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Problem Solving Exercise: Auto Manufacturing Case

1. Produce a problem statement. What is the problem you are solving?

The recent product delivery delays due to an excessive number of paint rejects on the bodies of the EX25 autos. The reject rate is now 4 times as usual and still increasing.

The problem is to decide if those unqualified units should be reworked and repainted. And also find out the reason cases the increasing rate of paint reject so as to prevent it to happen again.

1. Identify possible cases. Based on the information provided, what might have caused this problem?

One of the investigations of the same problem a year ago show that some employees were using a silicone hand lotion that could potentially prevent proper paint adhesion. Secondly, the production process has many steps. Painting takes a big and important part of the process. Even in general, everything was matching up with the standard, but there were employees who mishandled the units in some minor way.

1. Evaluate possible cases. Which of your proposed cases best fits the known facts and relies on the fewest assumptions? Why?

Based on the experience from a year ago and the assumption from question 2, the manufacturing supervisor has increased his time on the floor and has not noticed any employees doing anything wrong. If he always had his eyes on the assembly line 1 which is for EX25, that means the problem may not be caused from it. It maybe from somewhere else. Nor it is not the workers’ operation error. The cases maybe from the hand creams they used. Or from the material for painting, or water for cleaning, or the machines which are using those material. So the supervisor should pay attention to others thing more than people.

1. Confirm the true cause. How can the cause be observed in action? What can we do to verify any assumptions that have been made? How can we demonstrate the cause-effect relationship? When corrective action is taken, how will results be checked?

First, if the issue was caused by people, then trace the people’s routines. Try to change the lotion and check the reject rate each week. If assuming that it is the material caused the problem, contact the vender to provide the comparing between the new ordered painting material and the previous ordered material. If assuming that is the machine caused the material changed, call QAs to check the machines and devices on assembly line 1. If there is anything needs to be changed, keep tracing the reject rate for 2 to 3 weeks.