

APPLICATION OF PREDICTIVE MAINTENANCE TO FREIGHT TRANSPORT WAGONS

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Abstract

The equipment maintenance has become increasingly vital in response to the growing demands of modern industry. In this context, predictive maintenance plays a key role in enhancing equipment availability. In this study the methodology RCM (Reliability-Centred Maintenance) was applied to a railway wagon (Figure 1) fleet to identify and assess risks associated with potential failure modes (using FMECA methodology) and developing appropriate strategies for their management and mitigation. This RCM analysis was developed as part of the SMARTWAGONS project, carried out at the MEDWAY Maintenance & Repair facilities in Entroncamento. The results showed that the risks associated with four failure modes were successfully mitigated. Maintenance tasks were also proposed based on condition monitoring, with a strong emphasis on predictive maintenance, supported by the installation of sensors on the wagon under study.

Keywords

Predictive Maintenance; Availability; RCM; FMECA

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Figure 1. Railway wagon