Introduction

Irregardless of the state of the economy, identifying and exploiting potential markets for new or existing products is always important. As such, upper management has recently been alerted to the presence of one such untapped market. Within high school physics classrooms across the nation, there is a potentially lucrative market for inexpensive force transducers that can produce accurate force versus time curves. However, the capabilities of the transducer are best highlighted in its ability to produce a thrust versus time curve for a model rocket engine equivalent to what is published in the manufacturer's specification literature.

Inherent in the problem of creating a force versus time curve is how to acquire the data. Although there are numerous methods of measuring force, very few are capable of doing so over a given period of time at a high resolution. For example, a spring could easily be used to measure force but doing so over time with a high resolution is nearly impossible. Engineers-in-Training from previous years have conducted similar work. However, due to reasons outside of company influence, many Engineers-in-Training have left the company. When they left, much of their work was lost with them leaving current Engineers-in-Training with nothing to work with but the mentoring of Dr. Bruce Liebert. Using the available resources, the proposed solution involves the use of strain gauges on a cantilever beam which allows the data to be recorded electronically. This viable solution ensures that Vulture Capital Associates will not miss this opportunity to capitalize on this market.

The following report will present the step-by-step method used in order to create a transducer and produce a thrust versus time curve for a rocket engine. Following the method will be the results and a discussion of those results. Finally, this report will draw conclusions about the transducer, and some possible recommendations in making it better (if necessary).