Rocket Data Sheet and Launch Record

Rocket Description

Owner:	Madonna, Ngan, C
Rocket Name:	X-Caliber
Type:	Model Rockets. US
Length: (inches)	22.625in
Diameter: (inches)	1.645in
Fins:	3
Listed Mass: (g)	85
Date of Construction:	9/19/2014
Recommended Motors:	
C6-3 C6-5	
Center Gravity(CG):	36cm
Center Pressure(CP):	

Building Notes

Fins had to be cut on root edge because the engine holder had slid too far into the body tube.

Estimated Cd:	0.5
Predicted Altitude:	395

Prediction Notes

Company predicts 650, rocket mass is less than the listed

Launch Information

Date:	9/26/2014
Time of Launch:	11:00:00
Location:	parking lot
Rocket Mass(g):	80.2
Motor:	C6-5
Motor Mass(g):	25
Altimeter Mass(g):	9.9
Liftoff Mass(g):	115.1
Wind Direction:	SSE
Wind Speed:	9mph
Igniter:	Estes
No. of tries to ignite:	1

Ignition

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

Trajectory

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

Launch Notes

The ignition clip came undone, and that made the lauch delay a second or two from the time we pressed the button

Recovery Information

Ejection Occurred

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

Parachute Deployment

¨ Full	¨ Partial

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- chute string seperated

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:

About 40yards south of launch pad

Recovery Notes

While all parts were recovered, we found that the shroud lines were very tangled and this made it so the parachute couldn't open fully. Also one of our shroud lines was broken.

Lessons Learned

check and rewrapped the chute. We might have over compensated for the wind because the rocket went a lot more south than expected instead of straight up

Altimeter Two Data

Apogee Altitude:	372
Top Speed:	116
Burn Time (burn):	1.72
Peak Acc (Pacc):	10.7
Avg Acc (Aacc):	3.1
Coast Apogee (C2AP):	3.5
Apogee to Eject (AP2E):	1.2
Ejection Alt. (EALt):	355
Descent Speed (dESc):	16
Flight Duration (durA):	21

Altimeter Data Analysis

Everthing looked to be correct, the parachute ejected after the apogee and it came down very fast with the parachute not fully deployed.

Prediction vs Actual Analysis

Believed the rocket would reach a altitude of 395ft and the chute would eject a few seconds after. In reality the rocket ony reached 372ft and the chute did eject but the chut did not fully open, and one of the strings riped during its flight. Also the igniter cord detached durning the flight.

Post Launch Information

Flight Grade

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

Describe any damage to the rocket:

One broken shroud line

Rocket Project Suggestions

compare how the weights of the different rockets play in, we talked in class that the mod podge would make it heavier it would be interesting to see if the weights affects it a lot