Ruskeala Express interiors were inspired by the famous Nikolayevsky Express carriages, and the Urals Express and Sochi carriages were retro-styled after the 1970s–1980s Soviet Union period. All carriages are built using latest technology and fitted with advanced equipment.

According to the new 2022 catering concept, five single-deck dining carriages with kitchen space were subject to outfitting: microwave ovens, professional baking ovens, dishwashers, additional information lines, coffee machines, heat shelves and the kitchen space for serving and serving dishes was upgraded. Under the same concept, four administrative cars were overhauled: now they have refrigerators and juicers, a new set of electrical equipment, liquid heating, compartments for special needs people with a set of special furniture, a buffet with a set of furniture, microwave ovens and other equipment.

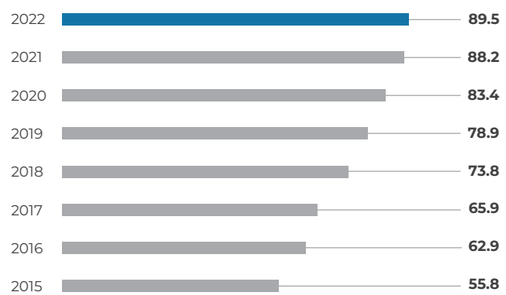
The installation of environmentally friendly toilets is underway. In 2022, the share of cars equipped with air conditioning units increased by 1.3% and environmentally friendly toilet facilities – by 2.5% of the bonded fleet.

Comparative data on the availability of air-conditioned carriages and eco-friendly toilet facilities

Share of carriages with eco-friendly toilet facilities, % of the bonded fleet



Share of carriages with air conditioning units, % of the bonded fleet



There are 13,611 carriages (89% of the fleet) equipped with charging sockets.

JSC FPC completed a project to equip its branded trains with high-speed data lines, covering a total of 7,462 carriages. The data line is used to provide passengers with access to the Poputchik (Fellow Passenger) multimedia portal, as well as for technical purposes – to support the operation of the carriage equipment monitoring and diagnostics system, the CCTV system, and the passenger boarding control system.

The Company also plans to use the data line for providing a voice communication service for the train crew and for deploying the software to replace legacy equipment used in the passenger train security and communication monitoring and control system.

Water and air sanitisers are also being installed, with the share of carriages already equipped with these solutions already standing at 40.2% and 50.6%, respectively.

The wooden window frames in the passenger carriages have been almost completely replaced by aluminium-plastic ones.

List of trains with single-option route sections in the 2022/2023 train schedule

Item	Train	Service
FAR EASTERN BRANCH		
1	No. 325/326	Khabarovsk – Neryungri
2	No. 351/352	Vladivostok – Sovetskaya Gavan
3	No. 363/364	Tynda – Komsomolsk-on-Amur
4	No. 663/664	Khabarovsk – Chegdomyn
EAST SIBERIAN BRANCH		
5	No. 67/68	Abakan – Moscow
6	No. 77/78	Abakan – Moscow
7	No. 124/124	Abakan – Krasnoyarsk
8	No. 362/361	Irkutsk – Naushki (with trailed Irkutsk – Ulan-Ude carriages)
9	No. 381/382	Severobaikalsk – Ulan-Ude
10	No. 601/602	Priargunsk – Chita
11	No. 606/605	Krasnoyarsk – Karabula
WEST SIBERIAN BRANCH		
12	No. 109/110	Omsk – Rubtsovsk
13	No. 347/348	Barnaul – Severobaikalsk
14	No. 602/601	Biysk – Tomsk
15	No. 609/610	Tomsk – Novokuznetsk
16	No. 635/636	Tomsk – Bely Yar
URALS BRANCH		
17	No. 127/128	Ekaterinburg – Priobye
18	No. 603/604	Yekaterinburg – Solikamsk
19	No. 609/610	Ust'-Akha – Yekaterinburg
GORKY BRANCH		
20	No. 51/52	Nizhny Novgorod – Izhevsk
21	No. 377/378	Kazan – Novy Urengoy
22	No. 379/380	Moscow – Pervomaisk/Bereshchino
23	No. 397/398	Kirov – Kazan
VOLGA BRANCH		
24	No. 379/380	Kamyshin – Moscow
KUIBYSHEV BRANCH		
25	No. 675/676	Ufa – Sibai
NORTH CAUCASUS BRANCH		
26	No. 677/678	Novorossiysk – Vladikavkaz
MOSCOW BRANCH		
27	No. 85/86	Moscow – Klimov
28	No. 141/142	Moscow – Kursk
29	No. 602/601	Moscow – Rybinsk
30	No. 687/688	Stavropol – Kavkazskaya (rolling of carriages for the Stavropol – Moscow service)
NORTHWEST BRANCH		
31	No. 9/10	Moscow – Pskov
32	No. 53/54	Usinsk – Syktyvkar
33	No. 77/78	Vorkuta – St. Petersburg
34	No. 87/88	St. Petersburg – Smolensk
35	No. 143/144	Yaroslavl – Murmansk
36	No. 305/306	Usinsk – Syktyvkar
37	No. 350/682 – 681/349	St. Petersburg – Kostomuksha
38	No. 375/376	Vorkuta – Moscow
39	No. 371/371	Kotlas – Arkhangelsk
40	No. 609/610	Sonkovo – St. Petersburg
41	No. 653/653	Labytnangi – Vorkuta
42	No. 662/661	Kineshma – Moscow
43	No. 667/668	Karpogory – Arkhangelsk
44	No. 677/678	Koslan – Syktyvkar
45	No. 677/677	St. Petersburg – Velikiye Luki
46	No. 680/679	Petrozavodsk – Kostomuksha
47	No. 691/692	Usinsk – Pechora (rolling of carriages for the Adler – Usinsk through carriages)

Organisational Structure

Organisational structure of JSC FPC (as of 31 December 2022)

Subsidiaries and affiliates of JSC FPC

Management apparatus of JSC FPC

Block subdivisions:
- Rolling stock management
- production development
- transport organisation
- passenger service and quality
- strategic development and digital transformation
- marketing
- human resources and social issues
- security
- corporate governance

Other units
supporting and supervising production processes

Business units of JSC FPC

10 centres

Branches of JSC FPC (10)

Branch management apparatuses

Branch business units (70)

37 carriage sites (CS)

22 passenger carriage depots (PCD)

10 railway agencies (RWA)

1 vehicle transport centre

The organisational structure of JSC FPC comprises the management apparatus, 10 centres, 10 regional branches, and six subsidiaries and other companies with JSC FPC's participation. The regional branches comprise 22 passenger carriage depots, 37 carriage sites, 10 railway agencies and the Vehicle Transport Centre.

The Company has an average headcount of 50,500 employees. JSC FPC's rolling stock fleet consists of 16,100 carriages running in 479 train pairs. The average age of the fleet is 17 years.

JSC FPC branches

1. Northwest Branch
St. Petersburg
2. Moscow Branch
Moscow
3. Gorky Branch
Nizhny Novgorod
4. North Caucasus Branch
Rostov-on-Don
5. Volga Branch
Saratov
6. Kuybyshev Branch
Samara
7. Ural Branch
Yekaterinburg
8. West Siberian Branch
Novosibirsk
9. East Siberian Branch
Irkutsk
10. Far East Branch
Khabarovsk