

Rocket Data Sheet and Launch Record

Rocket Description		Recovery Information		Altimeter Two Data			
Owner:	Casey & Ryan	Ejection Occurred		Apogee Altitude:	1543 Ft		
Rocket Name:	Hilton Magic	¨ During Ascent	¨ At Apogee	Top Speed:	258 mph		
Type:	HV Arcas	¨ After Apogee	¨ During Descent	Burn Time (burn):	1.5 s		
Length: (inches)	55.5 in	¨ Ejection Failure		Peak Acc (Pacc):	12.8		
Diameter: (inches)	2.63	Parachute Deployment		Avg Acc (Aacc):	7.8		
Fins:	4	¨ Full	¨ Partial	Coast Apogee (C2AP):	7.1 s		
Listed Mass: (g)	620	¨ Did not deploy		Apogee to Eject (AP2E):	-1.3 s		
Date of Construction:	Feb 2014	Parachute Descent		Ejection Alt. (EALt):	1470 Ft		
Recommended Motors: (G only)		¨ Stable Descent	¨ Tangled lines	Descent Speed (dESc):	10 mph		
G138-7T, G53-7FJ, G64-7W, G77-7R, G76-7G, G75-7M, G80-7T		¨ Some swaying	¨ Sprial descent	Flight Duration (durA):	104 s		
Center Gravity(CG):	38.5	Reason for Recovery Failure		Altimeter Data Analysis			
Center Pressure(CP):	46.7527	¨ Damaged Chute		We actually thought the rocket went higher than 1543 ft when we first saw it launch, but overall it was decently close to our projection (1442 ft, 101 off). Compared to our big sharky rocket -- which went 447 ft and went 98 mph -- it was pretty awesome to watch. We went the lowest relative to the other Arcas' that were sent up, one was lighter and one heavier. Our cd was actually closer to .48 according to the spreadsheet. Our arcas also went the slowest out of the three. The 'foxy' arcas burned twice as long as our rocket, but the engine was a G75. The 'KISS' arcas went 2002 ft, but it actually in the air for just one more second than our arcas.			
Estimated Cd:	0.56	¨ Tight Upper Body tube					
Predicted Altitude:	1441.8 Ft	¨ Improper setup					
Prediction Notes		¨ Chute Separated					
Our arcas is a little heavier relative to the past examples I could find, but I thought that I had a pretty good cd prediction. Once I plugged it into the spreadsheet, it looked a little high compared to the 'real' data that I could find from past launches. I figured that I would raise my cd, because I thought that since it was little heavier it wouldn't go quite as high. On the		¨ Motor Ejected					
Launch Information		¨ Unplanned Separation					
Date:	4/22/2014	¨ Other					
Time of Launch:	10:30:00	Descent Speed					
Location:	"Tee blocks" of the	¨ Slow	¨ Average speed				
Rocket Mass:	618 g	¨ Very fast	¨ Ballistic				
Motor:	G77-7R	Landing					
Motor Mass:	123 g	¨ Soft	¨ Water				
Motor Mass:	6.7g	¨ Tree	¨ Caught on Wire				
Altimeter Mass:	741 g	¨ Hard	¨ Crash				
Liftoff Mass:	Out of the North	¨ Landed on Building		Post Launch Information			
Wind Direction:	8 mph	Recovery		Rocket Damage			
Wind Speed:	Copperhead	¨ Full Recovery	¨ Lost	¨ No Damage			
Igniter:	3	¨ Not Recoverable	¨ Parts lost	¨ Scuffed Paint			
No. of tries to ignite:		Distance & Direction from pad:		¨ Launch Lugs			
Ignition		At least onto the hole southwest of the driving range		¨ Engine Stuck			
¨ Successfull	¨ Blow Out	Recovery Notes		¨ Fins Damaged			
¨ Caught on clips	¨ Motor Failure	Parachute deployed when it should and caught right away. Came down at a good speed meaning that there wasn't even as much as a chip in the rocket.		Describe any damage to the rocket:			
Trajectory		Copperhead ignitor is probably the way to go with an Arcas. It is also important to tape in the ignitor.		None			
¨ Straight-Up	¨ Spinning			Flight Grade			
¨ Corkscrew	¨ Non-vertical			¨ Excellent			
¨ Into the wind	¨ Unstable	Lessons Learned		¨ Good			
Launch Notes		First ignitor was taped in, but it blew out two times. We also couldn't get the controller to work, so we had a few false alarms. We then switched to a copperhead ignitor and the flight was pretty successful. Rocket was aimed straight up for the most part.		¨ Poor			
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