

Productivity improvement in Automobile industry by using method study

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Abstract

Productivity improvement is the very important factor for a firm to survive and to achieve breakthroughs the work carried out deals with enhancing productivity in an automobile industry. In production department there is some unwanted work process is done which is taking extra time, extra effort as well as increasing the cost of product and worker affected some unwanted fatigue, so the industry not able to improve productivity. Thus the purpose of this work is to propose improvement area in the industry so that industry can increase their productivity by analyzing the problem associated with it. Identified problems were solved by using method study principles improvement was achieved by reducing cycle time of product carrying from injection molding machine to direct on trolley instead of pallet to proceed in the paint shop department.

Keywords—

Productivity, firm, breakthrough, fatigue, method study

I. INTRODUCTION

The work presented here is done in an automobile industry which engaged in making automobile parts such as engine cover, battery tray etc. This work takes initiative to implement method study techniques to improve the work process in order to meet the customer demand.

Scope of the study

➤ The work is focused on work procedure involved in the production department.

➤ The work also focused on improving productivity by reducing worker's time consuming process in unwanted operations.

2. LITERATURE REVIEW

According to Mayank Dev Singh they working on "To improve productivity by using work study & design a fixture in small scale industry". The purpose of this research is to improve production capabilities for small scale industry and this research focused on the company, which produce Stay vane of Francis turbine. This research used work study technique to improve work process in company, and the research objectives towards accomplished this study is to identify problems in the production work process and improved it in terms of production time, number of process and production rate by proposing an efficient work process to company. This research used systematic observation, flow process and stopwatch time study as research methodology. Pro-E model software used for model testing and develop new model. They concluded that the improvement of work process was executed by eliminating and combining of work process, which reduces production time, number of process and space utilization. According to Khalid S. Al-Saleh working on "Productivity improvement of a motor vehicle inspection station using motion and time study technique" This research was carried out at the Motor Vehicle Periodic Inspection (MVPI) station to improve and enhance the bottleneck inspection

point by using different applications to reduce the inspection time.

3. METHODOLOGY

The objective of present study is to improve the productivity in an automobile industry by material handling system with the help of method study. The company selected for present study was established in 1981 has different units in its campus. The company is manufacturing plastic components of automobile parts such as engine cover, battery tray etc. During study of manufacturing unit of company it was found that there were some inefficiencies related to material flow and overall material handling system. To reach this given objective, the following specific methodology was adopted:

Method Study

Method Study is the first of the two main divisions of method and study and concerned with the way in which work is done. Method study is essentially used for finding better ways of doing work. It is a technique for cost reduction. The philosophy of method study is that 'there is always a better way of doing a job' and the tools of method study are designed to systematically arrive at this better way of doing a job. Method Study, is a technique for improving the efficiency of every type of work, ranging from that of complete factories to the simplest manual movements used in mass production.

Method Study Procedure

This procedure involves seven basic steps as follows:

SELECT: the work to be studied

RECORD: all the relevant facts about the present method

EXAMINE: the facts critically and in ordered sequences, using the techniques best suited to the purpose.

DEVELOP: the most practical, economic and effective method having due regard to all contingent circumstances.

DEFINE: the new method so that it can always be identified

INSTALL: The method as standard practice

MAINTAIN: the method by regular routine checks.

In a production department of an industry there is unnecessary processes are conducted often the same work can be done using more simple and less complicated tools. This is something that costs money and in some cases time. Planning these processes will ensure a company to avoid overwork when more simple work could perform the task. Because a very wide range of material sizes and weights are used at studied company it is important to consider what type of transportation equipment to use for each material type. It is necessary to avoid using equipment that is more complicated, heavier and takes more time to use.

initially finished components are kept directly on the pallet instead they can be kept on trolley used for transport of component (engine cover) to the next department which was paint shop. Finished component from injection molding machine to the pallet was taking unnecessary operation and increasing worker's fatigue and increase the cost of the product because of there was less component deliver in a day from production to paint shop department so by removing pallet I proposed to kept component directly on the trolley instead of pallet this will save time and will reduce the worker's fatigue so that worker can produce more component in a day.

Following results are obtained after applying method study procedure

S.N.	Detail	Before Implementation	After implementation
1	No of product produced in week	$80 \times 7 = 560$	$84 \times 7 = 588$
2	No of product produced in month	$80 \times 30 = 2400$	$84 \times 30 = 2520$
3	No of product produced in year	$2400 \times 12 = 28800$	$2520 \times 12 = 30240$
4	Profit per year	$28800 \times 450 = 12960000$	$30240 \times 450 = 13608000$

Increase in profit per year = $1360800 - 12960000$
 = 648000 Rs.

4. CONCLUSION

From the above discussion it can be concluded that the process can be improved based on method study, work procedure and proper utilization of machine and material. It will improve the current process by reducing the transportations, and reducing the worker's fatigue. After implementing the suggested improvement ideas the firm is able to increase its productivity.

5. REFERENCES

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