Rocket Data Sheet and Launch Record

Rocket Description	
Owner:	Matthew Pauk
Rocket Name:	Deadpool
Type:	Arcas
Length: (inches)	56"
Diameter: (inches)	2.6"
Fins:	4
Listed Mass: (g)	620g
Date of Construction:	3/4/2016
Recommended Motors: (G only)	
G53-5FJ,G64-7W,G71-7R,G76-7G,G38-7FJ,G40-7W,G77-7R,G78-7G,G79-7W,G80	
Center Gravity(CG):	
Center Pressure(CP):	46.75"

Building Notes

No major issues in building. A little bit of glue got on the shock cord, but it has been cleaned off for the most part. Also had

Estimated Cd:	0.538
Predicted Altitude:	1980ft.

Prediction Notes

Prediction is based on previous flights with a G80. Took into account the 3 second longer delay time for -10T, apogee will be reached before chute deploys.

Launch Information	
Date:	5/3/2016
Time of Launch:	9:40
Location:	West of HS
Rocket Mass(g):	600
Motor:	G80-10T
Motor Mass(g):	127.6
Altimeter Mass(g):	9.9
Liftoff Mass(g):	737.5
Wind Direction:	W/SW
Wind Speed:	9 mph
Igniter:	First Fire
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

Good launch. Went straight up for the most part, possibly slightly affected by the wind.

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:

Landed on the east side of Grant Road, in front of the Collison edition

Recovery Notes

Decent speed was average for the day. Landed normally.

Post Launch Information

Flight Grade

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

Describe any damage to the rocket:

none

Altimeter Two Data	
Apogee Altitude:	2032 ft
Top Speed:	352 mph
Burn Time (burn):	1.2 s
Peak Acc (Pacc):	15.8 g
Avg Acc (Aacc):	13.3 g
Coast Apogee (C2AP):	10.0 s
Apogee to Eject (AP2E):	-.8 s
Ejection Alt. (EALt):	2032
Descent Speed (dESc):	13 mph
Flight Duration (durA):	111.7 s

Altimeter Data Analysis

The Flight Duration seems to be a little long. The ejection altitude and apogee to eject time seems a little questionable. The apogee altitude and Ejection altitude are exactly the same, despite the fact that the data says the parachute ejected .8 seconds prior to apogee. It seemed to me that

Prediction vs Actual Analysis

Our prediction was 1980 ft, so we were only off by about 52 feet. We launched our rocket straight up. We tried to estimate higher than the previous G80-7T launches because with the extra 3 second delay time of our -10T, it was not likely to eject the parachute prior to apogee giving it a higher max altitude. We just underestimated this effect on the rocket. Also the wind seemed to slightly effect the rocket's path on its way up, so it may have gone even higher in the absence of wind.

Lessons Learned

Building? Painting? Predicting? Launching? Recovery? The hole in the chute seemed to work well. Our rocket still drifted to Grant Road, but probably would have gone farther without the hole. However, the hole should probably not be made any bigger, or it will do nothing to increase drag. When launching make sure that the igniters are securly taped in. We didn't have trouble with this, but some other people did. Also, when putting on mod pogge, don't spill the entire container.

Rocket Project Suggestions

The whole year of Rocket Physics was enjoyable. The rocket worksheets should be continued. They maybe aern't as fun as actually building the rocket, but they help you learn about the physics behind the rocket launch. Launching the small rockets in the fall was helpful so that we