

## Stuck on Quality: Quality Improvement

### Description

Fighter planes in an Air Force base in Okinawa spent too much time being serviced for a common procedure: extracting a piston out of a landing gear strut of a fighter plane. This maneuver was incredibly difficult and time-consuming when using the technical procedures as defined in the mechanics' manual. In fact, the prescribed method for dislodging the piston (banging the strut on a board or table) often caused damage to the strut.

A quality improvement team was given the mission to develop a better way: decrease the maintenance time and damage to the parts. After struggling to find the best *technical* solutions, the simple answer came during a routine car ride. By borrowing the suction cup that secured Garfield the Cat® to the car's window, one of the team's members devised a simple technique for extracting the piston from the strut quickly and easily.

Using a structured quality improvement process to understand and diagnose the problem, the team capitalized on the creativity of its members. The new technique dislodged the piston from the undamaged strut in a mere 30 seconds, as opposed to the 30 minutes or more that it used to take.

### Learning Points

By using a structured quality improvement process and capitalizing on a member's creativity, a team was able to achieve its mission: significantly reduce maintenance time, lower labor costs, and minimize damage to parts. At times, the best technical solutions can pale in comparison to what can be achieved through creativity.

### Discussion Questions

**Question:** What were the major strategies that the U.S. Air Force quality improvement team followed to improve the procedure for extracting the piston from the fighter plane strut?

**Answer:** The team followed a structured quality improvement process to assure that it understood the problem and developed a solution that would meet its project team goals. The team looked for ways to simplify and shorten the process for removing the piston from the strut. After several attempts to develop a sophisticated technical solution, the answer to its problem lay with a whimsical cartoon figure.

**Question:** Do you have examples from your own organization where a solution to a problem has become overly complicated and where the "book" solution does not solve the problem (and may even create some additional problems)?

**Answer:** Responses will vary. Most organizations will have examples of situations where the solution to a problem has become overly complex and expensive for the organization. These examples are excellent candidates for a quality improvement project.

**Question:** Are there any examples of "stuck pistons" in your organization? What chronic problems continue to exist unresolved? How might you use the quality improvement process to help find a creative remedy to the problem?

**Answer:** Responses will vary. By following the quality improvement process, a quality improvement team can understand the problem fully and uncover its causes. As a result, it is likely to develop a remedy that will eliminate the problem forever.