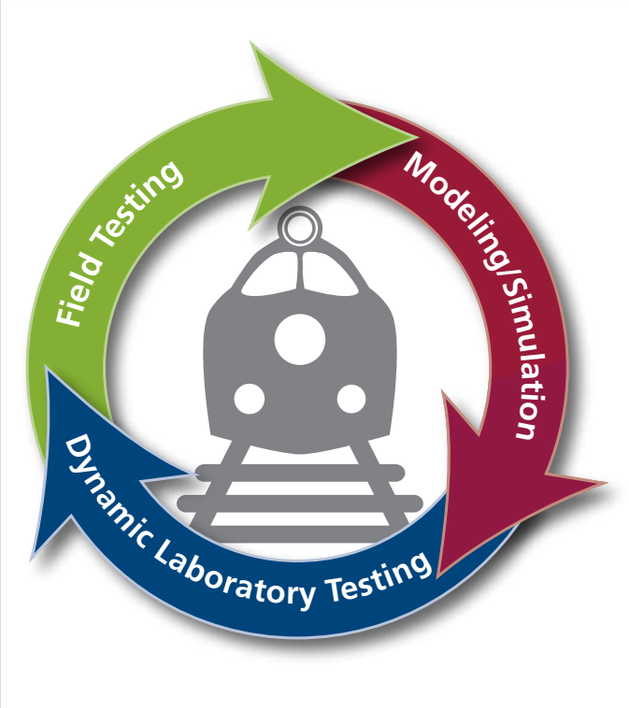
NRC·CNRC

Rail Vehicle Engineering

LET OUR EXPERTISE BENEFIT YOU

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

Closed-Loop Engineering



Evaluate the service environment

Model the system/issue

Design the solution

Verify performance under controlled lab conditions

Evaluate performance while in service

Iterate to optimize

Portable Test Lab

This freight rail mobile test lab is available for custom configurations during field testing applications. It can be used anywhere within the train consist.

Rail Vehicle Impact Hill

NRC's AAR accredited impact hill test facility is designed to test, certify, and improve the design and performance of rail vehicles, lading and containment systems. We test for compliance with various standards including AAR CII, ISO 4196, MIL-STD-810G.

National Research Council Canada
Conseil national de recherches Canada
Canada

Climatic Chamber

NRC is home to Canada's largest climatic engineering facility. It evaluates the performance of rail equipment and components under severe climatic conditions. We offer clients a full range of North American climate and environmental conditions, including snow, ice, freezing rain, rain, fog and the heat of the sun. Temperatures range between -46°C to +50°C.

Contact us to see how we can help you:

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Squeeze and Tension Frame

This facility can of exert up to 1.3 million pounds of longitudinal compression force, and 450 thousand pounds of tension force. The squeeze and tension frame allows rail vehicle manufacturers to test and certify that their cars can handle the massive strains that are exerted on railcars every day during rail travel.

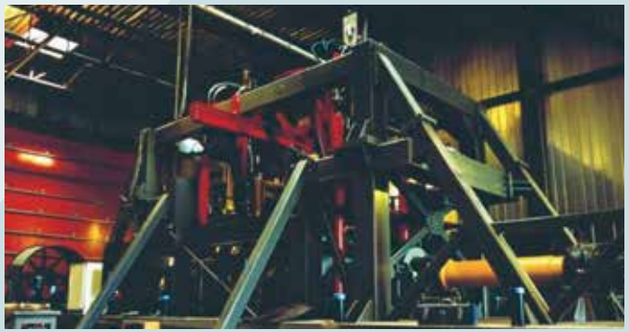
Instrumented Wheelsets

NRC's proven IWS technology provides direct, real-time measurements of the dynamic vertical, lateral and longitudinal forces which occur at the wheel-rail interface.

NRC has successfully applied its IWS technology to all types of railway rolling stock.

Structural Dynamics Test Facility

This facility tests product life and wear limits in days or weeks instead of years. It replicates in-service vibration environments for full rail cars or components in a repeatable, controlled setting using several programmable actuators.



Wheel, Bearing and Brakes Facility

NRC can perform controlled testing of rolling components and brakes. We use four electro-hydraulic programmable actuators to apply independent vertical and lateral loads. This facility is capable of operating at speeds of up to 80mph, at various angles of attack, with a fully loaded freight axle.