

Austin Paynter

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Summary

Mechanical Systems Engineer with 20+ years of experience designing, prototyping, and deploying high-reliability systems across defense, energetics, aerospace, and robotics. Specialized in translating complex concepts into manufacturable hardware, including work on energetic materials processing, autonomous systems, and precision electromechanical assemblies.

Strong background in rapid R&D environments, with hands-on expertise in CAD, fabrication, and system integration. Proven ability to bridge concept development and production-scale implementation in high-consequence applications.

Core Competencies

- Mechanical Design (SolidWorks, OnShape)
- DFM / DFA / GD&T / Tolerance Analysis
- Energetics & Propellant Systems
- Process Equipment & Piping Design
- Rapid Prototyping & Fabrication
- CNC & manual machining
- 3DP (FDM, SLA, SLS)
- Electromechanical Systems Integration
- Vendor Development
- Manufacturing Scale-Up
- Testing, Validation, and Field Deployment

Education

100+ credit hours toward B.S. Mechanical Engineering
Austin Community College
Certificate – Small Business Management

Certifications

Six Sigma Green Belt
FFL Type 07 (expired)

Key Strengths

- Design of high-reliability mechanical systems in defense and energetics environments.
- Bridging concept development to manufacturable hardware.
- Hands-on prototyping and fabrication expertise.
- Leadership across engineering and production teams

Professional Experience

Mechanical Engineer – X-Bow Systems

Austin, TX | 06/2025 – 01/2026

- Performed conceptual engineering for a **containerized miniature process plant** for nitrocellulose production, focusing on modularization, safety, and deployability.
- Developed CAD models and layouts for **process piping systems and structural frameworks** supporting solid rocket motor manufacturing infrastructure.
- Contributed to early-stage system architecture bridging chemical process requirements with mechanical implementation constraints.

Senior Mechanical Engineer – Pipedream Labs

Austin, TX | 12/2022 – 2025

- Led design and deployment of complex autonomous delivery infrastructure integrating mechanical systems, motors, sensors, and control hardware.
- Designed and field-deployed an **industry-first autonomous output portal system**, currently operational in a live customer environment.
- Drove **rapid prototyping cycles, including in-house fabrication and testing, enabling accelerated product iteration.**
- Collaborated cross-functionally across mechanical, electrical, civil, and software teams to deliver fully integrated systems.

Mechanical Engineer III – Energetic Materials & Products

Round Rock, TX | 11/2018 – 12/2022

- Designed mechanical and electromechanical systems for **military unmanned platforms and ballistic testing systems.**
- Designed, fabricated, set up and ran ballistic and explosives tests. **Including test articles, instrumentation, data collection, analysis and report writing.**
- Developed and validated hardware for high-reliability, high-stress environments.
- Authored technical documentation and implemented SolidWorks PDM systems to standardize engineering processes.

Manufacturing Engineer – Firefly Aerospace

Cedar Park, TX | 06/2018 – 11/2018

- Developed manufacturing processes and tooling strategies for aerospace hardware production.
- Supported **facility expansion and production system layout for rocket manufacturing** operations.

Manufacturing Manager – Dynamic Manufacturing Solutions

Austin, TX | 01/2017 – 03/2018

- Led 35+ personnel across machining, welding, and production operations.
- Built in-house CNC capabilities and increased throughput while reducing outsourcing costs.
- Directed build-out of a 20,000 sq ft manufacturing facility.

Owner & Lead Designer – White Orca Tactical

Austin, TX | 06/2016 – 12/2021

- Designed and produced precision rifle chassis systems with a focus on ergonomics and performance.
- Operated as a licensed firearms manufacturer (FFL Type 07), managing compliance, testing, and production.
- Worked directly with end-users to iterate designs based on real-world application feedback.

Mechanical Engineer (R&D) – National Energetics

Austin, TX | 03/2016 – 01/2017

- Designed precision opto-mechanical assemblies for high-energy laser systems.
- Led vendor sourcing and procurement for specialized components.

Earlier Experience

Oxford Instruments | Flexible Lifeline Systems | Cameron | Systel Inc. | US Army/National Guard
