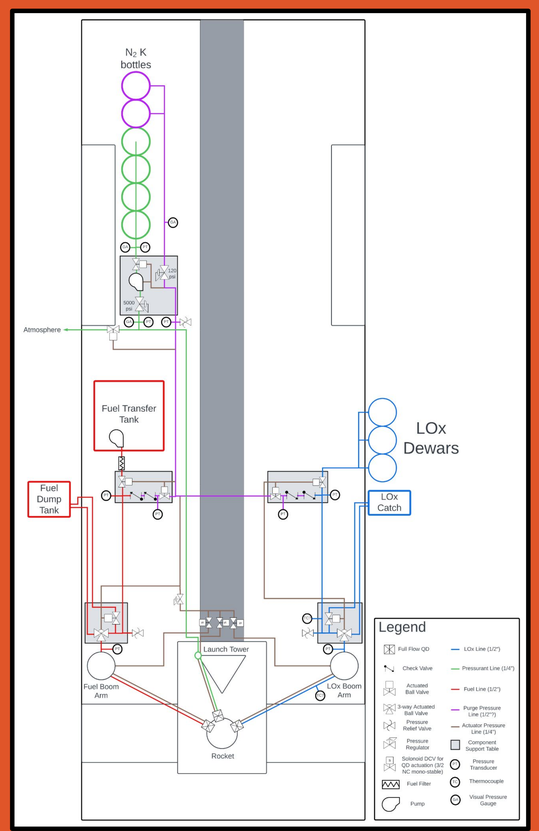
Vertical Test Stand (VTS)

The VTS sub-team has the goal of designing and building a mobile launch and testing platform. VTS subsystems include:

- Water Deluge System
- Quick Disconnect System
- Static Fire Testing Mount
- Fuel Line Plumbing
- LOx Line Plumbing
- Pressurant Plumbing
- Support Structures
- Hydraulic System

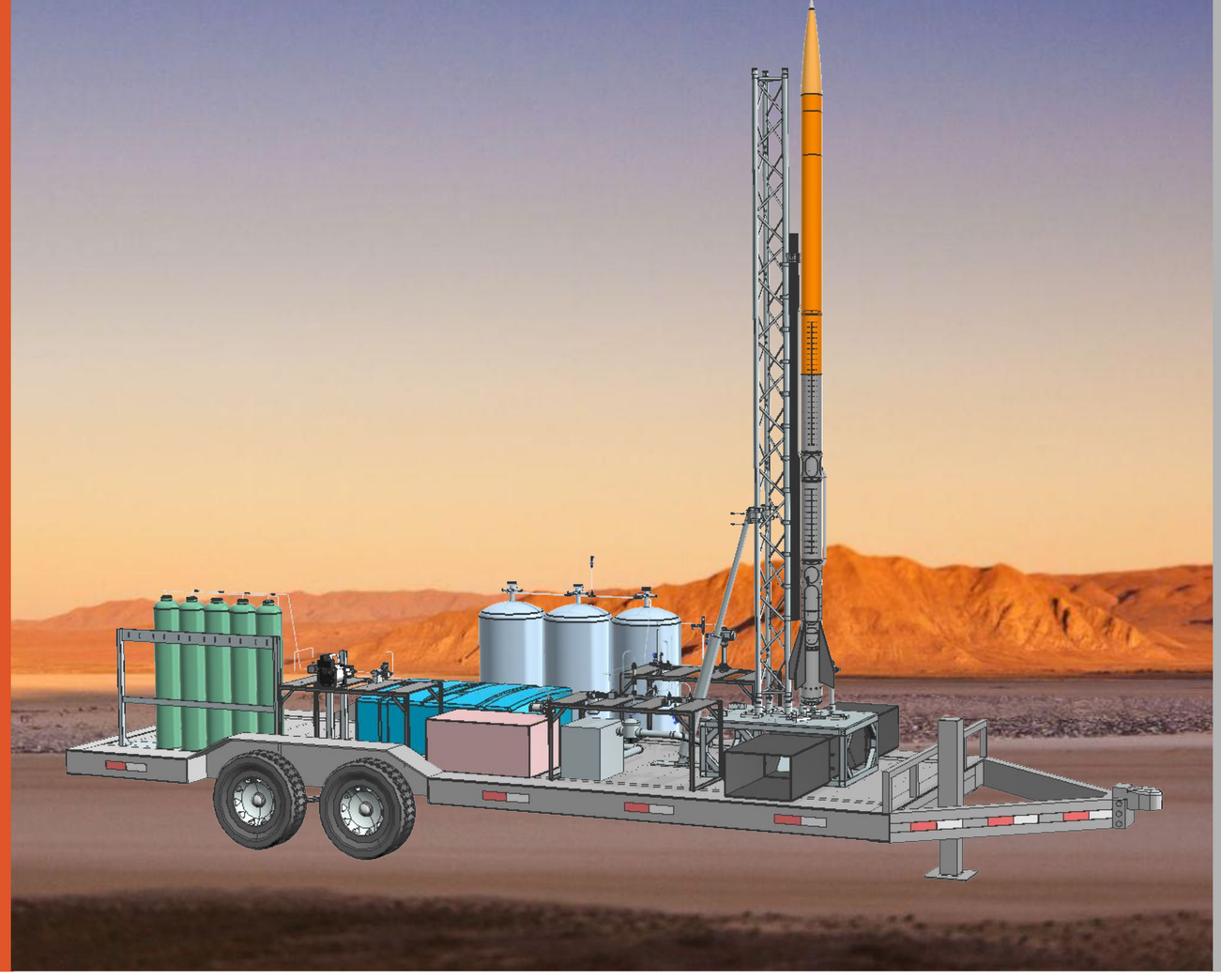


Piping & Instrumentation Diagram (P&ID) for the VTS fluids system (LOx, fuel, pressurant)

Oregon State University

High Altitude Liquid Engine

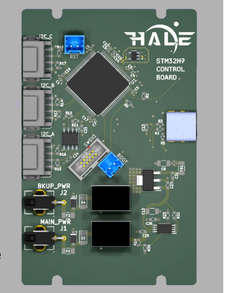
The High Altitude Liquid Engine Team (HALE) is an Engineering Capstone team made up of 14 students with the goal of successfully launching and recovering a single stage liquid bi-propellant rocket to the Kármán Line, 100 km above ground level. HALE is competing in the Base 11 Space Challenge, with more than 40 university teams reaching for the same goal.



Recovery/Avionics:

The Recovery/Avionics sub-team has the goal of developing a full recovery system in addition to designing, building, and testing custom flight computers. Subsystems include:

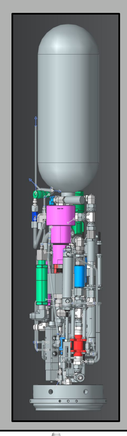
- Pneumatic Piston Ejection System
- Parachute/Shock cord sizing
- Fully Custom Flight Computers
- Recovery Hardware Speccing
- Sub-subscale rocket

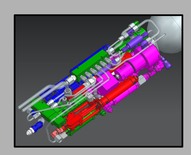


Fluids & Structures:

The Fluids and Valves sub-teams have the goal of creating a successful pressurant-fed fuel & oxidizer delivery system, including:

- Nitrogen, Fuel and LOx plumbing
- Main & Vent valve construction
- Electronic Regulator development
- Full fluid transport simulations
- System leak-checking & testing





The Structures sub-team has the goal of

- Integration between all other teams
- Taking parachute and engine loads
- Machining and CNC
- Adapatable and Flexible Design