

Fact sheet – Metallostroy maintenance depot

Metallostroy, near Saint Petersburg, is home to a maintenance depot where Russia's high-speed Sapsan train is serviced. One of the most advanced maintenance facilities in the world, the depot operates around the clock – thus ensuring more than 99 percent availability for the Sapsan.



High-speed service for high-speed trains

- The eight Sapsan (“peregrine falcon”) high-speed trains are serviced by Siemens at the Metallostroy depot near Saint Petersburg. Designed by Siemens and built by Russian Railways (RZD), the depot boasts state-of-the-art technology.
- Some 300 meters in length, the three tracks at the facility can accommodate entire ten-unit trains and allow maintenance to be carried out on three different levels – below floor, at vehicle body level (with lateral access to the interior) and on the roof.
- The technical equipment includes bogie drop pits, a measuring system for wheel sets and an ultrasound system for detecting hairline cracks in the chassis area.
- Service personnel employ state-of-the-art technologies. For example, touch screens that display each train’s condition and the work required are distributed in the track area. Technicians use these screens to view their work packages and report time needed and materials used.
- They also use mobile devices to report material removal in the warehouse and work orders, for instance. A prime example of high-tech maintenance for high-tech trains, it’s this IT support that makes efficient maintenance possible.
- A state-of-the-art materials warehouse, which is closely linked to the maintenance management system, ensures that service teams always receive the right spare parts.
- The depot also focuses on safety. All employees carry chips with which they authorize themselves in the depot monitoring system. The system, which is based on RFID technology, ensures, among other things, that trains are shunted only when no one is present in the track area.

Around-the-clock operation – without an operational reserve

- Russia’s high-speed transportation system currently has no operational reserve. This means that all eight Sapsan trains are in intercity operation every day.
- For this reason, maintenance has to be carried out mainly at night – outside normal operating times. In addition, service activities must be divided up since Metallostroy’s technicians are normally available only for a maximum of six hours at a stretch.
- The service activities required in connection with major maintenance reviews, in particular, must also be broken down into short work steps.

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99 percent availability – also under extreme weather conditions

- A computerized maintenance management system (CMMS) has been implemented since the service activities began. By networking all service activities and ensuring optimal management of all maintenance operations, the system guarantees that Siemens reaches its contractually agreed-upon availability target of 98 percent. Today, train availability already exceeds 99 percent.
- Predictive maintenance is the keyword. Trains are continuously monitored during daily operation. A large quantity of data reflecting current train conditions is collected, making it possible to identify abnormalities and fault patterns in time to prevent malfunctions before they occur.
- The data collected during train operation is continuously assessed and analyzed by experts at the depot. As a result, technicians are optimally prepared for the arriving trains. For example, service personnel are deployed, materials prepared and work orders issued long before the trains make their maintenance stops.

Key figures – Metallostroy depot

Location	Southeast of Saint Petersburg
Commissioning.....	2009
Planning	Siemens
Customer	Russian Railways RZD
Area	330 meters long, 60 meters wide
Employees	70, of whom 2 are from Germany
Capacity	3 trains simultaneously
Depot head	Brigitte Baumann (59)