

**National Research Council of Canada (NRC)**  
**Centre for Surface Transportation Technology (CSTT)**  
<http://www.cstt.nrc.gc.ca>

*About your trip to Ottawa*

CSTT welcomes WCRR 2006 delegates to Canada's national capital for a technical tour of CSTT laboratories and facilities.

You will travel to Ottawa by private railway coach furnished especially for WCRR 06 delegates at no extra charge by VIA Rail Canada on its morning train from Montréal.



From the Ottawa Station you will travel by special reserved bus to CSTT.

After the visit to CSTT, you will return to Ottawa Station by bus along a scenic tour through Ottawa featuring Parliament Hill, the Rideau Canal, the Ottawa River, the Gatineau Hills, Ottawa's historic downtown, and other attractions showing the city's progression from a small lumber-town in the great northern forests, to a centre of 19<sup>th</sup> century military transportation, to the capital of one of the world's G-8 nations.

Please explore the City at its tourism website <http://www.ottawatourism.ca>



### About your tour of CSTT-NRC

The tour will include demonstrations of research, development, and engineering work; a tour of laboratories and facilities; and discussions with our researchers and engineers about R&D priorities and future directions. Highlights are:

- rail vehicle impact ramp
- rail vehicle squeeze and tension frame
- four-post track simulator
- fatigue test facility
- wheel, bearing and brake test rig
- instrumented wheelsets
- full-scale climatic engineering chamber
- software and developments with NUCARS, Vampire, ANSYS, ADAMS and custom packages developed in-house



### Technological developments by CSTT

CSTT has been active in railway research, development, engineering, and testing for 40 years. We are:

- originators of the “*magic wear rate*” concept and principles
- leaders in rail grinding applications in North America
- innovators of *preventative grinding by MGT* concept and strategy
- creators and first implementers of the “*Preventative-Gradual*” rail grinding strategy
- originators of the “*100% Effective Lubrication*” concept and practices
- creators of intellectual property embodied in leading “*top-of-rail*” *friction modifiers*
- inventors of the *JK-136* rail design
- leaders in the development and application of *wheel/rail conformality* theory and practices
- developers of the “*anti-shelling wheel*” profile design
- originators and leaders in quantified “*Pummelling*” theory and practices to predict and prevent rolling contact fatigue

CSTT has done extensive work in railway freight car bogies. The results are embodied in the design of most three-piece bogies currently in service in North America and other heavy-haul railways around the world.

Our primary competences in the railway field are:

- wheel/rail interface
- bogie design and performance
- freight carbody performance and durability

CSTT has been home to some of North America’s best-known pioneers in railway research and technology like Joe Kalousek, Eric Magel, Kevin Sawley, and Peter Sroba;

and many exceptionally talented technology developers, practitioners, and associates like Renguang Dong, Yan Liu, Nelson Caldwell, and Helen Tucker.

CSTT is also very active in heavy road transport vehicles and military vehicles. These will be featured in your tour.

For a virtual tour of CSTT, please visit our website: <http://www.cstt.nrc.gc.ca>

*About the National Research Council Canada*

CSTT is an institute of the National Research Council Canada (“NRC”), one of North America’s premier research and development institutions. With 19 institutes and over 4000 staff, NRC does world-leading research in biotechnology, aerospace, microstructures, photonics, nanotechnology, information technology, building sciences, measurement standards, ocean technologies, and transportation.

NRC also operates the renowned Industrial Research Assistance Program (“IRAP”). It has served as a model for many countries developing their own national support programs for industrial S&T to create economic wealth.

*We welcome you to CSTT-NRC*

As proud members of the WCRR 06 Planning Committee, we extend a cordial welcome to Congress delegates, and we look forward to seeing you in Montréal at the Congress, and in Ottawa at CSTT-NRC!