The Derby on Marco Hill

**A race that makes a town**

Oh, there are many great races that towns get behind and help define who that community is. For the quaint town of Marco that race is the soap box “Derby on Marco Hill”. Run every year in early fall, the race winds down the hill behind town and finishes on Main street at the one stoplight in town. At each running of the 2500 foot long plunge, children under the age of 14 have the opportunity to hop into their creation and hope for fame and glory for an entire year in the town of about 800 people. Over the past 2 years, the competition had been fierce and this year was no less as we meet our protagonist, Alberto at the start of this race one rather warm October afternoon.

The racers all were at the line, all the familiar faces, Kristin[[1]](#footnote-1), TeeJay, Vincinzo, Chris, and Alberto along with several others. They sat at the top of the mountain, ready for the flag to be dropped and to push off and down. Their faces were serious and focused down the hill as their goggles were pulled down over their eyes. They could see the finish line, just 2500 feet ahead in the middle of town.

**The Challenge**

Alberto was intent on winning this year as he looked over at his primary competitor sitting in his blue and black machine. He did not want to sit behind Chris one more year and watch his smooth sailing frictionless "Sky's the Limit" derby car win again. Chris had been victorious that last two years and won the affections of the town. Somehow, Chris’s car always just seemed to keep rolling without losing speed like all the other competitors. He would start with everyone else and go down the hill with the rest of the cars, but when the road leveled off, he just didn’t slow down like everyone else.

And so Alberto had worked and brain stormed all winter long. He had read at least 10 different books on non-combustion propulsion methods until an idea finally hit him.

**A New Machine**

It had happened last January, under the grey skies of a boring winter day, that his idea had run into him. His little brother[[2]](#footnote-2), now 4 years old, 4 years younger than him, had pulled back on the yellow taxi car and let it fly across the floor straight into Alberto's heal. It was one of those spring loaded toy cars that kids play with. While Alberto was relatively uninjured, he threw a tantrum and ran to his room to illustrate to his parents how unfair life had been to him. But it was that fateful night that he had his dream about his own derby machine, The Tinkoff Derby 2000. Only this time it was painted yellow like the taxi car. In his dream he pulled it back and it flew off the line.

The next morning the construction of his new machine began. He had three different designs before he was finally successful with a spring that could wind up and then unwind to initiate speed and then disengage for the rest of the race. While he would never be able to match the frictionless conservation of energy and speed that Chris had, maybe if Alberto were to start faster than anyone else he could hold on to the lead just long enough to win.

**Race Day**

And so, on this warm July day, the flag dropped, Alberto released the lever and careened off Marco Hill in the lead and the race was on. Fearless riders plunged down the hill in a fabulous exhibition of horrible under age driving. A police officer on hand, one of only two police officers in the town, positioned himself halfway down the hill. Aware of the rivalry between Alberto and Chris, he decided to use his radar gun to clock their speeds. The cars went just out of range after 90 seconds right before they crossed the finish line.

The results of the officer Fife’s radar gun are as follows[[3]](#footnote-3).

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| T, sec | 5 | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 |
| **A(t)** ft/sec | 31 | 39 | 42 | 43 | 42 | 34 | 22 | 16 | 10 | 8 |

 **C(t)**

ft/sec

 50

 40

 30

 20

 10

 0 10 20 30 40 50 60 70 80 90

 Time, Seconds

Who won?

**So Close!**

As was expected, Alberto surged to a great early lead. Within the first 10 seconds he was easily 75 feet in front of the next couple of cars, piloted by Kristin and by his nemesis Chris. At 20 seconds, he was at least 350 feet in front. The crowd stared in disbelief at the flying yellow taxi derby car doubling the distance on everyone else. By the time they were near the bottom of the steep part of the hill, Alberto was approaching 500 feet ahead of everyone else.

 But then it began to happen again as the road leveled out to the gentle slope down into Main Street. Chris’s smooth riding frictionless machine began to outdistance everyone as it just didn’t slow down like everyone else’s car. As the seconds ticked by he slowly closed the gap on Alberto. The crowds at the bottom on Main Street could see Chris catching Alberto, but the finish line was coming. Cheering and yelling ensued for a race this dramatic hadn’t happened since the epic years of the 1950’s with Eddie the badger furiously challenging Charlie’s road racing machine[[4]](#footnote-4). Surely Chris couldn’t keep his momentum. Just over 80 seconds had passed since the flag was dropped and Alberto was just 100 feet from the line and yet just crawling along while Chris was now just 90 feet behind him and going about twice as fast.

 And there it happened. Just 10 feet in front of the line, Chris did the unthinkable and rolled past Alberto yet again, to win his 3rd consecutive Derby on Marco Hill[[5]](#footnote-5). Prizes were awarded and yet for another year, Chris would be lauded as the town champion[[6]](#footnote-6) in one of the closest races ever.

1. While being the only female competitor, Kristin was by no means the least. Not only had she finished just behind Alberto in the previous year’s race, she was known for her fearless descending skills and the habit of bumping other drivers and cackling loudly.

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2. Later, Miguel, Alberto’s little brother became a great racer himself by using just three wheels instead of 4 and reducing the rolling friction enough to win several years of fame and glory for himself on Marco Hill. [↑](#footnote-ref-2)
3. While reading through the annuls of history, many questions have arisen about officer Fife’s radar gun and how he simultaneously got two different cars speeds and why the recording of those speeds came in different forms. His response was as follows, “I actually had two radar guns running simultaneously. I always keep a back up, just in case someone needs to enforce a citizen’s arrest. One of my guns was accidentally set to graph mode and the other was in tabular mode but once the race started I didn’t want to interrupt the data, so I just grabbed each printout as it came and took it over to Thelma Lou to help me do the math.” [↑](#footnote-ref-3)
4. The name “Eddie the badger” was given to him by the town due to his knack for leaning out of his derby car and biting off pieces of the other participant’s machines. [↑](#footnote-ref-4)
5. Coincidentally, after the prizes were awarded, both machines were inspected that day and 2 new rules were placed into effect: No spring loaded contraptions were allowed and also hand cranked propulsion devises were outlawed. These years were referred to as the “Derby Doping Years.” [↑](#footnote-ref-5)
6. Asterisks were placed next to Chris’s three years of victory, and it should be noted that the following two years were won by the absolutely fearless Kristin. [↑](#footnote-ref-6)