

Gregory A. Marbett, B.Sc., Metallurgy, CFEI
Senior Metallurgist

AREAS OF EXPERTISE:

- Failure Analysis:
 - industrial machines, cranes, heavy construction equipment
 - engines
 - automobiles, aircraft, boats and other vehicles
 - pressure vessels
 - sports equipment, medical implements
- Material Analysis and Testing:
 - corrosion analysis
 - metallography, physical and mechanical property determination
 - heat treatment and manufacturing processes
 - metals, plastics, polymers, composites and ceramics
- Fire and Explosion Cause and Origin Investigations:
 - electric and gas heaters, refrigerators, toasters, dryers and other appliances
 - circuit panels
 - buildings, automobiles and forests
- Investigation of Building Envelope Failures (Residential and Commercial):
 - EIFS
 - Stucco
 - LP
 - insulation, windows, doors and roofs

EDUCATION:

- University of Washington – B.Sc., Metallurgical Engineering, 1986

PROFESSIONAL LICENSES:

- Active Inspector / Moisture Analysis, EIFS 3rd Party Inspector Certification, Exterior Design Institute, 2003
- Certified EIFS 3rd Party Inspector, EDI # OR-33
- Certified Fire and Explosion Investigator, NAFL, 6173-1946
- ASNT Level I Magnetic Particle Inspector, Pacific Testing Laboratories, 1992

SUMMARY OF EXPERIENCE:

Mr. Marbett began his engineering career as a metallurgist with The Boeing Company in 1986 and has been working in the forensics field since 1991. Mr. Marbett has been a senior forensic engineer and technical manager at two forensics engineering companies, in addition to West Coast Forensics, where he is a principal. Mr. Marbett has extensive analysis, negotiation and litigation experience in four major areas: material analysis and testing; product failure analysis; fire and explosion cause and origin investigations; and the investigation of building envelope failures.

CONTINUING PROFESSIONAL EDUCATION:

- 24th Annual Advanced Fire & Arson Seminar, IAAI Oregon Chapter 31, 2002
- 30th Annual Fall Seminar, IAAI Oregon Chapter 31, 2008

PROFESSIONAL AFFILIATIONS:

- American Society for Metals (ASM)
- Exterior Design Institute (EDI)
- International Association of Arson Investigators (IAAI-OR Chapter)
- National Association of Fire Investigators (NAFI)

SEMINARS PRESENTED:

- “Forensic Investigations” Speaker, Mutual of Enumclaw Insurance, Enumclaw, WA, March 2003
- “Fire & Product Liability/Electrical Perspective” Speaker, Oregon Casualty Adjusters Association Program, 2002
- “Failure Analysis” Speaker, National Association of Marine Surveyors, Western Regional Conference, 1993

DETAILED WORK HISTORY:

West Coast Forensics, Engineering and Design, LLC, Portland, OR 2006 – Present
Principal, Metallurgist

Currently fulfilling primarily the same forensic engineering roll and duties as performed during my tenure at Case Forensics. As one of the principals of West Coast Forensics, duties also include the execution of business operations.

CASE Forensics, formerly Schaefer Engineering Corp., Portland, OR 1998 – 2006
Manager, Engineering Consulting – Portland Division (1998 – August 2005)

As the Manager of the Engineering Consulting – Portland Division, provided technical direction and management oversight of:

- Forensic Engineering
- Mechanical/Civil Engineering
- Building Envelope Division
- Metallurgical Engineering

Duties included oversight of the technical, financial and administrative workings of the Portland Engineering Consulting Division. Responsible for project management, staffing, budgets, proposals, marketing and client invoicing. Provided technical support in forensic engineering analysis such as construction material defects, industrial failures, automobile accident reconstructions and fire investigations. Successfully defended numerous engineering analyses by providing expert witness testimony in state and federal courts. Performed peer review for technical analyses, testing and report writing generated in the Portland Division.

CASE Forensics (cont.)***Director of Building Envelope Division, Senior Metallurgist*** (June 2005 – March 2006)

As a forensic engineer, provided technical and litigation support to the insurance, industrial and legal professions. Performed building envelope failure analysis including water intrusion and mold damage involving EIFS, Stucco, LP siding, insulation, windows, doors and roofs. Effectively carried out failure analysis, investigations, testing, mechanical analysis, materials characterization, standards and code review. Also completed design and assembly review.

Pacific Testing Laboratories, Portland, OR

1991 – 1998

Manager, Engineering Consulting – Portland Office (1994 – 1998)

As the Manager of the Engineering Consulting office, provided technical direction and management oversight of:

- Forensic Engineering
- Mechanical/Civil Engineering
- Building Envelope Division
- Metallurgical Engineering

Duties included oversight of the technical, financial and administrative workings of the Engineering Consulting office. Responsible for project management, staffing, budgets, proposals, marketing and client invoicing. Provided technical support in forensic engineering analysis such as construction material defects, industrial failures, automobile accident reconstructions and fire investigations. Successfully defended numerous engineering analyses by providing expert witness testimony in state and federal courts. Performed peer review for technical analyses, testing and report writing generated in the Portland Office.

Forensic Engineer – Seattle Division, WA (1991 – 1994)

Project manager for various litigation related engineering analyses and testing involving loss of property or life. Generated technical reports, performed exemplar testing and provided expert witness testimony for said analysis. Provided engineering consulting to manufacturing, maritime and electronics industries in the areas of metallurgy and failure analysis. Developed laboratory skills involving Optical and Scanning Electron Microscopy, metallography and exemplar testing.

FAILURE ANALYSIS

Major case work addressed failures of large diesel engines, marine vessels and their components, cranes, bicycles, structural components, pressure vessels, fasteners, plumbing systems, lift and loading systems, high and low pressure hydraulic and pneumatic systems, ladders, automobile components, wood flooring and siding. The utilization of fracturography, metallurgy and stress analysis was required to accomplish the analysis.

CONSTRUCTION MATERIALS EVALUATION

Investigated and analyzed material defects that resulted in water intrusion, wood decay, structural failure and collapse. Provided expertise in LP siding and EIFS investigations on residential and commercial structures. Evaluated paint and sealant application quality in relation to wood decay and water intrusion.

EXTERIOR SIDING INVESTIGATIONS

Performed extensive testing and analysis on Louisiana Pacific (LP) Siding in support of the 1996 Class Action Suit. Evaluated defective LP Siding for manufacturing defects, improper installation, correct paint type and application. Managed a team of engineers who inspected numerous residential structures in the Pacific Northwest and the Gulf States for the purpose of evaluating LP Siding for defects based on the 1996 Class Action Suit criteria.

Evaluated the installation and performance of Exterior Insulation and Finish System (EIFS) on numerous residential structures in the Pacific Northwest. The emphasis of the investigations was to determine whether the EIFS siding was installed per industry standards, building code requirements and the manufacturers specifications. Performance of the product was determined by testing the plywood substrate for evidence of moisture and water intrusion. In cases of water intrusion, evaluation of the wood framing and sheathing for dry rot was performed. In addition, the EIFS products were evaluated for inherent defects in the system when applied as intended by the manufacturer. Provided expert consultation on proper EIFS installation to legal council on numerous cases.

PREMISES LIABILITY

Provided expertise in investigating slip and fall as well as trip and fall accidents. Performed coefficient of friction analysis and evaluation of walking surfaces of various materials including wood, metal, concrete and asphalt. Performed evaluation of building code compliance regarding stairways, walkway hazards and lighting.

FIRE INVESTIGATION

Determined the cause of failures related to electric and propane heaters, refrigerators, toasters, driers, oil furnaces, lights, switches, outlets, other electronic devices and components which are suspected of starting fires. Designed and performed exemplar tests to recreate fire events.

TESTING AND EVALUATION

- Metallurgical Testing and Examination
- Physical and Mechanical Property Testing of Materials
- Materials and Process Evaluation
- Fastener Testing
- Fatigue Analysis
- Data Acquisition
- Load Testing
- Temperature Testing
- Manufacturing Analysis
- Product Comparison Testing

The Boeing Company, Seattle, WA

1986 – 1989

Metallurgist, Material and Process Engineer for Boeing Materials Technologies

Duties included providing technical support and consulting for the various airplane groups. Authored and revised Material and Process specifications with a focus on manufacturing and materials testing for in-house and vendor usage. Reviewed and edited engineering drawings for proper material and process call outs. Performed vendor qualifications for existing and new parts manufacturing processes. Performed failure analysis of in-service and test parts. Assisted

The Boeing Company (cont.)

in the research and development of a new aluminum alloy, aluminum-lithium. Established vendor manufacturing criteria for net and near net shaped aluminum forged parts with emphasis on mechanical and corrosion properties. Participated in high profile commercial airplane crash investigations.

OTHER WORK EXPERIENCE:

Carpenter, Seattle, WA 1990 – 1991

Participated in the construction and remodeling of residential and small commercial buildings. Experience included framing, foundations and finish carpentry work.

Self-Employed Commercial Fisherman, Coastal waters of AK and WA 1989 – 1990

Operated and maintained a commercial fishing vessel for the purpose of purse seining salmon in Southeast Alaska. Experience included repair and maintenance of hydraulics, engine and mechanics of vessel.