

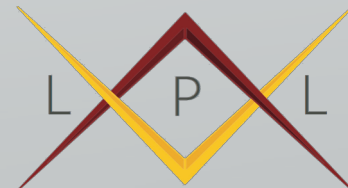
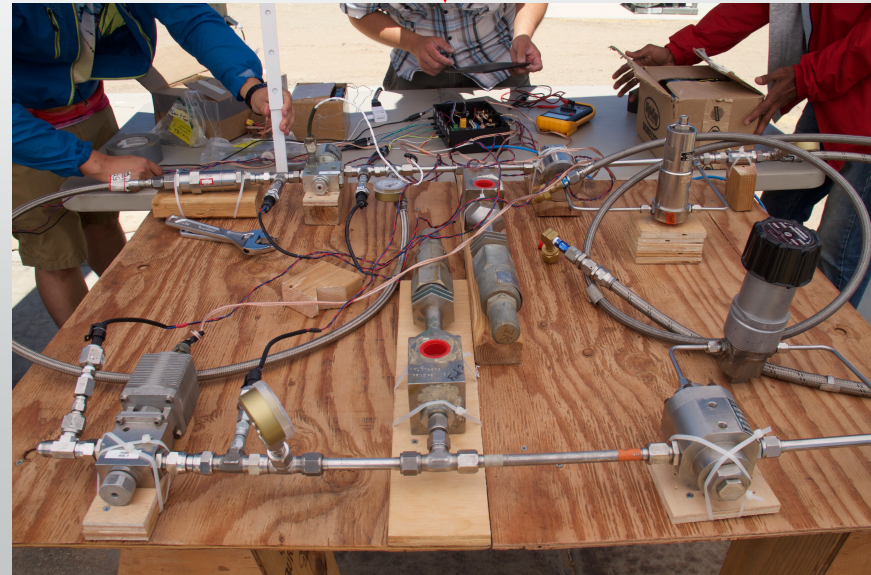
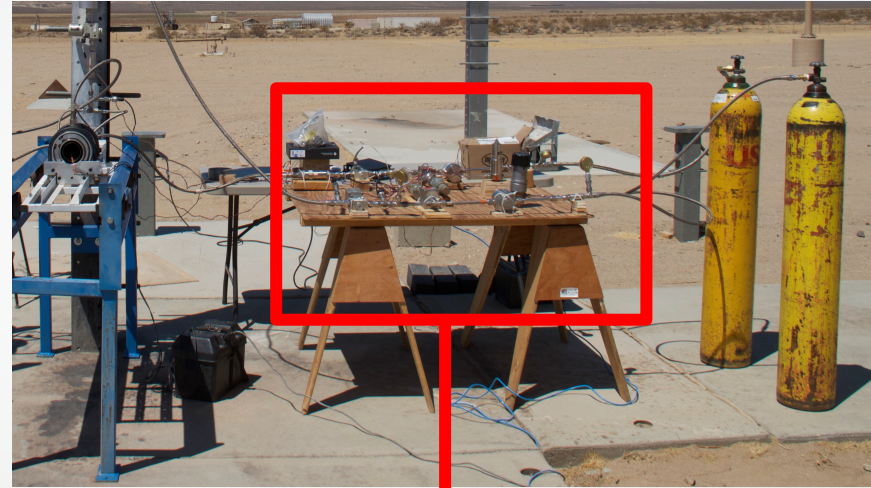
Motivation

The images on the right showcase the lab's test infrastructure when I joined LPL in August of 2016. All testing is conducted that Friends of Amateur Rocketry (FAR) in Mojave, California.

The test infrastructure had several issues:

- Took hours to set up & take down
- Safety concerns, cylinders not secured & extremely high line velocity in oxygen line
- All components were recycled components that were not properly sized
- Instrumentation not rated for operating conditions
- Data acquisition & controls system vulnerable to crashes

2016 Test Infrastructure



Motivation cont.

The first project I announced when I became laboratory lead in January 2017 was developing a new test stand that would feature the following:

- Mobility - to reduce setup & shutdown time
- Designed for oxygen use – material selection & cleanliness
- Sizing & securing oxygen cylinders – to reduce line velocity and ensure safe operation
- Minimal amount of flex lines
- Reliable instrumentation
- Robust data acquisition & controls system – Purchase of a NI DAQ system that integrated with LabVIEW software

Current Test Infrastructure

