

OVERVIEW

An unabashedly out-of-the-box, big picture thinking engineer who believes in the potential for technology to revolutionize aerospace system design and leverages that mindset to drive engagement and performance in teams large and small. An advanced structures expert with experience across the aerospace business landscape: OEM, small aerospace manufacturer, space R&D startup; working with national government/industry teams and as an independent consultant. Exceptionally well versed in all aspects of aerospace program management, system design, analysis and test with practical experience in diverse areas from conceptual design to manufacturing support; from R&D (parking lot) development testing to system level qualification testing; from developing design criteria to forensics; from ground support equipment to fighters, railcars, rockets, transports and spacecraft. I'm looking for an independent contributor or leadership role in an aerospace research and development group making real measurable progress towards transformative goals. I need a position that offers intellectual challenge, the ability to work on both the big picture and real world challenges, the opportunity to champion change and, ultimately, that feeds my soul.

KEY STRENGTHS

- Engineering Problem Solver
 - Draws upon vast experience in aerospace systems, structures and concepts
 - Uses superior analysis skills for problem characterization, design assessment, data analysis and forensics
 - Develops innovative, practical solutions to complex problems by coupling broad expertise with rapid learning
- Effective leader
 - Leads groups from small advanced study teams to large multi-company/agency, multifunctional teams leading through technical excellence, personal involvement and big picture motivation
 - Emphasizes listening, sharing information and promoting communication and responsibility across organizational/functional boundaries
 - Is passionate about teaching, transferring knowledge and developing critical thinking skills in others
- Technology development evangelist
 - Manages large scale DoD/NASA R&D contracts and has led national strategic technology development activities
 - Understands the technology development process including the "valley of death" and the role of "planting seeds"
 - Visionary – looks at where technology can lead, charts a path to get there and leads the way
 - Using "new" materials (highly conductive plastics) to replace high performance metals
 - Revolutionizing aerospace structural design through sensor based structural health management
- Strong business perspective and experience
 - Independent business owner provided consulting to NASA and the Air Force among others for over 12 years.
 - Adept at market analysis, business case development and decision making under uncertainty
 - Develops and executes complex programs with multiple customers, partners & subcontractors
- Strong communicator
 - Conveys complex information to diverse audiences in a clear, approachable manner
 - Has presented at 20+ technical conferences as session chair, panel host, etc., led 10+ national technical/strategic planning workshops, author of over 20 published papers/presentations

PROFESSIONAL EXPERIENCE SUMMARY

2019- present	Tethers Unlimited, Inc.	Business Area Manager
2011 – 2019	Exotic Metals Forming Company	System Engineer (2015 - present); Senior Research Engineer (2011 – 2015)
1999 - 2011	Consensus Technology, LLC	Independent Aerospace Technology Consultant
1979 – 1998	The Boeing Company	Award Winning Principal Engineer, IPT Lead and Program Manager

RELEVANT SKILLS

ENGINEERING: All aspects of aerospace structures technology: Design, Analysis, Test, Qualification/Certification and Forensics; Advanced Materials, Hybrid and Multifunctional Structures; Trade Study & Decision Support; Analysis Tools/Methods; System Health Management; Cost Modeling and Analysis; Business Case/ROI and Market Analysis; Manufacturing Support/Material Review Board (MRB).

LEADERSHIP: IPT/Team Leadership; Program/Proposal Development; Schedule, Budget and Performance Management; Subcontractor Management; Government Contracting; Continuous/Process Improvement; Mentoring; Technology Planning

OFFICE TECHNOLOGY: Exceptional PC Skills: MS Office, Confluence, JIRA, Software Development(Win/Mac/iOS), DOE/Data Analysis (JMP)

OTHER

EDUCATION: Cornell University: BS (1977), ME(C) (1978)

ASSOCIATIONS: AIAA, NSPE

PROFESSIONAL EXPERIENCE

2019 – present TETHERS UNLIMITED, INC

Business Unit Manager (2019– Present):

- Principal investigator/Program Manager for TUI's Emyprean project, an element of NASA's FabLab effort, creating robotic part handling and inspection capability within an EXPRESS Rack based manufacturing facility on the ISS
- Managed TUI's Robotics and In-Space/Off World Detailed Part Manufacturing Efforts (\$6.7 M of NASA and DARPA funded efforts)
- Principal investigator/Program Manager for TUI's In Space Metallic Recycling programs

2011 – 2109 EXOTIC METALS FORMING COMPANY

System Engineer/Facilities Coordinator (2015 – 2019):

- Transitioned 45,000 sq.ft. warehouse space to advanced manufacturing facility
- Developed/deployed visual app-based knowledge management tools for the shop floor and enterprise
- Developed/deployed digital based weld analysis system

Senior Research Engineer: R&D Department Lead (2011- 2015)

- Developed the Exotic R&D Lab for dedicated research and advanced automation development
- Performed impact/market studies and conducted research efforts around the application of advanced materials including 3D printing (FDM), advanced metals (Magnesium), ceramic matrix composites, and conductive plastics
- Developed/conducted multiple research projects in manufacturing process improvement such as laser cutting optimization, weld optimization, automated weld quality assessment, surface cleanliness measurement and 3D scanning

Conducted research into emerging technology applications resulting in the development of hybrid tubing systems using highly conductive plastics to replace metallic components (US Patent US10605388B2).

1999 - 2011 CONSENSUS TECHNOLOGY, LLC

Independent Aerospace Technology Consultant

Client List: Joint Army, Navy, NASA, Air Force (JANNAF) Committees and AFRL Space & Missiles Systems Propulsion Directorate; NASA Langley Research Center (NESC); NASA Ames Research Center; AFRL Structures, Materials, Manufacturing and Propulsion Directorates;

Focus Areas and Efforts:

- Led national effort defining the benefits and business case for health management in missile and space propulsion systems (JANNAF)
- Developed On-Orbit Inspectability and Repairability Guidelines and Recommendations for on-orbit detection, assessment and remediation of impact damage to composite structure including the effects of MMOD impact (NESC)
- Defined basic damage detection and assessment technologies, system architecture, implementation realities and system design requirements for Orion Crew Exploration Vehicle (CEV) (NASA Ames)
- Led national effort DEFINING the benefits of ISHM, detailed technology needs and specific technology plans to detect, assess and accommodate in-flight damage in real-time (AFRL)
- Provided comprehensive support to both the collaborative and proprietary portions of national Composites Affordability Initiative including facilitating Lockheed Martin's proprietary CAI concept selection effort (AFRL)

Example Publications:

"The Business and Technical Case for Rocket Engine Health Management", Panelist, 2009 AIAA Infotech@Aerospace Conference, Seattle, WA April 6-9, 2009

"Chair: Prognostics and Structures Session, 2009 IEEE Aerospace Conference, Big Sky, MT, March 7- 14, 2009

"Structural Health Management and Structural Design: An Unbridgeable Gap?", 2008 IEEE Aerospace Conference, Big Sky, MT, March 1-8, 2008

"Structural Health Management for the Crew Exploration Vehicle: An Assessment", AFRL Integrated Systems Health Management Conference, Cincinnati, OH, August 7-9, 2007

1979 - 1998 THE BOEING COMPANY

- Led company participation in \$400 Million, 20 year research initiative to develop 100% composite airframe structures
- Defined technical objectives, participation and programmatic strategy for high impact, long term technologies in design, manufacturing, stress analysis, survivability, cost modeling/analysis and innovation
- Managed all aspects of company's \$11.5M Phase II Composite Affordability initiative technical effort
- Managed all technical aspects of \$9.3 million Air Force funded all composite aircraft fuselage research program (DMLCC-F) continually evolving a compelling technology case maintaining program through multiple customer funding changes/crises

Engineering Experience:

- Discovered cause of in-flight anomaly during first IUS/Titan mission by testing hardware analog of complex three D control system
- Developed Spacecraft/Booster interface instrumentation minimizing installation induced preloads on critical joints
- Developed random vibration based approach to validating static loading conditions for complex composite structures.
- Functional focal point for all structural testing of complex composite structure
- Key forensics analyst for structural test failures developing methods to isolate failures from high speed test data
- Responsible for analysis and qualification of IUS elevation/restow system including zero-g simulation testing of IUS Airborne Support Equipment
- Responsible for design and analysis of re-entry system processing equipment including hardware and procedures for Rail Garrison
- Analyzed large articulated transporter including overall configuration, sizing, structural performance, mechanical performance and vibration isolation system