



STUDY THE EFFECTS OF 5S 3F & 7L IN AN ORGANIZATION

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ABSTRACT

Innovation is done for the betterment. The company has recently started its manufacturing. At initial stage, they were searching for the improvement so that the efficiency can be increased. So, the topic of 5S, 3F & 7L is chosen for the project. The main objective is to implement the 5S, 3F & 7L for reducing cycle time. Following are the innovations that were been made by discussing with the management of the company. Anyone who has recently opened a new machine shop has certainly had these thoughts: How can we improve efficiency, work organization, quality, safety and housekeeping and protect our investment at the same time?

5S, 3F, 7L is the name of a workplace organization methodology that uses a list of five Japanese words which are Seiri, Seiton, Seiso, Seiketsu and Shitsuke. Translated into English, they all start with the letter “S”. The list describes how to organize a work space for efficiency and effectiveness by identifying and storing the items used, maintaining the area and items, and sustaining the new order. The decision-making process usually comes from a dialogue about standardization which builds a clear understanding among employees how work should be done. It also instills ownership of the process in each employee.

KEYWORDS: 5S, 3F, 7L

I. INTRODUCTION

The company is manufacturing Refrigerators, So the project on “Study and Practical Implementation of 5S 3F & 7L”. Was carried out for **Starion India Pvt.Ltd. Ranjangaon Pune**, a very well-known company in the field of manufacturing sector.

Based on Japanese words that begin with ‘S’ the 5S Philosophy focuses on effective work place organization and standardized work procedures. 5S simplifies your work environment, reduces waste and non-value activity while improving Quality, efficiency, and safety the cycle time for assembling refrigerator has been reduced.

II. HEADINGS

IMPLEMENTATION OF 5S

Seiri (Sorting): Keep everything required and eliminate everything by putting red tag in unwanted thing

Seiton (Systematic Arrangement): By using the simple way to maximize the company's efficiency and reduce defects.

Seiso and Seiketsu (cleanliness): Once they have better environment, they can improve the healthier life, safe and transparency,

Shitsuke (Discipline): Enhance the quality control of work life and work criteria due to training and education improve the level of morale





CONCEPT OF 3F

This is the basic concept implemented in STARION INDIA PVT LTD after implementing 5S. The 3F consist of Feel, Fit & Finish. Once the employees implement 5S, they should have the feel of their work and responsibility. Each & every work should be done in proper manner. For this reason Starion uses this 3F.

Feel: Feel means Sense of responsibility. Employee should admire their roles & responsibilities that can help to improve the bottom line of the company.

Fit: Fit means to get adjusted. Once the employee get the sense of responsibility. They should get familiar with their work and responsibilities.

Finish: Finish means to complete the desired job. The employee with sense of responsibilities and familiarity can finish their job properly. So, this is mandatory to have a feel of job and familiarity to complete the job in proper manner.

CONCEPT OF 7 LOSSES

There are some losses that industry faces during performing all the activities. These losses are very harmful for the company as it can decrease the rate of performance.

Following are the 7 losses:

Expensive Production: Expensive Production is one of biggest loss that companies face as incurs lot of cost. There are some reasons for expensive production.

- Increase in the rate of material
- Increase in the labor cost
- Increase in the price of machinery & spare parts

Stock: Stock means inventory. If the inventory (stock) increases unnecessarily, it incurs cost to the company. The basic reason for the surplus stock is improper planning. The plan should be made properly in order to minimize the stock and cost for stock.

Defects: Defects cannot be removed but can be minimized. If any company wants to improve the efficiency then it should minimize the defects. Defects can be during inspection of raw material, manufacturing of goods or during inspection of finished goods. So, there should be control from inspection to manufacturing and from manufacturing to inspection. If it is being not controlled then it is the loss that will incur cost to the company.

Transportation: The transportation is one of the main activity in any company as the material is either brought from warehouse to the line or dispatched to the respective client. So, it plays important role in the all activities of the company. But sometime it can be unprofitable from companies point of view as incurs extra cost for shipment. This can be loss for the company if it requires extra cost. This loss can be minimized by minimizing the cost.

Waiting: Waiting is one of the loss for the company which should be minimized. Sometimes worker waits for the material while machine is continuous run or sometimes worker waits because machine is not working properly. So, there should be proper time management to avoid this loss.

Motion: The motion is also loss. If there is extra motion of the operator then it takes the time of operator. So to avoid such a loss there should be proper arrangement that can reduce the extra motion of the operator

Work itself: Work itself is somewhat different concept that each one wants to happen. It means work should get finished in the manner one wants to finish. But many times it's not get finished in desired manner. So, ultimately it becomes a loss which should be avoided to increase the efficiency and profit of the organization

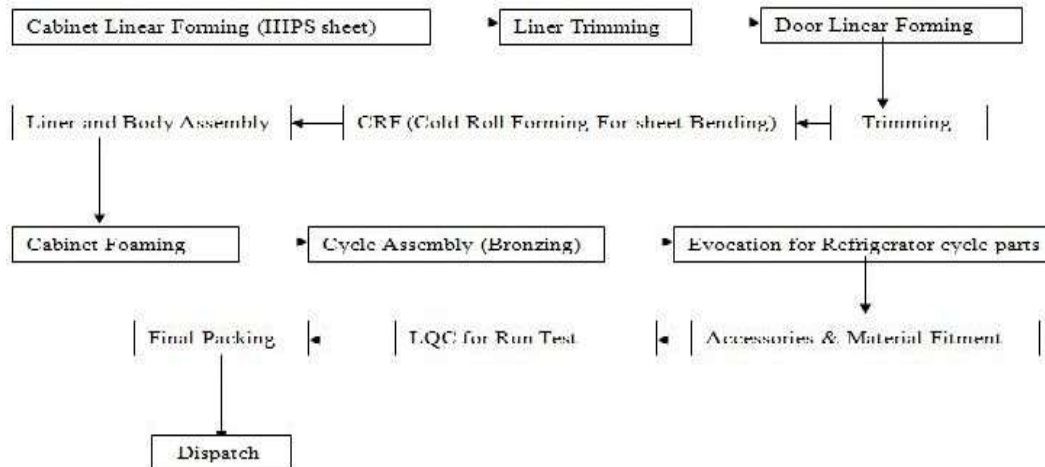
III. INDENTATIONS AND EQUATIONS PROBLEM IDENTIFICATION

- The first stage is Cabinet liner Forming, in this stage HIPS sheet is used for internal casting of the cabinet, of refrigeration.
- In Liner trimming, surplus sheet is trimmed so that it gets fitted properly.
- Then next stage if for, door liner forming is the same as Cabinet liner forming. After that the door sheet gets trimmed.
- CRF means (Cold Roll Forming), In this stage the doors are prepared by punching, cutting, bending the sheets. Liner & body assembly, in this stage the suction pipe & hot pipe assembly is done.
- In Cabinet Foaming there are three foaming chemicals ISO, Poly, and Cyclopentane that plays important role in formation of foam which is used for cabinet
- In cycle assembly, all the important parts like compressor, evaporator & condenser etc. are assembled in particular cycle.
- In evacuation, N2 flushing is done through evaporator in order to remove the moisture through pipe liner.
- Then remaining accessories & other component are fitted properly Eg. Freezer compartment, Thermostat, Crisper, switches etc.



- Then LQC is done that is, Line Quality Control. In this stage the refrigerator is tested. The temperature testing is done to identify whether it is running properly or not.
- The Final stage is packing, which is done before Dispatch

Data Collection



IV. IMPLEMENTATION OF 5S

Basically, Innovation is done for the betterment. The company has recently started its manufacturing in month of February. At initial stage, they were searching for the improvement so that the efficiency can be increased. So, the topic of 5S is chosen for the project. The main objective is to implement the 5S for reducing cycle time. Following are the innovations that were been made by discussing with the management of the company

Weld the Traction Arm:

Initially, The trolley was without traction arm which was creating problem in the movement and was causing breakage of the material. So, It is been decided to weld the traction arm to make the handling easier and to avoid the breakage.



Effect of Innovation

To Avoid Stock on the floor



Initially, the material was kept on the floor so it was utilizing unnecessary space on the floor. So, the innovation was made and 5S has been implemented as shown in the figure. So, it has saved lot of shop floor space.

To make rack for material storage



Fig. A



Fig. B

In Fig. A it can be seen clearly, The material has been put separately on the floor instead of specific space. So, the separate trolley has been made for these materials so that it can be easier to handle and relocate the material anywhere at shop floor.

Effect of Innovation

To reduce cycle time in power cord fixing stage



Fig. A



Fig. B

In first figure it can be seen that the all type of power cords are kept in one single bin. Because of that it was very difficult to identify the cords. So, for this reason the hanger is made that acquires lesser space and also reduces the work time.

Effect of Innovation

Time taken for picking a cord

It is found that the average time consuming looking for and retrieving, trimming was reduced by 38%.

These reductions were a direct result of the **5S, 3F, 7L** implementation. This time reduction will allow for additional productive time for employees to work meeting customer demand, being more efficient, and productive.

V. CONCLUSION

This time reduction will allow for additional productive time for employees to work meeting customer demand, being more efficient, and productive. Employees felt happy & relax after implementation of “**5S 3F & 7L**”. Employee feels more productive and happy with innovative system. This time reduction will allow for additional productive time for employees to work meeting customer demand, being more efficient, and productive. Employees felt happy & relax after implementation of “**5S 3F & 7L**”

Limitations

BUSY RESPONDENT: Many respondents were so busy that they could not reply.

This study is only for people who are willing to get involved in the company and help the company have better working environment and efficient process flow by using 5S.

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