Milestone Review Flysheet

Institution	University of California, Davis

Milestone	CDR

Vehicle Properties	
Total Length (in)	109
Diameter (in)	6
Gross Lift Off Weigh (lb)	35.4
Airframe Material	Fiberglass
Fin Material	G-10 Fi berglass
Drag	0.708

Motor Properties	
Motor Manufacturer	Aerotech
Motor Designation	L1520T
Max/Average Thrust (lb)	396.7/352.5
Total Impulse (lbf-s)	835.39
Mass Before/After Burn	8/4lb
Liftoff Thrust (lb)	1468

Stability Analysis	
Center of Pressure (in from nose)	53
Center of Gravity (in from nose)	48.46
Static Stability Margin	2.45
Static Stability Margin (off launch rail)	2.45
Thrust-to-Weight Ratio	9.5
Rail Size and Length (in)	1 and 96
Rail Exit Velocity	63.9

Ascent Analysis	
Maximum Veloxity (ft/s)	692
Maximum Mach Number	0.62
Maximum Acceleration (ft/s^2)	323
Target Apogee (From Simulations)	5470
Stable Velocity (ft/s)	700
Distance to Stable Velocity (ft)	1000

Recovery System Properties				
Dogue Parachute				
Manufacturer/Model		Fruity Chute Standard		
Size		36"		
Altitude at Deployment (ft)			5470	
Velocity at Deployment (ft/s)			0	
Terminal Velocity (ft/s)			-49	
Recovery Harness Material			Kevlar	
Harness Size/Thickness (in)			1	
Recovery Harness Length (ft)			30	
Harness/Airframe Interfaces		U-bolt and quick link connector		
Kinetic Enerfy of Each Section (Ft-lbs)	Section 1	Section 2	Section 3	Section 4
	2520	2321		

Recovery System Properties			
Main Parachute			
Manufacturer/Model		Fruity Chute Iris Ultra Co	
Size		84"	
Altitude at Deployment (ft)			80
Velocity at Deployment (ft/s)			49
Terminal Velocity (ft/s)			16
Recovery Harness Material			Kev
Harness Size/Thickness (in)			1
Recovery Harness Length (ft)			30
Harness/Airframe Interfaces		U-bolt and quick link con	
Kinetic Energy of Each Section (Ft-lbs)	Section 1	Section 2	Section 3
	346	320	

Recovery Electonics	
Altimeter(s)/Timer(s) (Make/Model)	StratologgerCF
Redundancy Plan	Multiple Stratologgers within avionics bay

Recovery Electonics	
Rocket Locators (Make/Model)	ArduPilot Mega
Transmitting Frequencies	900mHz
Black Powder Mass Drogue Chute (grams)	2

Pad Stay Time (Launch Configuration)	pending		Black Powder Mass Main Chute (grams)	2

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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
	Propulsion System Analysis: Team will measure effects of propulsion on rocket stress and strain
Payload 2	Overview
	Slosh in microgravity: Team will video record effects of vehicle movement on slosh, and slosh on vehicle movement

Test Plans, Status, and Results	
Ejection Charge Tests	Completed, nominal
Sub-scale Test Flights	Completed, nominal

Full-scale Test Flights	pending

Milestone Review Flysheet

Institution		Milestone	

Additional Comments

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