

Jacob A. Wagner

PE

Senior Managing Consultant & Director of Rail Practice



Mr. Wagner is a mechanical engineer with Engineering Systems Inc. (ESI). He has experience in failure investigation and analysis of railroad equipment, industrial equipment, structural products, vehicles, and utility infrastructure.

He specializes in both routine and custom testing for material or product evaluation, as part of root cause analysis or quality control. In addition, he has extensive experience in solid modeling, 3D-Laser scanning, reverse engineering, and fabrication.

Additionally, he has worked extensively with the rail industry to provide engineering expertise from work equipment design to AAR and AREMA testing. Mr. Wagner has a wide range of experience with both mechanical and engineering components, such as freight car trucks, air brakes, couplers as well as ties, track, and signal equipment. He has worked with equipment manufacturers to design new products and identify metallurgical and mechanical defects in existing products. Mr. Wagner has worked to develop new engineering standards to be implemented in industry to increase reliability and performance of products.

Other interests include electronic systems and control, machine design, and manufacturing technologies.

Education

MS, Mechanical Engineering. Georgia Institute of Technology.
2014

BS, Mechanical Engineering. University of Nebraska-Lincoln.
2012

Passed F.E. May 2012

Licenses & Certifications

- State of Nebraska P.E. License E-15896

Languages

- English

Contact Information

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ESi Omaha

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Omaha, NE 68110

Areas of Specialization

- Solid Modeling & 3D Laser Scanning
- Reverse Engineering & Fabrication
- Engineering Failure Analysis
- Data Acquisition & Instrumented Testing
- Accident Investigation
- Derailment Cause Finding
- Mechanical Testing
- Laboratory & Industrial Testing
- Non Destructive Testing & Inspection
- Mechanical & Materials Design
- Railroad Engineering, Design & Testing

Positions Held

Engineering Systems Inc., Omaha, Nebraska

- Director, Rail, 2025 – Present
- Senior Managing Consultant, 2021 – Present
- Senior Consultant, 2018 – 2021
- Senior Staff Consultant, 2017 – 2018
- Staff Consultant, 2012 – 2017
- Technician, 2010 – 2012

RSI Materials Engineering/Rail Sciences, Inc., Omaha, Nebraska

- Technician, 2008 – 2010

Professional Affiliations/Honors

American Society of Mechanical Engineers (ASME)

- Member

American Railway Engineering and Maintenance of Way Association (AREMA)

- Member of Committee 30 – Ties and Fasteners

Publications

“Measuring Tension Imbalance in U-Bolts During Tightening”, Leah M Ginsberg, Joel D. Hassebrock, **Jacob A. Wagner**, Hans C. Iwand, Alfred M. Pettinger. Journal of Failure Analysis and Prevention, April 2025.