



**CALIFORNIA STATE SCIENCE FAIR
2004 PROJECT SUMMARY**

Name(s) Aaron J. Mendonsa	Project Number J0717
Project Title A Sonar Device: An Application to Prevent Auto Collisions	
Abstract Objectives/Goals To find out whether a sonar device can be used to avoid auto collisions on busy freeways. Methods/Materials Full 14 Lines in Notebook 1. Follow Circuit Diagram of A Basic Sonar Device 2. Create a common ground of all components (ranging module, transducer, and OoPic microcontroller) 3. Recheck diagram to check if power is connected in all materials 4. Once completed, successfully,connect the interface cable to the laptop 5. Commence readings and data ·600 Series Transducer,·OoPic Microcontroller,· 6500 Series Ranging Module, ·Interface Cable,·LED,·9Vlt Battery,·Bread Board,·4.7K Pull-Up Resistor, ·1K Resistor,·4 AA Batteries,·Data Transfer Cable,·18 in. square base board, ·Electronic circuit wire,Battery carriage,·Laptop Results The results were based on initial starting and critical distance points and the frequency of emittance by the built sonar device. Graphical formats show that a sonar device can be used in the future as a device to help a person know if he is at a dangerous speed or stopping distance. Conclusions/Discussion My hypothesis was correct because I thought that it is possible to use a sonar device to prevent auto-collisions. I learned that sonar can be used for many applications, not only to detect the stopping distances of cars, but can be used as alarms and in the military. If I were to do this experiment again, I would use a more effective sonar device to reach distances greater than 35 feet. Overall, this has been an excellent project that taught me a little about electronic circuitry as well as the wonders of modern science and its positive application in daily lives.	
Summary Statement If a sonar device can be used as an application to prevent car collisions	
Help Received Father with assembly	