

# Assets of the Company

## Structure and Dynamics of Assets

Passenger rolling stock is FPC's key asset, making up 91% of total assets. As at the end of 2023, the Company's carriage inventory totalled more than 16,300 carriages.

### Structure of the Company's assets as at 31 December 2023, RUB billion

Assets	Book value
Passenger carriages	296.33
Fixed property	21.83
Other movable property	8.86
Intangible assets	0.19
Land parcels	0.13
<b>Total</b>	<b>327.34</b>

### Changes in the carriage fleet structure, carriages

Carriage type	Description	Fleet as at 31 December 2022	Acquired	Retired	Fleet as at 31 December 2023	Average age of carriages as at 31 December 2022, years	Average age of carriages as at 31 December 2023, years	Average wear, %
Deluxe	Second-class sleeping carriage (each featuring a shower room, a washbasin and a toilet)	114	-	-	114	15.2	16.2	53.4
CB	Compartment carriages with double berth compartments	464	13	3	474	15.6	16.1	52.9
РИЦ (RIC)	Second-class sleeping carriage, Euro standard size	265	-	-	265	13.7	14.7	41.8
МИКСТ (MIXED)	Compartment carriages with deluxe and first-class sleeping compartments	13	-	-	13	10	11	28.1
K	Second-class sleeping carriages (with four-berth compartments)	7,268	306	150	7,424	18.1	18	57.6
O	Third-class open sleeping carriage	6,618	209	32	6,795	15.9	16.2	48.1
MO	Interregional carriages	571	-	58	513	15.8	15.4	51.8
Б	Baggage carriages	91	1	8	84	23	23.4	84.7
P	Dining carriages	643	9	31	621	27	27	71.8
Other carriages	Power stations and ancillary carriages	44	6	4	46	24.2	25.3	66.3
<b>Total</b>		<b>16,091</b>	<b>544<sup>1</sup></b>	<b>286</b>	<b>16,349</b>	<b>17.3</b>	<b>17.4</b>	<b>53.7</b>

<sup>1</sup> Taking into account the commissioning of carriages built in 2022.

North-Western branch

**3,200** units

Kuibyshev branch

**1,300** units

Moscow branch

**1,900** units

Ural branch

**1,800** units

Gorky branch

**1,300** units

West Siberian branch

**1,100** units

North Caucasus branch

**1,900** units

East Siberian branch

**1,400** units

Volga branch

**1,400** units

Far Eastern branch

**1,000** units

## Current condition of the passenger carriage fleet

# 16,349

 cars

is FPC's fleet as at 31 December 2023

FPC operates a diverse rolling stock:

- by type and age (average age is about 17 years)
- by wear – approximately 54%
- by furnishing with air conditioning units – 90.7%
- by furnishing with environmentally friendly toilets – about 83.8%

The average carriage age, a key metric showing the technical condition of a carriage fleet, was 17.4 years as at 31 December 2023.

## 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

# 902

 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 furnished as modern conventional carriages, and even surpass them in many other respects.

Depending on the class, double-decker carriages have double-berth and 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. Also, one of the carriages in each train (administrative carriage) is equipped with special lifts for boarding wheelchair passengers from low platforms and has a special compartment and toilet.

In addition to two-berth and four-berth compartments, the train running on the Moscow – Voronezh route 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 modern rigid slackless couplings and pressure-proof gangways. For visually impaired passengers, all signage in carriages is duplicated in Braille.

## RIC carriages

# 200

 RIC carriages

in the Company's rail fleet

RIC type sleeper carriage of 61-4476 model (WLABmz) is intended for international traffic within the International Union of Railways – Union Internationale des Chemins de fer, UIC – (track gauge 1,435 mm) and in European part of the Russian Federation, CIS countries and Baltic states (track gauge 1,520 mm).

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

# 1,362

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 sleeping carriages), model 61-4517 (second-class sleeping carriages), and model 61-4-529 (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.

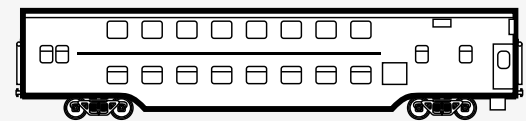


## Modern carriage types

Average carriage life:

at least **40** years

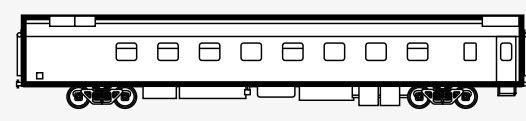
### Double-decker compartment carriage with berths. Model 61-4465



64 passengers 160 km/h

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

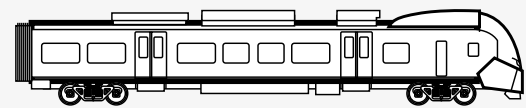
### RIC type sleeping carriage for on international routes. Model 61-4476



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

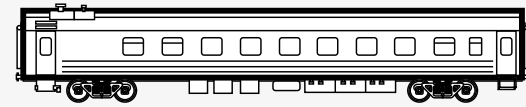
### Lastochka higher-speed electric train (Desiro RUS)



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

### Passenger seating carriage. Model 61-4458

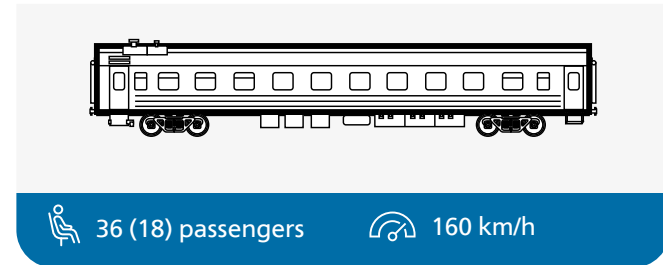


60 passengers 160 km/h

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



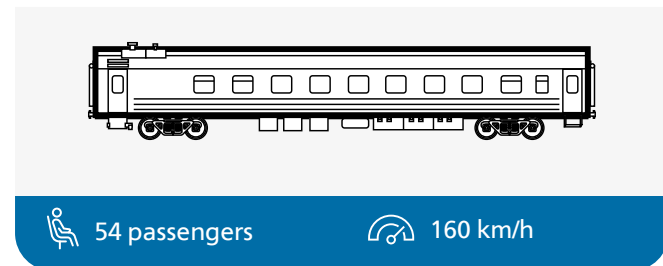
### Compartment sleeping carriage for permanent composition train sets. Model 61-4462



36 (18) passengers 160 km/h

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

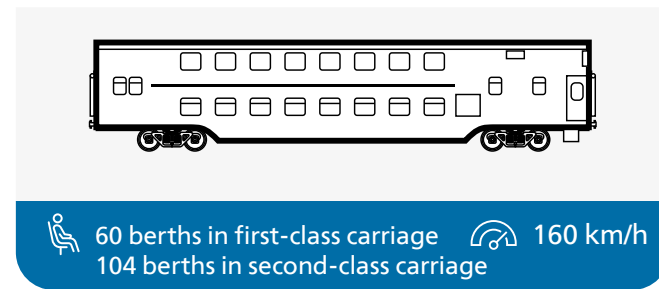
### Open sleeping carriage. Model 61-4447



54 passengers 160 km/h

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

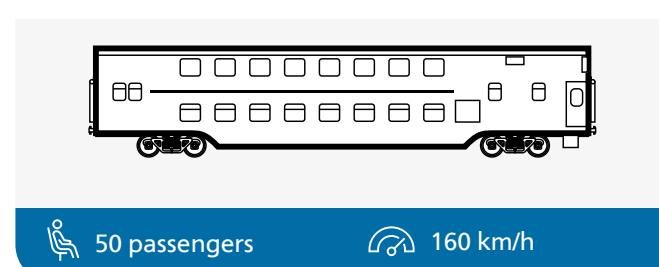
### Double-decker carriage with seats. Model 61-4492



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

- 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-deck compartment staff carriage with sleeping places. Model 61-4472



50 passengers 160 km/h

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

**LED lighting:** reduced energy consumption and operating expenses.

**Autonomous operation of bio toilets:** continued operability of toilet modules, translating into improved equipment reliability.

### 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.

### Carriage–2020, model 61-4523

**115 of 902**  
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)
- A 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
- 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

### Dining Carriage–2020, model 61-4525

The design of the 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 environmentally 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 from the new 2020 model range: the 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 carriage 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, is working on the development of new types of T-gauge carriages in Tver. The use of carriages of this gauge enables an increase in the size of passenger spaces and berths, as well as the creation of separate amenity spaces.

The main objective of such changes is to increase the level of individual comfort and personalise the space for passengers.

The new carriage is larger than the standard 1-BM carriage by 28 cm in width and 73 cm in length. By increasing the overall size of the carriage, the designers were able to enlarge the size of the passenger compartment. It became longer by almost 3 m (from 16 to 18.9 m).

In the course of development, a model of the capsule carriage interior was presented to the general public at the VDNKh Exhibition in Moscow. This carriage accommodates 56 individual capsule seats: 28 each at the bottom and top. The capsules are located along the central aisle of the interior. For the passenger's comfort, the berth is surrounded by an ergonomically shaped backrest in the form of a chair. A passenger can sit cosily and use the stationary table located next to it, which has recesses for glasses. USB sockets and light switches are located on the side surface, between the backrest and the table cover. The lighting concept was created especially for the capsule carriage. Contour lighting, which creates atmospheric lighting, is integrated into the cornices. Also, a number of brighter diodes act as individual lights. Between the table and the wall at the passenger's feet, there is a wide space where personal belongings or small luggage can be placed.

Another feature of the concept is a variable baggage storage system. The traditional option is under the lower capsule. There is also a special baggage compartment in the car. Inside, there are shelves for suitcases and spaces for oversized luggage with special fasteners. This solution accounts for the requests of passengers about accommodating oversized luggage, such as kayaks, skis, and bicycles. This zone can also accommodate a rest compartment for an attendant or a lounge area for passengers.

Special attention is paid to hygiene issues. The carriages will be equipped with a water and air disinfection system (which allows for the inactivation of 95% of bacteria and viruses), ultraviolet treatment of toilets and showers, touchless taps, soap dispensers, and hand dryers. Antibacterial materials will be used in the interior finishes.

Potential passengers and specialists highly appreciated this concept of prospective open carriage. So, it was accepted for further implementation on the new rolling stock.

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, and space for baggage accommodation), the conventional third-class open sleeping carriage is still in demand and looks promising for production, based on the results of a comparison of such carriages with the said concept.

Capsule carriages are 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. Also, they are attractive to those travelling with small kids who do not occupy a separate seat.

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

The launch of the rolling stock in the new gauge requires upgrading the infrastructure and the elimination of a number of barrier places, which predetermines the phasing of its introduction. The date of commissioning will be determined by the readiness of the infrastructure.

In addition, the change in body dimensions requires large-scale investments in the upgrade of the factory's production equipment for the assembly of such carriages. Measures were started to re-equip the plant without reducing the established production output. The first train of prototype carriages is scheduled to be commissioned by the end of 2024.

At the same time, the development of compartment passenger and administrative carriages is planned within the framework of creating T-gauge carriages. At the same time, the development of the compartment carriage provides for five layout variants (versions with and without service areas):

- With service areas (master carriage) – with four-berth compartments
- Without service areas (slave carriage) – with four-berth compartments and a service space
- With service areas (master carriage) – with four-berth compartments and recreation area
- With service areas (master carriage) – with two-berth and one-berth compartments
- Without service areas (slave carriage) – with two-berth and one-berth compartments and baggage area

The layout of the compartment administrative carriage differs from the traditional one in the presence of two compartments to accommodate wheelchair passengers, a baggage compartment, and a kitchen. The purpose of the kitchen is to provide passengers with meals in accordance with the concept of preparing meals on the train from cook-chill food.

### 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 carriage was introduced. The new concept was implemented in a pilot batch of carriages converted from traditional mass-produced carriages while undertaking overhauls with service life extensions.

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 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.

In 2020–2021, JSC FPC continued to refresh its fleet of third-class open sleeping carriages. A total of 67 carriages of this type underwent overhauls with service life extensions.

Based on the successful projects for overhauls (with service life extension) of third-class open sleeping carriages with interior renewal, a refreshed interior design was developed for second-class sleeping carriages 47K, which are subjected to overhaul with service life extension. All innovations successfully used in the overhauled third-class open sleeping carriages were also leveraged for second-class carriages.

In 2021–2023, the programme of overhaul with service life extension refreshed the interiors of 315 second-class sleeping carriages.

In 2020–2022, the Company launched branded carriages for the Ruskeala Express, Urals Express and Sochi trains to promote 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.

As part of the implementation of the new Catering Concept in 2022, work was carried out to retrofit five single-storey dining carriages with kitchen equipment: microwave ovens, high-end baking ovens, dishwashers, additional information trunks, coffee machines, heat shelves were installed, and the kitchen

space for serving dishes was upgraded. Also, four administrative carriages underwent an overhaul with service life extension, in which refrigerators and juicers were installed, and a new set of electrical equipment was added. The carriages are equipped with liquid heating, compartments for persons with disabilities (with a set of appropriate furniture), a buffet with a set of furniture, microwave ovens and other equipment.

The installation of environmentally friendly toilets is underway. In 2023, the share of carriages equipped with air conditioning units increased by 1.2%, and the share of carriages with environmentally friendly toilet facilities increased by 2% of the assigned fleet.

## Availability of carriages equipped with air conditioning units and environmentally friendly toilet facilities

Share of the assigned fleet equipped with bio toilets, %



The Company operates 14,177 carriages with power sockets for device charging, with the share of such carriages in the total fleet at 90.9%.

JSC FPC completed a project to equip its branded trains with high-speed data lines. A total of 8,018 carriages were equipped. 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.

Share of the assigned fleet equipped with air conditioning units, %



The Company also plans to use the data line to provide a voice communication service for the train crew and to deploy 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 standing at 44.4% and 54.5%, respectively.

Sandwich frames made of plastic and aluminium have almost completely replaced wooden window frames in passenger carriages.

**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
URAL BRANCH		
17	No. 127/128	Yekaterinburg – 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

Item	Train	Service
30	No. 687/688	Stavropol – Kavkazskaya (a group of Stavropol – Moscow non-stop carriages to train No. 145/146 Nazran – Moscow)
NORTH-WESTERN 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 (for Adler – Usinsk non-stop carriages)