Caleb Boe

Structures Engineer - People Leader - Workflow Optimizer

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Professional Summary

Senior Structural Engineer with 10+ years of experience in the design and analysis of composite and metallic structures across diverse aerospace and defense programs. Proven expertise in identifying process bottlenecks and deploying advanced software tools to streamline workflows, accelerate project timelines, and significantly improve design efficiency.

Skills

- **Structural Analysis:** Finite Element Analysis (FEA), Classical Hand Calculations, Buckling, Vibration, Fatigue, Damage Tolerance
- **Software:** FEMAP, NASTRAN (NX & MSC), HyperMesh, Patran, CATIA V5, Siemens TestLab
- **Programming & Scripting:** Python, MATLAB, SQL, C++
- **Technologies & Platforms:** Grafana, InfluxDB, Jira, GitLab, Polars

Work Experience

Branch Manager / Senior Structural Engineer *March 2026 – Present*
Leidos Dynetics Huntsville, AL

- Led branch operations for a 25+ person team of stress and thermal analysis engineers, directly managing 4 section managers (each overseeing 4–6 direct reports)
- Drove hiring and organizational growth by onboarding two engineers and an internal section manager, strengthening leadership depth and technical capacity
- Developed a Grafana dashboard integrating Jira data to forecast program staffing needs against branch capacity, enabling data-driven hiring decisions and proactive resource planning

Section Manager / Senior Structural Engineer *March 2024 – March 2026*
Leidos Dynetics Huntsville, AL

- Led a high-performing team of structural analysts (entry-level to senior), overseeing tasking, performance evaluations, and professional development while effectively diagnosing and resolving team dynamics, interpersonal, and performance issues
- Instituted monthly technical presentation series with rotating team speakers to drive knowledge sharing and build collective expertise
- Secured funding for a technical training opportunity, enhancing team skills and capabilities
- Designed and implemented a GitLab framework to enable seamless collaboration and distribution of custom Python and FEMAP API tools
- Developed a centralized queuing system for FEA and CFD analysis jobs and implemented a Grafana dashboard to provide real-time visibility into system status and usage metrics, demonstrating significant throughput improvements to upper management
- Directed the load test of a large composite structure, coordinating efforts across multiple engineering disciplines to ensure successful execution

Lead Structural Engineer *November 2021 – March 2024*
Leidos Dynetics Huntsville, AL

- Served as Stress Analysis Lead for road vibration testing effort: configured and operated on-site DAQ systems, performed in-field data analysis, and provided technical guidance to support test execution
- Developed Python-based spectral analysis tools compliant with MIL-STD-810 to characterize vibration environments and guide critical test decisions
- Led stress analysis efforts for integration of a data link system into a missile launcher, conducting impact assessments, developing comprehensive task lists, assigning work to team members, providing technical guidance, and delivering key results at design reviews
- Automated repetitive structural analysis workflows with Python scripts, significantly reducing processing time and freeing engineers for higher-value tasks

Structural Analysis Engineer *June 2018 – November 2021*
Aurora Flight Sciences (A Boeing Company) Manassas, VA

- Performed static strength, fatigue, and buckling assessments of metallic and composite structural components
- Conducted damage tolerance analysis for an existing aircraft and developed reports outlining acceptable damage types and levels to support continued operation
- Developed Python script to extract loads from finite element models and determine critical cases for composite bearing/bypass analysis, achieving a 4x increase in efficiency

Structural Design Engineer *June 2015 – June 2018*
Aurora Flight Sciences (A Boeing Company) Manassas, VA

- Designed lightweight structural components for solar-powered aircraft, emphasizing weight reduction while meeting strength, stiffness, and functional requirements
- Served as manufacturing liaison supporting machining, composite fabrication, assembly, and systems integration to ensure design producibility and resolve on-floor issues
- Led design of test fixtures and hydraulic load application system for structural load testing, verifying accurate load application and implementing comprehensive safety measures

Education

B.S. Aerospace Engineering *August 2011 – May 2015*
Iowa State University GPA: 3.87

Languages

- English – Native or Bilingual Proficiency
- Spanish – Limited Working Proficiency