

THE EXPERTS Robson Forensic

DAWN DIMARCO
Metallurgist

Career Metallurgist with extensive experience in failure analysis, metallurgical consulting, electron microscopy and materials testing on a wide range of materials and industries including aerospace and automotive. Over 25 years' experience analyzing failures in aerospace components, rotating hardware, and automotive parts.

PROFESSIONAL EXPERIENCE

2016 to present **Robson Forensic, Inc.**
Associate

Provide technical investigations, analysis, reports, and testimony toward the resolution of commercial and personal injury litigation involving failure analysis.

2005 to 2017 **Hutchinson Industries**
Chief Metallurgist / Materials Laboratory Manager

Responsible for leading a team of chemists, elastomer engineers, test lab engineers and laboratory technicians in the development of aluminum wheels, rubber formulations, and coatings for military and consumer product applications. Responsible for overseeing all aspects of materials laboratory operations including metallurgical and rubber laboratory. Directs and manages the materials testing, operation, maintenance and repair of lab equipment.

2004 to 2005 **Stork MMA Laboratories**
Chief Metallurgist

Performed failure analyses on metallic components from a variety of industries, including aerospace, automotive, biomedical, and petroleum refining for manufacturers, suppliers, vendors and consumers. Experienced in metallurgical analyses using Scanning Electron Microscopy and Energy Dispersive X-Ray Analysis (SEM/EDS) systems. Investigated and provided analysis and consultation regarding fastener failures, material properties, corrosion and manufacturing processing problems such as heat treatment issues. Performed metallurgical testing as well as day-to-day operation of metallurgical lab equipment.

1994 to 2004 **The Boeing Company**
*Senior Technical Specialist—Materials & Process Engineering
Metallurgical Laboratory and Metallurgical Staff Engineer*

Performed metallurgical evaluations and failure analysis of various critical helicopter components including rotor head, transmission, and landing gear of military rotorcraft.

- Technical direction to manufacturing support and Material Review Board (MRB)
- Audit raw material suppliers, qualifying part subcontractors, approving manufacturing plans and supplier data action notices.
- Boeing Quality Pride Award for Customer Support
- Pride@Boeing Recognition Awards
- Boeing Materials Engineering Outstanding Performance Award
- Tandem Rotor Commendable Performance Award

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1989 to **Naval Air Warfare Center**
1994 *Materials Engineer*

Worked with the Army, Air Force, NASA, and ARPA, to provide a coordinated approach to the development of advanced components for fighter/attack and subsonic/transport aircraft engines. Ensured transition of these components to future Navy systems. Maintained a role as the recognized focal point in the technologies associated with engine materials. Programmatically and technically managed advanced materials programs and ensured transition to future Navy systems. Supported the Technology Demonstrator Engine and Advanced Aircraft Programs: JTDE, JTAGG, F-22, F-18E/F, STOVL, and JAST. Provided technical direction in Navy fleet hardware improvements and maintain a role as Navy focal point for materials design, test and evaluation.

EDUCATION

Rutgers University College of Engineering New Brunswick, NJ, B.S. in Ceramic Engineering, 1989

CONTINUING EDUCATION

Drexel University College of Engineering; Materials Engineering Department **Graduate Level**

Structure and Properties of Metals
Structure and Properties of Ceramics
Phase Equilibria
Mechanical Behavior of Solids
Structure and Properties of Polymers
Introduction to Composite Materials
Thermodynamics of Solids
Fracture Mechanics I
Experimental Techniques of Materials
Diffusion of Solids
Kinetics
Advanced Engineering Mathematics I

Defense Acquisition Management University Systems Engineering Management

Rensselaer Polytechnic Institute Fracture Mechanics

The University of Tennessee Space Institute (UTSI) Aero-Propulsion Systems, Technology, Test and Evaluation

TRAINING AND COMPETENCIES

How Failure Analysis is Impacted by Additive Manufacturing, Knovel, 2020
Forensic Engineering Part C, Case Histories: Metallurgical & Mechanical Failure Analyses, SunCam, Inc., 2017
Forensic Engineering Part B, Four Classes of Metallurgical and Mechanical Failures, SunCam, Inc., 2017
Forensic Engineering Part A, Conducting Failure Analyses of Metallic Materials, SunCam, Inc., 2017
Elastomer Technology, 2016
Play Fair-Developing Competition Law Reflexes, 2015
Test Lab Safety Procedures & Requirements, 2015
Rubber Technology and Rheology, 2015
Digital Radiography & Real Time Radioscopy, 2014
Ground Combat Vehicle OPSEC Training, 2013
Fastening Technology and Bolted Joint Design, 2013
International Material Data System (IMDS) Standard Training, 2013
Mixing & Testing for Compound Consistency, 2013
Safety Training, 2012
Test Lab Safety, 2012
Emergency Evacuation, 2012
Quality Policy, 2011
Harassment / Diversity, 2010
The Process of Metal Casting, 2009
AS9100C Internal Quality Auditing, 2009
Michelin Radial Truck Tire Course, 2009
Digital Radiography & Real Time Radioscopy, 2006
Oxford Instruments INCA Microanalysis, 2001
Ethics Challenge, Questions of Integrity, 2000
Anti-Kickback, 2000
Product Substitution, 2000
Export Regulatory Compliance, 2000
Cambridge Instruments SEM Operator Training Course, 1998
Ethical Business Conduct-Baseline Training, 1998
Bearing Design and Analysis, 1998
Gear Manufacturing, 1998
Product Substitution, 1998
Going Global With the Basics - IS Security, 1998
Foreign Object Damage (FOD) Familiarization, 1997
Computing Security-Doing Business on the Web, 1997
Labor Charging Using Employee Time Keeping System, 1997
Radiation Safety-Analytical, Cabinet X-ray, 1997 & 2000
Safety Learning Map #1, 1997
Safety Learning Map #2, 1997
Hazardous Materials, 1996
Injury/Illness Reporting, Intervention, 1996

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ISO 9000 Training - The First Step to the Future , 1996
Computing Security, 1996
Intellectual Property Awareness Training, 1996
Chemical Laboratory Safety, 1995
First Responder Awareness, 1995
Hazard Communication, 1995
Back Care Program, 1995
Ethics Review, 1995
Basic Bearing Design, 1995
Ethics, 1995
Computing Security: It's In Your Hands, 1994
Eye Protection, 1994
First Responder Awareness, 1994
Hazard Communication, 1994
Hazardous Waste, 1994

PROFESSIONAL MEMBERSHIPS

American Welding Society, 2020-present
ChIPs Advancing Women in Tech, Law, & Policy, 2019-present
ASM International, 1989-present
Failure Analysis Society, 2018-present

- Programming Committee IMAT, 2020

SECURITY CLEARANCE

Cleared **SECRET** 1989-1994

PATENTS

Wear Resistant Wheel Coating and Method, US 8,333,878, published December 18, 2012

PUBLICATIONS

Coatings for High-Temperature Structural Materials: Trends & Opportunities (1996)
National Materials Advisory Board (NMAB) Government Liaison Representative

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TECHNICAL REVIEWS

Technical Reviewer for ASM Handbook, Volume 11: Failure Analysis and Prevention, "Stress-Corrosion Cracking"

Technical Reviewer for ASM Volume 11A, Failure Analysis and Prevention, "High-Temperature Corrosion-Related Failures"

Technical Reviewer for ASM Volume 11A, Failure Analysis and Prevention, "Analysis and Prevention of Corrosion-Related Failures"

AFFILIATIONS

Zeta Tau Alpha alumna

EXPERT NOT RETAINED