

Milestone Review Flysheet

PDR, CDR, FRR

Institution Name	Northwest Indian College
-------------------------	--------------------------

Milestone	FRR
------------------	-----

Vehicle Properties	
Diameter (inches)	5.54" to 4"
Length (inches)	89.48"
Gross Liftoff Weight (pounds)	15.09
Launch lug/button size	Rail Buttons 0.5"
Motor Retention Method	2 #12 1 1/2" bolts in T-nuts

Motor Properties	
Motor Manufacturer(s)	Cesaroni Technologies Inc
Motor Designation(s)	K660 Classic
Max, Average Thrust (Newtons)	1078.9 Ns, 659.2 Ns
Total Impulse (Newton-seconds)	2437.38
Mass before/after burn (pounds)	4.26/1.61

Stability Analysis	
Center of Pressure (inches from nose)	62.32
Center of Gravity (inches from nose)	54.26
Thrust-to-Weight Ratio	13.6:1
Rail Size/Length	72"
Rail Exit Velocity (feet/second)	74.99

Ascent Analysis	
Max Velocity (feet/second)	841.92
Max Mach Number	0.75
Max Acceleration (feet/second ²)	486.44
Peak Altitude (feet)	5280

Recovery System Properties	
Drogue Parachute	
Manufacturer/Model	LOC/Precision
Size	18"
Altitude at Deployment (feet)	Apogee - 5,280'
Velocity at Deployment (feet/second)	45

Recovery System Properties	
Main Parachute	
Manufacturer/Model	SkyAngle
Size	52
Altitude at Deployment (feet)	500
Velocity at Deployment (feet/second)	85
Velocity at Landing (feet/second)	21.3

Recovery System Properties	
Electronics/Ejection	
Altimeter(s) Make/Model	PerfectFlite MAWD
Redundancy Plan	RDAS-Tiny altimeter
Pad Stay Time (Launch Configuration)	1 hr

Recovery System Properties	
Electronics/Ejection	
Rocket Locators (Make, Model)	Garmin Astro 220
Transmitting Frequencies	151.82 MHZ, 151.88 MHZ, 151.94 MHZ, 154.57 MHZ, 154.60 MHZ
Black Power Mass Main Parachute (grams)	Drogue - 1.1/1.3 primary/secondary
Black Power Mass Main Parachute (grams)	2.3/2.5 primary & secondary

Milestone Review Flysheet

PDR, CDR, FRR

Institution Name Northwest Indian College

Milestone CDR

Payload/Science

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

Test Plan Schedule/Status

Ejection Charge Test(s)	11/5/2010, 12/5/10, 2/18/11
Sub-scale Test Flights	11/6/2010
Full-scale Test Flights	Low Altitude - 12/5/10, 3/20/11; High altitude 3/5/11, 3/26/11

Additional Comments

Frankenstein I shredded on 3/5/11 and has been rebuilt as Frankenstein II. March 20, 2011, Frankenstein II flew with a CT J330 to an altitude of 2389 feet with successful dual deploy recovery.