

## Modern, Higher-Performance Rolling Stock

To meet the demands of increasing passenger traffic as well as reduce travel times and ticket prices, 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 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

# 587

double-decker carriages  
in the Company's rail fleet

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 carriage with seats 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

The RIC sleeping carriage, model 61-4476 (WLABmz), is intended for international passenger services in the UIC countries (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) and the European Community (TSI, EN, 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).

# 200

RIC carriages  
in the Company's rail fleet

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

The Company holds permits for operating new RIC carriages in 16 European countries.



## Talgo trains

Due to their original design and technology solutions, passenger carriages by Patentes Talgo S.L. have several specific technical features, which significantly increase the average speed of rolling stock on the existing track infrastructure. The maximum speed of the trains in service is 200 km/h.

The natural tilting system allows increasing the speed of the train on curved tracks while reducing the negative impact of unbalanced lateral force on passenger comfort.

The system for radial positioning of trucks in curves allows increasing the service life of running gear while reducing rail wear.

The use of air suspension in conjunction with the natural tilting system and the system for radial positioning of trucks in curves provides a smooth ride and, thereby, significantly improves passenger comfort.

# 140

Talgo carriages  
in the Company's rail fleet

To run continuous diagnostics across the most safety-critical systems, the train is equipped with an automatic monitoring system allowing to monitor the brake system parameters (including antiskid device), and the operation of the climate system, electrical equipment, safety systems, fire alarm, fire extinguishing system, etc.

Currently, Talgo trains run on the Moscow–Nizhny Novgorod, Saint Petersburg–Samara and Moscow–Saint Petersburg routes.



## Carriage-2019

The carriages are operated in trains of the Far East, Zabaikalie, Volga and Northwest Branches.

Developed by JSC TVZ, the Carriage-2019 model range includes model 61-4516 (third-class open sleeping), model 61-4517 (second-class sleeping) and model 61-4529 (administrative compartment) 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 + 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

# 407

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

- convertible tables and personal safes for each passenger in compartment carriages
- automated sliding interior doors
- refreshed interior design.

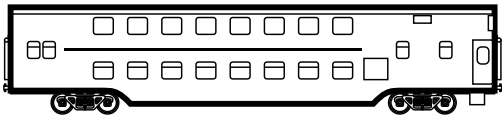
The administrative carriage features a compartment to accommodate two wheelchair users along with their travelling companions, a specially designed toilet with shower and boarding lifts in the redundant vestibule. The disabled passenger compartment is equipped with a passenger information display featuring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



## New carriage types

Average carriage life: at least 40 years

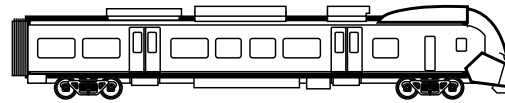
### Double-decker compartment carriage with berths. Model 61-4465



→ 64 passengers → 160 km/h

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

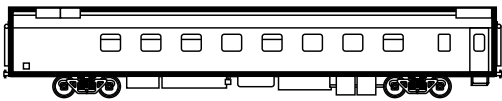
### Lastochka higher-speed electric train (Desiro RUS)



→ 443 passengers → 160 km/h

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

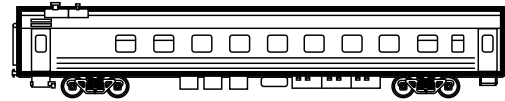
### RIC type sleeping carriage for use on international routes. Model 61-4476



→ 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

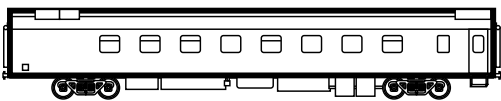
### Passenger carriage with seats. Model 61-4458



→ 60 passengers → 160 km/h

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

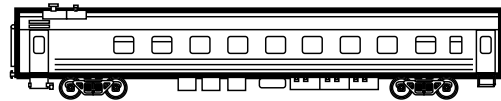
**Compartment carriage for train sets.  
Model 61-4462**



→ **36 (18) passengers** → **160 km/h**

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

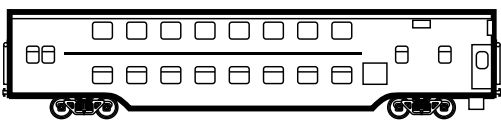
**Open sleeping carriage.  
Model 61-4447**



→ **54 passengers** → **160 km/h**

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

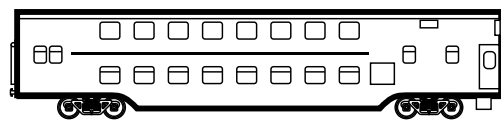
**Double-decker compartment carriage with seats.  
Model 61-4465**



→ **64 passengers** → **160 km/h**

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

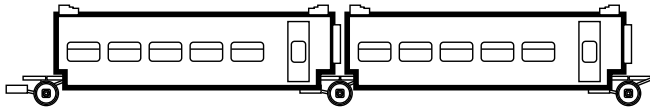
**Double-decker carriage with seats.  
Model 61-4492**



→ **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 higher-speed train (Talgo)



→ **443 passengers** → **160 km/h**

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

7 trains

| by Patentes Talgo S.L.

20 carriages per train

| including 1 buffet carriage, 1 dining carriage,  
| 2 railway service carriages with a diesel generator

### For use on international routes

→ **3 train sets with 1,520/1,435 mm variable-gauge wheelsets**

→ **216 passenger seats**

- 2 first-class carriages with seats
- 9 first- and second-class sleeping carriages
- 2 VIP sleeping carriages with a toilet and a 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

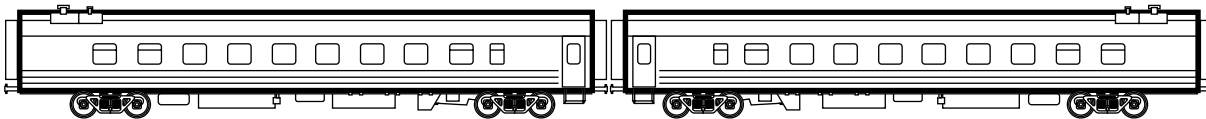
→ **4 train sets with fixed-gauge wheelsets**

→ **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–Nizhny Novgorod route)

## 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, divided into 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