ISSN 2348-1196 (print)
International Journal of Computer Science and Information Technology Research ISSN 2348-120X (online)
Vol. 5, Issue 4, pp: (91-96), Month: October - December 2017, Available at: www.researchpublish.com

Application of 5-S Technique in Manufacturing Industries in Simple Ways: A Case Study

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Abstract: **The paper represents an application of '5S' technology in one of the Manufacturing Industries. This paper aims to determine performance factors and characteristics in industrial organizations and identifying the effectiveness of 5S implementation. '5S' in simple terms is a Japanese technique consisting of five 'S' terms namely Seiri (sorting), Seiton (set in order), Seiso (shine), Seiketsu (standardize) and Shitsuke (sustain) having a deep sense for managing the work place. The aim of the implementation of '5S' in the organization is to enhance the productivity, safety, efficiency through effective workplace management. The need for the implementation of '5S' in the organization came into existence due to unorganized work-stations, uncomfortable working environment and the excessive wastes in the company. Hence to get rid-off of the above factors, there was an urgent need for the successive implementation of '5S' in the organization. During Implementation of 5-S Various Kaizen also being done.**

Keywords: **5S, Workplace Management, Kaizen**.

1. INTRODUCTION

Every organization aims for profit. In today's global market of decreasing profit margins, the profit made from the waste as well as through proper workplace management is mandatory[1]. Thus it is directly related to the competition of the particular organization with the competitor. Hence the profit from the waste and through the proper workplace management can be made only when there will be a stringent implementation of some workplace management technique and that technique is '5S' concept.Thus organization adopted the concept of '5S' for enhancing the profit, class of the company, working conditions, etc. and implemented the '5S' technique successfully[2]. Also the organization have various departments where the implementation of '5S' would result in a huge enhancement in productivity, proper workplace condition, increased profits and motivation to employees.

1.1. Glimpse on 5-S:

5S' is one of the Japanese techniques which was introduced by Takashi Osada in the early 1980s [8]. It is basically a workplace management methodology which helps for improving working environment, human capabilities and thereby productivity [8]. The word '5S' represents the 5 discipline for maintaining visual workplace. '5S' is workplace management to minimize the loss of time and unnecessary movements as well. It comprises 5 principles in making the organization highly efficient and effective those are Seiri (sorting), Seiton (set in order), Seiso (shine), Seiketsu (standardize) and Shitsuke (sustain).

2. IDENTIFICATION OF PROBLEMS ON ORGANIZATION BEFORE IMPLEMENTATION OF 5-S

The following problems occurred before implementation of '5S' in the organization:

1. Improper utilization of storage space for raw material, bins and finished products.

2. Wastage of time in searching the raw material due to non-permanent location for storage of raw material.

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3. Low productivity due to the time wastage in searching for tools, materials due to improper workplace management.

4. Presence of unwanted materials at the workplace which affects the moral of the worker while working.

5. Useful storage space being acquired by the unwanted materials.

6. More time and cost required for the inventory process of unwanted stored materials in raw material stores.

7. No well defined space for storing the unwanted or rejected material.

8. Unequal participation of officers and workers in workplace management due to non standardization.

3. METHODOLOGY

The following method was adopted to implement '5S'

3.1 Formation of team:

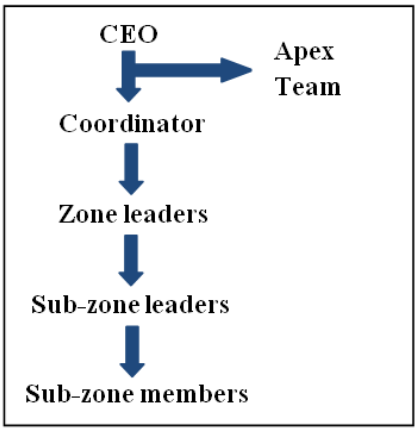

Fig -1: Organization structure

3.2 The organization was simplified into different zones, respective zones under the guidance of respective zone leader's awareness program launched by Zone leader to implement 5-S.

3.3 Identification Of Measures of 5-S:

Sl No	Process	Description	Activity Achived Before & After	Weightage %
1	Seiri (Sorting)	1)Perform sorting activity at your workplace i.e. into wanted and unwanted things. 2)Remove all the unwanted things that are at your workplace. 3)Only keep those things that you need.	1) After sorting seprate the wanted and unwanted things. Photograph required for after & before. 2) Remove all Unwanted things Photograph required.	20
2	Seiton: - (set in order)	1) Decide place for everything that you need. 2) Give proper identification to it for ease of search. 3) Keep everything at its defined place after use. 4) Make sure every time that everything is at its place.	1) Decide the place for everythings you need before and after photograph. 2) Give proper identification to it for ease of search. 3) Keep everythings at defined place after use. Photograph Required.	20
3	Seiso: - (shine)	1)Always keep cleanliness at your workplace. 2)Keep the tools always clean after its use. 3) Areas should be properly marked or painted.	1) Cleanliness at the workplace After and before Photograph. 2) Area Should be properly marked or painted.	20

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4	Seiketsu: - (standardize)	1) Define standard method/way of doing the work i.e. prepare standard operating procedure (SOP). 2)Do the work in that method/way only. 3)Maintain the discipline in your work	1) Defined standards SOP Displayed at work place need after and before photograph.	20
5	Shitsuke: - (sustain)	1) Maintain consistency in the method of doing work 2)Stick to the '5S' rules for proper workplace management. 3)Encourage the participation of all, for consistency in '5S' activities. 4)Perform '5S' activities periodically.	1) 5S rules for proper doing work 2) Encourage the participant of all for consistency in 5S activity. 3) Perform 5S activities periodically with the correct mechanism. 4) Engagement of top management involvement in 5S mechanism.	20

3.4 Implementation of 5-S Activity:

Fig2 Unwanted Material Removed

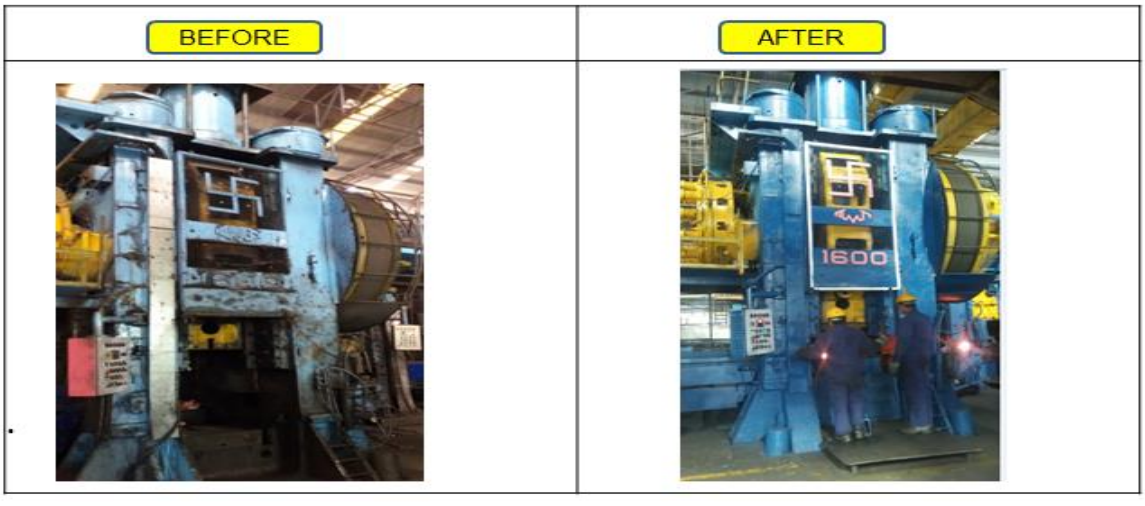

Fig3 Cleaning & Unwanted Material Removed

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Fig4 Conformity bin well defined with tag

The above 5-S activity converted into kaizen.

Fig5 Dies are kept on the floor now

4. RESULT

1. Productivity increased due to well defined space and systematic arrangement at the workplace.

2. Time saving in searching for tools, raw material required for production due to standard storage system with proper identification. As a result of saving in time, productivity increased.

3. Tremendous cost required for the inventory of unwanted material is drastically reduced.

4. Availability of more space for raw material storage, bin storage and finished goods storage. Also clear and well defined gangway for movement is achieved.

5. Morale of the workers increased due to proper workplace management.

5. CONCLUSION

The paper aims for demonstrating the detailed implementation of '5S' in the organization which resulted in:

1. Proper workplace management for better use of working area.

2. Time saving in searching for tools and materials due to proper location and identification.

3. Huge cost saving from waste and unwanted materials.

4. Increased morale of the workers due to enhancement of working environment.

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