

# 5S FOR EVERYONE

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## INTRODUCTION

Implementing change doesn't always require twelve months to plan. Many companies spend thousands on poster campaigns, coupled with a detailed and lengthy training programme and the award of certificates. Indeed, there are companies where everyone has been obliged to sign a sentence saying "I am committed to change and the implementation of Best Practice". By the time that everyone has come through this process they have forgotten why it started and probably had any initial enthusiasm drained from them.

The art to introducing change is to spend less time planning and more time doing. The use of simple techniques, coupled with good communication about why things need to change and what is happening, along with a modicum of enthusiasm, can have a profound effect at a fraction of the cost.

A personal favourite process is the application of 5S to a production or office area. It is cheap to implement and the initial (and most dramatic) stages have visible effects within hours of starting the process. Due to the ease of implementing 5S, another key benefit is that it demonstrates that a company is 'serious' about change as 'actions speak louder than words'. In basic terms 5S takes the discussion about the 'C' word ('Change' of course) out of the boardroom and onto the shop-floor.

5S is often quoted as simple housekeeping and indeed the earliest stage has much in common with tidying up and removing rubbish. As many companies stop after completing the first 'S', it is understandable why people make this comparison. But taking 5S further improves productivity, eliminates waste and creates a smarter, safer environment. As many customers now only place orders after seeing the factory, the impact a 5S programme can have on order intake can be disproportionate to the effort to undertake it.

Take a factory where there is an excess of dirt and rubbish, where items are not correctly stored and where processes are disjointed and badly laid out. It is not surprising that vast sums are spent on scrap, moving items unnecessarily or looking for items that are lost. It is also not uncommon for this type of factory to have low morale and high absence/accident rates. Over a sustained period, the added overhead of wasted time, inefficient processes and high scrap can severely affect margins.

Originally, 5S came from five Japanese words beginning with S. To aid understanding, equivalent English words beginning with the letter S are used. Different people use different words for the same part of the process (for example many people use the word SHINE, whilst some use SCRUB). Additionally, there are at least two different ways of implementing 5S, but essentially they all have the same results. The table below shows the original Japanese word, a common English equivalent and some other words used for the same technique.

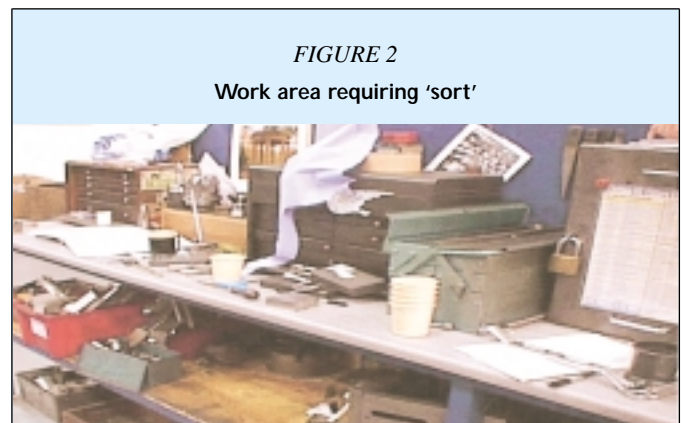
JAPANESE WORD	EQUIVALENT	ALTERNATIVE
SEIRI	SORT	SIFT
SEITON	SIMPLIFY	SET (IN ORDER)
SEISO	SHINE	SCRUB
SEIKETSU	STANDARDISE	SYSTEMISE
SHITSUKE	SUSTAIN	STANDARDISE

A simple explanation of each technique is as follows.

SORT	Sort through and sort out
SIMPLIFY	Improve what remains
SHINE	Keep it clean
STANDARDISE	Make problems visible
SUSTAIN	Stick to it

The first 3 'S's' are about 'doing' the change, whilst the last 2 are about the systems and culture to sustain and improve upon the changes made.

## SORT – Sort through and sort out



How much of what is located in your factory or office is really needed? How much of it is there just because 'one day we may need it', or worse how much is there simply because no-one has removed it? The first step to implementing 5S is to sort the items that are needed from those that are not.

One method of implementing SORT is to undertake a 'Red Tag Attack'. The purpose of this is to 'prune' the area of items that are not required so that it becomes both clearer and smarter.

The 'Red Tag Attack' involves the team working in the area, along with a supervisor/manager and where possible one worker from other areas. As the team move through the area they will see inventory, tooling, equipment, rubbish and machinery. Any items that are not required for the job that is immediately at hand is 'tagged'.

At the end of this process, the person responsible for each 'tagged' item should then be consulted as to the reason why it should remain in the area. Acceptable reasons for items staying centre on it definitely being used within the next month and if the item falls into the category, the tag should be removed.

If there is doubt as to whether or not it will be required in that period, or if the next time it may be required is greater than a month away the red tag should remain on the item. At this time anything that is clearly rubbish should be disposed of. Remaining 'red tagged' items should be removed from the area into a temporary holding area until it is proven that it is not required. At this time the items can be disposed of or moved into longer-term storage.

The benefits of implementing SORT are that you will have less clutter and therefore less time spent searching for items and moving around obstacles. In addition, the work place will look and feel more open. As mentioned above, many people stop at this point and therefore the association is made between 5S and housekeeping.

### SIMPLIFY – Improve what remains

Having removed all surplus items and rubbish from an area, the next step is to organise the area efficiently. Often this can be achieved by simply moving items closer together so that less time is spent walking between benches and desks. However, a better way to visualise what is going on (and therefore what could be improved) is to use a 'spider' or 'string' figure.

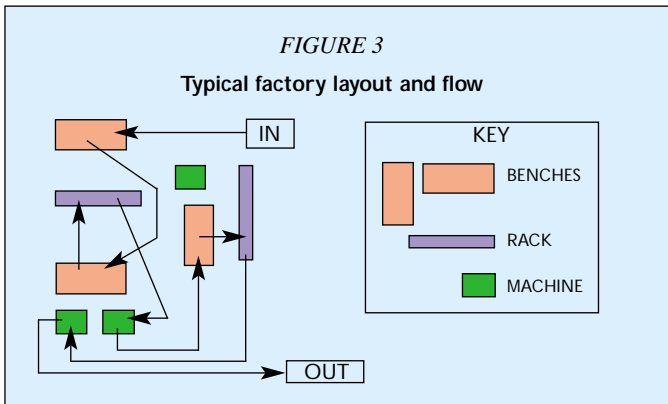
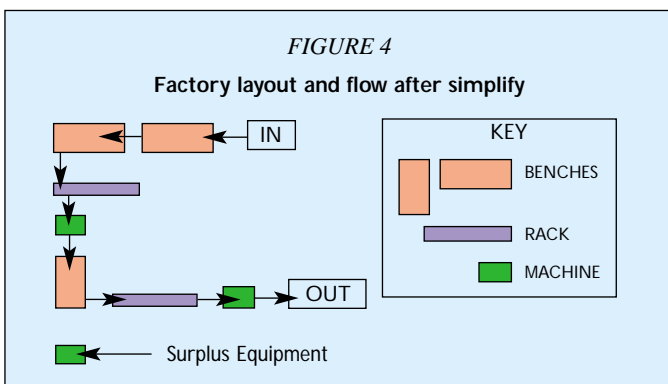
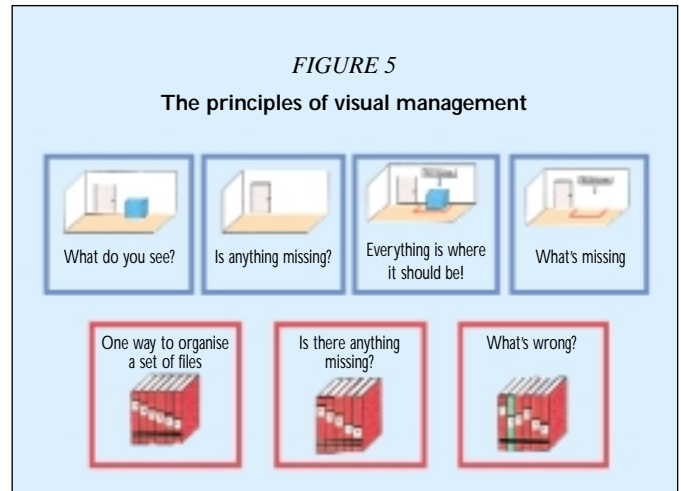


Figure 3 shows a typical layout of a factory area after a SORT activity has been completed. Drawn onto the layout is the flow of the product between the different benches and equipment. It is obvious that there is a significant amount of wasted time spent walking or carrying items between benches. By analysing the flow it is possible to relocate items so that they are located closer together to reduce walking distances. You may even identify further items that are not required and can be removed. Figure 4 shows one example of how this layout could be changed to improve the flow.



At this stage, it is common to define 'locations' for all needed items so that they don't stray. This can include the use of 'shadow boards', colour coding for easy recognition or floor

markings to indicate what is supposed to be where. This is the principle of Visual Management - 'a place for everything and everything in its place'. Consideration should also be given at this stage to identifying how many parts should be stored in the location and incorporate this into the identification.



This process can be applied to offices and individual workstations with the same effect. Typically, walking/movement distances can be reduced by up to 90% and productivity increased by 10-30% by having just completed 'SORT' and 'SIMPLIFY'.

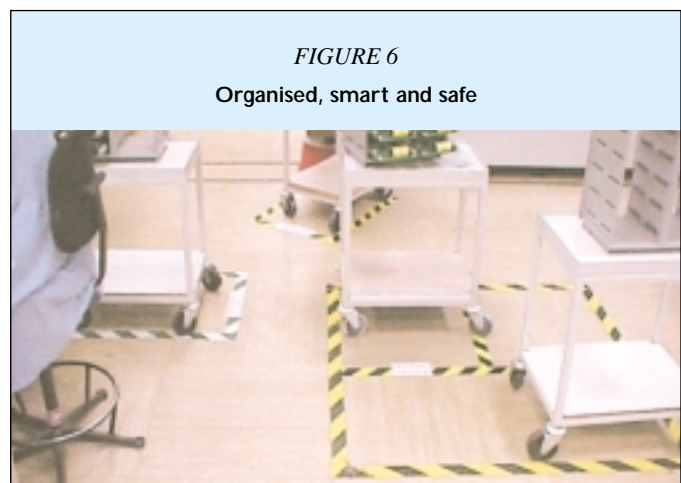
### SHINE – Keep it clean

Having sorted out unneeded items and then improved what remains, the next stage is a thorough clean up. This involves operators wiping down and sweeping their work areas and machinery. Many people also use dust covers to reduce the burden of cleaning.

SHINE improves the environment, reduces the risk of accidents and also improves the reliability of machinery (as poor cleaning often causes faults). The promotion of a daily '5 Minute SHINE' exercise will help to instill cleanliness as a routine.

### STANDARDISE – Make problems visible

STANDARDISE is about having defined processes that support the first 3S's so that mistakes cannot occur. This could include items already mentioned such as the daily 5 minute shine, shadow boards or the use of marked zones for storing items. Alternatively, it could include a set time every day or week to practice the first 3S's from top to bottom. By having simple, easy to follow processes and procedures it makes it harder for people to make mistakes and obviously when problems do occur - refer back to Figure 5 and the benefits of having marked out the floor so everyone knows where to store the item.



## SUSTAIN – Stick to it

Although results can be achieved very quickly by the use of 5S, for continued improvements there must be the self-discipline to move forward. 5S requires managers to go back and re-visit work previously done for further improvements as well as ensuring that the STANDARDISE systems are maintained and monitored. SUSTAIN is about the mental and physical disciplines required to maintain the other 4S items. Often people achieve the 'discipline' to maintain 5S through the use of routines, including self assessments, audits and checklists with the results visually displayed and regularly reviewed.

## SUMMARY

The successful implementation of 5S requires that everyone understand why it is being used and what the expected results are, as the removal of familiar (although unneeded) items and the reorganisation of processes can be extremely unsettling. This may need to be coupled with training in the principles of 5S.

Simply implementing SORT can have rapid results that demonstrate a company's commitment to change, whilst the application of the other elements can dramatically improve productivity and reduce both waste and lead time.

The use of SORT and SIMPLIFY are excellent methods for involving people very early on in the change process. Often they find the experience to be exciting and fun and in this way it can be used to create a pool of people who are both positive and motivated about change.

## FURTHER READING

- [1] Hirano H. '5S For Operators' *Productivity Press* ISBN 1-56327-123-0
- [2] Imai M. 'Gemba Kaizen' *McGraw Hill* ISBN 0-07-031446-2

## About the authors

**Mark Eaton**, MIOM, DMS, MSc. Having started his career as a design engineer, Mark progressed into manufacturing where he managed the engineering and operational functions for a number of blue chip, technology led businesses.

Mark now works as a consultant in the World Class Performance Unit for the Engineering Employers Federation (EEF South) where he uses his experience in lean and world class manufacturing to assist companies in developing effective processes and motivated teams.

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The pursuit of excellence is central to Keith's work as a member of the EEF South's World Class Performance Unit.