

JOSEPH B. OBERHOLTZER

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PROFESSIONAL SUMMARY

Avionics and software engineer with extensive hands on experience in the design, fabrication, and testing of autonomous VTVL rockets.

EDUCATION

The Pennsylvania State University

May 2013

Bachelor of Science in Mechanical Engineering

EXPERIENCE

Masten Space Systems

Mojave, CA

Rocket Systems Engineer

May 2013–Present

- Console operator for over 75 tests across six prototype engines, five propellant types, and three test stands. Responsible for flight code, simulation, hardware-in-the-loop, flight readiness reviews, safe vehicle operation, and post-flight analysis.
- Led the software and electrical design of new test stands for hypergolic and 25klb cryogenic engines.
- Collaborated with engineers in the design of fault tolerant control algorithms for flight vehicles
- Created hardware-in-the-loop stand to simulate hardware failures and validate safety critical embedded systems.
- Primary investigator into concepts for the aerodynamic descent of rocket vehicles. Led the program through analysis, production of a subscale test vehicle, and demonstration tests to 35km.
- Heading software development for MSS's XL-1 lunar lander, a vehicle representing a commercial partnership between MSS and NASA engineers through NASA's Lunar CATALYST.

Naval Sea Systems Command (NAVSEA)

Puget Sound Naval Shipyard, WA

Student Nuclear Engineer (Equipment Branch)

Aug 2012–Dec 2012

- Design of nuclear refueling equipment and procedures for US submarines

The Boeing Company

Philadelphia, PA

CH-47 Production Flight Test Engineer

May 2012–Aug 2012

- Developed maintenance and production flight test solutions for the Chinook helicopter

Jacobs Technology

Aberdeen Proving Grounds, MD

Range Technician (HMMWV operator)

Summer 2011

SKILLS AND COMPETENCIES

Avionics/Software Design and Integration

- Write in C/C++, Simulink Real-Time(XPC target), MATLAB, bash, and python
- Build with Make, Cmake, Automake
- Test with UT-Assert, Monte Carlo sims, custom built HIL, on vehicle PIL
- Version control using Git, GitLab, and Subversion(SVN)
- Trajectory optimize in OTIS4, Missile DATCOM, and Second Order Cone Programing (cvxpy, qcmI)
- Procurement and evaluation of actuators (pneumatic, BLDC), sensors (pressure transducer, thermocouple, load cell, flow meter, encoder, IMU, GPS), computers, and DMM for flight vehicles

Test Operations

- Operation of prototype vehicles in safety critical test environments.
- Development of test procedures and test cards to satisfy internal, regulatory, and customer expectations.
- Development of tools for efficient in-field analysis of test data allowing for rapid test iterations.
- Lifting and handling of flight vehicles and test trailers with boom lifts, forklifts, and skid loaders.

Mechanical/Electrical Design and Manufacturing

- Computer Aided Design (CAD): Solidworks, ExpressPCB, and EagleCAD
- Computer Aided Manufacturing (CAM): HSMworks, Cura, and MasterCAM
- Manual/CNC mill/lathe, TIG/MIG welding, composites, and plastic/metal 3D printing

CERTIFICATES

- FAA Student Pilot Certificate
- Red Cross First Aid Certificate
- DAN Oxygen First Aid Certificate
- NAUI Advanced Scuba Certificate
- USPA Skydive License – inactive
- AASI Snowboard Instructor Certificate – inactive