

Milestone Review Flysheet

PDR, CDR, FRR

Institution Name	Northwest Indian College
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Milestone	PDR
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Vehicle Properties	
Diameter (in)	6
Length (in)	83
Gross Liftoff Weight (lb)	8.12
Launch Lug/button Size	0.630" x 0.680" (large)
Motor Retention	10-24 Tie Down Bolts

Motor Properties	
Motor Manufacturer	CTI
Motor Designation	K500
Max/Average Thrust (N/lb)	607.9/136.7
Total Impulse (N-sec/lb-sec)	1595.6/358.7
Mass pre/post Burn (lb)	3.25/1.97

Stability Analysis	
Center of Pressure (in from nose)	65.49
Center of Gravity (in from nose)	53.39
Static Stability Margin	1.82
Thrust-to-Weight Ratio	13:01
Rail Size (in) / Length (in)	1.5" X 1.5"/96"

Ascent Analysis	
Rail Exit Velocity (ft/s)	70.46
Max Velocity (ft/s)	808.93
Max Mach Number	0.72
Max Acceleration (ft/s ²)	380
Peak Altitude (ft)	5,343

Recovery System Properties				
Drogue Parachute				
Manufacturer/Model		Top Flite		
Size		18		
Altitude at Deployment (ft)		5,280		
Velocity at Deployment (ft/s)		0.03		
Terminal Velocity (ft/s)		93.66		
Recovery Harness Material		Tubular Nylon		
Harness Size/Thickness (in)		9/16		
Recovery Harness Length (ft)		24		
Harness/Airframe Interfaces		1/4 inch closed eye eyebolt		
Kinetic Energy During Descent (ft-lb)	Section 1	Section 2	Section 3	Section 4
	691	639		

Recovery System Properties				
Main Parachute				
Manufacturer/Model		SkyAngle		
Size		50		
Altitude at Deployment (ft)		500		
Velocity at Deployment (ft/s)		93.66		
Landing Velocity (ft/s)		21.22		
Recovery Harness Material		Tubular Nylon		
Harness Size/Thickness (in)		9/16		
Recovery Harness Length (ft)		24		
Harness/Airframe Interfaces		1/4 inch closed-eye eyebolt		
Kinetic Energy Upon Landing (ft-lb)	Section 1	Section 2	Section 3	Section 4
	45	41		

Recovery System Properties				
Electronics/Ejection				
Altimeter(s) Make/Model		PerfectFlite StratoLogger		
Redundancy Plan		Redundant Dual Recovery with 2 PerfectFlite StratoLogger altimeters with independent power supplies		
Pad Stay Time (Launch Configuration)		2 hrs		

Recovery System Properties				
Electronics/Ejection				
Rocket Locators (Make, Model)		Garmin Astro		
Transmitting Frequencies		***Required by CDR***		
Black Power Mass Drogue Parachute (gram)		9g		
Black Power Mass Main Parachute (gram)		Tender Descender - 0.2g		

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Payload/Science

Succinct Overview of Payload/Science Experiment	An autonomous multirotor vehicle that will tow the rocket back to the launch area
Identify Major Components	Nosecone, ebay, airframe, fins, motor mount, GPS, 2 altimeters, drogue and main parachutes, multirotor vehicle
Mass of Payload/Science	3 pounds

Test Plan Schedule/Status

Ejection Charge Test(s)	11/10, 11/20, 12/4
Sub-scale Test Flights	3-Nov
Full-scale Test Flights	1-Dec

Additional Comments

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