

Milestone Review Flysheet

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Institution	Pennsylvania State University					Milestone	FRR			
Vehicle Properties					Motor Properties					
Total Length (in)	147				Motor Manufacturer	AeroTech				
Diameter (in)	6.079				Motor Designation	L1170				
Gross Lift Off Weight (lbf)	41.5				Max/Average Thrust (lbf)	Avg: 256.51				
Airframe Material	Blue Tube 2.0				Total Impulse (lbf-s)	951.39				
Fin Material	G10 FR4 Fiberglass				Mass Before/After Burn	4990g/2190g				
Drag	0.6119				Liftoff Thrust (lbf)	276.78				
Stability Analysis					Ascent Analysis					
Center of Pressure (in from nose)	115				Maximum Velocity (ft/s)	620				
Center of Gravity (in from nose)	91.75				Maximum Mach Number	0.56				
Static Stability Margin	3.8				Maximum Acceleration (ft/s^2)	225				
Static Stability Margin (off launch rail)	2.65				Target Apogee (From Simulations) (ft)	4876				
Thrust-to-Weight Ratio	6.39				Stable Velocity (ft/s)	36				
Rail Size and Length (in)	1.5/144				Distance to Stable Velocity (ft)	3				
Rail Exit Velocity (ft/s)	75.8									
Recovery System Properties					Recovery System Properties					
Dogue Parachute					Main Parachute					
Manufacturer/Model	Fruity Chutes Elliptical				Manufacturer/Model	Fruity Chute Iris Ulra				
Size	18" Diameter				Size	72" Diameter				
Altitude at Deployment (ft)	5280				Altitude at Deployment (ft)	700				
Velocity at Deployment (ft/s)	-				Velocity at Deployment (ft/s)	95.7				
Terminal Velocity (ft/s)	95.7				Terminal Velocity (ft/s)	19.48				
Recovery Harness Material	Kevlar				Recovery Harness Material	Kevlar				
Harness Size/Thickness (in)	0.5				Harness Size/Thickness (in)	0.5				
Recovery Harness Length (ft)	30				Recovery Harness Length (ft)	40				
Harness/Airframe Interfaces		1/2" Steel Eye Bolt			Harness/Airframe Interfaces		1/2" Steel Eye Bolt			
	Forward Body	Aft Body	Section 3	Section 4		Nose/Body Tube	Avionics Bay	Booster	KIWI	
Kinetic Enerfv of Each					Kinetic Enerfv of Each					

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Section (Ft-lbs)	1390	2695	
Recovery Electronics		Recovery Electronics	
Altimeter(s)/Timer(s) (Make/Model)	Stratologger CF	Rocket Locators (Make/Model)	Garmin Astro 320
Redundancy Plan	Two independently wired altimeter and charge systems. A single point failure anywhere in one system can be tolerated by the redundant system.	Transmitting Frequencies	MURS (151.820 MHz - 154.600 MHz)
Pad Stay Time (Launch Configuration)	2 hours	Pyrodex Mass Drogue Chute (grams)	3
		Pyrodex Mass Main Chute (grams)	3.5