CALIFORNIA STATE SCIENCE FAIR
2013 PROJECT SUMMARY

Name(s)
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Project Number
J0324

Project Title
RC Car Suspension

Abstract

Objectives/Goals
My objective was to find which type of shock oil gave the optimal absorption rate for a remote controlled car.

Methods/Materials
An accelerometer was attached to a remote controlled car and driven over a small bump at constant velocity for three trials per shock oil weight. Nine different weights of shock oil were tested from 20 through 100 weight increasing in increments of ten. The average G force across three trials for each oil weight was calculated from data collected by the accelerometer.

Results
The 30 weight shock oil provided the optimal dampening rate for the remote controlled car. The graph produced by the accelerometer for the 30-weight shock oil had neither reverberating peaks nor did it have a large spike that quickly returned to zero. This showed that 30-weight shock oil optimally dampened the car#s suspension movement.

Conclusions/Discussion
My conclusion is that 30-weight shock oil is the best oil weight because the car did not reverberate excessively nor did it have a hard impact then quickly return to zero.

Summary Statement
My project is about finding the best shock oil viscosities for a remote controlled car so that optimal shock absorption and dampening of the car can occur while driving over a road bump.

Help Received
Dad and science teacher helped me create graphs on Excel and find an accelerometer; Mom purchased the different types of oil that I told her I needed; Tutor helped me write the report while I dictated my thoughts to her.