Industrial Electrical/Electronic Control Technology Level-II

Module Title: - *Applying 5S Procedures*

Module code: *EIS IEC2 01 0322*

Nominal duration: *70 Hour*

Unit One: Prepare for work

This unit is to provide you the necessary information regarding the following content coverage and topics:

- Work instructions. .
- OHS requirements.
- Prepare tools and equipment.
- Implementing 5S.
- Check safety equipment and tools.
- Prepare and using kaizen board

1.1 Work instructions

The Information of about the work, describe what workers need to be able to do on the job.

Work functions

Key activities of each work function

Performance indicators .

I. Procedures vs. Work Instructions

*Many people **confuse "procedures"** with "**work instructions**".*

*In fact, most people write work **instructions** and call them **procedures**.*

*Procedures describe a **process**,*

***work instruction** describes how to **perform the conversion** itself.*

***Process** descriptions include details about the **inputs**, what conversion takes place (of inputs into outputs),*

*The **outputs**, and **feedback** necessary to ensure consistent results.*

*The PDCA process approach (**Plan, Do, Check, Act**) is used to capture the relevant information*

II. QUESTIONS THAT NEED TO BE ANSWERED IN A PROCEDURE INCLUDE:

*Where do the **inputs** come from (suppliers)?*

*Where do the **outputs** go (customers)?*

*Who **performs** what **action** when (responsibilities)?*

*How do you know when you have done it right (**effectiveness criteria**)?*

*What **feedback** should be captured (metrics)?*

*How do we **communicate results** (charts, graphs and reports)?*

1.1.1 JOB SPECIFICATION

*A statement of **employee**/workers characteristics and **qualifications** required for **satisfactory** performance of defined duties and tasks comprising a specific job or function.*

Table 1.1 Specification Sample

Technical parameters	Gigabyte 3D Rocket II (GH-PCU23-VE)
Heatsink and fan dimensions (L x W x H)	112mm x 112mm x 160mm 92mm x 92mm x 25mm
Heatsink material	aluminum plates on a copper base and four copper heatpipes 6mm in diameter
Fan rotation speed	~1500-3000rpm
Airflow	no data
Noise level	16.0 ~ 33.5 dBA
Nominal voltage	~12V
Fan MTBF	50,000h
Maximum power consumption	~4.6W
Fan bearings	2 frictionless bearings
Full weight	640g
Supported CPU sockets	Socket 478, LGA 775, Socket AM2/754/939/940
Additional	Additional fan in the lower part of the cooler Gigabyte thermal grease Replaceable fluorescent rings
Price, USD	$60

1.2 OHS REQUIREMENTS

*OHS requirements are legislation/**regulations**/codes of practice and enterprise safety policies and **procedures**.*

This may include
protective clothing and
equipment,
use of tooling and equipment,
workplace environment and safety,

handling of material,
use of firefighting equipment

CONT….

***Safe operating procedures** include*

Conduct Of Operational Risk Assessment

Treatments Associated With Workplace Organization.

Emergency procedures include

emergency shutdown

stopping of equipment,

extinguishing fires,

enterprise first aid requirements

site evacuation (Clearing)

1.2.1 WORKPLACE HAZARD

work provides many economic and other benefits,

a wide array of workplace hazards also present risks to the health and safety of people at work. These include

chemicals,

biological agents,

physical factors,

adverse ergonomic conditions,

allergens,

a complex network of safety risks,

broad range of psychosocial risk factors

HAZARDS

Physical hazards *are a common source of injuries in many* ***industries****.*

They are perhaps unavoidable in certain ***industries****, such as construction and mining*

Employmen*t of children may pose special problems. Falls are a common cause of occupational injuries and fatalities, especially in,*

- *construction,*
- *extraction,*
- *transportation,*
- *healthcare,*
- *building cleaning and*
- *Maintenance.*

CONT.…

Figure 1.1 At-risk workers without appropriate safety equipment

CONT....

*The transportation sector bears many risks for the **health** of commercial drivers,*

for example

from vibration,

long periods of sitting,

work stress and exhaustion.

*These problems occur **in Europe** but in other parts of the world the situation is even worse.*

CONT.…

Electricity poses a danger to many workers.

***Electrical injuries can be divided into four types**:*

- *fatal electrocution,*
- *electric shock,*
- *Burns, and*
- *falls caused by contact with electric energy.*
- *Vibrating machinery, **lighting**, and **air pressure** (high or low) can also cause work related illness and injuries.*

CONT.…

***The Act**: The Occupational Health and Safety Act 2004 (the Act) is the cornerstone of legislative and administrative measures to improve occupational health and safety in Victoria.*

*the key **principles**, duties and **rights** in relation to occupational health and safety.*

***The Regulations**: The Occupational Health and Safety Regulations 2007 are made under the Act.*

*administrative matters to support the Act, such as requiring **Licenses** for specific activities, keeping records, or notifying certain matters*

CONT.…

***Guidance**: Effective OHS regulation requires that Work Safe provides clear, accessible advice and guidance about what constitutes compliance with the Act and Regulations.*

This can be achieved through Compliance Codes, Work Safe Positions and non-statutory guidance ("the OHS compliance framework").

***Policy**: Not every term in the legislation is defined or explained in detail.*

sometimes new conditions arise (like increases in non-standard forms of employment, such as

casual,

labor hire and

contract work,

completely new industries with new technologies which produce new hazards and risks)

SELF-CHECK 1

Directions: Answer all the questions listed below.

1. What is the meaning of job?

2. List the requirements of job.

3. What is the meaning of work? (2 points)

4. Describe work instruction in your own words. (5 points)

5. Explain the difference between procedure and work instruction? (5 points)

6. Define job specification? (3 points)

7. Prepare specification samples. (10 points

Unit Two: Sort Items.

This unit is developed to provide you the necessary information regarding the following content coverage and topics:

- Prepare and implementing plan.
- Performing cleaning.
- Identify all items.
- List Necessary and unnecessary items.
- Red tag strategy.
- . Evaluate and placing unnecessary items.
- Record and quantifying necessary items.
- Report performance results.
- Check regularly necessary items.

2.1 Definition of Sort

***Sort**, the first pillar of 5S, means classifying items in the workplace in to two categories*

Necessary And

Unnecessary

that removing all the unnecessary items that are not needed for current operations.

2.2 Benefits of sort activity

Implementing this first pillar creates a work environment in

Space,

Time,

Money,

***Energy,** and*

other resources can be managed and used most effectively

CONT.…

If the first pillar is not well implemented, the following types of problems occur

The factory or a workshop becomes increasingly crowded and hard to work in.

***Unnecessary lockers**, shelves, cabinets and items make communication between employees difficult.*

Time is wasted in searching for parts and tools.

Increase unnecessary maintenance cost of unneeded inventory and machinery.

Excess stock-on-hand hides other types of problems in production.

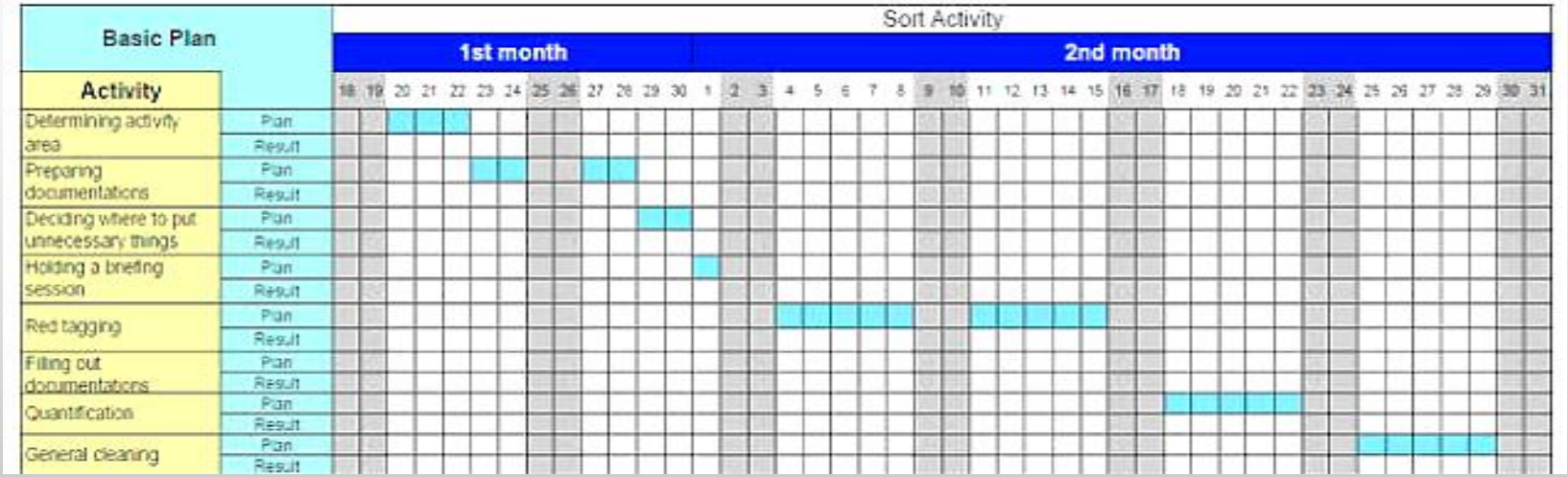
Unneeded items and equipment make it harder to improve the process flow

PLAN

Implementing sort activity is not always easy to identify unneeded items in a factory or workshop.

implementing sort activity based on the Plan Sort activity and plan sheet (sample).

Table 2-1 Sort activity plan sheet (sample



Cont....

A. Procedure for Sort activity

B. Steps implementing sorties

1) *Evaluate and take pictures of the work area.*

- *It's extremely important to take pictures during this evaluation step since referencing them*
- *after improvements have been made can be very enlightening.*

2) *Identify and red tag the items you no longer need.*

3) *Decide what to do with the tagged items.*

2.4 IDENTIFY ALL ITEMS.

Depend up on the workshops material; device and equipment identify the all of the items disposed follow the following of checklist table.

No.	Name of items	Unit	QYT	Category		
				Equipment's	Tools/device	materials
1						
2						
3						
4						
5						
6						

2.5 Listing Necessary and unnecessary items.

Some of types of unnecessary items are:

- defective or excess quantities of small parts and inventory
- outdated or broken jigs and dies
- worn-out bits
- outdated or broken tools and inspection gear
- old rags and other cleaning supplies
- electrical equipment with broken cords
- outdated posters, signs, notices, and memos

CONT…

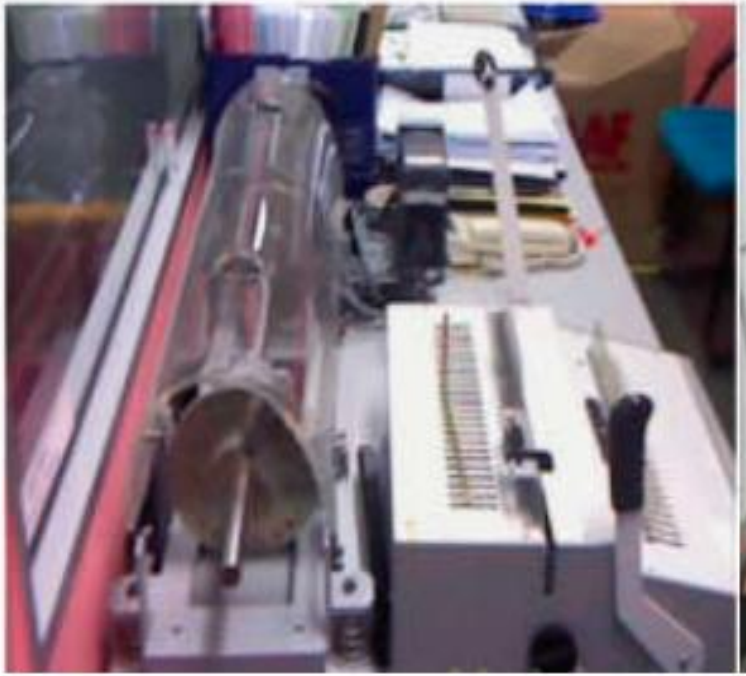


Figure 2.1 Unused machinery or equipment

Figure 2.2 Obsolete equipment

2.5.1 Places of where unnecessary items accumulate

Some locations where unneeded items tend to accumulate are:

- in rooms or areas not designated for any particular purpose
- in corners next to entrances or exists
- Along interior and exterior walls, next to partitions, and behind pillars.
- Under the eaves of warehouses.
- under desks and shelves and in desk and cabinet drawers
- near the bottom of tall stacks of items
- on unused management and production schedule boards
- in tools boxes that are not clearly sorted

Sample of format for records necessary items at the workplace

Process:	Process manager:	Line manager:	Date of check	

Target object			Quantity			Frequency of use				Common use		Storage	Remarks
Category	Item name Part number	Control No.	Present	Regular	Red tag	a	b	c	d	A	B		

Category
A: Product, half-completed product, part or material
B: Facility, jig, tool or consumable material
C: Documentation(form, record, etc.)

Quantity
Present: Present quantity
Regular: Necessary quantity
Red tag: Surplus

Frequency of use
a: Everyday
b: A few times a week
c: A few times a month
d: A few times a year

Common use
A: Used by every worker
B: Used only by specific workers

A sample format for recording unnecessary items in the workplace

List of Unused Items

Prepared by 5S Committee

Red Tag No.	Item name/ Part number	Site	Qty.	Date of Disposal	Reason to dispose									Disposal method					Others	Remarks
					A				B			C								
					1	2	3	4	1	2	3	1	2	3						

>Reason to dispose

A: Product, half-completed product, part or material	1. Unlisted and unused for a long period 2. Overproduced in-process stock beyond the capacity of the inter-process storage 3. Defect(processing/assembly/machining failure, or parts defect) 4. Others
B: Facility, jig, tool or consumable material	1. Unusable 2. Surplus 3. Others
C: Documentation(form, record, etc.)	1. Obsolete and unusable 2. Duplicate 3. Others

2.6 Use Red tag strategy.

1. The Red-Tag Strategy is a simple method for identifying potentially unneeded items in the factory or workshop, to

- *evaluating their usefulness and*
- *dealing with them appropriately*

An item with a red tag is asking three questions:

- *Is this item needed?*
- *If it is needed, is it needed in this quantity?*
- *If it is needed, does it need to be located here?*
- *Red Tag Holding Area" for a period of time to see whether they are needed, disposed and relocated.*

CONT.

There are two red-tag holding areas:

I. ***local holding areas and***
II. ***central holding areas.***

I. ***Local red-tag holding area*** *is used to manage the flow of red-tagged items with in a* ***local department*** *or production area.*

II. ***Central red-tag holding area*** *is used to manage the flow of items that should not be* ***disposed*** *of by* ***individual departments*** *or production area. Usually* ***central red-tag holding area*** *is used by an organization that is launching a companywide red-tagging effort.*

CONT.

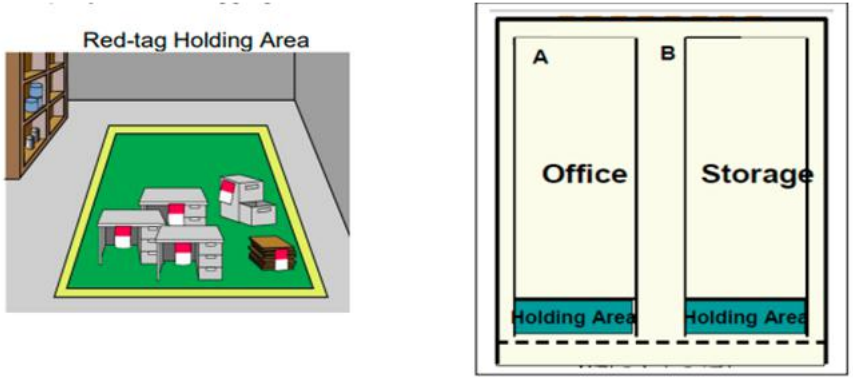


Figure 2.3 two red-tag holding areas

CONT..

2 . *Steps/procedures in Red tagging*

*The red-tagging process in a department or work area can be broken down into **seven steps***

Step 1: Launch the red-tag project.

Step 2: Identify the red-tag targets.

Step 3: Set red-tag criteria.

Step 4: Make red tags.

Step 5: Attach red tags.

Step 6: Evaluate red-tagged items.

Step 7: Document the results of red-tagging

CONT.…

Step 1: Launch the red-tag project

Red-tag campaigns are started and coordinated by the upper-level management of a company.

This involves:

- *Organizing a team*
- *Organizing supplies*
- *Organizing a time or schedule to perform red-tagging*
- *Deciding a local-tag holding area*
- *Planning for disposal of red-tagged items*

CONT..

Step 2: Identify red-tag targets

There are two red-tag targets

a) *In the **manufacturing area items** like inventory , equipment, and space are targets for red tags. Warehouse inventory include material, parts, products etc.*

b) ***Areas:** It is better to define a smaller area and evaluate.*

it well than to define a larger area and not be able to evaluate it fully in available time.

in creating red-tagging teams.

CONT….

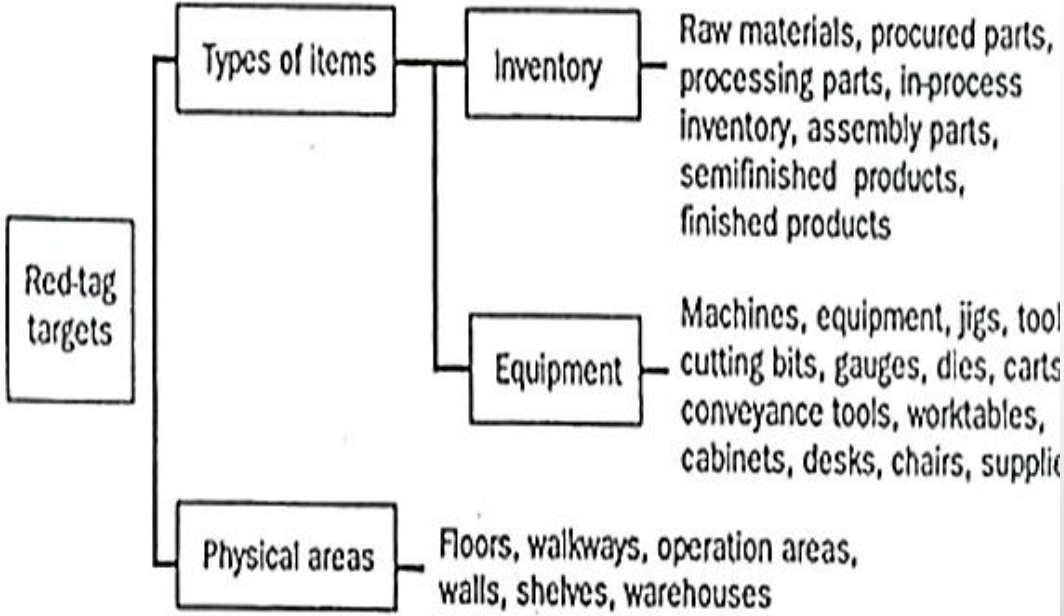


Figure 2.4 creating red-tagging teams.

CONT.…

- ***Step 3: Set red-tag criteria***

§ *The most common criterion is the next Month's production schedule*

Items needed for that schedule are kept in that location.

Three main factors determine whether an item is necessary or not.

The usefulness of the item to perform the work at hand.

The frequency with which the item is needed.

The quantity of the item needed to perform this work.

CONT.…

- ***Step 4: Make red-tags***

Various types of information on a red tag may include:

Category: provides a general idea of the type of item (e.g., Equipment, jigs, tools and dies.

Item name and manufacturing number.

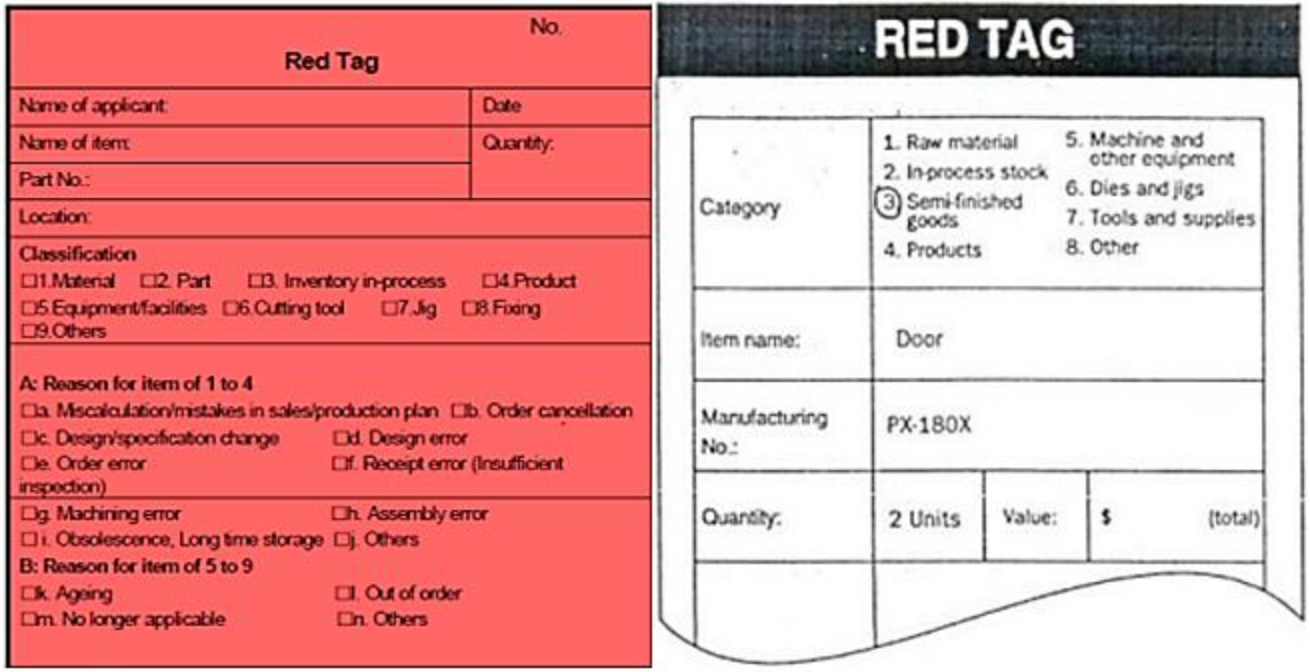
***Quantity**: indicates the number of items included under this red tag.*

***Reason**: describes why a red tag has been attached to this item.*

Value: includes the value of the red-tagged item.

Date: includes the red-tagging date

CONT….



No.

Red Tag

Name of applicant:	Date
Name of item:	Quantity:
Part No.:	
Location:	

Classification

☐1.Material ☐2. Part ☐3. Inventory in-process ☐4.Product
☐5.Equipment/facilities ☐6.Cutting tool ☐7.Jig ☐8.Fixing
☐9.Others

A: Reason for item of 1 to 4

☐a. Miscalculation/mistakes in sales/production plan ☐b. Order cancellation
☐c. Design/specification change ☐d. Design error
☐e. Order error ☐f. Receipt error (Insufficient inspection)
☐g. Machining error ☐h. Assembly error
☐i. Obsolescence, Long time storage ☐j. Others

B: Reason for item of 5 to 9

☐k. Ageing ☐l. Out of order
☐m. No longer applicable ☐n. Others

RED TAG

Category	1. Raw material 2. In-process stock (3) Semi-finished goods 4. Products	5. Machine and other equipment 6. Dies and jigs 7. Tools and supplies 8. Other	
Item name:	Door		
Manufacturing No.:	PX-180X		
Quantity:	2 Units	Value:	$ (total)

Figure 2.5 Make red-tags

CONT.…

Step 5: Attach the red tags

- *The best way to carry out red-tagging is to do the whole target area quickly, if possible, in one or two days.*
- *In fact, many companies choose to red-tag their entire factory during a one or two day period.*
- *Red-tagging should be a short and powerful event.*
- *You should red-tag all items you question, without evaluating what to do with them*

CONT….

Step 6: Evaluate the red-tagged items

In this step, the red-tag criteria established in step 3 are used to evaluate what to do with red-tagged items. Options include:

Keep the item where it is.

Move the item to a new location in the work area.

Store the item away from the work area.

Hold the item in the local red-tag holding area for evaluation.

Dispose of the item.

CONT….

Disposal methods include:

Throw it away.

Sell it.

Return it to the vendor.

Lend it out.

Distribute it to a different part of the company.

Send it to the central red-tag holding area

CONT.…

The next table shows disposal methods.

Table 2.3 disposal methods

Treatment	Description
Throw it away	Dispose of as scrap or incinerate items that are useless or unneeded for any purpose.
Sell	Sell off to other companies items that are useless or unneeded for any purpose
Return	Return items to the supply company
Lend out	Lend items to other sections of the company that can use them on a temporary basis
Distribute	Distribute items to another part of the company on a permanent basis.
Central red-tag area	Send items to the central red-tag holding area for redistribution, storage, or disposal.

CONT.…

- ***Step 7: Document the results of red-tagging***

§ *Each company or organization needs to create its own system for logging and tracking necessary information as red-tagging takes place.*

§ *The documentation system may involve a written logbook in each department and in the central red tag holding area. Or*

§ *it may involve entering data from the red-tags into a computer system.*

§ *Whatever the system, documenting results is an important part of the red-tagging process.*

§ *It allows the company to measure the improvement and savings produced as a result of the restaging effort.*

Unit Three: Set all items in order.

This unit is developed to provide you the necessary information regarding the following content coverage and topics:

- Prepare plan
- General clean activities.
- Location, storage and indication methods.
- Prepare and use tools/ equipment.
- Place and assign Items.
- Return and assign items.
- Report performance of results.
- Check each item.

Explanation of the second pillar of 5S – Set in order

Set in order means arranging necessary items so that they are easy to use and labeling them

so that anyone can find them and put them away.

The key word in this definition is "anyone".

Set in order can be implemented only when the first pillar- sort is done first.

Benefits of set in order

In general, the following problems and wastes are avoided when set in order is well implemented.

Motion wastes

Searching time wastes

CONT…

The waste of human energont…

The waste of excess inventory

The waste of defective products

The set in order step is actually at the core of so many important business principles such as safety,

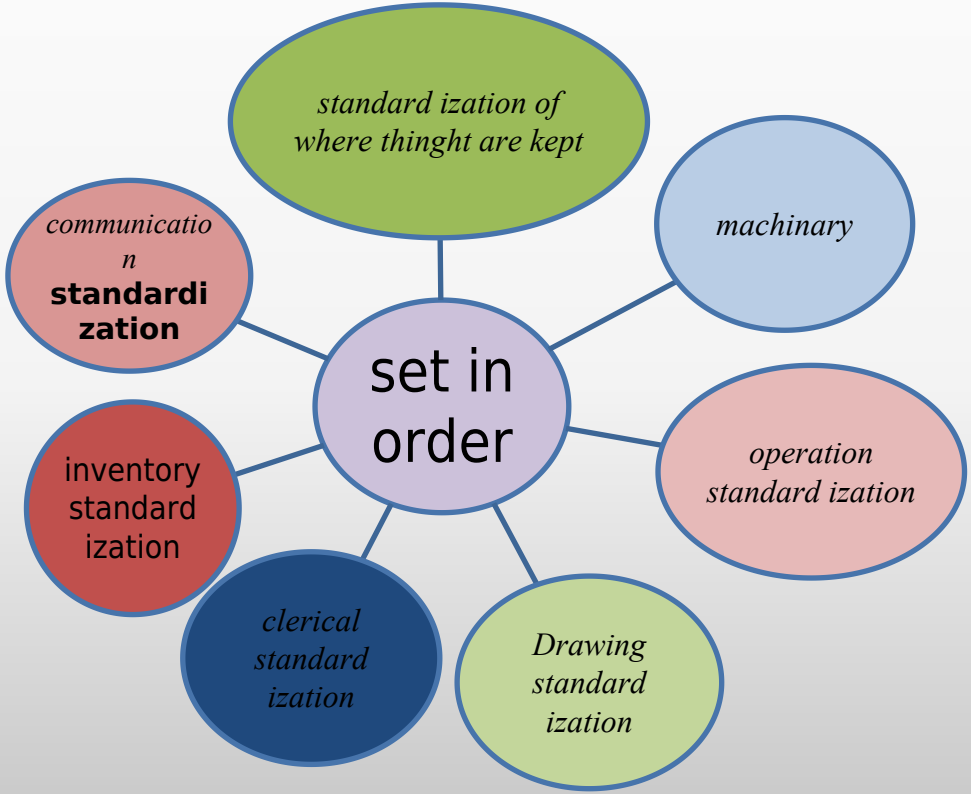
- *Ergonomics,*
- *Quality,*
- *Inventory Control,*
- *Productivity,*
- *Standard Work,*
- *The Visual Workplace And Employee Morale*

CONT…

Lock the following figure how to set in order of materials and equipment's

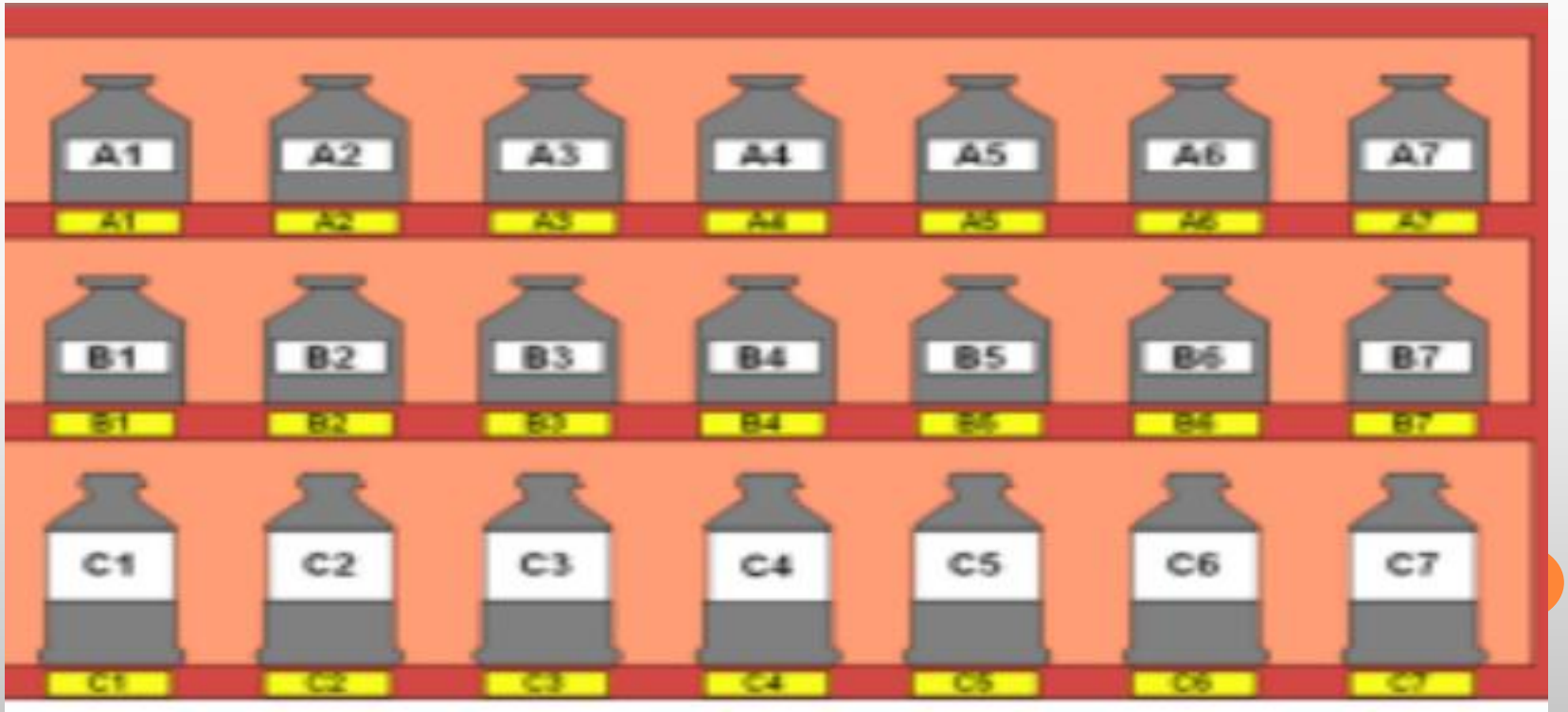
CONT…

Figure 3.2 Set in order is the core of standardization



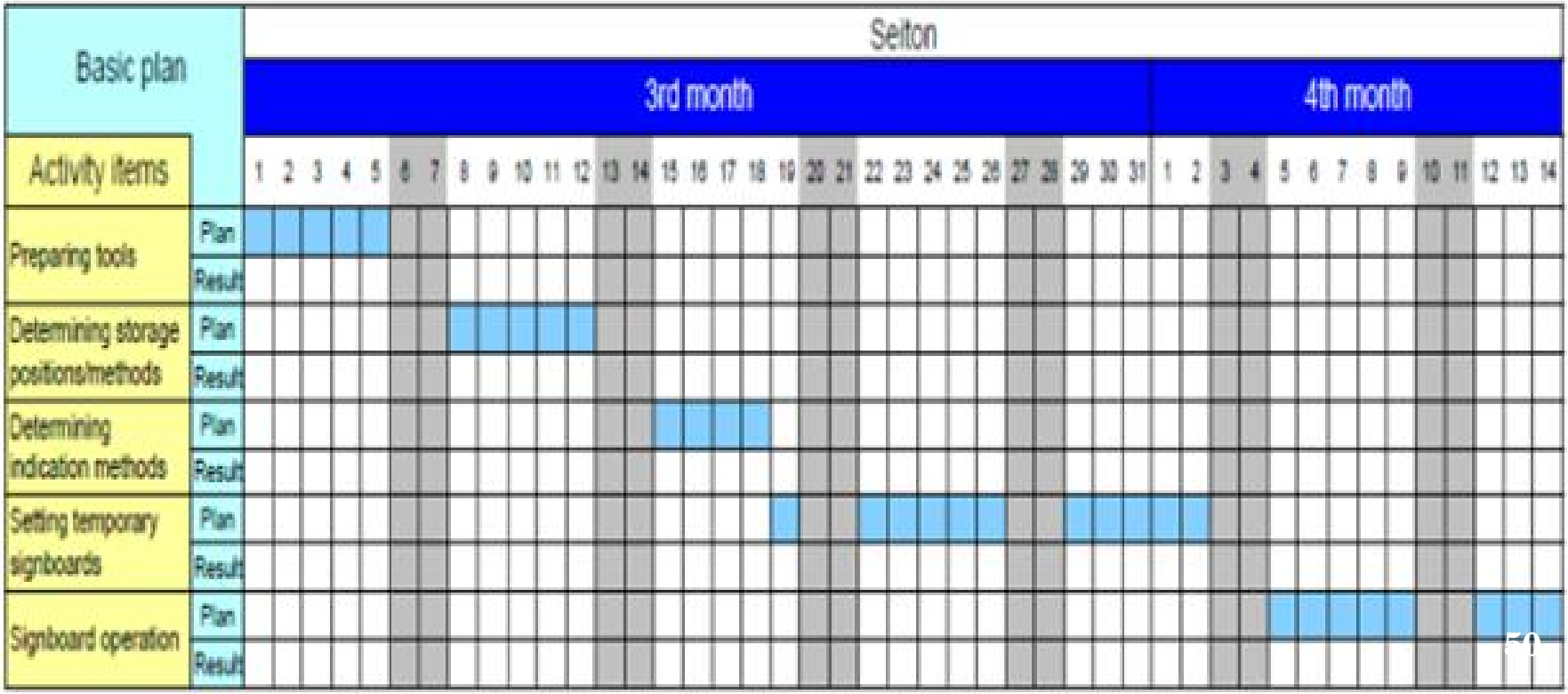
Cont.

Through visual controls, information such as where items belong, how many items should be placed there, what the standard procedure is for doing something, the status of work in process etc. can be communicated.

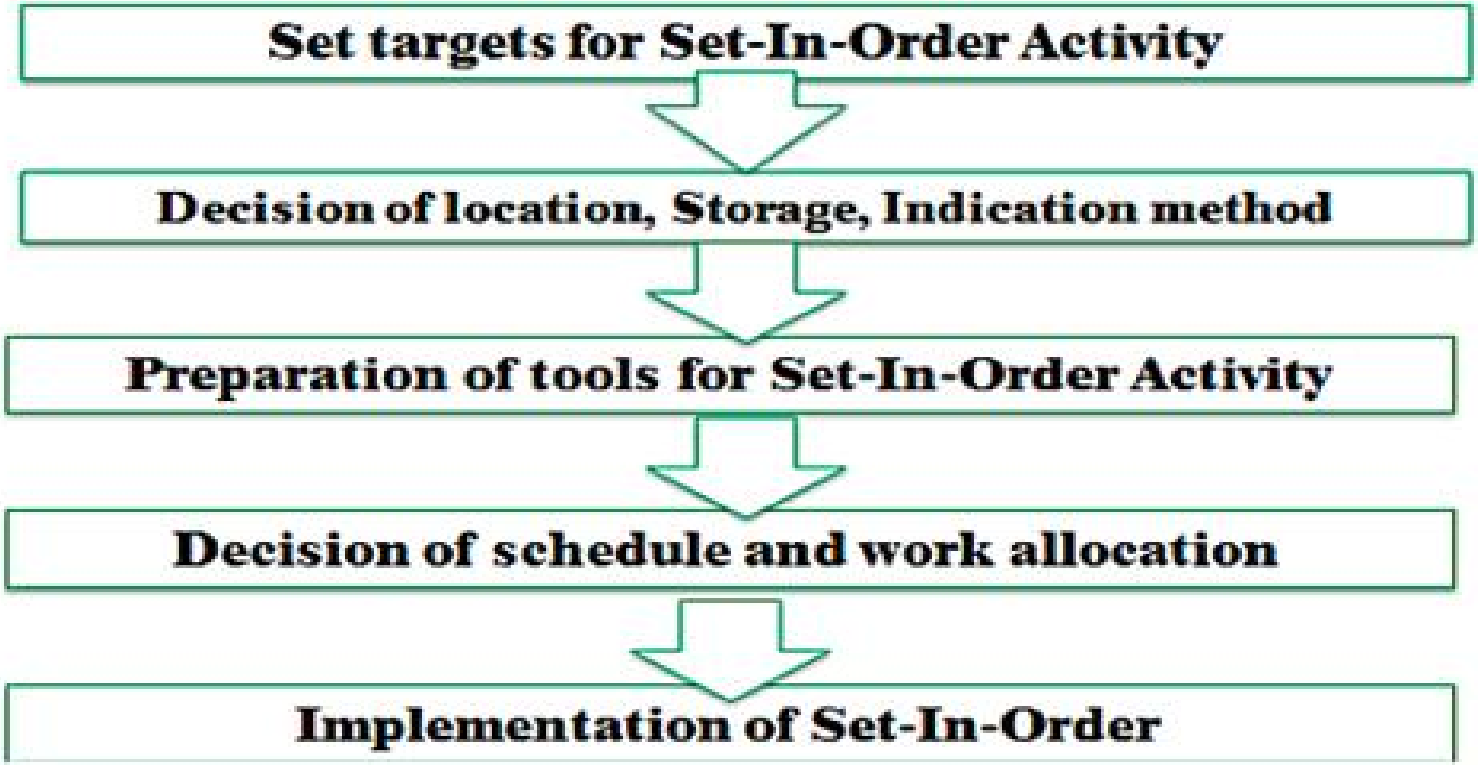


3.3.1 Plan and procedures for set in order

Set in order activity plan sheet (sample)



The Procedures for Set in order is implements follow as



CONT…

The principles that are helpful to eliminate or reduce motions that operators make are:

Principle 1: Start and end each motion with both hands moving at once.

Principle 2: Both arms should move symmetrically and in opposite directions.

Principle 3: Keep trunk motions to a minimum.

Principle 4: Use gravity instead of muscle.

Principle 5: Avoid zigzagging motions and sudden changes in direction.

Principle 6: Move with a steady rhythm.

CONT.

Principle 7: Maintain a comfortable posture with comfortable motions.

Principle 8: Use the feet to operate on and off switches for machines where practical.

Principle 9: Keep materials and tools close and in front

Principle 10: Arrange materials and tools in the order of their use.

Principle 11: Use inexpensive methods for feeding in and sending out materials.

Principle 12: Stand at a proper height for the work to be done.

Principle 13: Make materials and parts easy to pick up.

Principle 14: Make handles and grips in efficient, easy-to-use shapes and positions

Unit Four: Perform shine activities.

This unit is developed to provide you the necessary information regarding the following content coverage and topics:

- Prepare plan.
- Implement shine activities.
- Prepare tools and equipment.
- Shine activity procedures.
- Report performance results
- Conduct regular shining activities

4.1 Definition of Shine

- *Shine means **sweeping floors**, **wiping off machinery***
- *generally making sure that everything in the **factory stays** clean.*
- *shine is ability to **produce quality** products.*
- *it saving labor by finding ways to prevent*
  - ***dirt,***
  - ***dust, and***
  - ***debris from piling up in the workshop.***
- *Shine should be **integrated in to daily maintenance** tasks to combine cleaning checkpoints with maintenance checkpoints.*

Figure 4.1 Workers shinning machines. Figure 4.2 For Workers shinning the floor

CONT..

- *Cleaning is so important because when we doing some inspection. **checking of machinery**, **equipment**, and **work conditions**.*
- ***An operator cleaning** a machine can find many mal-functions.*
- *When a machine is covered with **oil**, **soot**, and **dust**, it is difficult to identify any problems that may be developing.*
- *While **cleaning the machine**, easily **spot oil leakage**, a crack developing on the cover, **or loose nuts** and bolts*

- ***shine*** *is to turn the workplace in to clean,* ***bright place*** *where everyone will* ***enjoy working.***
- *Another key purpose is to* ***keep everything*** *in top condition*
- ***Companies*** *or* ***organizations*** *should avoid the tradition of annual at the end of the year or on* ***spring cleanings****.*
- ***Instead****, cleaning should become a deeply ingrained part of daily work habits,*
- *so that* ***tools****,* ***equipment****, and* ***work areas*** *will be ready for use all the time.*

CONT….

Figure 4.3 Workers cleaning machines

CONT..

Factories or workshops that do not implement the shine pillar suffer the following types of problems:

1. *Poor morale and inefficiency at work.*
2. *Unable to see or find defects in dark and messy workplaces.*
3. *Slipping and injuries can be created due to puddles of oil and water on the floor.*
4. *Frequent breakdown of machines due to insufficient check-ups and maintenances which in turn leads to late deliveries.*

CONT..

6. *Low and unsafe operating machines due to insufficient checkups and* ***maintenance*** *which in turn leads to* ***hazard and accidents.***

7. ***will result*** *due to* ***shaving cuts*** *getting mixed in to production or assembly processes.*

8. ***Chip cuts*** *can get in to people's eyes and create injuries.*

9. ***Low morale*** *due to dirty work environments.*

1.3 Tools and materials used to implement shine

The following are some tools and materials used to implement the third pillar of 5S Shine.

Sponge oil

Broom detergent s

Brush spade

vacuum cleaner bolts

garbage containers floor scrubber cleaning Pads

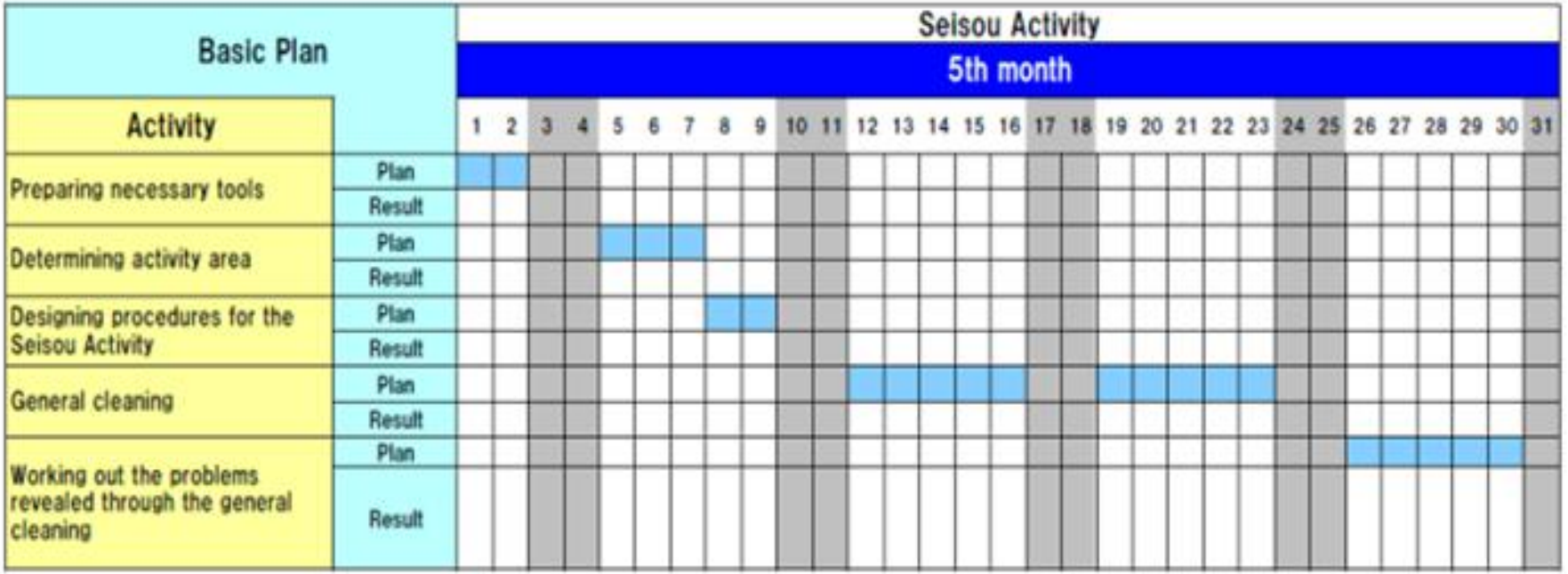
Screws etc…


CLEAR

activities

Shine activities a set of steps and rules that employees learn to maintain with discipline.

Shine activity plan sheet (sample)



Basic Plan		Seisou Activity: 5th month																													
Activity		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Preparing necessary tools	Plan																														
	Result																														
Determining activity area	Plan																														
	Result																														
Designing procedures for the Seisou Activity	Plan																														
	Result																														
General cleaning	Plan																														
	Result																														
Working out the problems revealed through the general cleaning	Plan																														
	Result																														

CONT..

procedures for shine

4.4.1. Implements shine activity procedures.

Step 1: *Determine shine target areas*

Step 2: *Determine Shine Assignments Workplace cleanliness is the responsibility of everyone who works there*

General Cleaning Assignment Sheet

Date of cleaning: Year Month

Activity area		Target place/object	Group	Leader	Tools	Required number of workers
Zone A	Machining-- Group A area	Lathe	Manufacturing	A	Detergent	25
		Press machine			Waste cloth	
	Machining-- Group B area	Floor			Scraper	
		Resting-place			Broom	
		Pathway			mop	
	Machining-- Group C area					
Zone B	Purchasing area					
	Material area					
Zone C	Painting area					
	Processed products discharge area					

CONT..

Example 2:

Regular Cleaning Assignment Sheet

Worksite			Group						5S promoter			
No.	Day	Target place/object	Person in charge						Frequency	Time	Start	Tool
			A	B	C	D	E	F				
1	Mon											
2												
3												
4	Tue											
5												
6												
7	Wed											
8												
9												
10	Thu											
11												
12												
13	Fri											
14												
15												

CONT..

***Step 3**: Determine shine methods Shine activities at daily work.*

ü ***The Determining is shine methods include.***

- *Choosing targets and tools*
- *Performing the five-minute shine*
- *Creating standards for shine procedures*

***Step 4**: prepare tools the cleaning tools should be placed properly or set in order.*

***Step 5**: Start to shine*

CONT…

When implementing the shine procedures, consider the following suggestions:

*Be sure to sweep dirt from floor cracks, **wall corners**, and around pillars.*

Wipe off dust and dirt from walls, windows, and doors.

Be thorough about cleaning dirt, scraps, oil, dust, rust, cutting shavings, sand,

Paint and other foreign matter from all surfaces.

Use cleaning detergents when sweeping is not enough to remove dirt.

4.4.2. INSPECTION

inspection is while implementing shine activities

The following types of equipment problems frequently exist in factories:

- *Oil leaks from the equipment on to the floor.*
- *Machines are so dirty that operators avoid touching them.*
- *Gauge displays and other indicators are too dirty to be read.*
- *Nuts and bolts are either loose or missing.*
- *Motors overheat.*
- *Sparks flare from power cords.*
- *V-belts are loose or broken.*
- *Some machines make strange noises.*

CONT..

Figure 4.6 Daily cleaning or inspection

4.4.3. Inspection steps

Step 1: *Determine inspection targets.*
Step 2: *Assign inspection activities*

Step 3: *Determine inspection methods*

Step 4: *Implement inspection*

Step 5: *Correct equipment problems*

- *Instant Maintenance*
- *Requests of Maintenance*

CONT..

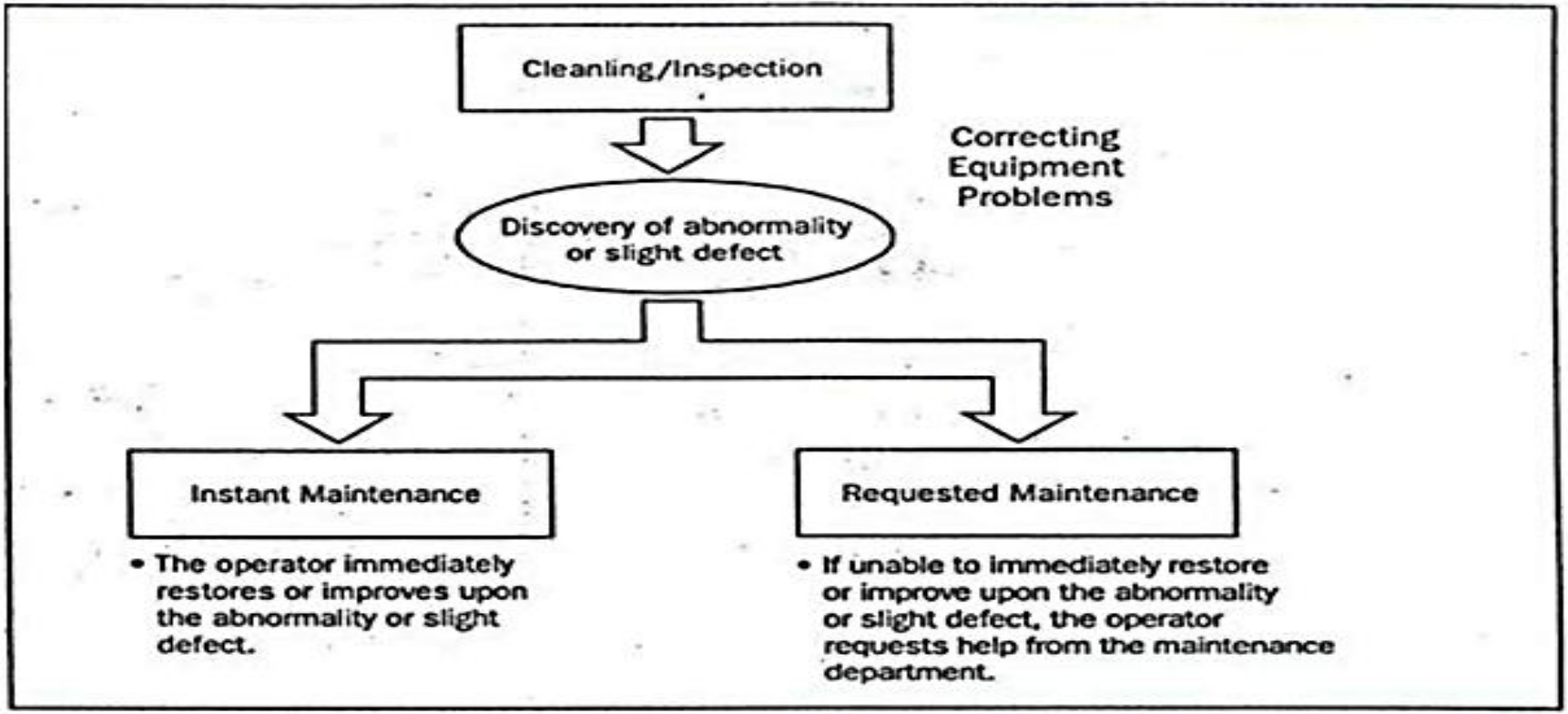


Figure 4.7 Two approaches for solving equipment problems

Unit Five: Standardize 5S

This unit is developed to provide you the necessary information regarding the following content coverage and topics:

- Preparing and using plan.
- Standardizing 5S activities.
- Preparing Tools and techniques.
- Standardize 5S.
- Implementing relevant procedures.
- Standardizing and reporting activities.

ACTIVITIES

- *The last step of 5S workplace organization and standardization is called Sustain or* ***Shitsuke.***
- ***converting*** *them into continuing practices to guarantee continuous improvement.*
- *It addresses describing a new outlook and a standard in place of work.*
- *It is helpful to give employees opportunities to play a dynamic role in the standards development*

Standardization

Basically 5S is a philosophy and an approach of organizing and managing the workplace and

course of work with the commitment of increasing efficiency by reducing waste,

It uses a list of five Japanese words:

- *Seiri (Sort)*
- *Seiton (Set in Order),*
- *Seiso (Shine), Seiketsu (Standardize), and*
- *Shitsuke (Sustain).*

CONT..

Unit Six: Sustain 5S

This unit is developed to provide you the necessary information regarding the following content coverage and topics:

- Plan and sustain 5S activities.
- Implementing techniques and procedures.
- Cleaning up workplace.
- Identifying unlikely Situations.
- Sustaining and reporting activities

CONT..

- *This **unit will discuss** the final phase of 5S the sustain phase.*
- *The **fifth and final S** in the 5S model stands for **SUSTAIN,***
- *this is the most difficult of the stages to implement in practice.*
- *It is difficult **because** this stage circles back on all the prior stages to ensure that they are being appropriately maintained and updated as necessary*

CONT..

The sustain stage therefore has two main objectives:

- ***sustaining*** *the current standard as they were agreed upon by the team .*
- ***Identifying*** *improvements when the* ***standards*** *are no longer relevant or* ***complete****.*
- *By writing short questions on a* ***T-card*** *(a small card in the shape of a T so that it can easily fit a plan board) everyone can perform a mini audit in an area of their choosing.*

The cards can include questions such as;

"Are all materials placed at their specified location?",

"is there something missing that you need to do your job properly or better?",

"are the tools on the shadow board cleaned according to standard?"

CONT..

- *The easiest way to perform such an audit is by linking each T-card to the standards defined in the previous step, leading to one T-card per standard.*
- ***Figure 4** shows an example of a T-card system that is used in a Dutch factory.*
- *On the left, a board with different T-cards is shown on which the mini-audit cards are kept and can be accessed on the shop floor.*
- *the right picture shows an example of one T-card in the hand of an operator, on which the use of a team board is assessed.*

CONT..

check	checklist	
	yes	no
• Device and equipment are cleaned during at activity continuously? • All obsolete, broken or unnecessary equipment not required for current projects are removed from the area or red tagged for removal?		
Equipment/machinery is clearly identified (numbered, named, color-coded, etc.) and placed in a properly identified location. Critical maintenance points are clearly marked.		
All tripping hazards such as electrical wires and equipment cables are removed from all working, standing, and walking areas.		

CONT..

*Generally **Sustaining** is the end result of how well we have performed the previous four S's..*

Process/procedure:

Step 1: -

Create reasonable rules of behavior in the workplace.

Discuss the rules with everyone concerned.

Show rules and standards clearly and attractively using illustrations, photographs and color-coding.

CONT..

Step 2: *- Exhibit before and after 5S photos where everyone will see them.*

Step 3: *- Recognize good practices and good performance.*

Train people to follow good ***housekeeping*** *rules autonomously.*

Enhance autonomous management activities

Maintain the discipline needed to do a good job

Upgrade productivity and quality consciousness

Wash hands after going to the toilet

CONT..

Wash hands before and after meals

Eat and smoke at designated places

Keep workplace always clean and tidy

Wear clean uniform and shoes

Follow safety rules

Put things back in their proper places

Work according to standards

Observe proper office decorum

THANK YOU