the service speed of a freight train, including along rail yards, was 40.9 km/h, up 0.5% y-o-y;

the average weight of a freight train increased 0.9% to 4,076 t;

the average daily performance of a freight train locomotive remained at the 2017 level of 2,136 thousand gross tkm;

631 new locomotives were supplied;

6,680.1 km of tracks were renovated (up 16.5% y-o-y);

implemented driver's digital route sheet.

## Improving the efficiency of infrastructure

## Repairs and upgrade of infrastructure facilities

**In 2018, we renovated some 6,680.1 km of tracks, up 16.5% y-o-y, which included:**

overhaul of 3,424.9 km of tracks under the track renovation programme;

overhaul of 1,284.9 km with used materials;

full replacement and intermediate overhauls of 1,939.1 km of tracks between full overhauls.

intermediate overhauls of 31.1 km of tracks. 2,905 sets of turnouts were laid.

## Improving performance at operating domains

**Transitioning from region-based management of the transportation process to the operating domain–based planning and organisation of train traffic is the key area of the Company's operations development. It boosts efficiency and helps to clearly separate unit functions and responsibilities.**

The reporting year saw continued implementation of the domain-based management principles, which in particular included locomotive crews working on extended service routes. Automated systems for planning, monitoring, and managing train traffic are being rolled out at the Eastern Operating Domain along with projects aimed at planning and timely adjustment of the locomotive fleet and modelling station operations.

## Optimisation of the freight traffic schedule

The main function of the train schedule is to maximise the infrastructure efficiency for the required throughput and carrying capacity, ensure the target volume of freight traffic and increase the schedule and mean speed.

**Key measures to optimise schedule:**

arrange traffic of heavy-duty trains weighing 8–9 kt;
ensure passage of coupled trains at railway sections with high traffic density;
establish new guarantee sections ensuring safe passage of loaded and empty container platforms as part of container trains.

## Traction stock in 2018

**In 2018, the operating locomotive fleet of Russian Railways comprised 14,275 units, including:**

7,703 freight train locomotives;
1,567 passenger train locomotives;
1,724 service train locomotives;
3,281 locomotives involved in special and other shunting operations.

**In 2018, the active locomotive fleet of Russian Railways**

**comprised 10,222 units, including:**

5,729 freight train locomotives;
744 passenger train locomotives;
957 service train locomotives;
2,792 locomotives involved in special and other shunting operations.
In the reporting year, the major and intermediate overhaul programme was completed in full with 3,742 units of traction stock repaired.

As part of the 2018 investment programme, 597 locomotives were acquired, including 570 under life cycle contracts. Russian Railways also purchased 34 electric locomotives that were previously operated under lease and sublease contracts. In total, Russian Railways added 631 locomotives to its fleet, all of which are Russian-made.

Additional 3,460 locomotives will be acquired in 2019 –2025. New technical requirements have been developed for the new generation freight locomotives, including electric and autonomous locomotives, to account for improved transportation technologies. Compared with the locomotives currently in use, the new generation mainline freight locomotives will provide for single traction, multiple-unit, and distributed traction systems. They will have greater power and traction and longer repair intervals.

## Developing heavy-duty traffic

Heavy-duty traffic and higher weight standards of freight trains are essential for the transportation optimisation as they help increase the carrying capacity and boost railway efficiency.

The development of heavy-duty traffic is a key initiative pursued by the railway transportation and infrastructure segment in line with Russian Railways Group's Development Strategy until 2030. To this end, the locomotive fleet needs to ensure the target traction resources while strictly complying with traffic safety requirements.

**In 2018, over 150 tests were performed to help bring the average train weight to 4,076 t (up 0.9% y-o-y). The increase in the average train weight was made possible by the formation and runs of heavy-duty and coupled trains, including:**

156,100 runs by heavy-duty trains (weighing over 6 kt);
35,600 runs by coupled trains.