**Propulsion Meeting 7 February 2017**

Adam gave igniter presentation:

Reason for a spark igniter

* Easy to restart
* Do not want to get close to engine while pressurized
* Easier to test from a distance
* Possibly switch to pyrotechnic for flight
  + Possible issue with turbo pump staging, cross that bridge later

Sub Team updates:

* Igniter
  + Adam gave presentation on other igniter projects
* Electric Feed System
  + Last week
    - Taking the design notebook parameters and doing complete review
    - Next to start working on designing impeller
    - Found several impeller designs to research
  + Upcoming
    - Need to check numbers
      * NASA paper high head / low flow impellers are adorable
    - Progress is happening
  + Help?
* Composite fuel tank
  + Last week:
    - As of Sunday everyone knows how to do a layup
  + Upcoming
    - For this week work on prototype with specified diameter and volume
    - Conceptual design work as well
    - Get into contact with supplier to update budget items
    - Need to deal with seam between liner and Al coupling
      * Many different ways to do, but not all practical
    - Working on team structure / roles
  + Help?
    - Failure analysis Professor can assist with testing
* PCC Undergrad
  + Last week
    - Safety Engineering scope
    - Following up on PCC Machine shop access thwarted by weather
  + Upcoming
    - Thursday meeting to update PCC PSAS members who can’t make it on Tuesday
    - More safety scope work
    - Scope / initial specs for pump / servo for ethanol line
  + Help?
    - Need to verify pump sizing
* Liquid fuel engine -

Last week:

* Went to a presentation
  + Upcoming
    - Work on improving manufacturing ability of part
      * Would like to go back to machine sciences
    - Machining work needs to be done / design updates
    - If we can build injector and test annulus we can cold test without putting it in the engine
    - Email Andrew with data to order material for parts
  + Help?
    - Need newbies to help with updating solidworks files. Have several who offered to help.
    - Might take 2 or three weeks if new member does it
* Structure
  + Last week:
    - Not much, Dillon needs help
  + Upcoming
  + Help?
    - Need welder
    - Mounting ring being made
      * We are making our own load cells
      * Need plate design for mounting load cells
* EGSE
  + Last week:
    - Working with Asa on specs
    - Some progress at Sunday’s meeting
    - Working on safety and control systems, procedures etc
  + Upcoming
  + Help?
    - Need to have another instrumentation meeting with Andrew
    - Need some more data on general sequencing

Feed System:

Small projects on issues list (github)

* Need some sort of stainless steel line / pan for LOX for relief valve
* Need to verify Ball in ball valves in LOX filled drain system are
* Figure out operation pressure of igniter
* Getting rid of rack and pinion motor.
  + 600 in/lb for cracking on cryo valve - need to spec
* Need to design diffuser for N2 injector for LOX and ethonol
* Need flow meter for measuring c\*
* Spec Cryo insulation for LOX tank and all LOX lines - existing standards exist
  + Jacob to look into -

Other business:

Machine Sciences -

All capstones should get together at some point to put together all items needing to be machined.

* Would like to have other machine shops as well

**LFETS Meeting 2 February 2017**

**OFFICIAL PROPULSION MEETING TIME TUESDAY AT 6PM AT PSAS IN ROCKET ROOM**

**OFFICIAL LFETS MEETING TIME NOW THURSDAY AT 2PM AT PCC (Likely in AM101 / makerspace unless otherwise necessary)**

Agenda:

Project introduction

* Review current status of project
* Brief review of PID
* Overview of project areas
  + EGSE
  + Rocket Engine

Ignition! book pdf: <https://ia601905.us.archive.org/12/items/ignition_201612/ignition.pdf>

\*Ethan needs permission to create a wiki for the test stand on GitHub repository

Jacob to ask Andrew

Safety

Tara to begin assembling scope and outline this weekend

Safety regulations

ORS

NTSB

DEQ

MSDS

Safety of people

Handling

Mindset

PPOE

Safety of equipment

Talk to senior LFETS people about issues related to lox and hardware

Avoid Propellers

Action items

GIThub - issues

Push data to Git,

Implement Wiki for tracking documentation

Improve LFETS directory readme.md to provide summary information and links to details

Machining

Ian to find out from Alex Vin what the requirements are for using the Machine Shop at PCC