

## Vehicle/Track Interaction Consulting Services



Practical solutions to problems affecting railroads and suppliers from dedicated experts in instrumentation, field testing and analysis

**E**NSCO, Inc. is a recognized leader in the railway industry and parlays more than three decades of experience into comprehensive, knowledge-based Vehicle/Track Interaction Consulting services. ENSCO's subject matter experts can provide support and consultation specific to the needs of vehicle operators, suppliers and derailment investigators. Whether qualifying vehicles for higher speed operation, addressing a vehicle's behavior or guiding rail vehicles through acceptance testing, ENSCO can skillfully navigate the customer through the process with efficiency.

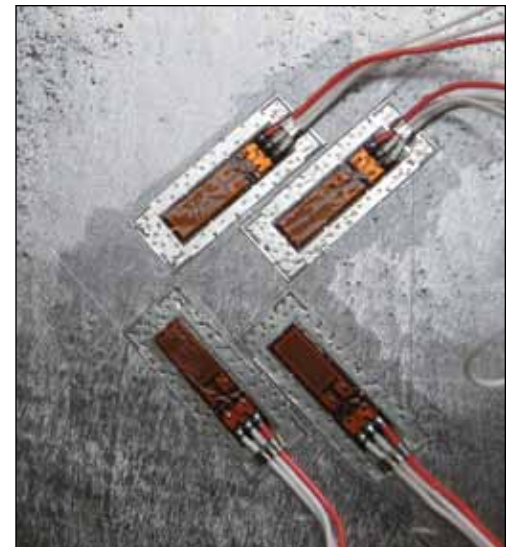
### Vehicle performance/qualification testing

ENSCO's staff provides data collection and analysis services to verify system specifications and demonstrate safe operations for the purposes of waiver and/or qualification approval. These services can also play a vital role during investigations of issues that affect day-to-day operations. ENSCO's testing and analysis services verify vehicle performance, identify problems and assist in determination of appropriate remedial actions so vehicles can quickly return to service. Our capabilities include:

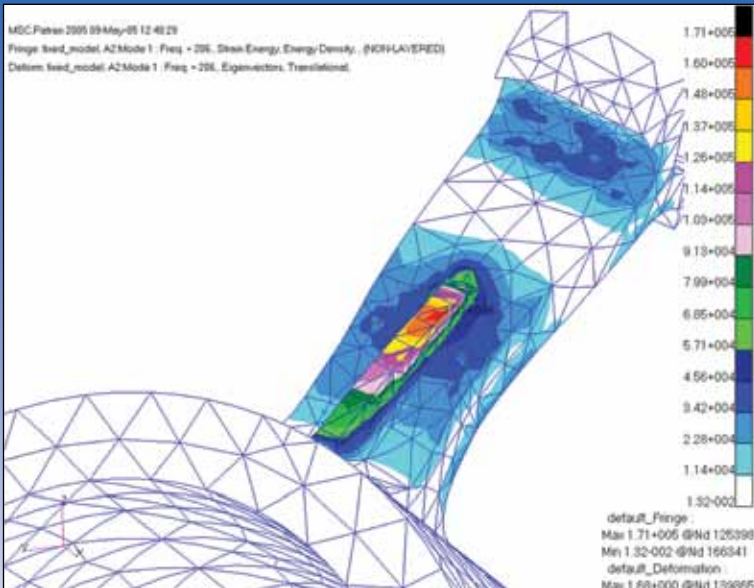
- Ride quality testing
- Wayside and onboard noise testing
- Wheel/rail force measurements using Instrumented Wheel Sets
- Brake performance testing
- Wheel slip/slide testing
- ElectroMagnetic Interference/Compatibility (EMI/EMC) qualification testing
- Vibration level testing

### Vehicle dynamics analysis

ENSCO's staff routinely assesses wheel/rail forces, carbody/truck accelerations and vehicle component loading to identify excessive and potentially hazardous motions and conditions. Our ability to provide expertise in the collection and assessment of field test data as well as vehicle modeling and dynamic simulations can be an essential resource for any railroad or manufacturer's engineering department.



*Strain gage application on a component to be analyzed.*



Finite Element Analysis.



Wheel unloading test being conducted.

### Wheel unloading tests

The measurement of the wheel unloading under a vehicle is critical in the determination of maximum safe curving speeds necessary for operations at elevated cant deficiency under the Federal Railroad Administration Track Safety Standards. This information is also critical during investigations of the steering and braking capabilities of freight and passenger vehicle trucks. ENSCO's experience includes the measurement and assessment of the unloading of individual wheels installed under a wide range of vehicle types, making it a valuable partner during these investigations.

### Track inspection services

ENSCO is an industry leader in the provision of track inspection services to railroad and transit operations. Our service capabilities include:

- Track geometry testing
- Rail profile measurement
- Third rail geometry measurement
- Video recording of right-of-way, track roadbed and tunnels
- Track component evaluation, including joint bars and ties

### Derailment Investigations

ENSCO recognizes that the operational, mechanical and track disciplines of a railroad must work together in an integrated system to ensure safety. Our broad expertise in the collection and critical analysis of track and vehicle information allows ENSCO to look at all factors contributing to derailments and arrive at solutions to prevent future incidents.

ENSCO is proud of its record of service to operators and manufacturers throughout the industry including:

- Alstom Transportation
- Amtrak
- GE
- Kawasaki
- MARC
- MARTA
- MBTA
- Metra
- Metrolink
- Metro North
- Nippon Sharyo
- NJT
- Rotem
- WMATA
- VRE



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