CALIFORNIA STATE SCIENCE FAIR
2008 PROJECT SUMMARY

Name(s)
Chase Campion

Project Number
J0104

Project Title
The Effects of Tail Assemblies on Gliders

Abstract

Objectives/Goals
My objective was to find out the effect of different tail assemblies on gliders. I believe that the T-tail assembly will have the farthest flight distance because the horizontal stabilizer on the T-tail is mounted farther back than any other tail assembly; therefore the T-tail would have more leverage when the glider pitches up.

Methods/Materials
Four identical gliders, with different tail assemblies were constructed out of basswood and balsawood. The different tail assemblies were: a right-angle tail, a V-tail, a twin tail, a T-tail. The gliders were then launched the same way for 9 trials, for each glider, in a no wind condition.

Results
The T-tail assembly glided the farthest out of all the gliders at an average of 97.72 feet, followed by the twin tail at 86.28 feet, followed by the V-tail at 73.61 feet, and lastly the right-angle tail at 56 feet.

Conclusions/Discussion
The conclusion is that the T-tail is the best design for an un-powered airplane, a glider, based on the flight distance. Other tail assemblies may be better for powered airplanes, but still the best design for a glider is the T-tail assembly.

Summary Statement
My project is about how different tail assemblies effect the flight distance of gliders.

Help Received
Mother and older brother helped with launching the gliders