SZYMON SKUBISZ

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Professional Summary

Creative and detail-oriented Mechanical Engineer with 13+ years of experience spanning design, analysis, and manufacturing of aerospace and precision instrumentation components. Expert in CAD modeling, DFMA, and cross-functional collaboration from concept to production. Passionate about creating innovative, manufacturable designs that improve performance, reliability, and user experience.

Work Experience

TMC - AMETEK **5/2025 – Present**

Manufacturing Engineer **Peabody, MA**

- Lead process development and product design improvements for precision vibration isolation and analytical instrumentation, applying DFMA and Lean principles to enhance manufacturability and reliability.
- Partner with design and operations teams to optimize component geometry and material selection, reducing cost and assembly time while maintaining performance.
- Document and refine vibration dampening platform manufacturing processes, train technicians and improving consistency—resulting in a 10% reduction in epoxy usage and 40% fewer defects.
- Develop standardized work instruction and visual documentation for 50+ processes, ensuring repeatability and ISO 9001 compliance.
- Redefined large sheet-metal component design to eliminate 4 hours of labor per part, optimizing form and function.
- Drive supplier design feedback and qualification efforts, balancing cost, manufacturability, and precision requirements.
- Support development of vibration isolation systems for precision instrumentation operating in extreme and sensitive environments, performing mechanical analysis and design optimization for structural stability and damping performance.

COLLINS AEROSPACE **6/2022 – 5/2025**

Manufacturing Engineer – Space Systems **Windsor Locks, CT**

- Collaborated with design engineering to refine spacecraft thermal management hardware, ensuring manufacturability of heat exchangers, pumps, valves, and sublimators.
- Led a critical failure investigation of spacecraft cooling systems; determined contamination root cause and provided design modification recommendations.
- Developed and updated CAD models and engineering drawings to latest configurations for production release.
- Authored detailed documentation in SAP and supported configuration management and change control activities.

COLT'S MANUFACTURING COMPANY, LLC **9/2021 – 2/2022**

Manufacturing Engineer **West Hartford, CT**

- Supported design-for-assembly improvements across rifle production lines, optimizing layout, tooling, and manufacturability for government and commercial platforms.
- Reduced assembly time by 15% through tooling and process redesign.

MIRION TECHNOLOGIES (CANBERRA), INC. **2/2021 – 9/2021**

Detector Engineer **Meriden, CT**

- Designed and optimized seal plate manufacturing process for gamma detectors, improving throughput by 50% and reducing defects by 80%.
- Authored updated assembly drawings and manufacturing documentation; trained technicians to ensure process adherence.

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HARCOSEMCO, LLC **1/2020 – 4/2020; 10/2020 – 2/2021 (Contract)**
Mechanical Design Engineer **Branford, CT**

- Designed and developed aircraft engine sensors (Oil Temperature RTD Sensor, Air Flow Sensor), performing calculations, 3D modeling, and tolerance analysis.
- Supervised off-site product testing and integrated results into design improvements.
- Strengthened design-for-manufacture and testing expertise to align product design with manufacturing capabilities and performance criteria.

CAPEWELL AERIAL SYSTEMS, LLC **11/2018 – 10/2019 (Contract)**
Mechanical Design Engineer **South Windsor, CT**

- Led design and prototyping of aerospace airdrop systems, including strut support systems, pressure valves, and timed-release mechanisms.
- Created 3D models, assemblies, and prototypes; drove iterative design reviews with Engineering, Production, and customer stakeholders.
- Delivered designs that improved performance, reliability, and manufacturability under stringent aerospace standards.

Selected Projects

- Designed and qualified a spacecraft thermal management subsystem for Collins Aerospace, ensuring structural integrity under launch and orbital vibration profiles.
- Developed precision vibration isolation platforms at TMC – AMETEK, optimizing epoxy bonding processes and improving consistency for nanometer-level isolation.
- Designed and prototyped aerospace airdrop strut and valve assemblies at Capewell Aerial Systems, meeting stringent reliability and manufacturability requirements.

Software Proficiencies

CAD Modeling (Autodesk Inventor, Siemens NX, Solidworks, AutoCAD, Creo); ERP Systems (SAP, Epicor); PLM Tools (Teamcenter, Windchill PDM, Solidworks PDM); MES (Solumina SQA Suite); Simulation & Analysis (ANSYS, Solidworks FEA); 3D Printing (Ultimaker Cura); MS Office Suite

Technical Proficiencies

3D Modeling & Assembly Design, DFMA, GD&T (ASME Y14.5), Finite Element Analysis, Tolerance Stack-Up, Root Cause Analysis, Process Validation, Lean Manufacturing, ISO 9001, AS9100, Aerospace Manufacturing, Additive Manufacturing, Technical Writing, Cross-Functional Collaboration

Certifications and Awards

GeoTol GD&T Fundamentals • Foreign Object Damage Prevention • Material Handling Awareness • Environmental Health & Safety • Global Trade Fundamentals • Quality Cardinal Rules • Six **Raytheon Excellence Awards** for exceeding customer expectations and managing multiple hardware programs

Education

Central Connecticut State University, New Britain, CT

Bachelor of Science in Mechanical Engineering, Minor in Mathematics – *May 2017*

Clark University, Worcester, MA

Bachelor of Arts in English, Minor in Spanish – *May 2009*

Leadership & Collaboration

Cross-functional design reviews • Supplier feedback integration • Technician training and mentoring • Concept-to-production development • Design-Manufacturing integration