

Milestone Review Flysheet

PDR, CDR, FRR

Institution Name	Northwest Indian College
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Milesone	PDR
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Rocket Properties	
Diameter (in)	7.67" to 4"
Length (in)	90.8
Gross Liftoff Weight (lbm)	14.97
Launch lug/button size	0.5"
Motor Retention	2-#12 2" bolts in T-nuts

Motor Properties	
Manufacturer	Aerotech
Designation	K1275R
Peak, Avg Thrust	2132.3Ns, 1066.2N
Mass (before, after burn)	2061g, 731g
Total Impulse	2224.9

Stability Analysis	
CP, CG (in. from nose)	75.9924, 50.7318
Stability Margin	3.29
Thrust-to-Weight Ratio	16:01
Rail size, Length	72"

Ascent Analysis	
Max Velocity (ft/s)	666.44
Max Acceleration (ft/s ²)	550.25
Peak Altitude (ft)	5280
Rail Exit Velocity (ft/s)	79.97

Recovery System Properties	
Drogue Parachute	
Size	28"
Configuration	Round
Alt. at Deployment (ft.)	5280
Velocity at Deployment (ft/s)	3.23

Recovery System Properties	
Main Parachute	
Size	90"
Configuration	Round
Alt. at Deployment (ft.)	500
Velocity at Deployment (ft/s)	66.65
Velocity upon Landing (ft/s)	20.56

Recovery System Properties				
Electronics/Ejection				
Altimeter(s) Make, Model	PerfectFlite MAWD			
Redundancy Plan (altimeters, switches, batteries, etc.)	2 MAWD altimeters with independent power sources			
Pad Stay Time (launch configuration)	1 hr 45 min			
Rocket Locator (Make, Model)	Garmin Astro 220			
Frequencies of Transmitting Electronics	151.82 MHZ, 151.88 MHZ, 151.94 MHZ, 154.57 MHZ, 154.60 MHZ			
Black Powder Mass (grams)	Main	1.85 (1.9)	Drogue	1.02 (1.1)

Payload/Science	
Succinct Overview of Payload/Science Experiment	Measure atmospheric temp, humidity, baro pressure, solar irradiance, ultraviolet radiation. Measure rocket roll & science payload by internal temp
Identify Major Components	4 micro controller boards and respective sensors
Mass of Payload/Science	5 lbs, estimated

Test Plan Schedule / Status	
Ejection Charge Test(s)	11/5/2010/ completed successfully
Subscale Launches	11/6/2010/ completed successfully
Full-Scale Launches	Low Altitude - 11/30/2010; High altitude - 1/15/2011, 2/19/2011, 3/12/2011