**Bob, MSA and his marriage…..**

I was teaching MSA to my second group of students at Chevron. Bob, a recently hired designs engineer was in this class. In fact, he was the “sample” we used to teach the concept of measurement system variation. To do this I asked Bob to step on and off a standard bathroom scale 20 times. We had an individual read his weight, the inspector, and yet another engineer record his weight, the data recorder. As a group we then made the necessary calculations and created both a histogram and an XmR chart of the data. It was obvious to all that the only variation was in the measurement system. Since everyone had to have taken the SPC class before this one, they all know the difference between random causes of variation and special causes. Next we embarked on a brainstorm in an attempt to reduce the variation. We quickly concluded that one thing we could change that might help was to redo the study but place the scale on a hard surface, unlike the carpeted surface in the conference room. So we all adjourned to the men’s bathroom which had the only tile floor in the building. We got some funny looks as we stopped all traffic into the bathroom until we had completed the 20 replications to get the data but soon enough returned to the conference room. And following the analysis as above, we found that we had reduced the variation by almost 50%.

Armed with this information, they were given the task to complete an MSA in the next month and we would then meet to review the individual projects.

Well it only took a few days and Bob was in my office, effusive and excited beyond measure. He was talking a mile a minute. He told me that this class had a dramatic effect on his life and might have saved his marriage. He went on. His wife was very self-conscious of her weight. And although she was probably 5’-6” if she ever got above 112 lbs, she would, as Bob said, “go ballistic”. It seems she had a scale next to the bed and each morning would step on the scale and if she weighted more than 112 Bob said his day was ruined, his kids day was ruined and life in general, for at least that 24 hours was pretty bad. His wife would get mad, reclusive, and not eat a thing that day…and if the next morning her weight was not less than 112, the whole process was repeated. And unfortunately, this happened 2-3 times a week.

Luckily, Bob’s wife had an affinity for math and was very interested in his SPC projects, which he said they discussed at times. Hence, they had a discussion in which Bob related the concept of random variation, special cause variation and measurement system variation. After a little cajoling he got her to step on and off the scale 20 times and they created both a histogram and an XmR chart. He related to her, the data as quantification of the concept of variation and he was able to convince her that if her weight did not go outside the control limits, her weight had not really changed -- it was just variation in the measurement system. Well they made a control chart, put it on the wall by the scale and now each morning his wife would step on the scale and plot her weight….and life has been much better, even this morning when she weighed 112.

Bob was ecstatic.

Later Bob and I discussed this as one of Shewharts errors of adjustment. That is “to adjust a system that does not need adjusting”. To which Bob replied….especially when the adjustment makes life miserable for me --- thanks.

Well life for Bob, his wife and their two kids was much better and it was all due to understanding variation. And not only did I help a little in his predicament, but I got a really cool slice-of-life story to tell you.