



**CALIFORNIA STATE SCIENCE FAIR  
2003 PROJECT SUMMARY**

<b>Name(s)</b> <b>Andrew G. Stinson</b>	<b>Project Number</b> <b>S0106</b>
<b>Project Title</b> <b>The Effects of Archer's Paradox on an Arrow After Being Shot</b>	
<b>Abstract</b> <b>Objectives/Goals</b> The objective is to observe the effect of Archer's Paradox on an arrow shot from a properly tuned recurve bow for the first 33 feet of flight. <b>Methods/Materials</b> I will perform this experiment using a 42lbs recurve bow and a carbon/aluminum arrow with a slightly stiff tuning set up, as is proper. The first six shots will be at a five foot standing distance from the target and the other groups of six from two foot intervals after five feet to 33 feet. After shooting the arrow, I will measure the horizontal and vertical angles of which the arrow hit the target. I will repeat this many times at varying distances. Then I will be able to take the average horizontal and vertical angle at each distance and be able to plot the path of the arrow. The arrow will be shot at a horizontally and vertically perpendicular target in relationship to the line of which the arrow rest and nockingpoint on the string make. <b>Results</b> The arrow appeared to have a fairly stable vertical motion, yet a very unstable horizontal motion in the begging of flight. That unstable horizontal motion seemed to disappear at about 23 feet into the shot and from there after the arrow had a fairly stable and straight horizontal motion in flight. <b>Conclusions/Discussion</b> My conclusion is that the effects of Archer's Paradox on an arrow shot from a properly tuned recurve bow can be seen in the horizontal instability of the arrow for the first 23 feet (these qualitative results should apply to any recurve bow, however the quantitative results will only apply to the same bow setup)	
<b>Summary Statement</b> My project is shows the immediate flight of the arrow after being released with fingers from a recurve bow.	
<b>Help Received</b> Used largescale printer in a media office.	