Milestone Review Flysheet

PDR, CDR, FRR

Institution Name	Northwest Indian College

Milestone	PDR

Vehicle Properties	
Diameter (in)	4
Length (in)	112.625
Gross Liftoff Weight (lb)	33.38
Launch Lug/button Size	0.5
Motor Retention	Aero Pack Tail Cone/Retention

Motor Properties	
Motor Manufacturer	CTI
Motor Designation	L395-IM
Max/Average Thrust (N/lb)	1585.6N/933.8N
Total Impulse (N-sec/lb-sec)	3147 Ns
Mass pre/post Burn (lb)	5.6 lb/2.15 lb

Stability Analysis	
Center of Pressure (in from nose)	76.29
Center of Gravity (in from nose)	68.61 (w/motor)
Static Stability Margin	1.91
Thrust-to-Weight Ratio	6.289 avg/10.679 max
Rail Size (in) / Length (in)	1 in/72 in

Ascent Analysis	
Rail Exit Velocity (ft/s)	55.12
Max Velocity (ft/s)	582.36
Max Mach Number	0.52
Max Acceleration (ft/s^2)	251.14
Peak Altitude (ft)	5,280

Recovery System Properties				
Drogue Parachute				
Manufacturer/Model	Sky Angle Cert3			
Size	24"			
Altitude at Deployment (ft)	5,280			
Velocity at Deployment (ft/s)	34.5			
Terminal Velocity (ft/s)	72.42			
Recovery Harness Material	Kevlar			
Harness Size/Thickness (in)	9/16"			
Recovery Harness Length (ft)	30			
Harness/Airframe Interfaces	3/8' closed steel eyebolt			
Kinetic Energy During Descent (ft-lb)	Section 1	Section 2	Section 3	Section 4
	162.88	977.23	1140.14	

Recovery System Properties				
Main Parachute				
Manufacturer/Model	Sky Angle Cert3 Xlarge			
Size	89 sq ft			
Altitude at Deployment (ft)	700			
Velocity at Deployment (ft/s)	72.42			
Landing Velocity (ft/s)	12.11			
Recovery Harness Material	Kevlar			
Harness Size/Thickness (in)	9/16"			
Recovery Harness Length (ft)	20			
Harness/Airframe Interfaces	3/8" closed steel eyebolt			
Kinetic Energy Upon Landing (ft-lb)	Section 1	Section 2	Section 3	Section 4
	6.31	37.84	44.14	

Recovery System Properties	
Electronics/Ejection	
Altimeter(s) Make/Model	PerfectFlite MAWD
Redundancy Plan	2nd PefectFlite MAWD
Pad Stay Time (Launch Configuration)	2 hours

Recovery System Properties	
Electronics/Ejection	
Rocket Locators (Make, Model)	Garmin Astro 200, DC 20
Transmitting Frequencies	***Required by CDR***
Black Powder Mass Drogue Parachute (gram)	1.56
Black Powder Mass Main Parachute (gram)	3.1

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Payload/Science	
Succinct Overview of Payload/Science Experiment	SMD atmospheric measuring and photography Power Management system
Identify Major Components	Nose cone, main parachute bay, ebay, drogue parachute bay, science/power management bay, fin can, propulsion system, recovery system
Mass of Payload/Science	6.4 pounds

Test Plan Schedule/Status	
Ejection Charge Test(s)	Tested for subscale - complete Scheduled for competition rocket -
Sub-scale Test Flights	Complete 11/12/11
Full-scale Test Flights	Scheduled: 12/17, 1/14/12, 2/18/12, 3/12/12, 4/9/12

Additional Comments