# Rocket Data Sheet and Launch Record

| Rocket Description | |
|---|---|
| Owner: | Jeff Shymanski and |
| Rocket Name: | American Horror S |
| Type: | ModelRocket.us |
| Length: (inches) | 22.625 inches |
| Diameter: (inches) | 1.645 inches |
| Fins: | 3 |
| Listed Mass: (g) | 81.2 g |
| Date of Construction: | 9/19/2014 |
| Recommended Motors: | |
| C6-3, C6-5 | |
| Center Gravity(CG): | 37.9 cm |
| Center Pressure(CP): | |

**Building Notes**

We had an abnormally long shock cord and applied a substantial amount of paint, which could be the cause for our massive rocket (approximately 10 grams more than other

| | |
|---|---|
| Estimated Cd: | 0.5 |
| Predicted Altitude: | 350 feet |

**Prediction Notes**

Company says 650 feet, but we predict 350 feet. This because during the lauches in 2012, there was a rocket that was the exact same mass as ours -- 81.2 g -- and used the same engine type as us. That

| Launch Information | |
|---|---|
| Date: | 9/25/2014 |
| Time of Launch: | 9:20:00 |
| Location: | Soccer Field Parkir |
| Rocket Mass(g): | 81.2 g |
| Motor: | C6-3 |
| Motor Mass(g): | 24.9 g |
| Altimeter Mass(g): | 9.9 |
| Liftoff Mass(g): | 9.9 |
| Wind Direction: | Southeast |
| Wind Speed: | 5 mph |
| Igniter: | Estes |
| No. of tries to ignite: | 3 |

**Ignition**

| | |
|---|---|
| ¨ Successfull | ¨ Blow Out |
| ¨ Caught on clips | ¨ Motor Failure |

**Trajectory**

| | |
|---|---|
| ¨ Straight-Up | ¨ Spinning |
| ¨ Corkscrew | ¨ Non-vertical |
| ¨ Into the wind | ¨ Unstable |

**Launch Notes**

When we first tried to launch our rocket, it was unsuccessful. Consequently, the plug and motor were readjusted. The second attempt also failed, but we believe the reason was because the ignitor battery died. We used a new one and then it launched. The launch itself was a bit awkward; our rocket bent at an angle

**Recovery Information**

**Ejection Occurred**

| | |
|---|---|
| ¨ During Ascent | ¨ At Apogee |
| ¨ After Apogee | ¨ During Descent |
| ¨ Ejection Failure | |

**Parachute Deployment**

| | |
|---|---|
| ¨ Full | ¨ Partial |
| ¨ Did not deploy | |

**Parachute Descent**

| | |
|---|---|
| ¨ Stable Descent | ¨ Tangled lines |
| ¨ Some swaying | ¨ Sprial descent |

**Reason for Recovery Failure**

¨ Damaged Chute
¨ Tight Upper Body tube
¨ Improper setup
¨ Chute Separated
¨ Motor Ejected
¨ Unplanned Separation
¨ Other _____

**Descent Speed**

| | |
|---|---|
| ¨ Slow | ¨ Average speed |
| ¨ Very fast | ¨ Ballistic |

**Landing**

| | |
|---|---|
| ¨ Soft | ¨ Water |
| ¨ Tree | ¨ Caught on Wire |
| ¨ Hard | ¨ Crash |
| ¨ Landed on Building | |

**Recovery**

| | |
|---|---|
| ¨ Full Recovery | ¨ Lost |
| ¨ Not Recoverable | ¨ Parts lost |

Distance & Direction from pad:

Went Southeast, but floated to the west.

**Recovery Notes**

Since our shock cords were abnormally long, the nose cone was not in close proximity to the body tube during the descent. Instead of just letting it fall, Lauryn caught our rocket. The rocket landed in the same parking lot we lauched it in, but a little to the west.

**Lessons Learned**

We learned to make sure that the ignitor has a full battery before trying to launch. We also learned that with a rocket that has a greater mass, a C6-3 engine was the right motor because since the rocket is heavier the parachute needs to be deployed sooner due to its lower atitude.

**Altimeter Two Data**

| | |
|---|---|
| Apogee Altitude: | 359 feet |
| Top Speed: | 100 mph |
| Burn Time (burn): | 2.12 sec |
| Peak Acc (Pacc): | 8.0 gs |
| Avg Acc (Aacc): | 2.2 gs |
| Coast Apogee (C2AP): | 2 sec |
| Apogee to Eject (AP2E): | -0.8 sec |
| Ejection Alt. (EALt): | 339 feet |
| Descent Speed (dESc): | 9 mph |
| Flight Duration (durA): | 27.7 sec |

**Altimeter Data Analysis**

In the Apogee to Eject, the altimeter recorded that our parachute ejected 0.8 seconds before the apogee, but visually we saw that it ejected after apogee. The pressure could have caused this discrepancy in the apogee to eject number.

**Prediction vs Actual Analysis**

We predicted that our rocket would reach the altitude of 350 feet and our rocket reached 359 feet. We were extremely close in our prediction.

**Post Launch Information**

**Flight Grade**

¨ Excellent
¨ Good
¨ Fair
¨ Poor
¨ Rocket cannot launch again

**Describe any damage to the rocket:**

No Damage

**Rocket Project Suggestions**

I wish that we could have seen more comparisons between the C6-3 and the C6-5 before we launched our rocket. We weren't sure exactly which engine to go with so we just used the one that was demonstrated in class.