



Lukas Neal

Senior Mechanical Engineer, Lethality

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STRENGTHS

- 🔧 **Hands On Test Leadership**
Led arena and ground campaigns personally, then used video and inspection findings to guide practical design updates.
- 👥 **Cross Functional Trust**
Built alignment across safety, manufacturing, integration, and operations teams when difficult hardware decisions surfaced.
- ⚙️ **Configuration Discipline**
Kept NX models, drawings, and Teamcenter baselines connected, giving reviewers confidence in released data.
- 🔧 **Supplier Partnership**
Worked directly with machining and specialty suppliers, turning fabrication feedback into cleaner production designs.
- 🎯 **Clear Engineering Judgment**
Translated uncertain system objectives into testable requirements, safe procedures, and decisions teams could act on.

SKILLS

Mechanical design
Warhead development
Ordnance systems NX
Teamcenter CAD PLM
Prototype development
Platform integration
Verification and validation
Design of experiments

SUMMARY

Senior mechanical engineer with 10 years developing complex aerospace and defense hardware from concept through qualification and **production transition**. Work includes precision mechanical design, warhead and ordnance development, platform integration, **verification and validation**, prototype maturation, and ground and flight testing. Advanced NX and Teamcenter user with hands on experience creating drawings, specifications, test procedures, engineering reports, and **technical data packages**. Leads **design of experiments**, high speed video capture, data analysis, supplier execution, failure investigation, controlled assembly, and configuration management. Partners with analysis, safety, manufacturing, vehicle integration, test, and operations teams to resolve difficult engineering issues. Brings practical judgment to safe, manufacturable designs and disciplined execution across export controlled programs, helping teams move mission critical hardware from engineering intent into reliable production.

EXPERIENCE

Senior Mechanical Engineer, Energetic Systems

Vanguard Aero Systems 📅 July 2023 - Present 📍 Tucson, Arizona

Lead mechanical development for compact energetic payload assemblies supporting unmanned aerospace platforms. Own architecture trades, detailed design, prototype maturation, qualification planning, supplier coordination, and production readiness. Guide engineers and technicians through controlled builds, test execution, discrepancy review, and configuration release.

- Led **NX** design maturation for energetic payload assemblies, supporting prototype builds and production readiness.
- Created **Teamcenter** design baselines, interface definitions, drawings, and controlled releases for tightly packaged assemblies.
- Directed arena and ground tests with **high speed video**, instrumentation, and post test inspection.
- Established **design of experiments** matrices and procedures, supporting safe qualification decisions across configuration variables.
- Coordinated machining, energetic material, and specialty test suppliers, resolving tolerance and schedule issues.
- Guided controlled prototype assembly and **disassembly**, improving discrepancy review and configuration documentation.

Mechanical Engineer IV

Red Mesa Defense Engineering 📅 March 2020 - June 2023 📍 Albuquerque, New Mexico

Owned **mechanical design** and integration for ruggedized munition adjacent hardware supporting flight vehicles. Led requirements tracing, NX and Teamcenter release activity, prototype to production reviews, verification planning, anomaly analysis, supplier coordination, and junior engineer development.

- Owned NX design integration for ruggedized hardware, balancing loads, packaging, environments, and **manufacturability**.
- Released production drawings, specifications, and **technical data packages** through **Teamcenter** configuration workflows.
- Planned ground and flight verification with safety, instrumentation, test, and **vehicle integration** teams.
- Analyzed **high speed video**, sensor data, and hardware condition, guiding focused engineering changes.
- Drove prototype to production reviews with suppliers, simplifying features without compromising critical performance.
- Mentored junior engineers through tolerance analysis, design reviews, test readiness, and technical reporting.

Mechanical Engineer III

Frontier Flight Technologies 📅 August 2017 - February 2020 📍 Phoenix, Arizona

[Arena testing](#) [Ground testing](#)

[Flight testing](#) [System safety](#)

LANGUAGES

English Native

Spanish Intermediate

MY CAREER



● Senior Mechanical Engineer, Energetic Systems at Vanguard Aero Systems (3.2 Years)

● Mechanical Engineer IV at Red Mesa Defense Engineering (3.2 Years)

● Mechanical Engineer III at Frontier Flight Technologies (2.5 Years)

● Mechanical Engineer at Sonoran Aerospace Labs (1.1 Years)

Designed mechanical subsystems and precision test fixtures for aerospace programs from analysis through fabrication, assembly, and environmental testing. Supported integration, configuration control, supplier execution, nonconformance disposition, root cause investigation, and formal design and test readiness reviews.

- Designed mechanical subsystems and fixtures, supporting fabrication, assembly, and environmental testing.
- Built NX layouts and interface studies, resolving packaging conflicts before **vehicle integration**.
- Authored specifications, assembly instructions, **test procedures**, and **technical reports** with acceptance criteria.
- Executed vibration, shock, thermal, and functional tests, using measured data for investigations.
- Coordinated specialty fabrication and procurement, incorporating supplier feedback into released designs.
- Presented mechanical margins, interface risks, and verification evidence at formal readiness reviews.

Mechanical Engineer

Sonoran Aerospace Labs 📅 June 2016 - July 2017 📍 Tempe, Arizona

Developed mechanical components, fixtures, and prototype assemblies for flight hardware research programs under senior engineering guidance. Produced controlled NX models and drawings, supported fit checks and testing, incorporated technician feedback, and documented findings for verification decisions.

- Developed mechanical components, fixtures, and prototype assemblies under senior engineering guidance.
- Produced NX models and drawings with geometric tolerancing, materials, and inspection features.
- Supported prototype assembly and fit checks, recording interfaces and incorporating approved changes.
- Prepared **test procedures** and instrumentation layouts for structural and functional evaluations.
- Improved drawing notes and inspection guidance through direct machinist and technician feedback.
- Documented test observations and dimensional findings in engineering reports supporting verification decisions.

PROJECTS

Energetic Payload Qualification Campaign 📅 2024

Directed a qualification campaign for compact payload assemblies, combining design of experiments, controlled builds, arena testing, high speed video, post test inspection, and engineering review. Work connected measured behavior with analytical predictions and production readiness decisions.

Munition Adjacent Flight Hardware Transition 📅 2022

Moved ruggedized flight hardware from detailed design through verification and production review. Coordinated NX design updates, Teamcenter release activity, vehicle integration, supplier feedback, acceptance criteria, and anomaly disposition across cross functional teams.

LEADERSHIP & AWARDS

- Recognized by engineering leadership for dependable ownership of energetic payload prototype and qualification work.
- Selected to mentor junior engineers through design reviews, tolerance analysis, test readiness, and technical reporting.
- Commended by manufacturing and test partners for resolving interface issues before integration milestones.

EDUCATION

Bachelor of Science in Mechanical Engineering

Arizona State University 🎓 GPA: 3.5 📅 2016 📍 Tempe, Arizona

Coursework: Mechanical design, dynamics, materials science, manufacturing processes

CERTIFICATIONS

- NX Advanced Design Training 📅 2024
- Teamcenter Configuration and Change Management 📅 2023

TECHNICAL SKILLS

- **CAD Design:** NX, CAD, geometric tolerancing
- **PLM Systems:** Teamcenter, configuration management, change management
- **Mechanical Engineering:** Mechanical design, interface definition, precision assemblies
- **Test Execution:** Arena testing, ground testing, flight testing
- **Verification Methods:** Verification and validation, qualification assessment, acceptance criteria
- **Instrumentation:** High speed video, sensor data, witness media
- **Technical Documentation:** Specifications, test procedures, engineering reports
- **Data Packages:** Technical data packages, production drawings, assembly instructions
- **Manufacturing Engineering:** Manufacturability, prototype fabrication, production transition
- **Safety Engineering:** System safety, safety protocols, controlled assembly
- **Supplier Management:** Vendor direction, supplier coordination, subcontractor execution
- **Integration Engineering:** Platform integration, vehicle integration, interface studies

PROFESSIONAL AFFILIATIONS

- Member, American Society of Mechanical Engineers, supporting continued mechanical engineering practice.
- Participant, aerospace and defense engineering review communities focused on testing, safety, and manufacturability.

ADDITIONAL INFORMATION

Work Status : Authorized to work in United States. No sponsorship required.

REFERENCES

AVAILABLE ON REQUEST