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TPM Newsletter

AIDC EC Total Productive Maintenance Newsletter

In this issue

RESISTANCE TO 5'S AND HOW TO OVERCOME IT

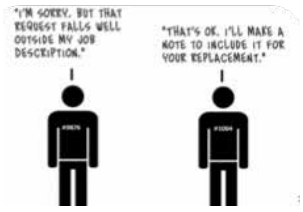
7 MOST HEARD OF REASONS:

"5's will not increase production output"
Many production managers can't see the link between 5's and their short - term objectives of meeting the production planand staying within budget. The best way to convince them is with a pilot - the payback will be quick and significan

"Why clean if it will get dirty again"
5S prevents the area from getting dirty again, and makes the cleaning task easier. Help workers understand that there is no need for major clean up if 5S is carried out regularly and consistantly.

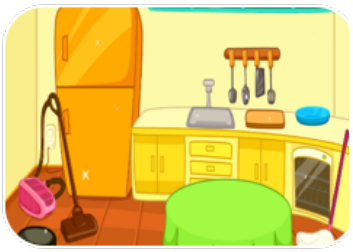
"We've tried that before"
The house keeping efforts in most organisations are superficial , limited and usually dependant on management driving the process. Many companies outsource housekeeping. Put a spotlight on unhelpful practices by conducting an assesment and compiling a photo report to higlight problem areas.

"Let's focus on the improtant things"
Emphasise that 5S principles are the important things. Unless 5S is implemented first, other best practices are bound to fail.



"It's not part of my job description"
Workers are often reluctant to take on the 'added responsibility' of cleaning and tidying up. Make it clear that 5S is part of their normal day-to-day responsibilities, and that it contributes to productivity improvemenet and empowerment.

"It's just another whim"
Ensure that 5S has the backing and commitment of all managers. It must be seen as the new way of working, and is an integral part of the drive to improve your company's competitiveness.



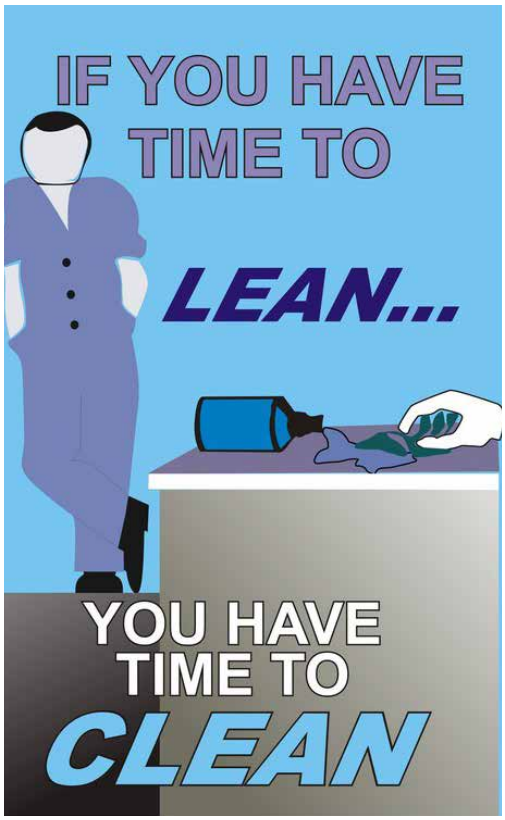
"It won't work here"
Explain to your employees that 5S can work anywhere if the standards and implementation process are properly customised. 5S has been succesfully implemented in a range of locations, including factories, offices and processing plants.

Tips for 5S sustainability:

1. Consistency – Have daily scheduled clean up's and do not deviate from them.
2. Support – Have management and office staff participate in some of the clean up's to show shop floor employees everyone's commitment.
3. Accountability – Assign accountability to employees to track progress.
4. Recognition – Have weekly and monthly audits. Implement a monthly competition to recognise the best 5S team within the shop floor and offices.
5. Visual aids and demarcations – Labelling and demarcations must be visual and stand out.
6. Photo's – Take plenty of before and after pictures to show progress to employees.
7. Explain – When addressing an employee with regards to 5S make sure to explain the reason for keeping a tidy environment and why things must be stored in its place.

Example: If the spanner is not placed back in the tooling cupboard after change overs the next change over time will increase as the employee will not know where the spanner was placed.

Compiled by Bianca Ehlers.



BEST PRACTICE FOR HORIZONTAL DEPLOYMENT

Horizontal deployment derives from the Japanese word Yokoten, which roughly translates to "best practice sharing". The idea of horizontal deployment is to transfer information and knowledge across the company. Horizontal deployment is not just a copy and paste exercise, but a more peer to peer, with the expectation that people will go see it for themselves and learn how other areas (or the model area) are implementing TPM.

Factors to consider

There is only one important factor to consider when horizontally deploying, that is, the leadership quality and motivational level of the new TPM area's leader. We usually find different types of line managers, one who has a total understanding of the concepts as well as trusting in their subordinates, and the other being there just to fill out his own job requirement and go along with the program as a ticking exercise. The former always being the one to progress much smoother and faster than the latter. It is amazing as to what impact a positive and motivational person could have on an entire production line.

Difficulties when implementing horizontal deployment

(1) Shop floor mindset

When in the process of TPM horizontal deployment from the Model area to other areas in the company, we should always validate the mindset of the operators in the new area compared to the model cell. This is why the above mentioned is important, that the operators go visit and learn the TPM culture from their peers at the model areas. The more understanding you have of TPM, the easier it becomes in embracing and implementing it.

(2) Nature of machinery in other areas

Another barrier in horizontal deployment would be the difference of machinery in the respective areas.

For example, moving from the machine shop floor into assembly. We generally find machines ranging from milling and extruders up until 15 ton presses, these machines relatively leaves a massive mess once the shift change commences. The contamination sections of the machine are quite visible and one point lessons fairly easy to adhere to, whereas, on a neat assembly line, these factors are not that easily identified and requires a more focus to detail approach. It is important for team leaders of the line to take initiative and train the operators to acquire this skill.

(3) Timing schedule

When assigning a timeline before horizontally deploying, make sure that it's not a copy and paste exercise unless the cells are identical. As mentioned before, the nature of the machinery could be of a vast difference which could impact the effectiveness of the deployment.

To conclude, these are just my personal views on what I observe within companies. It may or may not occur, just keep them in mind if one day you happen to come across any.

Compiled by Tawfeeq Abrahams.

FIRST IN FIRST OUT (FIFO) SYSTEMS

As an Industrial Engineer I continuously look for improvements whether it be within the work place or day to day tasks. Tasks should be made as simple as possible whilst trying to take out the human error factor.

During one of my recent company visits I looked at their FIFO colour identification system, that of colour coding per month and realised in order to use the color coding system I first had to be trained on what colour indicates which month or alternatively glance at the work instruction that illustrates this.

MONTHS	Colour Code
January	
February	
March	
April	
May	
June	
July	
August	
September	
October	
November	
December	

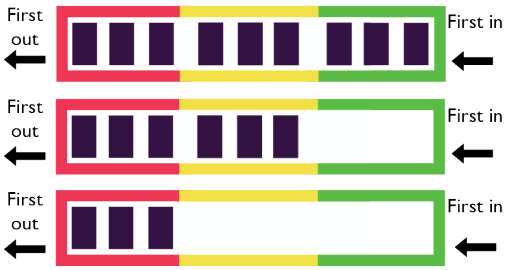
Thinking back to keeping things simple, why not have a FIFO demarcation where we use numbers. This will eliminate having to look at what colour is representing what month. Eliminating the need for thinking and rather using numbers, knowing that 1 needs to be used first and then 2, 3 and we continue to 12.

MONTHS	Number Code
January	1
February	2
March	3
April	4
May	5
June	6

This method is a quicker way to visually spot what inventory needs to be used next, not forgetting that an ideal FIFO system will have the inventory stacked accordingly in order to automatically use the first item in, example an beverage fridge in stores stocked from the back and we as the consumers take the item

from the front. However in most cases this is not applied in all areas and various industries.

Further examples of FIFO and order levels control:



Stock levels

Maximum level

Re-order level

Minimum level

Compiled by Bianca Ehlers.

A SHORT INSIGHT ON OEE
IN THE EXPERIENCE OF BHONGO XAYIMPI

Overall Equipment Effectiveness, better known as OEE, has formed the bulk of my involvement in Total Productive Maintenance (TPM). It is simply a means to measure the productivity of an operation, and ultimately its progress in continuous improvement.

The best way to measure OEE is by autonomously doing so by employing a computer built into a machine monitoring its inputs, disruptions and outputs. This in itself is a summary of OEE: the overall rate is the answer to dividing the good (usable/sellable) outputs by the inputs. However, OEE can also be measured manually by means of recording the information – inputs, disruptions and outputs - of the processes and converting that information in calculations to arrive at the rate.

It is imperative for the operators to be involved in the acquisition of the process information. This ensures their security in the measuring system, as well as their cooperation in making it a success. They should understand, if not perform, the calculations that result in the rates. This allows them to trust the OEE reports that would be given to them, and carry out any tasks assigned to them to improve the rates. If this is not done, they will display great resistance and disbelief in the measuring system.

The delays – losses in the process – should be addressed by the production team. The team includes team leaders, operators, controllers and managers. As a build on to the addressing; the delays should be rectified in a strategic format. The reason for the entire production team to be included is to ensure that everyone understands the impact of the losses on manufacturing and the significance of the rectifications. The rectifications will extend to review the work flow, scheduling and targets and the perception of the potential of the plant. There has been a standard used which states that the world class OEE rate is 85%. This, unfortunately, is a myth when it comes to practicing OEE. The rate is certainly possible, but with certain processes. Some types of processes are developed in such a manner that the rate of 85% cannot be achieved even if they would run at their capability. Each plant should focus on calculating their own maximum rate by taking into consideration variables such as their staff compliment, the manufacturer ratings of their equipment and the processes that their manufacturing entails. Once a maximum rate has been established, realistic milestones can be set as targets to improve their current OEE rate based on current capacity. Failing to determine these realistic milestones will lead to discontentment of the staff as they would fail to reach them with the misunderstanding that they are at fault.

There should be a continuous focus on OEE. Any interruptions to this focus, for a lengthy period, leads to the loss of quality of the system as it would be practiced less to be perfected and be taken less seriously by the staff. The plant would also not see significant progress in the increasing of the rate or develop trends of improvements that would assist in forecasts and target setting.

OEE is an excellent manner to measure, understand and monitor the actions on the shop floor, and any other operations where it may be implemented. It is not the only way to measure operations, but it has certainly proved effective and intensive. Many companies have followed suit in using it since its introduction in 1971 by the Japanese Institute of Plant Maintenance (JIPM).

SHADOW BOARDS TPM CLUSTER PROGRAMME

What are shadow boards?
Shadow boards are tools, supplies or equipment storage boards used in production, manufacturing, and service environments. The aim of the shadow board is to achieve an organized workplace where tools, supplies and equipment are stored in appropriate locations close to the work area or work stations. Shadow boards can be different sizes and located in many different areas of a process or plant.

Why do you need them?
It provides the basis for standardization in the work place. As well as eliminating waste of excess motion, but they need to be place at an appropriate point of use for them to eliminate this waste. They also eliminate the waste of time spent looking for an appropriate tool. Having a shadow board can also save the costs of buying/ replacing a tool because it cannot be found then later having more than one of the same tool, hence it is used in the sort and set in order stages of the implementation and operation of a 5s system in a workplace. Lastly it can have an impact in improving product/ equipment quality as well by avoiding the use of inappropriate tools.

Challenges with shadow boards
Many people in the manufacturing industry complain that the use of shadow boards is not effective because

- Tools/ equipment go missing still
- Nobody knows where they are
- If locked, people forget or loose keys

The list of issues is endless.

How to overcome the challenges
1.Provision for all
In a manufacturing environment tools go missing due to the fact that one line does not have a shadow board yet and will go borrow from the line that has. Therefore you need to ensure that every line has their own shadow board with the tools they require.

2.Discipline
In order to avoid further disappearance of tools people have to be held accountable for the tools they are provided with. Discipline has to always go hand in hand with unfavourable consequences to the person held accountable in order for it to be effective. The disciplinary measures also have to be clearly communicated to the person/people held responsible for the tools.

3.Encourage trust
Locked shadow boards are not always effective as keys go missing and/or forgotten. One can avoid the stealing of tools from one station to the next by colour coding them or permanently marking them for a specific station.

4.Have a sustenance plan
Set a frequency for audits to be done to ensure that the tools are still all available, in good condition, properly demarcated and at the correct station. During the first few months of implementation you will find that the frequency of these audits needs to be high and as the culture and discipline settles one can reduce the frequency of Audits.

Compiled by Siphokazi Ramaboea July

ENQUIRIES

For any enquiries or feedback relating to the AIDC EC Total Productive Maintenance

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