



David A. Moore, P.E.
Metallurgical and Materials Engineering

PROFESSIONAL EXPERIENCE

2011 – Present **UNIFIED ENGINEERING, LP – Aurora, Illinois**
(f.k.a. UNIFIED ENGINEERING, INC.)
Principal Engineer

Consulting in the areas of failure analysis, accident investigation and reconstruction, design review and evaluation, materials evaluation and application, and machinery and product testing. Materials expertise include metallurgy, welding and joining, fracture analysis of metals, polymers and glass, mechanical behavior of materials, mechanical testing, metal fabrication, and corrosion. Experienced and trained in a broad range of products, equipment and structures such as:

- Transportation: automobiles, aircraft, bicycles, railcars, trailers
- Material/Personnel Lifts: cranes (mobile, overhead, tower), hoists, forklifts, elevated work platforms, ladders, scaffolds
- Rigging: chains, wire rope, slings, hooks, blocks, strapping
- Industrial Machinery: presses, pumps, hydraulic equipment
- Power and Process Industries: boilers, gas turbines, piping, gas transmission and distribution
- Buildings and Structures: framing, glazing, plumbing, elevators
- Medical Devices: implants, tools
- Consumer Products: furniture, power tools, exercise and leisure equipment, appliances

Testifies as an expert witness in product liability, personal injury, and negligence cases.

1993-2010 **PACKER ENGINEERING, INC. - Naperville, Illinois**

2000-2010 Vice President, Materials Engineering

1998-2000 Director, Materials Engineering

1993-1998 Staff Engineer, Materials Engineering, Mechanical Engineering

1989-1993 **GE Aircraft Engines - Cincinnati, Ohio**

Materials Applications Engineer responsible for providing expert support to design, manufacturing and repair functions within the commercial and military large gas turbine engine group, involving: materials selection, testing, failure analysis, manufacturing and repair process development, alloy development and specification writing. Performed welding, brazing, heat-treating, machining, coating and inspection of titanium, iron, cobalt and nickel-based alloys.

ACADEMIC

M.S. University of Dayton, Dayton, Ohio - Materials Engineering (1993)

B.S. University of Illinois at Urbana-Champaign, Illinois - Metallurgical Engineering (1989)

CONTINUING EDUCATION

- Engineering & Manufacturing Operations Course (1990)
- Fracture Analysis of Brittle Materials (1995)
- Plastics Failure Analysis/Prevention and Testing (1996)
- Plastics Fracture Analysis Workshop (1996)
- Compliance with the EU Product Regulations (1998)
- Forklift Operator Training (1999)
- TapRoot® Incident Investigation Training (2000)
- Metallurgical Failure Analysis of Boilers (2001)
- Parker Hannifin Fluid Power Basics (2002)
- OSHA 10-Hour General Industry 29 CFR 1910 (2006)
- ASME Fox Valley Section Short Course – Material Fatigue (2008)
- Park Tool Bicycle Repair and Maintenance Clinic (2009)
- Mobile Crane Inspector (2015)

PROFESSIONAL REGISTRATION AND CERTIFICATION**LICENSES**

- Licensed Professional Engineer in Arkansas (License No. 14874)
- Licensed Professional Engineer in Colorado (License No. PE.0057327)
- Licensed Professional Engineer in Illinois (License No. 062-047612)
- Licensed Professional Engineer in Iowa (License No. 17715)
- Licensed Professional Engineer in Mississippi (License No. 19567)
- Licensed Professional Engineer in North Carolina (License No. 033981)
- Licensed Professional Engineer in Ohio (License No. 78264)
- Licensed Professional Engineer in South Carolina (License No. 24802)
- Licensed Professional Engineer in Texas (License No. 115100)

AFFILIATIONS

- American Society of Metals and Materials (ASM)
- International Engineering Society for Advancing Mobility Land Sea Air & Space (SAE)
- American Society of Mechanical Engineers (ASME)
- American Welding Society (AWS)

APPOINTMENTS

- ASTM Committee F08 - Sports Equipment, Playing Surfaces and Facilities (2021 – present)
- ASTM Committee F08.10 – Bicycles (2021-present)
- ASME B30 Standards Committee – Safety Standards for Cableways, Cranes, Derricks, Hoists, Hooks, Jacks, and Slings (alternate, 2012 – present)
- ASME B30.9 Subcommittee – Slings (2009 – present)
- ASME B30.18 Subcommittee – Stacker Cranes (2009 – present, Chair 2014 - present)
- University of Illinois Department of Materials Science and Engineering Alumni Board Member (2009- 2018)
- Journal of Failure Analysis and Prevention, Editorial Board Member, (2011 – present)
- ASM Failure Analysis Committee Member (1995 – 2016) (Secretary 2003-2004, Vice Chair 2004-2005, Chair 2005-2006)
- ASM Failure Analysis Society Member (2016 – present)
- ASM Professional Education Subcommittee Member (2008 – 2011)
- TMS Professional Registration Committee Member (1995 – 2021)
- NCEES PE Met/Mat Exam Development Committee (2021 – present)
- ASME, Pressure Vessel & Piping Division, Technical Program Representative for the Materials & Fabrication Technical Committee (1995, 1996)

PUBLICATIONS and PRESENTATIONS

PUBLICATIONS

1. D.A. Moore, J. Connor, “Evaluation of Simple Aluminide and Platinum Modified Aluminide Coatings on High Pressure Turbine Blades after Factory Engine Testing,” ASME Journal, 91-GT-379 (1991).
2. D.A. Moore, “Failure Analysis in Heat Treating: Who’s to Blame?”, Proceedings of the 9th Inductoheat Induction Heating Seminar (2000).
3. “Crankshaft Failure and Why It May Happen Again,” Practical Failure Analysis (2001).
4. D.A. Moore, “Failure Analysis in Heat Treating: Who’s to Blame?”, Proceedings of the 10th Inductoheat Induction Heating Seminar (2001).

PRESENTATIONS

1. “Evaluation of Aluminide and Platinum Modified Aluminide Coatings on Nickel Base Superalloy High Pressure Turbine Blades,” ASM International Materials Week, Detroit, Michigan (1990).
2. “Wrought GTD-222: A New Structural Alloy for Gas Turbines,” ASM International Advanced Aerospace Materials/Processes Conference, Anaheim, California (1993).
3. “Successful Engineering,” Association of Chinese Scientists and Engineers, Chicago, Illinois (1994).
4. “Failure Analysis of Gears,” SME Heat Treating and Hardening of Gears Clinic, Nashville, Tennessee (1999).
5. “Profit from Failure Analysis and Innovation,” ASM Chicago Chapter, Schaumburg, Illinois (1999).

6. "Failure Analysis in Heat Treating: Who's to Blame?", 9th Inductoheat Induction Heating Seminar, Clearwater Beach, Florida (2000).
7. "Failure Analysis in Heat Treating: Who's to Blame?", 10th Inductoheat Induction Heating Seminar, Clearwater Beach, Florida (2001).
8. "Crankshaft Failure - And Why It May Happen Again," ASM Materials Solutions 2001, Indianapolis, Indiana.
9. "Wire Rope Failure Analysis: Approach and Examples," ASM Materials Solutions 2001, Indianapolis, Indiana.
10. "Capturing the Facts," Defense Trial Counsel of West Virginia 2003 Annual Meeting.
11. R.J. Shipley and D.A. Moore, "Everything You Thought You Knew About Materials Engineering Investigations . . . and More," DRI Products Liability Conference, Las Vegas, Nevada (February 2003).
12. "Practical Aspects of NDE Field Examinations," D.R. Atkins, D.A. Moore, R.J. Shipley, ASM Material Solutions 2003 Conference & Exposition, Pittsburgh, Pennsylvania (October 13, 2003).
13. "Unexpected Failures at Work, Home, and Play," P.J. Pfeifer, D.A. Moore, R.J. Shipley, "ASM Material Solutions 2003 Conference & Exposition, Pittsburgh, Pennsylvania (October 14, 2003).
14. "Avoiding Wire Rope Failure," Crane & Hoist Conference & Exposition, Rosemont, Illinois (October 17, 2003).
15. "Capturing the Facts," Kane County Bar Association CLE Seminar, Geneva, Illinois (September 21, 2004).
16. "Failure Analysis: Planning the Macroscopic and Microscopic Examinations," 2006 Minnesota Microscopy Society Spring Symposium, St. Paul, Minnesota (April 21, 2006)
17. "An Engineer's Perspective: Selection and Use of the Expert Witness," Illinois Paralegal Association, Chicago, Illinois (October 13, 2006)
18. "Human Factors in Aviation: Errors & Aging," Chicago Bar Association, Aviation Law Committee, Chicago, Illinois (May 7, 2008)
19. "SWA Flight 1248 Incident at Midway Airport," Materials Science & Technology 2008 Conference, Pittsburgh, Pennsylvania (October 8, 2008)
20. "Texas A&M University Bonfire Collapse," Materials Science & Technology 2008 Conference, Pittsburgh, Pennsylvania (October 8, 2008)
21. "Crane Incident Investigation," 19th Annual Construction Safety Conference & Exposition, Rosemont, Illinois (February 17, 2009)
22. "Metallurgical Failure Analysis of a Fractured Chain Link Weld," Material Science & Technology 2018 (MS&T18), Columbus, Ohio (October 16, 2018)
23. "Ironman: Metallurgical Engineering in the Fire Investigation," McCoy Leavitt Laskey Fire Science and Litigation Seminar, San Antonio, Texas (October 24, 2019)

MISCELLANEOUS

- Certificate of Recognition, ASME (1996)
- Tau Beta Pi - Engineering Honor Society (1988)
- Alpha Sigma Mu - Metallurgy Honor Society (1988)
- GE Aircraft Engines Achievement Award, Production Coatings (1989)
- PSIA Certified Ski Instructor (1987 – 1998)