



**CALIFORNIA STATE SCIENCE FAIR  
2007 PROJECT SUMMARY**

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**Project Title**  
**Determining the Stop Rate on Different Surfaces with Different Tire Pressures**

**Abstract**

**Objectives/Goals**  
Using a KTM 65cc dirtbike, I determined how tire pressure would affect the stop rate of the bike on different surfaces.

**Methods/Materials**  
I am using my KTM 65cc dirtbike. I first did a safety and maintenace inspection. I then praticited getting the bike to 15 mph using a speed gun. I had a highway patrolman use speed gun. He would signal when I hit 15 mph. After practicin this. I would slam on back brake at the signal.  
I then determined which surface I would begin with. I started concrete.  
The different surfaces were: concrete, asphalt, packed dirt, loamy soil, and sand.  
I began with a tire pressure of 25psi  
The different tire pressures used were: 25, 15 and 5psi.  
I rode my bike on concrete until I hit 15 mph. I then slammed on back brake at the signal.  
I then measured the stopping rate with a tape measure.  
3 trials for each surface under each tire pressure.

**Results**  
5psi - longest - concrete 32'9"      shortest - loamy soil 15'3"  
15 psi - longest concrete 42'6"      shortest - loamy soil 18'6"  
25psi - longest concret 47'      shortest - loamy soil 24'3"

other surfaces fell between the above results.

**Conclusions/Discussion**  
I learned that different tire pressures affect the stopping rate. A lower tire pressure showed that it will stop faster. However, if tire pressure is too low, not enough air for tire to work properly. It will effect how smooth your ride is, and could ruin rims.  
For safety puposes, if you really want to be able to stop quicker, you should have a tire pressure a little lower than recommended. Recommended amount is 10.

**Summary Statement**  
My project will determine how tire pressure effects stopping rate of a dirt bikes.

**Help Received**  
teacher taught scientific process, dad helped with supervision, officer Butler CA CHP, helped with safety and speed gun.