



## Instrumented Wheelsets (IWS)

NRC has been a leading designer and developer of Instrumented Wheelsets (IWS) for rail cars in North America for over 20 years. NRC's IWS offers unmatched accuracy, reliability and durability with a unique ability to turn complex data into useful information for the end-user.

### Direct wheel/rail force measurements

During train operation, heavy loads combined with the dynamic forces that occur at the wheel/rail interface can lead to deterioration of both track and rolling stock. Wheel/rail contact anomalies can lead to increased maintenance costs and reduced service life. In situations where poor track quality exists, excessive forces can cause derailments, buckles, breaks, rail rollovers, and other safety concerns.

In all cases, knowing and managing wheel/rail forces is a critical factor in reducing safety risks, lowering maintenance costs, and maximizing service life. An IWS is the only tool that provides direct measurement of wheel/rail contact forces.

NRC's proven IWS technology provides direct, real-time measurements of the dynamic vertical, lateral and longitudinal forces that occur at the wheel-rail interface, as well as the lateral contact position between the wheel and the rail.

### NRC Advantage

- › **Field-proven instrumentation:** Precise gauge placement and full bridge configuration for superior signal-to-noise ratio and temperature compensation.
- › **Plug and Play:** Wheelsets are installed into the existing truck, and connected to your existing data acquisition system to enable immediate use and data streaming.
- › **Self-zeroing:** No need to lift wheelsets off the ground to zero them before testing.
- › **Optical data-transmission:** Contact-free transmission of digital data.
- › **NRC's IWS Analytical software:** Post processing of large IWS data files, and outputs a summary of all AAR M-976 exceptions with accurate GPS positioning of exception locations.
- › **Real-time data processing :** Ability to view wheel/rail forces in real-time, allowing online and

timely decisions to be made during field testing – immediately identifying the location of peak loads on the rail.

### World-class expertise at your service

NRC is a recognized leader in rail vehicle and track optimization among freight, transit and passenger railways and rail equipment OEMs around the world. Let our expertise benefit you.

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[www.nrc-cnrc.gc.ca/eng/solutions/advisory/instrumented\\_wheelsets.html](http://www.nrc-cnrc.gc.ca/eng/solutions/advisory/instrumented_wheelsets.html)

NR16-238/2018E-PDF  
ISBN 978-0-660-27326-6 PDF  
978-0-660-27330-3 PAPER

July 2018  
Également disponible en français.