

Milestone Review Flysheet

PDR, CDR, FRR

Institution Name	Georgia Institute of Technology
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Milestone	PDR
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Vehicle Properties	
Diameter (in)	5.25
Length (in)	105
Gross Liftoff Weight (lb)	35.21
Launch Lug/button Size	1515
Motor Retention	TBD

Motor Properties	
Motor Manufacturer	Gorilla Rocket Motors
Motor Designation	L789
Max/Average Thrust (N/lb)	794.6
Total Impulse (N-sec/lb-sec)	3251.8
Mass pre/post Burn (lb)	3.99

Stability Analysis	
Center of Pressure (in from nose)	TBD
Center of Gravity (in from nose)	TBD
Static Stability Margin	1.75
Thrust-to-Weight Ratio	22.56745243
Rail Size (in) / Length (in)	1.5/ 96

Ascent Analysis	
Rail Exit Velocity (ft/s)	57
Max Velocity (ft/s)	655.8
Max Mach Number	0.57
Max Acceleration (ft/s ²)	250
Peak Altitude (ft)	5,280

Recovery System Properties				
Drogue Parachute				
Manufacturer/Model		Legacy Hardware		
Size		3 feet		
Altitude at Deployment (ft)		5,280		
Velocity at Deployment (ft/s)		50		
Terminal Velocity (ft/s)		60		
Recovery Harness Material		Kevlar		
Harness Size/Thickness (in)		1.5		
Recovery Harness Length (ft)		30		
Harness/Airframe Interfaces		3/8 inch diameter steel cable		
Kinetic Energy During Descent (ft-lb)	Section 1	Section 2	Section 3	Section 4
	65.9937888	683.229814	407.608696	

Recovery System Properties				
Main Parachute				
Manufacturer/Model		Legacy Hardware		
Size		10 feet		
Altitude at Deployment (ft)		500		
Velocity at Deployment (ft/s)		60		
Landing Velocity (ft/s)		12		
Recovery Harness Material		Kevlar		
Harness Size/Thickness (in)		1.5		
Recovery Harness Length (ft)		30		
Harness/Airframe Interfaces		U-bolt, 3/8 inch diameter steel cable		
Kinetic Energy Upon Landing (ft-lb)	Section 1	Section 2	Section 3	Section 4
	4.476	39.386	23.497	

Recovery System Properties				
Electronics/Ejection				
Altimeter(s) Make/Model		Perfect Flite Stratologgers		
Redundancy Plan		Two altimeters will be wired independently to both the main and drogue parachutes.		
Pad Stay Time (Launch Configuration)		>2 hours		

Recovery System Properties				
Electronics/Ejection				
Rocket Locators (Make, Model)		GPS		
Transmitting Frequencies		***Required by CDR***		
Black Power Mass Drogue Parachute (gram)		2		
Black Power Mass Main Parachute (gram)		5		

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Payload/Science

Succinct Overview of Payload/Science Experiment	A system for dampning liquid slosh through the use of magnetorheological fluid. This fluid will be actuated with solenoids and driven to a pre-defined state in the Liquid Stabilization in Microgravity (LSIM) experiment.
Identify Major Components	Two PVC pipes, computer network called SIDES.
Mass of Payload/Science	10 lbs.

Test Plan Schedule/Status

Ejection Charge Test(s)	End of January
Sub-scale Test Flights	October 13th
Full-scale Test Flights	End of February

Additional Comments