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KNOWLEDGE & EXPERTISE

Over twenty-eight years of experience as a materials engineer, failure analyst and accident investigator in the aviation and industrial maintenance fields culminating in the leadership of a team of eleven plus engineers and technicians.

EMPLOYMENT HISTORY (1989 to Present)

Materials Engineer & Technical Supervisor (Sr. rank since 2001/Team Lead since 2015)
Naval Air Systems Command at Fleet Readiness Center Southeast
Materials Engineering Division; Polymers & Composites, Metals & Ceramics Branches.
Naval Air Station Jacksonville, FL 32212-0016

2014 - Present:

Materials Engineer, Metallurgist & President
Southeastern Metallurgy, LLC

DUTIES (1989 to Present @ NAVAIR)

- ❖ Technical Supervisor of 11+ engineers & technicians (since 2015).
- ❖ Metallurgical failure analysis (700+), accident investigation, engineering problem solving of aircraft engines, systems, structures, and industrial machinery.
- ❖ Design & manufacturing of new parts, material selection, forming, forging, conventional machining, welding, heat treating, machine grinding, electric discharge machining, additive manufacturing, and shot peening.
- ❖ Polymers and composites design, selection, degradation, and investigations.
- ❖ Corrosion identification, prevention, and control.
- ❖ High temperature materials, turbine cases, blades, disks, and shafts.
- ❖ Heat, lightning strike, and fire damage evaluations.
- ❖ Write single or multiple component repair instructions and processing specifications.
- ❖ Consultant to engines, systems, and structures engineering staff in failure prevention, repair, and part design.
- ❖ Train engineering staff (300+) in materials and processes.
- ❖ Train technicians (400+) in special skills and new manufacturing techniques.

UNIVERSITY EDUCATION

Doctoral: Materials Science and Engineering, University of Florida, 2006.
Master's: Materials Science and Engineering, University of Florida, 1995.
Bachelor's: Materials Science and Engineering, University of Florida, 1991.

TYPES OF LEGAL CASES TO DATE (Southeastern Metallurgy '14 - '17)

Mechanical Failures • Truck Suspension Failure • Aircraft Corrosion • Welding Failures (Steel & Aluminum) • Motor-Bike Fork • Welding Accident • Truck Drive Line • Tractor Fire • Condominium Railing Corrosion • Horse Trailer Corrosion • Graphite/Epoxy Composite Structural Failure • Pipe Corrosion • See Web Site "Experience" for Additional Info.

PROFESSIONAL TRAINING ('91 to present)

- ❖ *F/A-18 Aircraft Drawing & Manufacturing Interpretation Course, FRCSE.*
- ❖ *Tescan Instruments; Field Emission Scanning Electron Microscopy.*
- ❖ *Oxford Instruments; EDS, WDS & EBSD X-Ray Microanalysis.*
- ❖ *Bearing and Gear Design Technology.*
- ❖ *Fundamentals of Arc Welding.*
- ❖ *Aircraft Accident Investigation, National Transportation Safety Board.*
- ❖ *Superalloys for Heavy Duty Aircraft Gas Turbines.*
- ❖ *Geometric Dimensioning & Tolerancing.*
- ❖ *Cold Expansion Systems Engineering, Fatigue Technologies.*
- ❖ *Scanning Electron Microscopy & X-Ray Microanalysis, Lehigh University.*
- ❖ *Jet Engine Mishap Investigation, U. S. Air Force.*
- ❖ *F-14 Aircraft Bulkhead Quality Hole Machining, NADEP Norfolk.*
- ❖ *Aircraft Composite Structure Producibility & Quality, Wichita State University.*
- ❖ *Aircraft Powerplants, FAA.*
- ❖ *Advanced Composites Training, Abaris.*

PUBLISHING & PRESENTATIONS

- ❖ Journal Article: (W/ John J. Mecholsky, Jr.), *Relationship Between Fracture Toughness And Fracture Surface Fractal Dimension In AISI 4340 Steel*, Materials Sciences and Applications, 2013, 4, 258-267.
- ❖ Ph.D. Thesis: *Relationship Between Fracture Toughness And Fracture Surface Fractal Dimension In AISI 4340 Steel*, University of Florida, 2006.
- ❖ Presentation: *Load Flow in Multi-Stack Joints*, NAVAIR Air Vehicle Engineering Conference, 2009.
- ❖ Presentation: *Elimination of Baking Operations Following Nitric Acid Based Temper Etching*, NAVAIR Air Vehicle Engineering Conference, 2007.
- ❖ Presentation: *Failure Analysis of Turbine Engine Compressor Front Hub/Disk*, AeroMat Conference, 2004.
- ❖ Presentation: *Failure Analysis of Turbine Engine In-flight Failure*, AeroMat Conference, 2004.
- ❖ Presentation: *Tailhook Failure & Aircraft Mishap*, University of Florida Graduate Students & Faculty, 2004.
- ❖ Other Related: *Journal Article Reviewer & Advisor, Metallurgical and Materials Transactions A*, 2014-Present.



SELECTED AWARDS

- 2016 ▶ From Materials Engineering Division Jacksonville for significantly reducing engineering investigation turn-around time, training four new engineers.
- 2015 ▶ From Materials Engineering Division Jacksonville for completing multiple high profile engineering investigations (several engine & airframe losses).
- 2012 ▶ From Commander, Naval Air Warfare Center, for support of the T-45 Hook Shank Production Restart Team.
- 2011 ▶ From Materials Engineering Division Jacksonville for skillful and professional completion of jet trainer mishap investigation involving airframe loss.
- 2010 ▶ From Materials Engineering Division Jacksonville for the performance of high-visibility failure analysis of a main landing gear trunnion and suggestions for improvement.
- 2009 ▶ From Materials Engineering Division Jacksonville for completion of numerous analyses and investigations of Navy/USAF turbofan engine turbine failures.
- 2009 ▶ From Materials Engineering Division Jacksonville for support of turboprop engine compressor blade failures.
- 2008 ▶ From Materials Engineering Division Jacksonville for failure analysis of three separate instances of air-to-air refueling hose failure.
- 2006 ▶ From Materials Engineering Division Jacksonville for completion of high visibility failure analysis a jet aircraft wing spar.
- 2006 ▶ From Program Executive Officer, Tactical Aircraft Programs for professionalism and technical expertise in the investigation of the effects of contamination on jet engine bearing damage.
- 2005 ▶ From Commanding Officer, Marine Aircraft Group 31 for outstanding response and support in rapidly inspecting several heat-damaged jet aircraft.

- 2000 to Present ▶ Multiple awards throughout the years from Materials Engineering Division Jacksonville and Production Supervisors for support of FRCSE plant manufacturing shop operations including machining, grinding, and shot peening.
- 2000 to Present ▶ Multiple awards throughout the years from Materials Engineering Division Jacksonville and FRCSE Production Supervisors for providing training to engineers and artisans, especially classes required to recertify in special skill areas.

OTHER RELEVANT EXPERIENCE & TRAINING (1978-1985)

- ❖ Auto, Truck, Gas & Diesel Engine Mechanic: Various employers.
- ❖ Training: OJT & Westside Skills Center, Jacksonville, Fl.
- ❖ Awards: Placed or won Regional and State Vocational Industrial Clubs of America Mechanics competitions.

