Control Charts

- During the Measure phase, one of the first things the Back Belt wants to do is to determine whether the process is in control with respect to the major 'Y'.
- The primary tool for this is a control chart.

Control Charts

- The simplest control chart consists of a simple plot of the observed variable versus time, with the control limits marked on the chart, and sometimes, the specification limit.
- The control limits are typically set at +/- three standard deviations. It is important to remember that the control limits should not be recalculated each time the control chart is redrawn.
- Rather, they should be set once, and then changed because of a change in the process.

Control Charts

- The control chart is a graph used to study how a process changes over time.
- Data are plotted in time order. A control chart always has a central line for the average, an upper line for the upper control limit and a lower line for the lower control limit.
- These lines are determined from historical data.

Control Charts

By comparing current data to these lines, you can draw conclusions about whether the process variation is consistent (in control) or is unpredictable (out of control, affected by special causes of variation).

Control Charts

- Control charts for variable data are used in pairs. The top chart monitors the average, or the centering of the distribution of data from the process.
- The bottom chart monitors the range, or the width of the distribution. If your data were shots in target practice, the average is where the shots are clustering, and the range is how tightly they are clustered.
- Control charts for attribute data are used singly.

When to Use a Control Chart

- When controlling ongoing processes by finding and correcting problems as they occur.
- When predicting the expected range of outcomes from a process.
- When determining whether a process is stable (in statistical control).
- When analyzing patterns of process variation from special causes (non-routine events) or common causes (built into the process).
- When determining whether your quality improvement project should aim to prevent specific problems or to make fundamental changes to the process.