



**CALIFORNIA STATE SCIENCE FAIR
2007 PROJECT SUMMARY**

Name(s) Kyle R. Dwyier	Project Number S1607
Project Title Steam Whistles	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals I built a high efficiency, low-pressure whistle out of a piece of four-inch abs plastic pipe. I was trying to match the same output as a turn of the century steam whistle that could be found on an old train, and can be heard up to two miles away.</p> <p>Methods/Materials materials: -26 inches of 4-inch abs plastic pipe; -Abs cement; -3/8 inch all thread; -4 3/8 inch washers and nuts; -1/4 inch all thread; -1/4-inch nut; -5 1/4 inch washer and nut; -4-inch o-ring; -2 cans of Krylon paint. procedure: -I found the pipe I#d me needing I did all of the mathematical calculations; -I did all of the mathematical calculations; -I cut the pipe into 3 pieces: one was 17 inches and the other two were 4 and a half each; -I measured out the space for the air hole; -I cut out the air hole; -I put the tapered edge on the top edge of the air hole; -I machined the circle that makes the languid plate; -I cut out the slot in the languid plate; -I machined the circles that make the base plate and top; -I drilled the holes necessary in the base plate; -I machined the grooves into the base plate; -I cemented the languid plate in place; -I cemented the base plate in place; -I cleaned off the outer tube; -I painted the whistle; -I cemented the top plate in place.</p> <p>Results I accomplished what i intended to create. My whistle was able to be heard from a little more than 2 miles away. I am very satisfied with all of my findings.</p> <p>Conclusions/Discussion In the end, I have learned a lot throughout this project. I accept my hypothesis, because I made a high efficiency whistle that runs at low pressure, that sounds like an old steam whistle. It can also, be heard from just over 2 miles away. All in all, this was a great project, and my predictions, though at the beginning of the project seemed a little farfetched, seem to be 100% accurate.</p>	
Summary Statement I made a high efficiency, low preassure air whistle.	
Help Received Mike Dwyier - Mentor ...my dad / RIchard J. Weisenberger - Mentor...Acoustic engineer	