



IMPLEMENTING 5S IN A ORGANIZATION

What is 5S ?

5S is a system for organizing spaces, so work can be performed efficiently, effectively, and safely. This system focuses on putting everything where it belongs and keeping the workplace clean, which makes it easier for people to do their jobs without wasting time or risking injury.

The 5S concept might sound a little abstract at this point, but, it's a very practical, hands-on tool that everyone in the workplace can be a part of.

5S involves assessing everything present in a space, removing what's unnecessary, organizing things logically, performing housekeeping tasks, and keeping this cycle going. Organize, clean, repeat.

The term 5S element comes from five Japanese words:

- **SEIRI** -SORT
- **SEITON** -SET IN ORDER
- **SEISO** -SHINE
- **SEIKETSU** -STANDARDIZE
- **SHITSUKE** -SUSTAIN








5S can be applied almost anywhere in the organization. Administration, hangar, workshops, store, production and all can benefit from a dose of 5S.

First, we need a plan and every plan begins with a goal. The usual goal is reduction of waste. The plan sets rules for each of the 5S elements. In 5S, each element brings us closer to our goal of resource conservation and reduction of waste. Upon completion, it includes the anticipated benefit of the overall process as well as the organization's commitment to assure that changes are maintained. A post-mortem process after execution of the plan will provide lessons learned for the next use of the process.

5S

5S is a five-step organization technique to create and maintain an intuitive workspace.

				
Sort	Set In Order	Shine	Standardize	Sustain
Keep only necessary items in the workplace.	Arrange items to promote efficient workflow.	Clean the work area so it is neat and tidy.	Set standards for a consistently organized workplace.	Maintain and review standards.

SORT

By sorting we begin to analyze our environment and what it contains. We examine objects in our workspaces and begin to question their presence and purpose. Sorting is a decision process based on rules intended to satisfy plan goals. In sorting, the 5S team makes two piles: “what stays” and “what goes.” We eliminate the waste of space. People have installed 5S as part of a growth plan and discovered upon execution that they could defer the purchase of additional square footage. They were able to create new spaces from existing facilities. Execution of the sort process will require discipline and, to be honest, some ruthlessness.

Some examples of Sort activity include:

- Equipment that is broken or has been in disuse for significant periods of time - discard or remove from the area for storage.
- Broken or obsolete equipment that has become the place for accumulated trash, people’s hats, and coats needs to be removed. (Kind of like that treadmill we all buy for hanging all our workout clothes on!)
- Obsolete hardware or parts must go – surplus them out or discard in the dumpster – metal scrap or hardware should be sold off for salvage.
- Record archives: Are the records needed for any purpose or can they be disposed by shredding? Reduce paper and records storage only to the minimum needed to meet liability and compliance requirements. If they are needed, look at scanning or some version of electronic storage.

In sorting we must have the input of personnel who work in that space. Don’t be shy about communicating the goal of the plan. Most people feel more comfortable working in an organized workplace and will generally embrace the initial effort to make changes. It’s not unusual to discover that personnel have been living in frustration with a situation for years.

Plan on doing this process regularly once 5S is institutionalized – it’s a continuous improvement exercise that, once it becomes a habit, sharpens an organization's ability to see and eliminate waste.



SET IN PLACE

What remains in the workplace must be organized and established as the new norm. Everything gets a place. Identify where each item goes and decide early on why it must be in the place assigned. The reason why must be communicated to the work force. It's helpful to have a map of equipment and tooling locations to keep everything in its assigned location.

“Set in place” examples include:

- 5S teams draw equipment outlines on the floor and label the equipment location on that spot.
- Cabinets are relocated and their content is clearly labeled. Mechanic toolboxes may be required to be maintained in a set location.
- An appropriate program a set location from where mechanics will carry the tools is maintained as a FOD control measure.
- Toolboxes are arranged in one place, test equipment another and are designated by painted lines on the floor.
- HAZMAT cleanup materials are clearly labeled and located close to the work areas.
- Ground power units are stationed convenient to the aircraft and parked, so they are not in the way of work.
- Technical data stations are located at set locations. They have enough space for the equipment, but not so much that they accumulate discarded paper.
- HAZMAT waste containers will have their location near waste generating areas with their contents clearly marked.



SHINE

The face lift begins here. We paint and clean the area after we re-organize. Equipment may get a new coat of paint. Years of accumulated dust and dirt are washed off by liberal application of soap and water.

Floors are cleaned and, if necessary, repainted or re-conditioned. Areas that are set aside for remaining equipment will be repainted or outlined. In a shop the application of paint on the walls and equipment can have positive effect on staff productivity. Broken equipment that survived the sort process must be repaired at this time. Time must be set aside to periodically clean and restore any improvements made.

STANDARDIZE

By now we have invested a lot of time and effort in the previous three processes. Now we train the work force to the new system. Procedures for shop cleanup and management of the new environment must be trained and enforced throughout the workplace. If a team was assigned to create the plan and implementation, they should carry out training of the work force.

The 5S plan should include analysis of workstations. If identical work is performed in multiple locations, for example, nonstandard workstation layouts must be addressed so that one worker can use a location interchangeably with another. This analysis can be applied to hangar bays, back shops, and offices. The level of execution in this area can spell the difference in success or failure in the 5S effort. The organization will know if it falls short of its planned goals. These decisions will have to be made at the planning level, so the effort doesn't falter over unplanned costs.

<u>Tape Color</u>	<u>Application</u>	<u>Examples</u>
	Permanent location for equipment	Equipment, cabinets, furniture, waste baskets
	Temporary storage location	WIP, Finished Goods, Carts
	Biohazards	Biohazard waste collection containers
	Hazardous chemical waste	Chemical waste collection containers
	Safety equipment	Eye wash stations, safety showers, spill kits, respirators
	Radiation	Radioactive waste collection containers
	Electrical equipment access	Area in front of electrical panels and switch gear
	Fire and emergency equipment	Fire extinguishers, doors, panels
	Change in protective equipment requirements	Designated PPE (safety glasses, lab coats, etc.) required past this line.

SUSTAIN

We are here! We made it ...have a party and celebrate. You've achieved a great milestone. Afterwards go back and do it again. This is sustaining. If we fail to maintain, we just fall back to where we started. Most efforts fail here after clear success early in the process. There are lots of reasons. But they all result in gradual deterioration of the effort because the organization fails somehow to incorporate the changes into its corporate culture.

5S keeps providing dividends only by constant practice and application. The drive for excellence is tied to continuous execution. Our plan in the beginning must include the means we will use to sustain our success.

KEY BENEFITS OF 5S PROCESS IMPLEMENTATION

Most of the companies today begin their lean improvement by implementing 5S, which is the Japanese methodology of minimizing errors. It is a good way for these companies to get familiar with continuous improvement cycles by involving workers to organize and improve the workplace conditions for various growing organizations.

Implementing 5S has a number of other benefits, these include:

- **Increase productivity** - Every organization works towards achieving increased productivity, after all, productivity increases the overall return on investment. According to global research done by various consultancy firms, it has been found that effective implementation of 5S lean manufacturing resources provides this improvement. The complete removal of unnecessary items along with efficient workplace maximization is enough to help develop improved productivity with minimal wastage of time. Less time spent searching through unnecessary items means more time spent working.
- **Improved safety** - is yet another benefit of 5S implementation. A clean workplace environment, especially in a manufacturing unit can result in significant reduction in the number of injuries sustained by workers. Most often, unattended chemical spills increase the chances of slips and falls. Contrary to this, following methodical procedures of cleaning, limits the possibility of all such unfortunate mishaps. Also, the reduction in unnecessary travel through the workspace environment further minimizes the risk of sustaining injuries by limiting exposure to hazardous substances elsewhere in the facility. This in return functions to increase the moral of employees, as reduced incidents of injuries convey employer's concern for worker safety.
- **Waste reduction** - Implementing 5S will also yield a fair reduction in lost and damaged items in the workplace. A clear and organized workplace with proper labelling provides workers the flexibility to replace damaged items in the designated places, thereby minimizing the total number of misplaced and lost tools and equipment. Further, the appropriate management of equipment also minimizes damages that are generally caused to various parts of the products during the production process.

PART OF THE LEAN JOURNEY

The thing about 5S is that it fits very well with aviation maintenance. It speaks to all the disciplines involved with internal compliance standards. The following are some examples that respond well to 5S implementation:

- Hangar and workshop standards (sort, shine, and standardize)
- Quality assurance (standardization, sustain)
- FOD control (sort, set in place, standardization)
- Production control (sort, set in place, standardize, sustain)
- Recordkeeping (sort, set in place, standardize, sustain)

Keep in mind that 5S is often part of a larger effort related to Lean implementation. But there is no rule that says it must be. Also making these changes requires a top down and bottom up coordination to better mitigate the discomfort that change brings. Success is best achieved by starting small building on small continuous successes. Find an area whose improvement would be visible and make changes, then pick a new area and begin again. Keep in mind how small parts of the organization contribute to the whole. Be ready to fail, learn from failure, then try again and succeed. After all this is a journey; enjoy the ride.

5S IS ABOUT COMMITMENT

When working through the 5S process, you have to remember that in fact it is a process, not an ideology that can be improvised. Success with 5S, comes when you follow through with the process and spend the extra energy needed on the last two S's to ensure success for the long-haul. You may have a clean facility, but it's short-term. The goal with 5S is to eliminate waste from your organization in all forms including transportation, inventory, motion, waiting, over processing, overproduction, and defects, otherwise known as the seven deadly wastes. An initial clean-up may eliminate a few wastes, but without a method to standardize and sustain your efforts, the chances of continuing to eliminate waste, are slim to none.

Worse yet, the chances of keeping the waste you originally eliminated away, are also slim. You must create a culture that sees the value in committing to the 5S process. Once you've worked through the sort, set in order, and shine, you must define what you expect out of your employers, including their responsibilities and daily schedules. Your organization needs to determine how much time is needed every day to ensure your 5S is maintained and a continued focus.

