

Milestone Review Flysheet

PDR, CDR, FRR

Institution Name	The Phelps School
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Milesone	CDR
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Rocket Properties	
Diameter (in)	4 in
Length (in)	107 5/8 in
Gross Liftoff Weight (lbm)	191.9 oz
Launch lug/button size	80/20
Motor Retention	Aeropack Ring Retention

Motor Properties	
Manufacturer	Aerotech
Designation	K550W
Peak, Avg Thrust	396.8 N, 655.3 N
Mass (before, after burn)	1487 g, 598 g
Total Impulse	1539.1 N s

Stability Analysis	
CP, CG (in. from nose)	74.94, 69.27
Stability Margin	1.42
Thrust-to-Weight Ratio	7.42:1
Rail size, Length	80/20 , 10 ft

Ascent Analysis	
Max Velocity (ft/s)	821 ft/s
Max Acceleration (ft/s ²)	486 ft/s ²
Peak Altitude (ft)	6590
Rail Exit Velocity (ft/s)	92.44 ft/s

Recovery System Properties	
Drogue Parachute	
Size	14 inch
Configuration	Standard
Alt. at Deployment (ft.)	6590
Velocity at Deployment (ft/s)	31.6 ft/s

Recovery System Properties	
Main Parachute	
Size	29.5 CuFt
Configuration	3-52 inch tethers
Alt. at Deployment (ft.)	600 ft
Velocity at Deployment (ft/s)	86 ft/s
Velocity upon Landing (ft/s)	24.6 ft/sec

Recovery System Properties				
Electronics/Ejection				
Altimeter(s) Make, Model	Dual Mini Alt/WD+ flight computers/altimeters			
Redundancy Plan (altimeters, switches, batteries, etc.)	2 Altimeters wired to both crucibles, each have own battery and switch, LED light indicates complete circuit			
Pad Stay Time (launch configuration)	9+ hours			
Rocket Locator (Make, Model)	Big Red Bee			
Frequencies of Transmitting Electronics	GPS change is under consideration due to restricted frequencies			
Black Powder Mass (grams)	Main	TBD	Drogue	TBD

Payload/Science	
Succinct Overview of Payload/Science Experiment	Dual TOCON UV sensors measure UV levels which are recorded on independent dataloggers at a rate of 1 measurement per second
Identify Major Components	2 TOCON Standard UV sensors and 2 OMEGA Voltage reading dataloggers in rocket; 1 TOCON Standard UV sensor and 1 OMEGA Voltage reading datalogger at ground level.
Mass of Payload/Science	6 ounces plus mounting hardware

Test Plan Schedule / Status	
Ejection Charge Test(s)	Late January 2010
Subscale Launches	7-Feb-10
Full-Scale Launches	7-Mar-10