

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
Length (in)	108.5
Gross Liftoff Weight (lb)	40.9
Launch Lug/button Size	TBD
Motor Retention	Plate

Motor Properties	
Motor Manufacturer	Aerotech
Motor Designation	1390
Max/Average Thrust (N/lb)	1,375 N
Total Impulse (N-sec/lb-sec)	3,946.5 Ns
Mass pre/post Burn (lb)	8.55 / 4.20

Stability Analysis	
Center of Pressure (in from nose)	89.4
Center of Gravity (in from nose)	71.3
Static Stability Margin	3.60
Thrust-to-Weight Ratio	7.54
Rail Size (in) / Length (in)	TBD

Ascent Analysis	
Rail Exit Velocity (ft/s)	60
Max Velocity (ft/s)	613.88
Max Mach Number	0.55
Max Acceleration (ft/s ²)	280
Peak Altitude (ft)	5,259

Recovery System Properties				
Drogue Parachute				
Manufacturer/Model		Unk		
Size		36"		
Altitude at Deployment (ft)		5,259		
Velocity at Deployment (ft/s)		Approx. 0		
Terminal Velocity (ft/s)		120		
Recovery Harness Material		Nylon Webbing		
Harness Size/Thickness (in)		TBD		
Recovery Harness Length (ft)		TBD		
Harness/Airframe Interfaces		U-Bolt		
Kinetic Energy During Descent (ft-lb)	Section 1	Section 2	Section 3	Section 4
	NA	N/A	N/A	N/A

Recovery System Properties				
Main Parachute				
Manufacturer/Model		Unk		
Size		120"		
Altitude at Deployment (ft)		700		
Velocity at Deployment (ft/s)		120		
Landing Velocity (ft/s)		25		
Recovery Harness Material		Nylon Webbing		
Harness Size/Thickness (in)		TBD		
Recovery Harness Length (ft)		TBD		
Harness/Airframe Interfaces		U-Bolt		
Kinetic Energy Upon Landing (ft-lb)	Nose Cone	Booster Section	Payload Section	Section 4
	15.6	64.2	198.1	N/A

Recovery System Properties	
Electronics/Ejection	
Altimeter(s) Make/Model	Perfect Flite Stratologgers
Redundancy Plan	2 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)	Fastrax GPS / Xbee Pro combination
Transmitting Frequencies	900 MHz
Black Power Mass Drogue Parachute (gram)	0.91
Black Power Mass Main Parachute (gram)	1.52

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Payload/Science

Succinct Overview of Payload/Science Experiment	Levitate and isolate a platform from the vibrations of the rocket.
Identify Major Components	Neodymium Magnets embedded in a balsa wood platform, Solenoids, A123 batteries, Flight Computer (ARM Cortex M3), Flight Recorder (Atmega 2560).
Mass of Payload/Science	10 lb Payload 5 lb Flight Avionics

Test Plan Schedule/Status

Ejection Charge Test(s)	December 2011 / January 2012
Sub-scale Test Flights	Skin & Skin Fastner Subscale Test - December 10th 2011
Full-scale Test Flights	February / March 2011

Additional Comments