Turning Packing Department Claims into Workable Solutions

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Abstract — *The Kawneer Company in Springdale, Arkansas is a façade aluminum manufacturer. The company had an escalating issue in receiving claims from customers due to bad packing. Its quality department was tasked in reducing claims in the packing department. They included audits along with GEMBA walks, training of product colors and shapes with sample boards to aid the reduction. Part of the task was to test employees with a score of 3 or better. Twice weekly audits were completed on the packing department and used the boards to enlighten the packing workers as well as training on how to package the materials correctly to reduce damage. The results proved that claims could be reduced, as they went from 14 in January-February to 10 in March-April.*

Key Terms — *human error, manufacturing claims reduction, manufacturing processes, quality processes*

INTRODUCTION

The Kawneer Company in Springdale, Arkansas is a façade aluminum manufacturer. They produce aluminum curtainwall and storefront materials as well as doors. In several months, the quality department of Kawneer Company, an aluminum manufacturer located in Arkansas, had encountered several issues that involve claims from customers relating to the packing department that account for about $41,000 of total claims in January and February. These claims were at a high cost to the company and the quality department was tasked to investigate the root cause and implemented procedures to reduce these claims. Possible solutions included extensive training for packing workers and reference materials while packing.

The claims were from customers, who are receiving the material with the wrong color, or wrong part. The parts are not protected or wrapped properly for the type of finish of the product, and at times the wrong part is shipped causing a shortage of another order. Employees have been observed not checking the information on the work orders that contain part images, color codes, and quantity against the order to verify that the material shipping is correct.

The project objectives are as follows:

- Reduce claims from customers by 10% in 60 days or less
- 10% or less of production staff with a score of 3 or lower
- Minimize human error by 5% from lack of training and other obstacles weekly

LITERATURE REVIEW

Quality Processes

Human error has been the main cause of incorrect labelling [1]. Humans make errors; however, systems limit those errors. It is important to have processes in place when an error is caused, the root cause and solution is quick to find. Unified packaging and labeling make this difficult, therefore it is important to implement processes to double check this [1].

Simplicity in solving quality control issues in production is the best method [2]. This enables even those with the most basic knowledge to understand and implement the solution [2]. This allows for the solutions to be realized and utilized as standard processes. Flowcharts enable the person to visualize the issue and trajectory. A checklist will give accomplishment and organization of tasks, and for management a histogram and Pareto diagram are better suited for presentations [2].

Quality departments do support the business results in that it maintains processes and standardization in the workplace [3]. While research

is sparse on the topic of how relevant the quality department is to any given product manufacturer [3], there are roles they play in any organization. It is important for quality to take a more active role and broad range of practices in production [3]. A broader role enforces workers to perform better whether the role is in auditing or developing processes. This forces the worker to perform better, as they are reminded to stay true to implemented routine to eliminate errors. This does aid the organization for better performance which effects results.

A simple approach to issues yields high results in some cases [4]. Using effective tools can save costs and can improve productivity. This can mean a higher result for an organization with packing issues. Addressing issues by cause and reducing downtime, capacity can be maintained and possibly increased with more streamline processes as found with the Toyota Production System [4]. It is important to identify issues that are very evident first and resolve before looking for larger ones. In not addressing the evident issues or "low hanging fruit" [4], all other issues addressed may not yield the results it should.

Human Error

Workers that have hands on responsibilities with the product are more susceptible to human error in relation to others [5]. The highest were assembly of parts for the product [5]. It is also important and a more fruitful [5] solution to track feedbacks from the customer for guidance to the worker. SHERPA and HEART are two human reliability analysis methods. Enhanced inspection also leads to fewer errors sent to the customer.

Humans play important roles in manufacturing and warehouse labor work [6]. It is hard work with sometimes low pay. It is also very important to organizations as they are reliant of these workers to package the goods correctly. Solutions are twofold: performance objectives on each error type and rate significance [6]. This enables the plan of attack on how to solve the most known issue. Main objectives were to address process accuracy and speed in that would be important to the customer [6]. Reliable working environments were suggested as an

initiative to reduce human error and conducive to worker performance [6].

It is important to identify tasks that influence human behavior in increasing risk of error [7]. Estimating this risk is complicated, and many factors should be examined. The last two decades, processes and methods were created to minimalize these errors [7]. Accident risks as well as human error traps should be examined and planned for. CREAM and HEART are two strategies that aid in this risk examination and can identify risks that should be addressed [7].

METHODOLOGY

In order to measure claims, data from the beginning of the year from January to February was compared to data acquired in March and April with the new implementation of training and accountability. Data for bad material was sorted based on the customer claim code of wrong color, incorrect packing method, incorrect amount of parts, and incorrect parts. The data was based on filtering on the reason codes for material packing.

These numbers were measured by Kawneer's automatic claims system. This revealed what claims were for and what the projected savings were for the company. It was measured by the starting point in January through February, and another sample of the claims from the claim system revealed 60 days after in March and April period.

First, color samples were provided for easy distinguishing of different anodize finishes for the packing workers. This had never been provided as instant checking. This enabled the workers to distinguish between colors and was one main issue with claims, incorrect color.

Second, intensified, and additional training was provided to packing workers. They were tested after work instructions were provided with a score that translated into a level of knowledge. They were tested on four categories, work order (WO) knowledge, work instructions (WI) knowledge, color identification, and shape. Those that scored three or less returned to training to assess again as

this reflected that they had a score of 89% or less in knowledge, which is determined as unacceptable as the goal was to be 90% or better.

Third action was additional auditing or GEMBA walks of the processes. This consisted of performing two audits per week. One audit or GEMBA walk was standard where the quality department looks at the whole processes and quality checks has been done; however, another was required to gain additional numbers of processes completed and not completed for the critical to quality points. Part of the process of the audit was to observe, and a second was to ask the worker why they were doing what they were doing whether the action was right or wrong. These results were observed and measured using the zero to one hundred percent. These results were shared with the department leads first, then as a group. This also placed accountability on the group and helped minimize human error.

RESULTS

In the beginning of the year, the claims for packing skyrocketed. With the new processes and implementation for workers, claims began to slow down and for the past two weeks have stopped. As shown in Figure 1, claims went from over $41,000 to $21,096 which was almost half of the amount.

Table 1 shows how the number of claims were just as impressive with 14 claims starting out in January and February and ended with only 9 in March and only 1 in April. Based on the numbers, it can be said that the training, sample board, and GEMBA walks helped reduced the amount of claims. March had 9 claims but the total amount in U.S. dollars it is drastically less.

All packing workers have been tested and with the claim's numbers, proves that this was successful. While the shape identification proved to be the largest obstacle, the goal was met in the scoring procedures as shown in Figure 2. Human error was the leading issue and was reduced to 5% with processes that proved to solve claims issues such as checking the color, and training with detailed work instructions on how to pack certain materials.
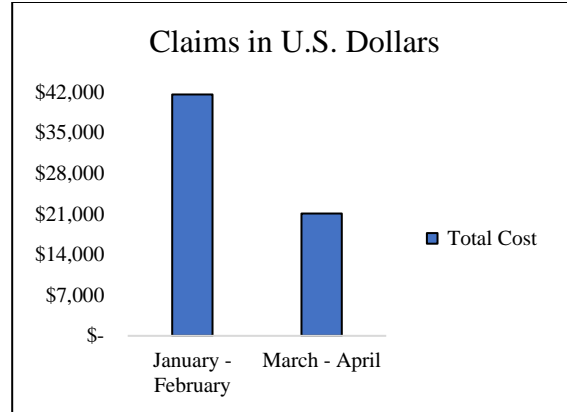

Figure 1
Claims in U.S. Dollars

Table 1
Amount of Claims

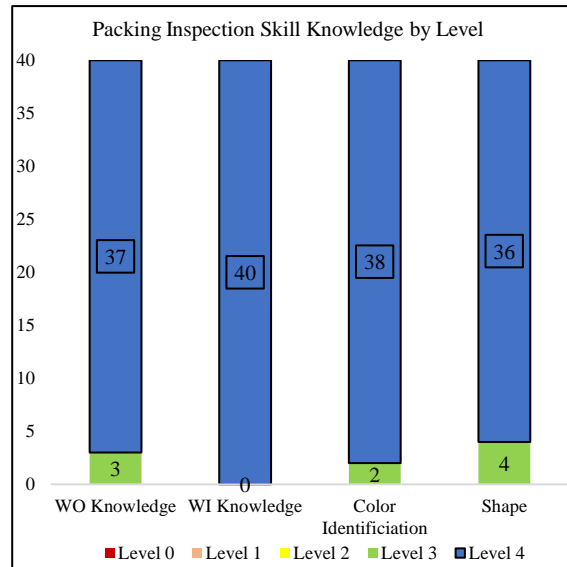| Month	Claims
January	7
February	7
March	9
April	1

Figure 2
Packing Inspection Skill Knowledge by Level

CONCLUSIONS

The primary objectives were to reduce claims received from customers, provide training to better the packing process, and reduce the error rate in order to provide a quality product that would save the company money with labor and costs to rework

material. It was discovered that human error was largely to blame, and training was very badly needed. Figure 3 is the sample board that it is in every packing department station. Color charts supplied reflected the color choices, and therefore enabled the packing worker to clearly see what the piece should look like as well as shape identification which was also an issue. The simple processes that were placed proved to be not only helpful but cost effective as well.

Figure 3
Anodize Finishes Sample Board

Since implementation, claims have significantly slowed, and none have been received in the past two weeks' time for the packing department. It is needed to continually audit and test to maintain current claim levels. Quality department has proven invaluable in the reduction of claims as well as enacting simple, yet efficient processes for workers to follow.

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