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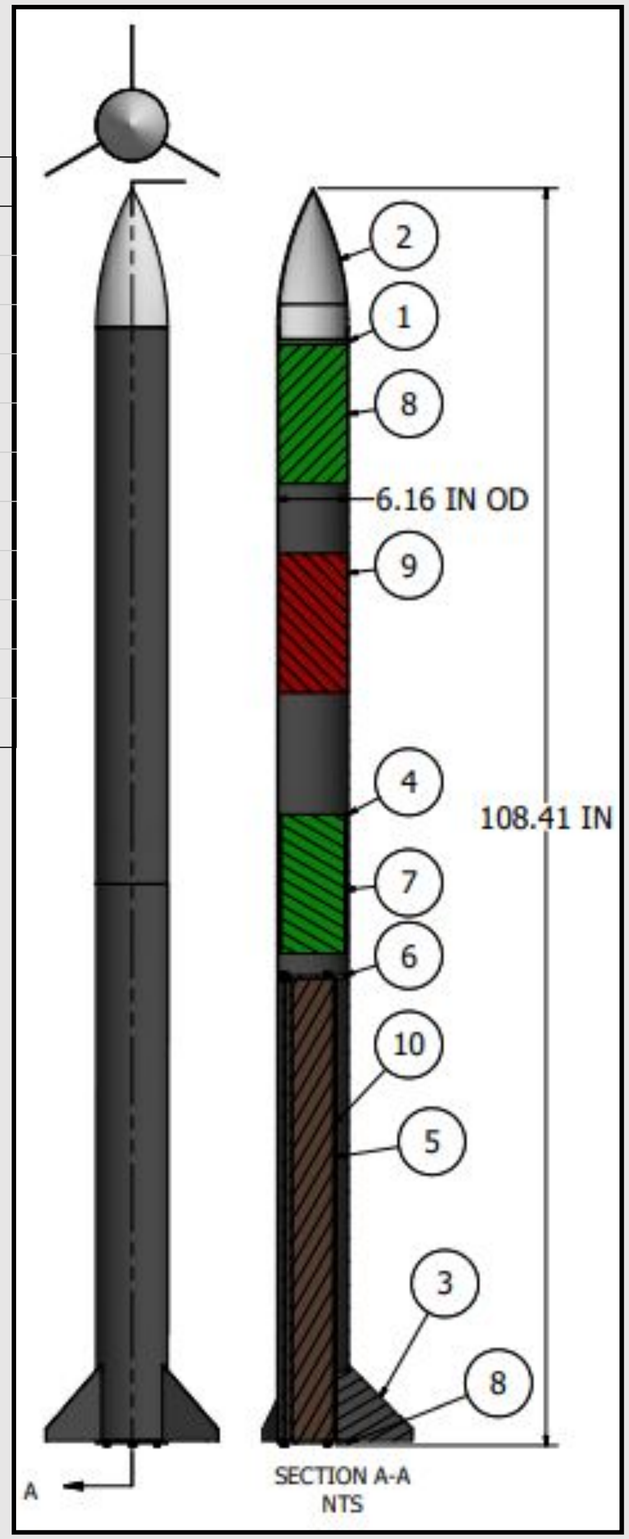
Acknowledgments:

Structures

Bubble	Name	Material	Mass (LBM)
1	Fuselage	Carbon Fiber	7.5
2	Nose Cone	Nylon 6 (3DP)	0.968
3	Fins	Carbon Fiber	0.519
4	Coupler	Fiberglass	0.063
5	Motor coupler	Phenolic	6.016
6	Bulkhead	Aluminum	0.684
7	Parachute 1	Nylon	3.87
8	Parachute 2	Nylon	2.36
9	Electronics Bay	Various	15.6
10	Motor	Propellent	21.875
			59.455

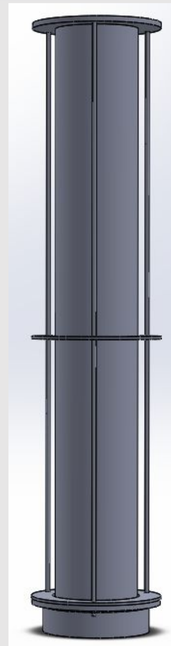


Propulsion

Simulation Data:

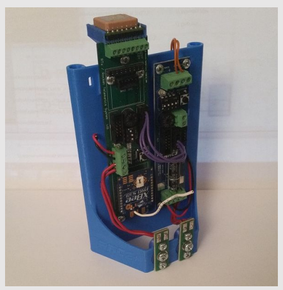
- Apogee: 11203 ft
- Initial Velocity: 224 ft/s
- Time to apogee: 23.7 s
- a_{max} = 26.8 ft/s^2
- I_{total} = 2320 lbf-s
- Stability: 1.71 cal

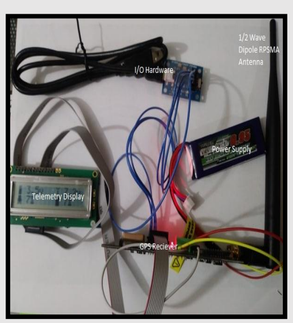
- N-class motor N-10000-VM-P will be used
- Thrust plate will be welded to the base of the body of the rocket
- First centering ring is screwed to the thrust plate
- Other centering ring and bulkhead bulkhead are connected with threaded rods
- Flanged retainer is used to fix motor in the rocket body.



Avionics

- For Main Avionics, RTX/GPS system from MissileWorks will be used.
- Flexible whip 900 MHz RPSMA antenna will be used on the main avionics of the rocket.
- Separately Powered Stratologger CF will be used for the redundant avionics
- Dual Event Ignition will be achieved wireless using the ESP8266 sensor





Recovery

- The rocket will be safely slowed down by a dual stage parachute deployment event.
- The first stage will deploy a drogue chute at apogee to stabilize the rocket and minimize drift during descent.
- The second stage will deploy the main chute at 1000’ above ground to slow the rocket to 17 ft/sec so it won’t be destroyed upon impact.
- GPS guidance systems will also be used to track the rockets location in flight and for