

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

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

683

DOUBLE-DECKERS

in the Company's fleet

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.





RIC CARRIAGES

RIC type sleeper car 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

200

CARRIAGES

of RIC type in the Company's fleet

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.

Permits have been obtained in 16 European countries for the operation of new RIC (Regolamento internazionale per le Carroze) gauge carriages.

TALGO TRAINS



140 CARRIAGES

of Talgo trains
in the Company's fleet





CARRIAGE-2019

The carriages are operated in trains of the Far East, East Siberian, Volga, Gorky, Moscow and Northwest Branches. In 2022, these carriages will be put into service in the West Siberian and Ural branches.

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

604 CARRIAGES

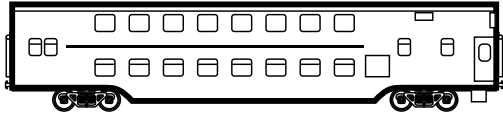
of Carriage-2019 model range
in the Company's fleet

- 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

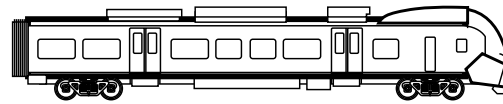
Average carriage life: at least 40 years



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

 **64 passengers**  **160 km/h**

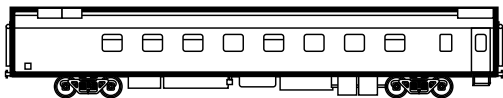
- Environmentally friendly toilet facility
- Air conditioner
- Water cooler
- Audio and video system





Lastochka higher-speed electric train (Desiro RUS)

 **443 passengers**  **160 km/h**

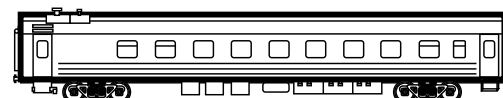
- Environmentally friendly toilet facility
- Air conditioner (an individual unit in each driving cab and each passenger compartment)
- Retractable steps for easy boarding from and alighting to low (220 mm) platforms
- Passive safety system for passengers
- Floor-mounted racks for large hand luggage



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

 **32 passengers**  **160–200 km/h**

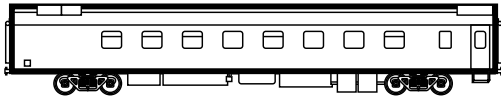
- Environmentally friendly toilet facility, including a shower
- Climate control (heating, ventilation, cooling)
- Water supply system
- Reading lights
- Power sockets to charge mobile phones or laptops
- Public address system with a volume control



Passenger seating carriage. Model 61-4458

 **60 passengers**  **160 km/h**

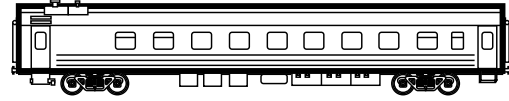
- Environmentally friendly toilet facility
- Air conditioner
- Water cooler
- Audio and video system
- Attendant call buttons



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

 **38 (18) passengers**  **160 km/h**

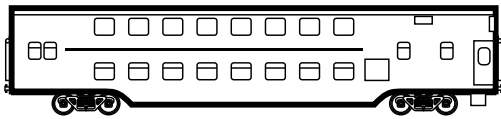
- Environmentally friendly toilet facility
- Air conditioner
- Water cooler
- Audio and video system



Open-plan sleeping carriage. Model 61-4447

 **54 passengers**  **160 km/h**

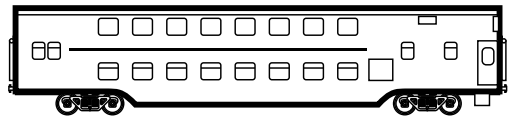
- Environmentally friendly toilet facility
- Air conditioner
- Fire-extinguishing system connected to the on-board water supply system



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

 **64 passengers**  **160 km/h**

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

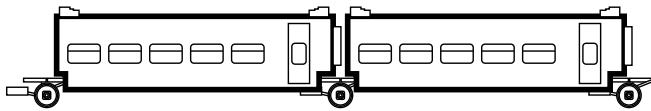


Double-decker carriage with seats. Model 61-4492

 **60 berths per first-class carriage**
104 berths per 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



Strizh (Talga) higher-speed train

 **443 passengers**  **160 km/h**

- Environmentally friendly toilet facility (motorised carriages)
- 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

7 TRAINS

made by Patentes Talga S.L.

20 CARRIAGES

including:

1 buffet carriage

1 dining carriage

2 ancillary vehicles with diesel generator

For use on international routes

3 TRAINS WITH TRACK GAUGE SWITCHING (1,520/1,435)

216 PASSENGER SEATS

- 2 first-class carriages with seats
- 9 first- and second-class sleeping carriages
- 2 VIP class sleeping carriages with sanitary facilities and shower in each compartment
- 3 first-class sleeping carriages, each with a compartment for special needs passengers

Commissioned in 2016

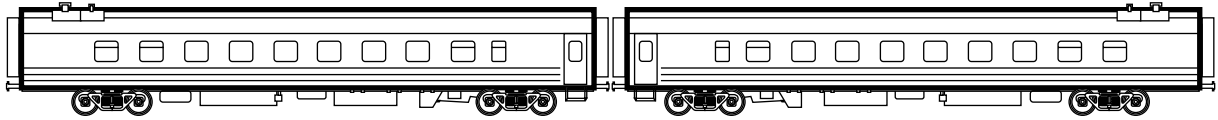
For use on domestic routes

4 TRAINS WITHOUT CHANGE OF RAIL GAUGE

414 PASSENGER SEATS

- 11 first- and second-class carriages with seats
- 5 VIP sleeping carriages with a toilet and a shower in each compartment

Commissioned in June 2015
(Moscow – Nizhniy Novgorod)



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

Carriage–2020

Carriage–2020 is a new design of double-decker carriages.

The project features:

- 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)

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DOUBLE-DECKER CARRIAGES

of Carriage–2020 model range

Features to provide additional comfort for passengers in the carriage:

- A 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
- A 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
- A shower cubicle in each carriage