CALIFORNIA STATE SCIENCE FAIR
2007 PROJECT SUMMARY

Name(s)
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Project Number
J0101

Project Title
Car Spoiler Efficiency

Abstract

Objectives/Goals
An experiment was conducted to determine which rear car spoiler angle will be the most efficient in speed and traction.

Methods/Materials
Wind was blown from an electric blower into a wind tunnel over a model car. A ruler was placed inside the wind tunnel to calculate how far the car was blown by the wind at different spoiler angles. There was also a scale to measure how much downward force was applied on the back of the car. The greater amount of downward force on the back leads to more traction on the back. The hypothesis that a 20 degree spoiler angle will be the most efficient in speed and traction, was confirmed

Results
The angle with 21 degrees was the most efficient for reducing drag and increasing traction. The angle with 60 degrees was the best for improving traction but not drag. The angles -68 were the best for the least amount of drag but not for the most amount of traction. I was very surprised that the largest angle had the least drag.

Conclusions/Discussion
My original problem was what car spoiler angles will be most efficient for speed and traction? The angle with 21 degrees was the most efficient for reducing drag and increasing traction. The angle with 60 degrees was the best for improving traction but not drag. The angles -68 were the best for the least amount of drag but not for the most amount of traction.

I found it hard to measure the downward force because the wind was not staying at a constant speed, so I had to estimate the weight. I was surprised that angle 7(-68 degrees) had the least amount of drag. The angle was so large that it looked like it would create the most amount of drag. I came to find that my hypothesis was correct (I expected that a wing angle of twenty degrees will be the most efficient.)

Summary Statement
An experiment was conducted to determine which rear car spoiler angle will be the most efficient in speed and traction.

Help Received
My dad helpd me build the wind tunnel. My science teacher guided me through the steps. My mom helpd me with the display board.