

Team Meeting 1/24/20

Meeting Objectives

- Discuss Propellant sourcing & alternatives
- Discuss chamber alu stock sourcing
- Discuss valving & plumbing component sourcing
- Work on CoDR slides, info

Propellant Sourcing

- Praxair doesn't have LNG or LCH₄ in the bay area
 - Tried a few contact routes, email & phone, ended up with same guy Rigo
 - Probably don't have it
- Air Liquide
 - Wouter emailed 2x, no answer
- Should ask Blue Origin and SpaceX for info on LCH₄/LNG suppliers
- Switch to GCH₄?
 - Cheap
 - Can use high-pressure cylinder w/gas regulator to control
 - Need to know how much mass of CH₄ is in a cylinder
 - Will need aux cooling for injector face to compensate for loss of cooling from cryo methane
 - Use LN₂ for film cooling?
 - Need to borrow or buy pressure regulator
 - Flex hose connections
 - Can switch to simple coaxial injector with gaseous fuel (like SSME, J-2, etc)

Chamber Stock Sourcing

- Allen Steel
 - 1 step above a scrap yard - we can get alloy info
 - Should go check their stock
- Kaiser Aluminum
 - They sponsor FSAE teams, maybe we can too
 - Wouter asking them for quote on 4"ODx0.25" wall or 4.5"ODx0.25" wall

Plumbing Components

- Can we borrow from Stealth Space?

To-Do

- Rough design for CoDR

- Hand calcs. and sketches only at this stage, don't spend too much time on CAD or simulations until our basic concept is refined