

Milestone Review Flysheet 2017-2018

Institution Engineering and Technologies Academy @ Roosevelt High School

Milestone PDR

Vehicle Properties

Total Length (in)	104.25
Diameter (in)	4.024
Gross Lift Off Weigh (lb.)	10.82
Airframe Material(s)	Blue Tube
Fin Material and Thickness (in)	Birch Aircraft Plywood, 1/4in
Coupler Length/Shoulder Length(s) (in)	3.25

Stability Analysis

Center of Pressure (in from nose)	73.4896 in
Center of Gravity (in from nose)	63.3574 in
Static Stability Margin (on pad)	2.53
Static Stability Margin (at rail exit)	
Thrust-to-Weight Ratio	14.47
Rail Size/Type and Length (in)	1010 rail, 96
Rail Exit Velocity (ft/s)	107.8

Recovery System Properties

Drogue Parachute

Manufacturer/Model	Giant Leap Hemispherical Chute PLUS
Size/Diameter (in or ft)	18"
Altitude at Deployment (ft)	5574.43
Velocity at Deployment (ft/s)	0.01
Terminal Velocity (ft/s)	
Recovery Harness Material	Kevlar
Recovery Harness Size/Thickness (in)	1/2" Tubular
Recovery Harness Length (ft)	17.5

Harness/Airframe Interfaces				
Kinetic Energy of Each Section (Ft-lbs)	Section 1	Section 2	Section 3	Section 4

Recovery Electronics

Altimeter(s)/Timer(s) (Make/Model)	PerfectFlite StratoLogger Altimeter CF
Redundancy Plan and Backup Deployment Settings	PerfectFlite StratoLogger Altimeter, Redundant drogue ejection charges
Pad Stay Time (Launch Configuration)	

Motor Properties

Motor Brand/Designation	Aerotech J800T
Max/Average Thrust (lb.)	101N, 225.03lb/696.5N, 156.58lb
Total Impulse (lbf-s)	1229.1N-sec, 276.31lb-sec
Mass Before/After Burn (lb.)	2.39lb/1.03lb
Liftoff Thrust (lb.)	
Motor Retention Method	Rear end of the motor

Ascent Analysis

Maximum Velocity (ft/s)	796.7
Maximum Mach Number	0.708
Maximum Acceleration (ft/s^2)	1478.988
Predicted Apogee (From Sim.) (ft)	5564

Recovery System Properties

Main Parachute

Manufacturer/Model	Fruity Chutes
Size/Diameter (in or ft)	72"
Altitude at Deployment (ft)	1000
Velocity at Deployment (ft/s)	88.76
Terminal Velocity (ft/s)	
Recovery Harness Material	Kevlar
Recovery Harness Size/Thickness (in)	1/2' Tubular
Recovery Harness Length (ft)	22.5

Harness/Airframe Interfaces				
Kinetic Energy of Each Section (Ft-lbs)	Section 1	Section 2	Section 3	Section 4

Recovery Electronics

Rocket Locators (Make/Model)	Big Red Bee 900 Transmitter	
Transmitting Frequencies (all - vehicle and payload)		
Ejection System Energetics (ex. Black Powder)		
Energetics Mass - Drogue Chute (grams)	Primary	
	Backup	
Energetics Mass - Main Chute (grams)	Primary	
	Backup	
Energetics Masses - Other (grams) - If Applicable	Primary	
	Backup	

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Payload			
Payload 1 (official payload)	Overview		
Payload 2 (non-scored payload)	Overview		
Test Plans, Status, and Results			
Ejection Charge Tests			
Sub-scale Test Flights			
Full-scale Test Flights			
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Additional Comments			

