Rocket Data Sheet and Launch Record

Rocket Description

Owner:	Cooper and Addison
Rocket Name:	Nuclear Destruction
Type:	Big Sharky
Length: (inches)	22.625
Diameter: (inches)	1.645
Fins:	Laser-Cut 1/8 in Balsa
Listed Mass: (g)	69.4
Date of Construction:	9/19/2014
Recommended Motors:	
C6-3, C6-5	
Center Gravity(CG):	37.8 cm
Center Pressure(CP):	

Building Notes

Our yellow paint was not good. It dripped down underneath the tape.

Estimated Cd:	0.5
Predicted Altitude:	375 Ft

Prediction Notes

Compans says that big sharky can go 650 feet in air with C6-5 engine

Launch Information

Date:	9/25/2014
Time of Launch:	9:15:00
Location:	Soccer field parking lot
Rocket Mass(g):	69.4
Motor:	C6-3
Motor Mass(g):	24.6
Altimeter Mass(g):	9.9
Liftoff Mass(g):	103.9
Wind Direction:	southeast
Wind Speed:	5 mph
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

Our rocket launched the first time we tried to ignite it. We aimed it a little to the east because we didn't want a gust of wind to knock it off trajectory. There was no wind so it launched a little too far east, over the little kid soccer fields.

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
Parachte didn't release

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:

50 yards east

Recovery Notes

The parachute got stuck in the body tube. It descended very fast because of this. No damage was done though because it landed on grass.

Lessons Learned

We should have used more baby powder on the parachute. This would help it get released easier.

Altimeter Two Data

Apogee Altitude:	423 Ft
Top Speed:	112 mph
Burn Time (burn):	1.9 s
Peak Acc (Pacc):	8.3 g
Avg Acc (Aacc):	2.6 g
Coast Apogee (C2AP):	3.75
Apogee to Eject (AP2E):	-0.8
Ejection Alt. (EALt):	406 Ft
Descent Speed (dESc):	27 mph
Flight Duration (durA):	15.25 s

Altimeter Data Analysis

Our parachute clearly popped a little after apogee, but the data shows it popped .8 seconds before. Our decent is really fast because the parachute got stuck. This also caused our flight duration to be short.

Prediction vs Actual Analysis

We predicted 375 because other rockets with around 70 g mass usually stayed around here. We had less wind so it went higher than previous years.

Post Launch Information

Flight Grade

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

Describe any damage to the rocket:

No damage.

Rocket Project Suggestions

Be more careful about how you pack the parachute. Don't jam it in too far. Take your time painting, use more tape.