Toyota Essay, Research Paper

Let?s start with a Japanese introduction?

JIT: Short, for just in time, JIT is manufacturing process aimed at getting the right quantity of quality parts to the assembly line at the exact time they are needed for production.

KAIZEN: The Japanese word for ?improvement?, kaizen techniques target and eliminate waste in production processes.

KANBAN: The Japanese term for ?sign?, kanban uses standard lot sizes and often, returnable containers with a card attached. These kanban cards, which are pulled as assembly-line workers use parts, alert suppliers that part levels need to be replenished.

POKA-YOKE: Loosely translated from Japanese as ?mistake-proof?, this process involves establishing standardized work procedures, such as assembly activities, to prevent errors from occurring.

THE FIVE S?s: Representing sort, stabilize, shine and sustain, the five S?s aim to bring order and conformity to the plant floor.

1.) As Doug Friesen, what would you do to address the seat problem? Where would you focus your attention and solution efforts?

In April 1992, Toyota Motor Manufacturing, USA (TMM) had problems in the run ration of the plant. The run ration was down to 85% from 95%. It meant a shortfall of 45 cars per shift, which had to be made up with overtime. Consequently, too many cars needed off-line operations of one type or another before they could go on to shipping. The main source of the problem was the seats defects in the cars.

In case of the cars with seat problems, the car went through the assembly line with the defective seat in it. Then the car was driven to the Code 1 clinic area to see if the problem was correctable there. If the problem called for a replacement seat, the car was moved to the overflow parking area where the car waited for new seat to be delivered from the supplier.

This routine is in fact an exception given the quality control process in TMM. In TMM, Toyota Production System (TPS) principles would make any production problems instantly self-evident and stop producing whenever problems were detected.

In case of the defective seats, the reasons for exception were:

a) The final assembly people already knew of the problem.

b) It was possible to finish building the car without seat assemblies

c) It was felt that stopping the line was too expensive given how long it took to obtain the replacement seat.

The seat set was the most expensive of all the purchased parts. TMM?s sole seat supplier was Kentucky Framed Seat (KFS), which teamed up well with TMM?s operations until TMM proliferated its products, the seat styles increasing from 3 styles with 4 colors up to 18 styles. Even though the supplier tried to adapt the cars with seat defects became the major concern of the assembly plant in 1992.

In fact, the manager of the assembly, Dough Friesen should focus mainly on the legitimacy of the exception in the case of the defective seats and the coordination between the plant and the seat supplier.

? It is reported that KFS responded with a special delivery of replacements twice a week. But still, there were cars waiting for the new seats for more than 4 days.

? Occasional incidents of cross threading, that is, when a team member shot a bolt at an angle were fixed easily by team leaders.

? There were very few incidents, which could damage the seat covering with hand tools.

? The hook breakage problem reported by one of the group leaders might also derivate assembly process.

Consequently, the manager of the assembly should first identify those processes needing improvement. Second, he should gather more data about the problems by interviewing the personnel in details. Finally, he should analyze this data in order to figure out gaps between the standards and the current outputs.

2.) What options exist? What would you recommend? Why?

We note that the signs of problems appear after TMM proliferated the number of seat styles from 3 to 18. Even though KFS operated as a part of the assembly line, all the seat parts being detected through the line from the beginning to the end, the cars have seat defects. In fact, it is not reported that the seats are delivered defective to the plant. The seats are damaged during the assembly.

Hence, one of the options that the manager has is to revise seat assembly team.

Another issue is to redesign or improve off-line operations in case the manager decides to continue correcting seats off-line.

Also, the manager should think through the overwork that the plant has after TMM became the sole source of the Camry wagons fro the first time for Toyota worldwide.

? Revision of the seats design in order to control assembly defects

? To have multi-suppliers to lighten the burden of the only supplier who works for 18 different styles

? Revision of the off-line operations in order to avoid overtime work

These are the possible recommendations that may be useful for the manager of the plant. Since the high level of off line vehicle inventory affects negatively the sales and most importantly the just-in-time principle of TMM.

In addition, it is important to note that maintaining the quality in the long run is closely dependent on the efficiency of each step of the production process.

3.) Where, if at all, does the current routine for handling defective seats deviate from the principles of the Toyota Production System?

The current routine for handling defective seats deviates from the two guiding principles of TMM.

First, high level of the defective cars inventory does not apply to the just-in-time principle. It is considered a deviation of the true production, which is hence a waste given the Toyota Production System?s principles.

Second, the current application is against Jidoka principle, which insists on building quality in the production process and on stopping production whenever a problem is detected.

Also, two strong attitudes created within the organization – stick to the facts and get down to the root cause of the problem ? are ignored. A typical discussion of a problem would start with ?let?s go see it? and then converge on the five whys exercise until the root cause was identified and determined.

Contrarily to these principles, the plant currently tries to handle defective seats with off-line operations. In case of the cars with seat problems, the car went through the assembly line with the defective seat in it. Then the car was driven to the Code 1 clinic area to see if the problem was correctable there. If the problem called for a replacement seat, the car was moved to the overflow parking area where the car waited for new seat to be delivered from the supplier.

This creates the need for overtime in order to fix waiting cars.

It is obvious that the handling is not suitable to the design of the production in the plant.

4.) What is the real problem facing Doug Friesen?

The real problem of the plant is the identification of the problem, which disturbs all the production operations. It is mostly concentrated on the off-line operations, which are not suitable to the overall design of the plant.

He should first decide whether the problem comes from the seats and the supplier or from the way the problem is solved through off-line operations.

The team leaders of the plant report separately different problems such as supplier?s delay in delivering the replacement seats, occasional incidents of cross threading or the hook breakage while seat assembly.

In fact, all these incidents may be linked to the need of redesigning some parts of the production since the plant is overloaded and workers suffer of overtime.

Bibliography

References

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