

# Milestone Review Flysheet

**Institution** AIAA OC Section

**Milestone** PDR

Vehicle Properties	
Total Length (in)	77.5
Diameter (in)	4
Gross Lift Off Weigh (lb)	20.91
Airframe Material	Fiberglass
Fin Material	Fiberglass
Coupler Length (in)	10.5, 3.75, 3

Motor Properties	
Motor Designation	Cesaroni K661
Max/Average Thrust (lb)	170.43/133.21
Total Impulse (lbf-s)	547.747
Mass Before/After Burn (lbs)	5.572/2.761
Liftoff Thrust (lb)	146.13
Motor Retention	Aero Pack 75 mm Retainer

Stability Analysis	
Center of Pressure (in from nose)	58.6132
Center of Gravity (in from nose)	55.2708
Static Stability Margin	0.83
Static Stability Margin (off launch rail)	1.978
Thrust-to-Weight Ratio	6:01
Rail Size and Length (in)	96
Rail Exit Velocity	57.245

Ascent Analysis	
Maximum Velocity (ft/s)	706.9
Maximum Mach Number	0.64
Maximum Acceleration (ft/s^2)	1864.27
Target Apogee (From Simulations) (ft)	5869.09
Stable Velocity (ft/s)	43.9993
Distance to Stable Velocity (ft)	5.2

Recovery System Properties				
Drogue Parachute				
Manufacturer/Model		Fruity Chutes		
Size		18 in		
Altitude at Deployment (ft)		Apogee; 5869.09		
Velocity at Deployment (ft/s)		16.54		
Terminal Velocity (ft/s)		122		
Recovery Harness Material		Tubular Nylon		
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
	995.51	180.617	3022.91	

Recovery System Properties				
Main Parachute				
Manufacturer/Model		Fruity Chutes		
Size		84 in		
Altitude at Deployment (ft)		900		
Velocity at Deployment (ft/s)		116		
Terminal Velocity (ft/s)		16		
Recovery Harness Material		Tubular Nylon		
Harness Size/Thickness (in)		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
	17.968	3.62	54.56	

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

Recovery Electronics	
Rocket Locators (Make/Model)	Whistle GPS
Transmitting Frequencies	***Required by CDR***
Black Powder Mass Drogue Chute (grams)	1.644
Black Powder Mass Main Chute (grams)	2.442

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## Autonomous Ground Support Equipment (MAV Teams Only)

Capture Mechanism	Overview
Container Mechanism	Overview
Launch Rail Mechanism	Overview
	***Include Description of rail locking mechanism***
Igniter Installation Mechanism	Overview

## Payload

Payload 1	Overview
Payload 2	Overview

## Test Plans, Status, and Results

Ejection Charge Tests	
Sub-scale Test Flights	
Full-scale Test Flights	

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Additional Comments