



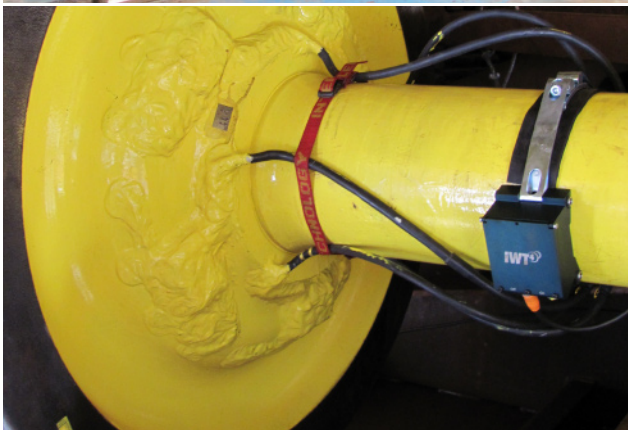
IWT4 For Increasing Axle Load

Case Study



VALE are one of the world's largest producers of Iron Ore, and with the current heavy demand for iron ore VALE has focused on increasing the capacity of its EFC heavy haul line. The EFC is a mine to port operation with the mine close to the Amazon and the port near Sao Paulo in the north of Brazil.

Vale's aim is to increase the capacity of each ore wagon by 20 tonnes, resulting in an axle load of over 37 metric tons. A cornerstone in achieving this is the measurement of wheel rail forces. Measuring leads to understanding the impact of the increased axle load on the infrastructure, which allows for optimisation of the total rail system.



Interfleet's latest **Instrumented Wheelset Technology (IWT4)** is a natural choice as it is able to directly measure vertical, lateral, and longitudinal forces, while using the ore wagon's standard wheelset. Furthermore the instrumentation process does not involve any destructive modification of the wheelset, this means the fatigue life of the wheelset is preserved. This removes any need for additional ultrasonic inspection of the wheelset, which is important when considering the high axle load for this application.

Two IWT4 wheelsets were manufactured at Interfleet's laboratory in Sweden and shipped to Sao Paulo together with a state of the art data acquisition and evaluation system. A customised evaluation and reporting system was developed for Vale. This system provides exception reporting linked to positions on the network, and allows the operator to analyse and display data via a user friendly interface.



During February 2010 Interfleet engineers travelled to Sao Paulo to commission the system and train Vale staff in its operation and to date Vale are using the system as a key tool for implementation of their capacity upgrade.

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