



# Giuseppe Sammartino, P.E.

## PRINCIPAL ENGINEER + LABORATORY MANAGER

Mr. Sammartino has extensive experience with design, analysis, and testing of trucks (bogies) and components, primarily in the freight car and passenger sectors of the railroad industry. Mr. Sammartino's responsibilities at CTLGroup consist of oversight and management of qualification and product performance testing for the manufacturing and construction industries. Additionally, he provides forensic analysis, component design validation and consulting, including utilizing analytical techniques such as FEA modeling, 3-D modeling, and component instrumentation. Mr. Sammartino is also an Executive Committee Member for the American Society of Mechanical Engineers (ASME).

### Academic Credentials

M.S. in Mechanical Engineering  
University of Illinois at Chicago,  
2000

B.S. in Mechanical Engineering  
University of Illinois at Chicago,  
1998

### Licensure/Certification

Professional Engineer  
IL

### Affiliations

American Society of Mechanical  
Engineers | Rail Transportation  
Division Executive Committee  
Secretary

### Contact Information

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### Representative Project Experience

#### Product Development/Product Improvement

- Designed freight car suspensions, components, and structures, such as: draft gears; bolsters; side frames; springs; spring systems; friction wedges; side bearings; and primary suspension pads.
- Optimized new freight car suspension designs by developing in-house empirical testing programs and vehicle dynamics software. These programs relied on data collected from instrumented components and validation of FEA models.
- Secured approval from local authorities for new freight car and truck component designs in North American, South American, European, Asian and Australian markets.
- Awarded multiple patents by U.S., International and foreign authorities for successful and innovative freight car suspensions and component designs.

#### Engineering Test Design + Implementation

- Developed laboratory and field testing protocols designed to characterize the static and dynamic response of various freight and passenger car truck components. The data was collected using linear and rosette strain gages and were correlated with the design models to validate the finite element analyses.
- Performed on-track vehicle and component testing and monitoring utilizing on-site and remote monitoring equipment. The data was used to validate design models.
- Optimized friction wedges, side bearings and primary suspension design through adaptive fixturing and novel test protocols.

#### Vehicle Dynamics - Testing + Analysis

- Utilized vehicle dynamics software in conjunction with FEA modeling to optimize freight car suspensions and components for the global rail industry. Program goals were to ensure the safety and improve the performance of the design concept. Incorporated instrumented, full-scale car dynamic testing on various track conditions.
- Performed FEA modeling and vehicle dynamics simulations and was responsible for real-time data acquisition used to support the implementation of major AAR test programs such as: Bulk Commodity; AAR MSRP Chapter XI; AAR MSRP S-286; and AAR MSRP M-976.
- Provided FEA modeling and vehicle dynamics simulations for aberrant vehicle behavior studies used in derailment investigations, as well as litigation support.

#### Forensic Analysis + Investigation

- Investigated root cause of derailment in Boston due to track component failure.
- Evaluated rapid deterioration of rail track components in Mexico.
- Investigated probable cause for derailment of a freight car while operating in Canada. Evaluated possible derailment scenarios utilizing vehicle simulation software.