CALIFORNIA STATE SCIENCE FAIR
2006 PROJECT SUMMARY

Name(s)
James P. McClean

Project Number
J0120

Project Title
Propelling Numbers

Abstract

Objectives/Goals
To show that by increasing the pitch of a propeller it will generate more thrust, while at the same time less RPM, and draw more power.

Methods/Materials
I used four different 9-inch propellers, an electric motor, tachometer, watt meter and I built a test stand for measuring thrust.

Results
I found that everything had gone according to my hypothesis. As the pitch of the propeller was increased, the thrust generated increased, maximum RPM achieved dropped and power drawn from the battery increased.

Conclusions/Discussion
Through my experiment I learned that the reason thrust goes up and RPM goes down as pitch is increased is because the high, or course-pitched propeller has to push more air. This also causes the motor to work harder which in turn pulls more power from the battery.

Summary Statement
My project is about how changing pitch effects propeller performance.

Help Received
My dad helped me cut the wood for my test stand and supervised the tests.