

## Milestone Review Flysheet

### PDR, CDR, FRR

<b>Institution Name</b>	Cedar Park Rocketry Team	<b>Milestone</b>	CDR
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Vehicle Properties	
Diameter (mm)	102.21
Length (mm)	1787.52
Gross Liftoff Weight (g)	4046.773
Launch Lug/button Size	1" width 0.25" slot
Motor Retention	Aluminum motor retainer

Motor Properties	
Motor Manufacturer	Gorilla Rocket Motors
Motor Designation	J395RT
Max/Average Thrust (N/lb)	457.889/399.439
Total Impulse (N-sec/lb-sec)	1034.547
Mass pre/post Burn (g)	4046.778/3506.18

Stability Analysis	
Center of Pressure (mm)	1440.47
Center of Gravity (mm)	856.94
Static Stability Margin	5.74 (Overstable)
Thrust-to-Weight Ratio	48.5:1
Rail Size (in) / Length (ft)	1"/6

Ascent Analysis	
Rail Exit Velocity (ft/s)	67.401
Max Velocity (ft/s)	745.57
Max Mach Number	0.662949
Max Acceleration (ft/s <sup>2</sup> )	349.55
Max Altitude (ft)	5402.49

Recovery System Properties	
Drogue Parachute	
Manufacturer/Model	Wildman Rocketry
Size	18" diameter
Altitude at Deployment (ft)	5402.45
Velocity at Deployment (ft/s)	0.03
Terminal Velocity (ft/s)	738.727
Recovery Harness Material	Kevlar
Harness Size/Thickness (in)	5/16
Recovery Harness Length (ft)	11
Harness/Airframe Interfaces	Secured to 1/4 inch welded screw eye
Kinetic Energy During Descent (ft-lb)	43487.591

Recovery System Properties	
Main Parachute	
Manufacturer/Model	Wildman Rocketry
Size	36" diameter
Altitude at Deployment (ft)	318.01
Velocity at Deployment (ft/s)	416.17
Landing Velocity (ft/s)	-38.614
Recovery Harness Material	Kevlar
Harness Size/Thickness (in)	5/16
Recovery Harness Length (ft)	14
Harness/Airframe Interfaces	Secured to 1/4 inch welded screw eye
Kinetic energy upon landing (ft-lb)	3016.96 ft-lb

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<b>Recovery System Properties</b>	
<b>Electronics/Ejection</b>	
Altimeter(s) Make/Model	Altus metrum/telemetry
Redundancy Plan	We have two of everything that we would need except parachutes and motors, we also have two activations for each thing that needs activation
Pad Stay Time (Launch Configuration)	1 hour

<b>Recovery System Properties</b>	
<b>Electronics/Ejection</b>	
Rocket Locators (Make, Model)	Still evaluating options
Transmitting Frequencies	70cm bank (in 125 hz steps)
Black Power Mass Drogue Parachute	2g per charge
Black Power Mass Main Parachute	2g per charge

<b>Payload/Science</b>
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Succinct Overview of Payload/Science Experiment	We have A tube inside of a tube with Neodymium magnets placed in the top and bottom of each of the tubes to slow the effects of G-Forces on the inside tube which is simulating a astronaut launching off
Identify Major Components	Neodymium magnets, inside and outside tubes made of fiberglass, accelerometer (measures G-Forces),
Mass of Payload/Science	

<b>Test Plan Schedule/Status</b>
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Ejection Charge Test(s)	2/20/17
Sub-scale Test Flights	1/05/17 Reached apogee at 352 feet. Reached apogee in 7.1 seconds. Parachute deployed in 7.2 seconds at 350 feet.
Full-scale Test Flights	3/04/17 redo possible 4/01/17

