

EXAMPLE U-CHART

The U-chart

The chart below is a typical chart used by a safety department - cases per 200,000 hours. Rather than just plotting the number of accidents, this graph plots accidents per 200,000 hours. This allows the rate on the graph to be consistent even with different size work forces.

In this example, the number of cases each month is determined, then divided by the number of hours worked in the month, and finally multiplied by 200,000. The control limits vary from month to month as hours change. When hours worked are low, the control limits are far from the average line. One expects a large amount of variability in the data when there is a small work force. When hours worked are high, the control limits move inward. One expects a small amount of variability.

Note that the initial average was calculated for a time period starting prior to the beginning of the graph. This is typical for an existing graph which has accumulated many years of data, and a decision is made to remove some of the "old" data. In this case, it was decided to remove the data prior to fiscal year 1995. However, the baseline average was left as is, rather than recalculating it for Oct 94 to Jan 95.

There are several significant trends in this graph. First was a decrease from 2.28 to 1.64 in early 1995. The five points from Feb 95 to Jun 95 were greater than one standard deviation below the previous average. However, there was then a significant spike in August 1995. August 1995 reflects special cause variation, and we will assume the cause in question was identified. When developing the proper average to use, it was decided to remove August 1995 from the average. Note the average line cuts through the center of the remaining data for the time interval.

