“The Red Bead Experiment”
A demonstration of futility found in many Management Systems

Materials provided by
The Pyzdek Institute
Demonstration Objectives

• Help you become a more effective leader
  – Begin the process of transforming you to running the business using modern tools and methods to maximize stakeholder value and minimize loss to society
Goal: No Red Beads!

- **Red Beads represent defects in the business process**
  - All the things that can and do go wrong with a process

“A stupid experiment that you’ll never forget” – Dr. Deming
Help Wanted!

Vacancies, 8. Applicants must be willing to work.

• Educational requirements minimal.
• No experience required.
Staffing

- Four willing workers
- Two quality auditors
- One QA supervisor
- One analyst/recorder
- One boss (position not open)
Procedure

• Apprenticeship training
  – Stir thoroughly
  – Scoop a full paddle of beads
  – Carry paddle to auditor #1, record count
  – Carry paddle to auditor #2, record count

• QA supervisor compares counts, announces total

• Analyst/Recorder records counts

• At end of each day, boss assesses performance, coaches, and takes the appropriate action
Lot Size: 50 per worker per day

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Results of Simulation

Each table will discuss the results of this simulation among themselves for five minutes. Then groups will share their insights and conclusions.

– Are there any similarities between the simulation and the real-world?
– Examples from your own experiences?
Statistical Analysis

• Six Sigma Black Belt will explain her/his analysis of the results.
• Discussion: How does the Black Belt’s interpretation differ from the traditional approach?
Superstitious Learning

What do we learn when we react to random variation?
An experiment was conducted to study responses to random rewards
Details and Results

• A pigeon is given a reward at a random time, with no reference to its behavior
• Birds tended to repeat what they were doing when they received the reward
  – Turning, twisting, flapping, jumping, etc.
• Responses persisted
  – After rewards were stopped, more than 10,000 responses were recorded before extinction
• When rewards resumed, different responses appeared

Learning occurred even when no learning was intended
Regression and Learning

• Statistical fact
  – A value far from the mean is usually followed by a value nearer to the mean

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Discussion Topics

• A manager reacts when a employee’s performance is poor…
  – Assuming the manager’s action has no effect, is the next result likely to be better, worse, or the same?
  – What are employees likely to learn?
  – What is the manager likely to learn?

• Open discussion: What are some real world examples in your organization?