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5S Model - Shop Floor or Mirror?

Discover the difference between success and failure in implementing 5S.

It is not an exaggeration to say that Merritt Tool's shop floor shines. Who wouldn't marvel at the remarkably uncluttered aisles and public offices spread across 63000 sq ft. However, what is more surprising is that Merritt Tool employs only one employee for general housekeeping. The secret of such a 'spick and span' workplace-- The meticulous execution of 5S! For Merritt Tool Co. in Kilgore, Texas, 5S is an acronym for: Sort, Shine, Simplify, Standardize and Sustain. This article describes the pragmatic efforts made by Merritt's shop floor in this direction.

Merritt Tool a 65-employee firm was founded in 1928 and is into providing services to the aerospace and the oil field industry. Larry Simmons, general manager at Merritt Tool, views 5S as 'a way to help people get more done by working half as hard so that the company can make more money'".

Boeing, one of Merritt's main customers and Techsolve a Cincinnati based manufacturing consulting group teamed up with Merritt to conduct 5S and other improvement activities at Merritt Tool.

The initiation...

The whole process was initiated by:

- Forming a team comprising members from all departments.
- Video taping all the activities in the shop floor to capture the flow of activities, the methods adopted, and practices followed. The management was careful enough to deliberately focus on the activities and not on the employees, to avoid making them feel self-conscious.
- Checking if any processes or procedures adopted were resulting in waste, rework and redundancy. They contemplated on how they could reorganize the workplace to make the place more orderly and efficient.
- Formulating a plan that comprised the objectives to be met, the list of tasks to be executed to achieve those objectives and a timetable.
- Finally reviewing and reporting their progress to the president of the company. It was now ready to Sort, Simplify, Shine, Standardize, and Sustain.

Sort and simplify

According to Mr. Simon, the general manager at Merritt Tool Sorting involves organizing necessary things and disposing the unnecessary ones. To put it implies arranging necessary things systematically and labeling them.

- Every item used daily has a point of use, meaning a definite place to store for easy retrieval.

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- Tools and items used daily or frequently are shadow boarded. A shadow board contains the outline of the part and holds the part as in kitchens to hold utensils in place. On the shop floor shadow boards help to group parts for accurate delivery.
- The shadow boards are placed as per the convenience of the employees. Heavier tools are placed at lower levels than the lighter ones.
- Tools are grouped as per their size so that they can be easily identified.
- Using shadow board for storing tools increases visibility. Any vacant spot is conspicuous by the absence of the tool to be stored there.
- All the tools are labeled. The labels display details about the tool, its size, calibration, specifications and maintenance.
- Tools, which are not used on a daily basis, are stored in labeled cabinets. These cabinets have see through doors so that employees need not guess what is stored inside the cabinet. (Also implying that you cannot put unnecessary junk inside the cabinet!!)
- Machine enclosures are regularly modified to ensure better containment of chips.
- The hydraulic lines at the back of machines accumulating dirt are not a very uncommon sight in most shop floors. Mr. Simon ensured these lines went undercover, and ensured the place looked tidy.

Shine

- The floors of Merritt Tool were stripped and repainted with a glossy, light colored wear resistant coating.
- Machines were cleaned properly and repainted.
- At Merritt, every employee cleans his own work area. The mops and other cleaning material are labeled and stored in a specific place.
- Every employee is required to 'visually sweep' his work area at least once a day to ensure there is no dirt and that everything is in place.
- Mr. Simon believes 'Flat surfaces attract clutter'. According to him employees would be tempted to place just anything like say a pair of calipers, which might hurt somebody on the shop floor.

Standardize

Standardizing is essential to make sorting, simplifying and shining a habit. That is, to sustain the above habits we need to establish standards. This is why standardising and sustaining go together.

- At Merritt Tool checklists are posted at places convenient for employees. These checklists include information such as which employee is responsible for doing the work and the procedures to be followed by the employee to ensure compliance etc

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- All the standard procedures are documented. Checklists are made and posted at prominent places for easy reference.
- Digital photographs of 'should be' conditions are kept at conspicuous places and serve as gentle reminders to employees.

Sustain

The last S stands for sustain, which is the most important and yet most difficult to implement. 5S is a journey and not a destination. Continuous efforts have to be made. Self-discipline, sharing ideas for improvement and teamwork are essential to sustain 5S.

- At the end of the day, employees at Merritt ensure they have done the tasks assigned against the checklists.
- Managers at Merritt practice what they preach. They behave more like coaches and mentors facilitating and guiding employees to comply with 5S.
- Though a 5S program is its own reward, Mr. Simons believes an incentive program would definitely motivate employees to perform better.

Benefits achieved

Reduced set-up time, increased visibility, improved safety and a better-organised workplace were some of the apparent advantages Merritt Tool attained on implementing 5S. Moreover, 5S provided an opportunity for employees in different departments to come together, team up and have fun!

By establishing standard procedures and documenting them, Merritt successfully streamlined its operations and reduced its set-up time. Prior to implementing 5S a lot of time would be wasted searching for tools or retrieving a fixture piece from a remote room. 5S helped organize and systematically reduce lead-times, inventory and set up times. This in turn prepared the ground to initiate 'lean manufacturing' at Merritt.

Lessons learned

- Formulate a way to effectively monitor your current operations prior to implementing 5S. For instance, Merritt Tool videotaped the procedures they followed to understand and monitor them thoroughly.
- The team formed to realize 5S should ideally be a cross functional one. Employees from a one department look at issues pertaining to other departments with a fresh perspective and hence come up with innovative solutions.
- 5s can be a lean enabler. It can act as an effective catalyst to successful lean manufacturing.
- A clean workplace invariably appeals to customers. Cleanliness can thus contribute significantly to profitability.
- The difference between success and failure in implementing 5S lies in how it is perceived.



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Organizations must realize that 5S is more of a philosophy and a mindset than a technique. They must devise tailor made strategies to implement 5S such that it best suits their business needs.