c Charts: Control Charts for Count Data

Data Science for Quality Management: Control Charts for Discrete Data

with **Wendy Martin**

Learning objectives:

Calculate Control Limits for the p chart using the normal approximation

Calculate Control Limits for the c chart using the exact calculation

Generate the c chart using R software

Control Limits (Normal Approximation)

$$\text{UCL} = \bar{c} + 3\sqrt{\bar{c}} \quad = 35.23$$

$$\text{LCL} = \bar{c} - 3\sqrt{\bar{c}} \quad = 7.49$$

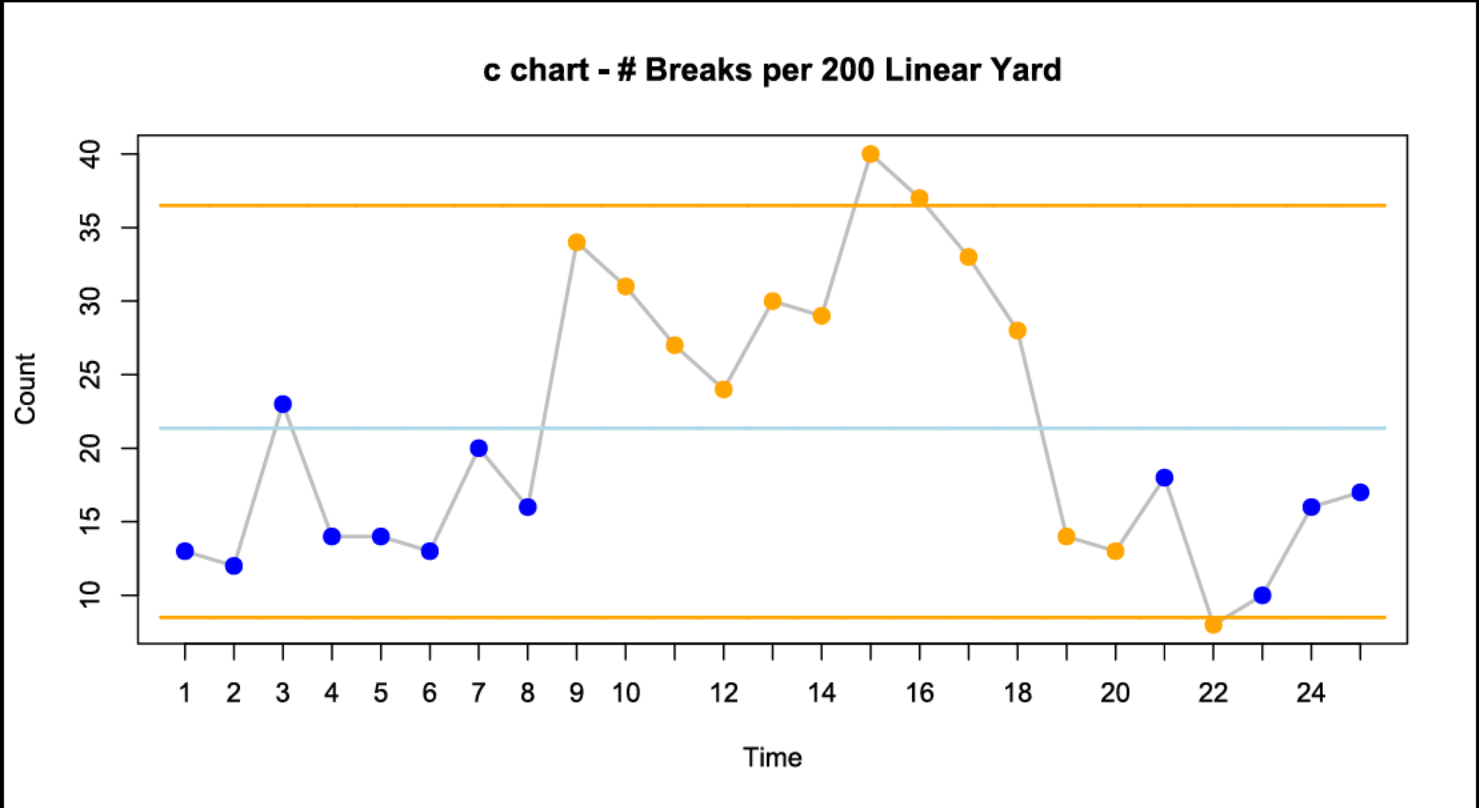
Note : If c-Bar < 9, the Exact Limits MUST be used for the Control Limit Calculations

Exact Poisson Control Limits

- Using the Poisson distribution
  - Find UCL where P(X and above) ≤ 0.00135 and use (X – 0.5) for the UCL
  - Find LCL where P(X and below) ≤ 0.00135 and use (X + 0.5) for the LCL

- UCL = 36.5 LCL = 8.5

Control Chart(s)



Sources

The material used in the PowerPoint presentations associated with this course was drawn from a number of sources. Specifically, much of the content included was adopted or adapted from the following previously-published material:

- Luftig, J. An Introduction to Statistical Process Control & Capability. Luftig & Associates, Inc. Farmington Hills, MI, 1982
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