The Ideal *Old Man's* Car

The initial reason for designing and constructing the Maglev vehicles was to create a car that could both carry a high number of people in a quick amount of time, and be the most cost efficient. Unfortunately for me, a high number of people would not be able to squeeze into my car. A slow, yet steady and comfortable pace made it quite obvious that my car was not in the upper echelon of the class. Instead however, it found its own identity as being ideal for an old man. Freedom rides through the countryside would be this car's specialty.

In preparation for our upcoming project, we first watched a video on modern day Maglev vehicles. In the video we learned about the theories of magnets and electricity working together to form a high-speed vehicle. We learned about the futuristic possibilities of traveling from New York to Washington (without spilling your coffee) in relatively short time. The main purpose of a Maglev vehicle is for mass transportation in a quick amount of time. After we were introduced to the Maglev vehicle in the video, we proceeded to the computer lab to peruse the Internet. On the Internet, we found a variety of current Maglev vehicles. We got to check out the various speeds and performances that these particular vehicles had. In the making are some more elite types of Maglev vehicles. Perhaps someday in the near future, there will be a Maglev line running through our very own town.

It was now time to plan out a strategy on the design of my car. The very first thing I sketched out was how wide the track was. A car any wider than the track would obviously not be able to run. Also, the magnets had to be a little more than an inch

separated apart or else the magnets would not function properly. My completed sketch was a relatively small car that would be able to fit approximately 7-10 passengers at a time. One motor was supposed to rest on the top of the rear end and act as a propeller. Once my advisor approved my sketch, I looked for the proper materials in making my vehicle. The first thing I found was the material for my body. A light Styrofoam material was perfect for the design of my car. I cut out the proper design and also placed a shield of protection on it. Once the basic body was established, I found a base made of a hard light plastic. The plastic was easy to cut so that the contours of my base would match that of the car. Once I had my body and my base all set, I needed to install the ingredient that makes it all happen, the magnets. You could not just plug the magnets on the base in any sort of arrangement that you want. The magnets have to be placed on in rows approximately one inch apart. Also, the magnets (once they are placed on) must repel the force given off of the track so that the Maglev vehicle can float. After the magnets were carefully put on, it was time to install the motor system. The motor system consisted of one motor, two wires, and a propeller. The two wires would touch the side of the Maglev track and generate power inside the motor, which would turn the propeller. Once my motor system was installed, I was ready to test out my product on the track.

Something was wrong. Placing my vehicle on the track was no different than trying to drive a car while it is elevated, the motor was humming but it wasn't moving an inch. Upon observation, I concluded that my car had too much weight pushing down on the magnetic track. The one thing I could do was to hollow out the insides of the Styrofoam, which would reduce much of the weight. Well, that didn't do too much. So I continued to chop away at the body of my car. Each crucial chop eliminated the

passenger rate of my vehicle. Eventually the weight balanced out when my vehicle totaled the passenger rate of 1.5. Saddened by the loss of passenger space, I was happy to see that my vehicle could at least move. My vehicle was now completed. All it needed was a purple colored body, and a beautiful purple baseball No. 4 for good luck.

A cheap car to build, it only cost a shade over $57 million ($50 million going into labor). Measurements concluded that a mere 1.5 passengers could jam into my car's tight surroundings. With the knowledge of my car being a "one man wrecking crew" I tested it on the track to see how much speed my puppy could burn. Once the results came in, it was time to label my Maglev car ideal for the *old man.* A respectable average speed of 4.75, my car will not pass the board of transportation's expectations. However, if the time comes for "personal" Maglev use in the future, people can come to either me or Q. Some controversy was brought up in aspects to the motor. A more efficient "gold" motor was placed on some of the other vehicles, and showed that they performed at a higher speed. Would my car have broken record speeds with this "gold" motor?

Although my car would not have passed the expectations of the Maglev transportation theories, I did learn a lot about how electricity and magnets can work together. I learned that the Maglev is a mode of transportation for the future. A low (if not zero) pollution percentage, a Maglev would be ideal to the ozone. I found it amazing how the vehicles actually float down the track. The main problem for me was the weight factor. For some reason, I wasn't able to carry a space wide enough to fit any more than two passengers. Speculation could lead to bad magnet placement on the bottom. If I could do it again, I would design a car that distributes the weight more evenly throughout the base so I could fit more passengers. I would also look into purchasing the gold motor

for higher velocity. I thought it was a fun project and I recommend it to future generations of classes.