Name(s)	Project Number
Faith A. Bryer-Ash	**J1908**

Project Title

Third Headlight Is No Fifth Wheel

Abstract

Objectives/Goals

The purpose is to test the hypothesis that an additional central headlight at eye-level, which will turn on with the original two headlights, can cause faster reaction times for on-coming traffic to prevent more head-on accidents.

Methods/Materials

The Procedure is to design a board to make it look like a car is coming at you. Cut three circles in the front of car (two where the headlights are, and one below the windshield in the center) and place light bulbs in the holes. Attach the wires to a battery and to a) two side headlights and b) one light. Have the tester sit in a chair and hold the stopwatch. When you press the button to activate the chosen amount of lights and a button to activate the stopwatch, the participant presses the stop button to stop the stopwatch when they see the light. Record that time. Repeat process three times. Average times. Test the same participant#s reaction time again, but only with the two headlights. Record data. Repeat three times. Do the same process to twelve other people to come to a total of thirty-nine tests each for the two lights and three.

Results

The results are that the individual test with three lights averaged: 0.24, 0.24, 0.31, 0.22, 0.31, 0.25, 0.31, 0.43, 0.25, 0.16, 0.19, 0.26, 0.27 seconds. The overall average was 0.26 seconds. This is a significantly faster reaction time than the tests with only two lights, proving that the hypothesis was correct. The averages of each test for the two lights are 0.28, 0.29, 0.35, 0.21, 0.43, 0.22, 0.36, 0.44, 0.21, 0.21, 0.26, 0.25, 0.32 seconds. All the reaction times for the two lights as a mean are 0.29.

Conclusions/Discussion

If the cars that are simulated in this experiment (the car on the board and the participant in a car) are going thirty-five miles and hour, and if they were fifty feet away from each other going opposite directions but only one of the cars had a third brake light, then the distance of the cars would be 1.25 inches more apart than if you did this experiment with only two lights. Considering that both cars had the third light, then this number would double to 2.5 inches of space that the vehicles are distanced from each other. This would support the saying, #I just missed an accident by inches.# Sometimes inches are enough to make a big difference in whether you have an accident or not. Further testing in a real life scenario would increase the knowledge of the benefits of the third headlight.

Summary Statement

My project is to determine whether it is an advantage to have an additional third eye-level headlight versus the two standard headlights on cars.

Help Received

Father helped cut, drill, and wire board.