

Internship 2022

WK5 Progress Report

Propulsion Team

Tasks completed last week

- [#71] Casing V1 Fabrication
- [#36] O rings purchase
- [#57] Snap rings purchase
- [#88] Ejection Charge testing
- [#11] Casting tools fabrication
- [#56] Fuel Casting
- [#84] Research on preparation of Potassium Perchlorate.(ongoing)

CASING V1 FABRICATION

Casing 1 fabrication complete.

Fabricated at the machine shop



O-RINGS AND SNAP RINGS

O-RINGS serve as pressure seals

Snap Rings serve as retainers instead of using bolts



EJECTION CHARGE

The ejection charge, made from Crimson Powder was tested and it performed excellently.



CASTING TOOLS FABRICATION

Fabrication in progress



- [#84] Research on preparation of Potassium Perchlorate.

A number of methods can be used:

- Treating an aqueous solution of Sodium Perchlorate with Potassium Chloride.
- Bubbling Chlorine gas through a solution of Potassium Chlorate and Potassium Hydroxide.
- Reaction of Perchloric acid with Potassium Hydroxide(This method is rarely used due to the dangers of perchloric acid)
- Electrolysis of Potassium Chlorate solution causing Potassium Perchlorate to form and precipitate at the anode.
- Thermal decomposition of Potassium Chlorate.

Tasks in this week

- [#19] Static Test #1
- [#86] Fabricate snap rings groove
- [#87] Modify bulkhead to fit snap rings
- [#11] Continue casting tools fabrication
- [#84] Research on preparation of Potassium Perchlorate.

Timeline

Month	Intern week	Tasks
Jan		
	Week 1	Designs [Fuel, Casing, Nozzle, Bulkhead, Casting tools, Test stand]
	Week 2	Fabrication of items
	Week 3	Fuel Fabrication and test stand revamp
Feb	Week 4	Fabrication of items & Fuel casting
	Week 5	Iterative Fuel tests
	Week 6	Launch Pad design and iterative fuel tests
	Week 7	Iterative fuel testing and improvement