



JOEL D. HASSEBROCK, P.E.
SENIOR STAFF CONSULTANT & REGIONAL OPERATIONS MANAGER
JDHASSEBROCK@ENGSYS.COM

Mr. Hassebrock is a Senior Staff Consultant at Engineering Systems Inc. based in the Omaha, Nebraska office and is a licensed professional metallurgical and materials processing engineer in the State of Nebraska. He is part of ESI's Rail Practice Group and serves as a Site Safety Coordinator.

With over a decade of experience, Mr. Hassebrock specialized in failure analysis, metallurgical analysis, and materials testing across diverse industries. His experience encompasses various matters including various railroad related failure analyses, bearings, gears, shafts, fasteners, corrosion mechanisms, heat treating, weld failure analyses, and component testing.

Proficient in utilizing advanced tools and techniques such as glow discharge and optical emission spectrometers, universal servo-hydraulic tensile testing machines, scanning electron microscopy (SEM), optical microscopy, multiple hardness testers and metalworking lathes & mills.

Beyond technical skills, Mr. Hassebrock has a proven track record of achieving project goals within prescribed time frames and budget parameters. He provides technical support for failure analysis and testing, conducts studies, tests, repairs, and develops effective processes.

Mr. Hassebrock's previous experience also includes field testing, data acquisition & processing, onsite third-party quality assurance, and dynamic railway vehicle simulations. Mr. Hassebrock has previously helped develop, implement, and maintain procedures to ensure ISO 17025 accreditation, reflecting his dedication to excellence and continuous improvement.

Areas of Specialization

- Metallurgical Failure Analysis
- Railcar Wheels, Axles, and Bearings
- Railcar Truck Castings and Assemblies
- Laboratory and Industrial Testing
- Mechanical Testing
- Weld Evaluations
- Corrosion Analysis
- Nondestructive Testing and Inspection
- Fixture and Test Design
- 3-Dimensional Printing

Education

- The Ohio State University
 - Master of Science, Welding Engineering, expected graduation 2027
- Creighton University, Heider College of Business
 - Master of Business Administration, 2013
- Iowa State University
 - Bachelor of Science, Materials Engineering, 2009



Licensed Professional Engineer (P.E.)

State of Nebraska, License E-17978

Professional Affiliations

American Society for Materials International (ASM)

Member

The Minerals, Metals & Materials Society (TMS)

Member

American Railway Engineering and Maintenance-of-Way Association (AREMA)

Member of Committee 4 – Rail

American Welding Society (AWS)

Member

American Society for Mechanical Engineers (ASME)

Member

Engineers Club of Omaha

Member

Positions Held

Engineering Systems Inc., Omaha, Nebraska

Regional Operations Manager, 2024 - Present

Senior Staff Consultant, 2023 - Present

Staff Consultant, 2019 - 2022

Associate Staff Consultant, 2015 - 2019

TÜV Rheinland Rail Sciences Inc., Omaha, Nebraska

Manager Vehicle Dynamics and Testing, 2014 - 2014

Laboratory Manager, 2013 - 2014

Laboratory Technician, 2010 - 2013

Continuing Education

Crash Reconstruction for the Engineer

Northwestern University Center for Public Safety, Peachtree Corners, GA, 2022

Geomagic Design X Training Course

3DSYSTEMS, Cary, NC, 2015

Geomagic Control Training Course

3DSYSTEMS, Cary, NC, 2015

Publications/Presentations

“A Review of Recent Heavy Haul Wheel and Bearing Failures on North American Freight Railroads”, C. Lonsdale, **J. Hassebrock**, J. Wagner, S. Karunakaran, T. Wynne. International Wheelset Congress (IWC), June 2023, Chicago, IL.

“Failure Analysis of Railroad Components”, **J. D. Hassebrock**, H. C. Iwand, ASM Handbook, Volume 11A: Analysis and Prevention of Component and Equipment Failures, 2021, DOI 10.31399/asm.hb.v11A.a0006837.

“Fracture of Hex Bars During Manufacture”, **J. D. Hassebrock**, H. C. Iwand, Journal of Failure Analysis and Prevention, August 2016.