## Strain Gauges

In this project, the residual stress will be determined through the use of strain gauges. Because of this it will be important to develop consistent, and accurate strain gauge application. To achieve this goal, a number of strain gauges will be applied to aluminum test bars. These bars will then be loaded and the strains read will be compared to a theoretical strain.

The strain gauges used in this research are CEA-06-125UW-350, bought from Vishay Micro-Measurements.

The bar will be fixed in such a way that it can be approximated as a 3-point bend, as in the figure below:



Where the R's are the reaction forces, and L is the load.



From this data and the strain gauges, the following results were obtained:

	Strain Gauge #1	Strain Gauge #2	Strain Gauge #3	Strain Gauge #4	Strain Gauge #4
Average Error	2%	4%	3%	2%	3%
Standard Deviation of Error	2%	1%	2%	2%	2%
Maximum Error	7%	6%	6%	7%	7%

Strain Gauge Correlations

