

# Milestone Review Flysheet 2017-2018

<b>Institution</b>	School Name	<b>Milestone</b>	PDR
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Vehicle Properties	
Total Length (in)	80
Diameter (in)	4
Gross Lift Off Weigh (lb.)	24.36
Airframe Material(s)	Fiberglass
Fin Material and Thickness (in)	Fiberglass
Coupler Length/Shoulder Length(s) (in)	Minimum is 3.25"

Motor Properties	
Motor Brand/Designation	Cesaroni K2000
Max/Average Thrust (lb.)	556.11/440.09
Total Impulse (lbf-s)	524.142
Mass Before/After Burn (lb.)	5.433/2.564
Liftoff Thrust (lb.)	146.13
Motor Retention Method	Aero Pack 75 mm Retainer

Stability Analysis	
Center of Pressure (in from nose)	116.4851
Center of Gravity (in from nose)	74.5034
Static Stability Margin (on pad)	11.6701
Static Stability Margin (at rail exit)	11.8867
Thrust-to-Weight Ratio	6:1
Rail Size/Type and Length (in)	96
Rail Exit Velocity (ft/s)	57.245

Ascent Analysis	
Maximum Velocity (ft/s)	380.05
Maximum Mach Number	0.64
Maximum Acceleration (ft/s^2)	734.17
Predicted Apogee (From Sim.) (ft)	5363.22

Recovery System Properties									
Drogue Parachute									
Manufacturer/Model	Fruity Chutes								
Size/Diameter (in or ft)	18								
Altitude at Deployment (ft)	Apogee								
Velocity at Deployment (ft/s)	16.54								
Terminal Velocity (ft/s)	122								
Recovery Harness Material	Tubular Nylon								
Recovery Harness Size/Thickness (in)	1/0.0071								
Recovery Harness Length (ft)	25								
Harness/Airframe Interfaces	machine-closed stainless steel eye bolts, tubular nylon shock cord								
Kinetic Energy of Each Section (Ft-lbs)	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Section 1</th> <th>Section 2</th> <th>Section 3</th> <th>Section 4</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">361.303</td> <td style="text-align: center;">357.613</td> <td style="text-align: center;">973.213</td> <td style="text-align: center;">1339</td> </tr> </tbody> </table>	Section 1	Section 2	Section 3	Section 4	361.303	357.613	973.213	1339
Section 1	Section 2	Section 3	Section 4						
361.303	357.613	973.213	1339						

Recovery System Properties				
Main Parachute				
Manufacturer/Model	Fruity Chutes			
Size/Diameter (in or ft)	84"			
Altitude at Deployment (ft)	900			
Velocity at Deployment (ft/s)	116			
Terminal Velocity (ft/s)	16			
Recovery Harness Material	Tubular Nylon			
Recovery Harness Size/Thickness (in)	1/0.0071			
Recovery Harness Length (ft)	25			
Harness/Airframe Interfaces	machine-closed stainless steel eye bolts, tubular nylon shock cord			
Kinetic Energy of Each Section (Ft-lbs)	Section 1	Section 2	Section 3	Section 4
	11.677	357.613	31.45	43.28

Recovery Electronics	
Altimeter(s)/Timer(s) (Make/Model)	Stratologger CF Flight Computer/RRC3 Flight Computer
Redundancy Plan and Backup Deployment Settings	use of primary and secondary flight comoputer, both different models; independent batteries
Pad Stay Time (Launch Configuration)	Approximately 2 hours

Recovery Electronics		
Rocket Locators (Make/Model)		
Transmitting Frequencies (all - vehicle and payload)	***Required by CDR***	
Reaction System Energetics (ex. Black Powder)		
Energetics Mass - Drogue Chute (grams)	Primary	3.2
	Backup	5
Energetics Mass - Main Chute (grams)	Primary	4.5
	Backup	5.5
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

