

BŘECLAV, 13 January 2020

## **Správa železnic Tests the Břeclav – Vranovice Line for Speed of 200 kph**

Since last December, running tests of railway vehicles at a speed of 200 kph are going on in parts of the line between Břeclav and Vranovice. The tests' objective is preparing selected line sections of the Czech rail network for a planned speed increase and verifying the behaviour of bearing constructions and other parts of railway constructions during a considerably higher dynamic load. Measuring of the line's vicinity acoustic burden during passage of a vehicle at speeds higher than 160 kph of today is also being carried out.

The section Vranovice – Břeclav is part of the high-speed lines network in preparation. In the future, the high-speed line from Brno as a branch of the backbone HSL Prague – Brno – Ostrava should finish at Šakvice. Trains will continue their ride to Břeclav on the current modernized conventional line with line speed increased to 200 kph after necessary adaptations. *"We promised that we would gradually increase speed on the Czech railway. Now we have started acting. The current infrastructure does not allow increase trains' speed without necessary adaptations such as eliminating all level crossings for cars and pedestrians. Thanks to tests being under way, we will acquire the necessary data for projects under preparation",* says Mr. Jiří Svoboda, Director General of Správa železnic.

As far as modernization of the line Vranovice – Břeclav for higher speeds is concerned, preparation of the project should start this year; documentation necessary for acquiring a building permit will follow and then the construction implementation as such in order to finish up to the end of 2025. Construction works will have to include especially reconstruction of railway stations Podivín and Zaječí (completing platforms), a closure of the railway crossings at Podivín and Starovičky in the section Zaječí – Šakvice, a renovation of the railway substructure, superstructure and the catenary and repairs of bridges. Namely the current state of bridges and their durability at higher speeds is being currently verified by testing runs.

Due to the fact that last running tests at speeds of 200 kph were carried out on this line in 2004, preparation for running tests started last September. The state of the line in the testing section was first verified technically by a flaw detection vehicle and at the same time by a track recording car measuring the catenary of Správa železnic. Besides bridges and other artificial constructions, verifications of railway crossings, platforms, polycarbonate roofing etc. were carried out. Other technical parts and installations on the line were checked in detail as well. Following that, adaptation and setting of individual infrastructure components for speed tests of 200 kph was carried out. The required state of the line in the testing section was retroactively verified by a run of track recording cars.

On Monday 9 December 2019, testing runs as such for speeds of 200 kph in the Břeclav – Vranovice section were carried out with use of a Siemens Vectron locomotive which is fully equipped with the on-board part of the European Train Control System (ETCS). Tests were

focused on the ETCS system behaviour at speeds exceeding 160 kph. Dynamic behaviour of selected bridges' bearing constructions at speeds of 160-200 kph was being tested as well. Two bridges (from 1933 and 1946) with bearing constructions - according to the elaborated study - susceptible to a disproportional dynamic response (oscillation) were selected for testing. The measurement as such was assured by the Czech Technical University in Prague – Civil Engineering Faculty and by employees of the Infrastructure Technical Administration. The measurement's results will be used for optimal designing of new bridges and repairs of current ones during modernization of the line for higher speeds.

In cooperation with the Chair for Railway Civil Engineering of the Czech Technical University in Prague, acoustic measurements during passage of a vehicle at speeds of 200 kph were made as well. Besides classical exact measuring of the acoustic burden level by a calibrated apparatus, the so-called "acoustic camera" was used (for the first time on the Czech railway) for identification of the place and cause of noise occurrence. This technology allows graphically locating the place and intensity of the noise burden (e.g. wheel-rail contact, subsoil, contact of the catenary and the pantograph etc.). For predications of a noise burden at speeds exceeding 160 kph, theoretical analysis models are being used on the railway. Measurements mentioned above as well as the analysis model will serve to determine the noise burden and adopt measures for observation of binding noise limits.