

# Internship 2022

## Wk 5 Progress report

**Name: Gichia Maureen**

# Tasks completed last week

- [#56] Motor Fuel Casting3.
- [#84] Research on preparation of Potassium Perchlorate.
- [#88] Crimson powder for pyro ejection reaction tests.

- **[#56] Motor Fuel Casting3**

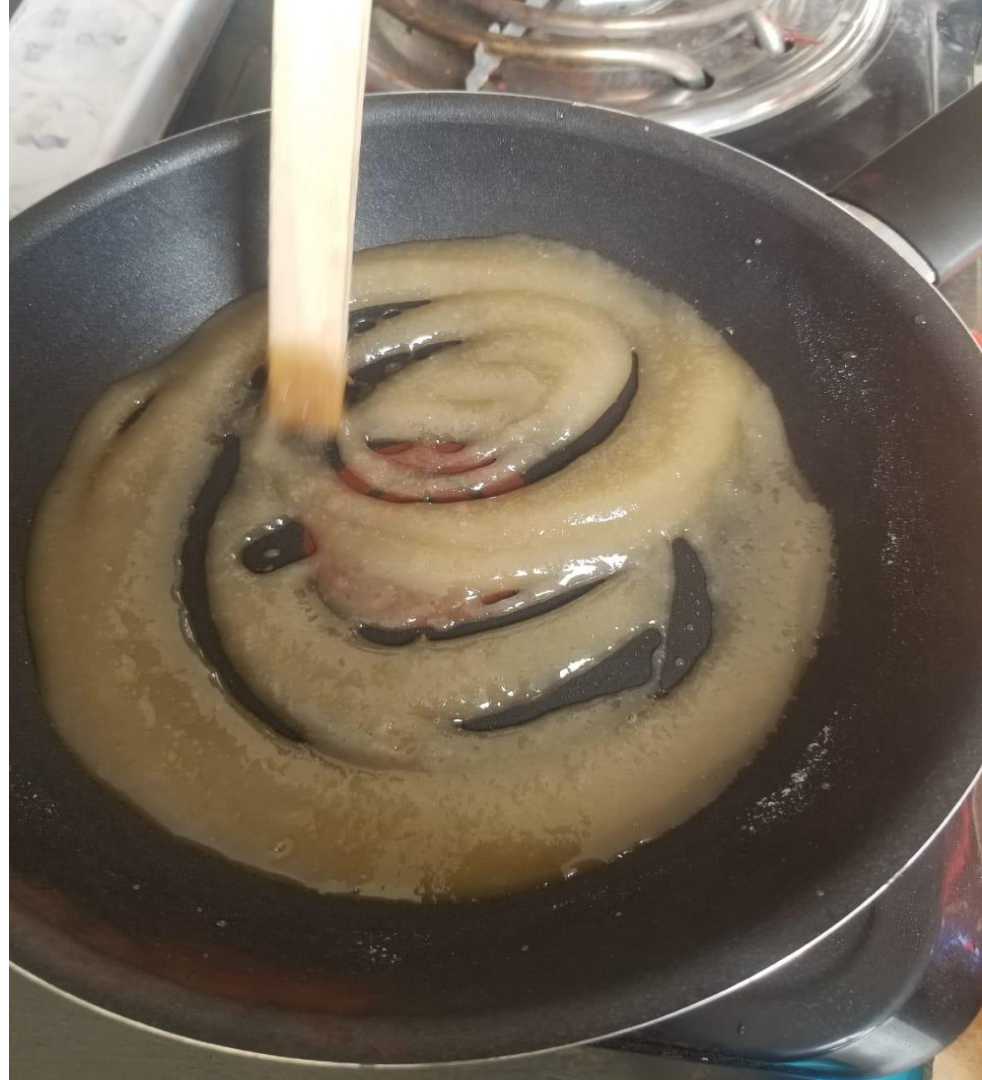
KNSB Propellant

- Less brittle than KNSU

propellant ratio: 65% Potassium Nitrate

35% Sorbitol

Heating Temperature - 115-125 oC



- [#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.

- [#19] Crimson powder for pyro ejection reaction tests.

The firing of the pyro-charge is to be applied in the parachute deployment system.



# Tasks in this week

- [#11] Completion of Casting tools fabrication.
- [#19] Static Firing tests
- [#71] Completion of Casing fabrication
- [#85] Development 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