Milestone Review Flysheet

PDR, CDR, FRR

Institution Name	Harding University

Milestone	PDR

Vehicle Properties	
Diameter (inches)	6.16
Length (inches)	121
Gross Liftoff Weight (pounds)	39.3
Launch lug/button size	Public Missile Linear Launch Rail Lugs
Motor Retention Method	Currently under review

Motor Properties	
Motor Manufacturer(s)	Contrail Rockets
Motor Designation(s)	L-1222-SM
Max, Average Thrust (Newtons)	Maximum: 2540 Average: 1191.7
Total Impulse (Newton-seconds)	3694
Mass before/after burn (pounds)	Before: 39.3 After: 30.7

Stability Analysis	
Center of Pressure (inches from nose)	100.7
Center of Gravity (inches from nose)	68.19
Thrust-to-Weight Ratio	6.79
Rail Size/Length	1 inch by 8 feet
Rail Exit Velocity (feet/second)	Under research

Ascent Analysis	
Max Velocity (feet/second)	622
Max Mach Number	0.55
Max Acceleration (feet/second^2)	484
Peak Altitude (feet)	5305

Recovery System Properties	
Drogue Parachute	
Manufacturer/Model	SkyAngle Classic 44"
Size	44"
Altitude at Deployment (feet)	5305
Velocity at Deployment (feet/second)	1.03

Recovery System Properties	
Main Parachute	
Manufacturer/Model	Public Missile 120"
Size	120"
Altitude at Deployment (feet)	800
Velocity at Deployment (feet/second)	61.84
Velocity at Landing (feet/second)	between 17 and 22

Recovery System Properties	
Electronics/Ejection	
Altimeter(s) Make/Model	PerfectFlight Mini Altimeter
Redundancy Plan	2 altimeters on board
Pad Stay Time (Launch	3 Minutes

Recovery System Properties	
Electronics/Ejection	
Rocket Locators (Make, Model)	Walston Retreival System
Transmitting Frequencies	***Required by CDR***
Black Power Mass Main Parachute (grams)	Under research
Black Power Mass	Under research

Configuration)			Main Parachute (grams)	

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Payload/Science	
Succinct Overview of Payload/Science Experiment	We will take data for the temperature, humidity, pressure, solar irradiance, and ultraviolet radiation during descent and after landing. We will also take three pictures during descent and three pictures after the payload has landed. We intend to separate the payload from the airframe at 2,500 feet.
Identify Major Components	1. Payload pod 2. Camera 3. Humidity Sensor 4. Temperature Sensor 5. Pressure Sensor 6. Ultraviolet Radiation Sensor 7. Solar Irradiance Sensor 8. Payload Computer 9. Payload Parachute 10. GPS Tracking System
Mass of Payload/Science	Currently Under Research

Test Plan Schedule/Status	
Ejection Charge Test(s)	Testing to be done in February
Sub-scale Test Flights	Test flight set for January
Full-scale Test Flights	Test fligt set for March

Additional Comments