# How to Implement Standardised Work

## Value Chain Competitiveness (VCC)

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# How to Implement Standardised Work

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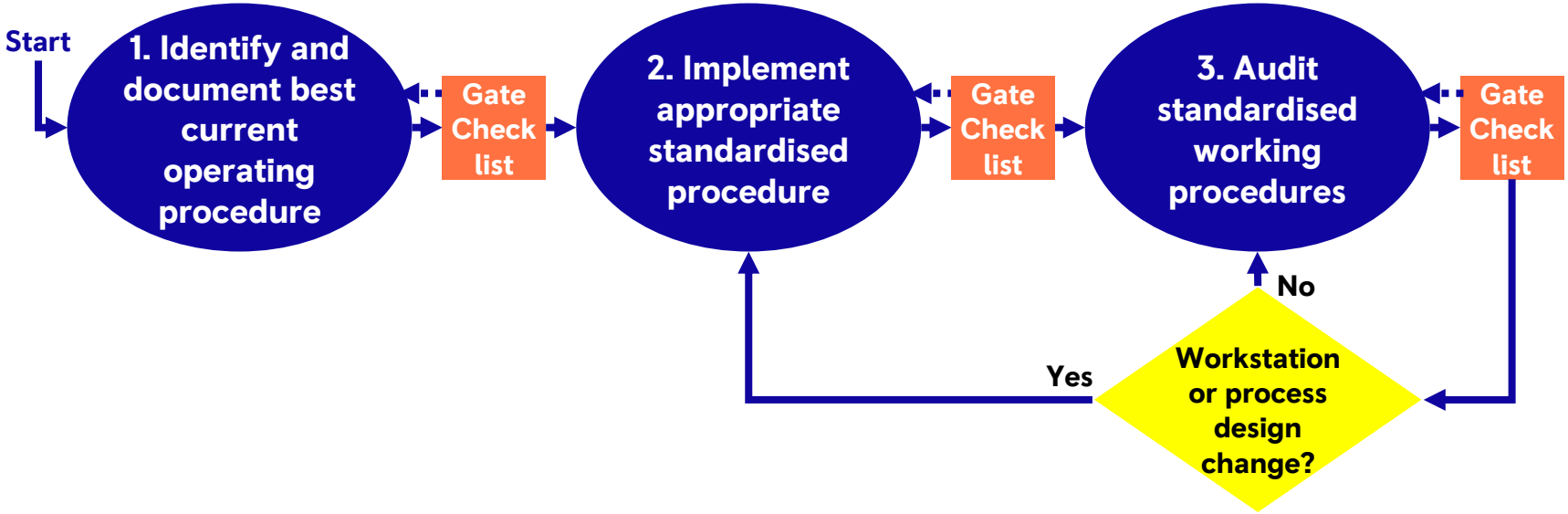
Scope

Objectives & Principles

Prerequisites



# Scope



## This ‘How To’ will enable you to:

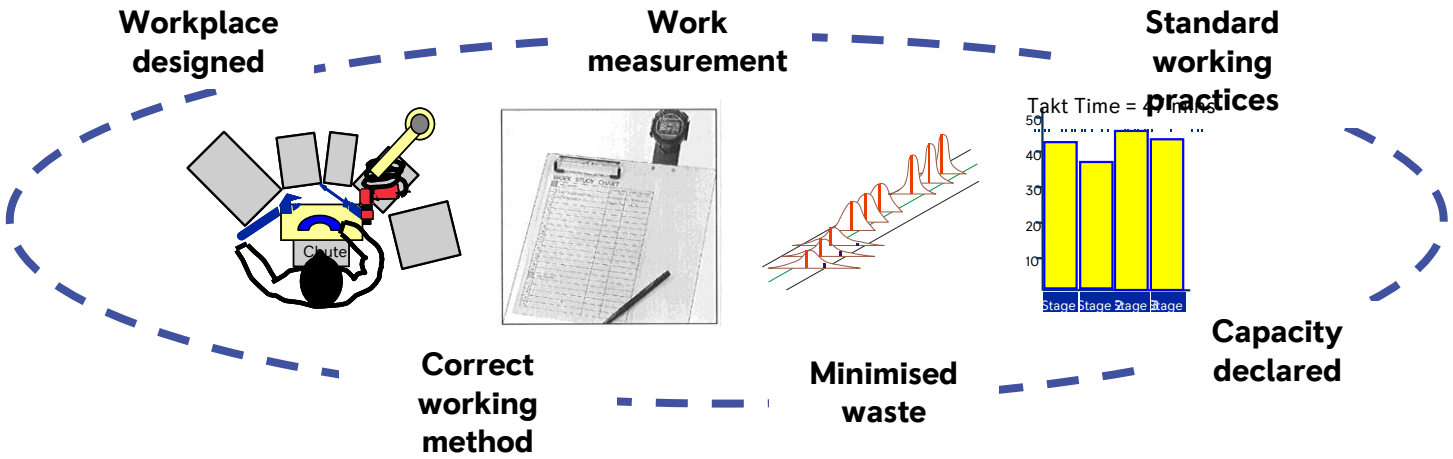
- Create standardised working documents and visual references to minimise variability and use as a basis for continuous improvement
- Update documents as process and workstation design improvements are made
- Ensure adherence to current standards

# Objective and Principles



1. All relevant personnel involved in the development of a single agreed way of working.

2. Standardised working processes documented and maintained, reflecting the safest, easiest and most productive method.

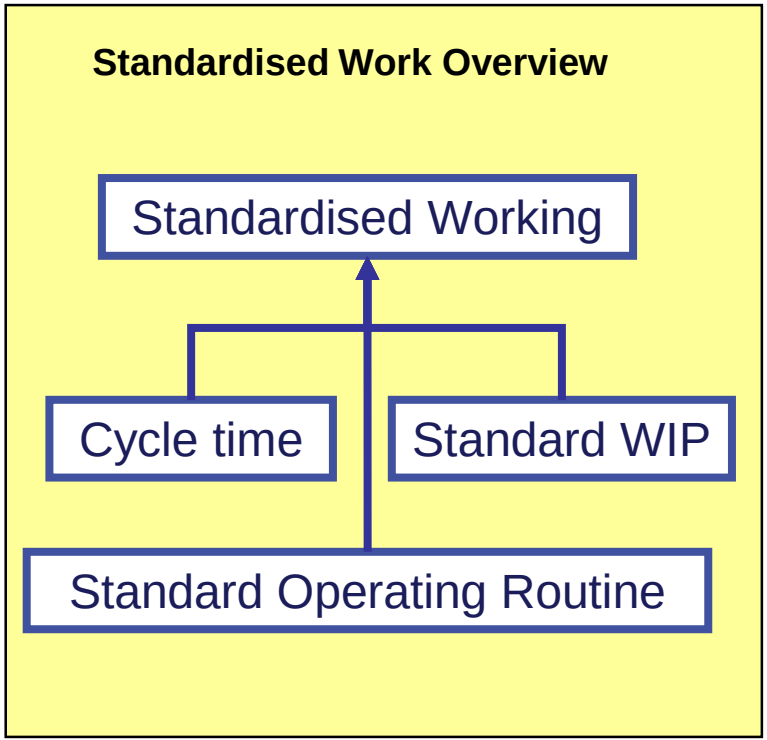



3. Standard processes displayed and used to train all relevant personnel – skills matrices available and maintained.

4. Regular quick and simple audits carried out to check adherence and to identify opportunities for improvement.

# Objective and Principles






- There are three key elements of Standardised Working:
  - A standard operating routine, or work step sequence
  - Standard “work in progress” (WIP) stock
  - A cycle time for each process based on Takt time (the customer required output rate)
- The Standardised Working Procedure has many purposes:
  - A means to reduce process variability
  - To build quality into the process
  - To maximise productivity
  - As a training aid

# Prerequisites



## Knowledge:

- Workstation and cellular layouts
- Understanding of simple machines vs. multi-function
- Work measurement and work content make up

## Data:

- Work Content sheets
- Process Planning Sheet
- Optimised methods data
- Planned products and volumes
- Machines, equipment, services required and availability levels
- Routings / operation sequences and standard times
- Material handling and local storage considerations
- Quality standards and Rework information
- Safety statistics
- Set up times
- Cell Layout sheets

# 1. Identify and document best current operating procedure



## Determine the current operating procedure

Example - workplace organisation SOP

- Understand current level of workplace organisation:
  - what should/should not be there
  - locations, cleanliness, etc.
- Review, where information exists:
  - layout
  - equipment assumptions
- Investigate deviations to existing standards and document their effect and reasons:
  - safety
  - quality
  - productivity, etc.

# 1. Identify and document best current operating procedure

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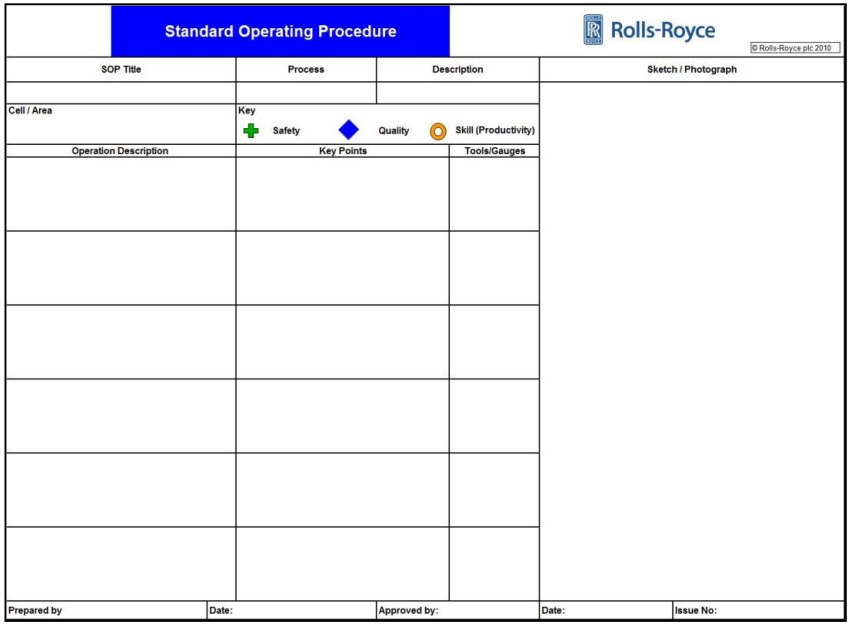
## Re-establish the standard and communicate

SOP example format



Standard Operating Procedure

Rolls-Royce



| SOP Title | Process | Description | Sketch / Photograph |
|---|---|---|---|
| | | | |
| Cell / Area | Key: Safety, Quality, Skill (Productivity) | | |
| Operation Description | Key Points | Tools/Gauges | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
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| Prepared by | Date: | Approved by: | Date: / Issue No: |

- Document the re-established standards on an SOP template to form the basis for standardised working:
  - The standard does not have to be totally efficient – but must ensure safety and quality are not compromised
- Communicate to all parties:
  - Shift briefing
  - One-on-one coaching sessions
- Ensure that all parties conform to the accepted method:
  - Supervisor must audit to confirm adherence

# Gate checklist 1: Identify and document best current operating procedure



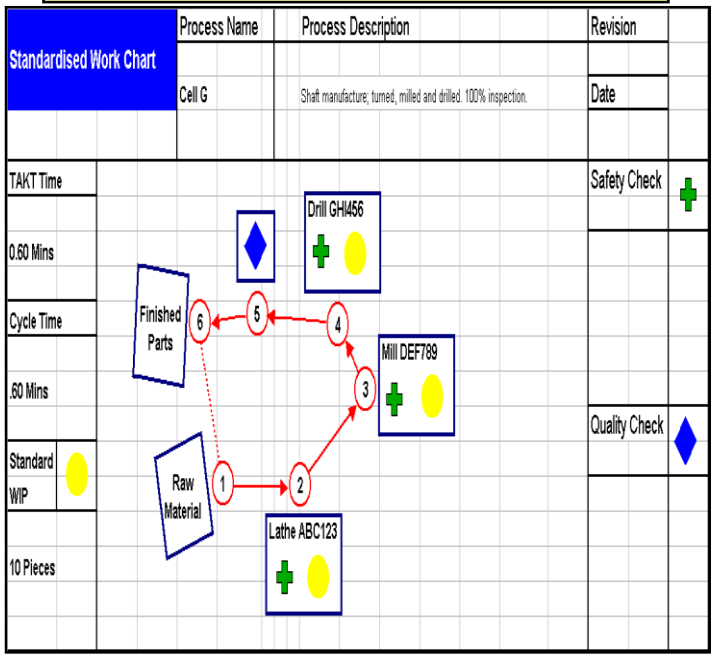
- ☑ Current state examined and best operating method documented
- ☑ Operation Description sheet completed and displayed
- ☑ New method communicated to all relevant personnel

# 2. Implement appropriate standardised procedure



## Develop optimised method and identify critical points for safety, quality and efficiency

Standardised Work Chart Example



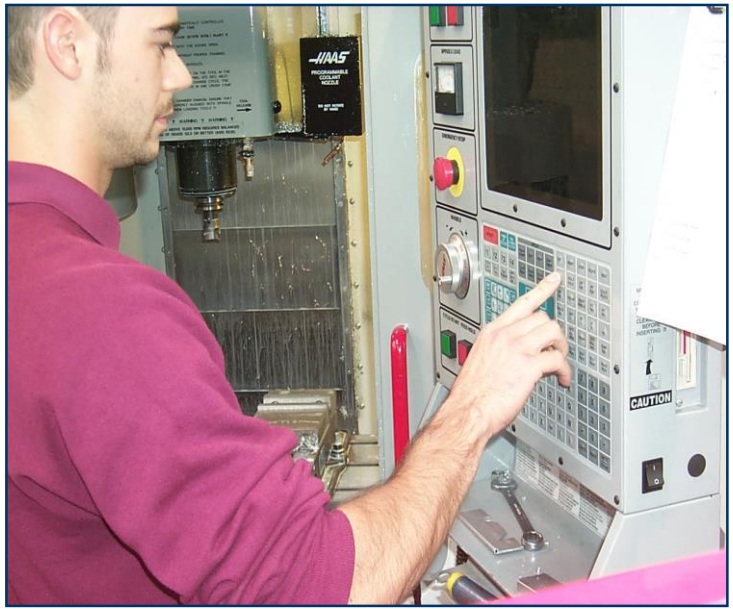

- Identify ‘natural’ groups of work elements:
  - elements that follow each other in a sequence
  - elements which can be combined, avoiding unnecessary handling of materials or components
  - discrete activities or “mini events”
- Identify and highlight safety, quality and productivity key points that protect the operator and product integrity:
  - difficult motions, twists, grasps or bends
  - repetitive motions or actions
  - key quality characteristics or features from drawing or specification

# 2. Implement appropriate standardised procedure



## Trial the new operating procedure

Example – testing a new workplace layout SOP following a setup reduction exercise

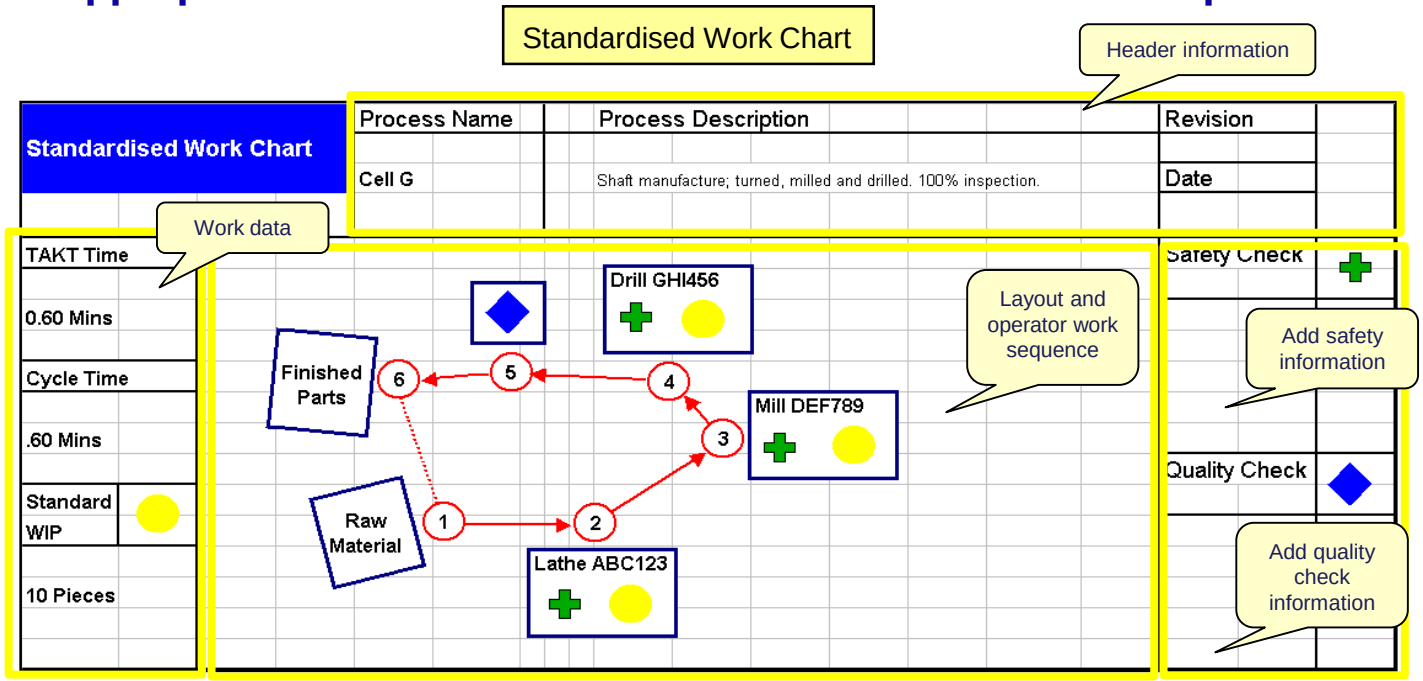



- Explain new layout, key points and relevant change aspects to the users:
  - walk them through the process
  - have relevant people ready to discuss aspects of the operation
- Observe in normal operation:
  - skilled or knowledgeable operator
- Identify potential variability
- Ensure adherence to key points:
  - advise the operator of key points pertaining to Safety and Quality
  - the layout does not have to be optimised for efficiency at this point

# 2. Implement appropriate standardised procedure



## Determine appropriate standardised work document and confirm the procedure



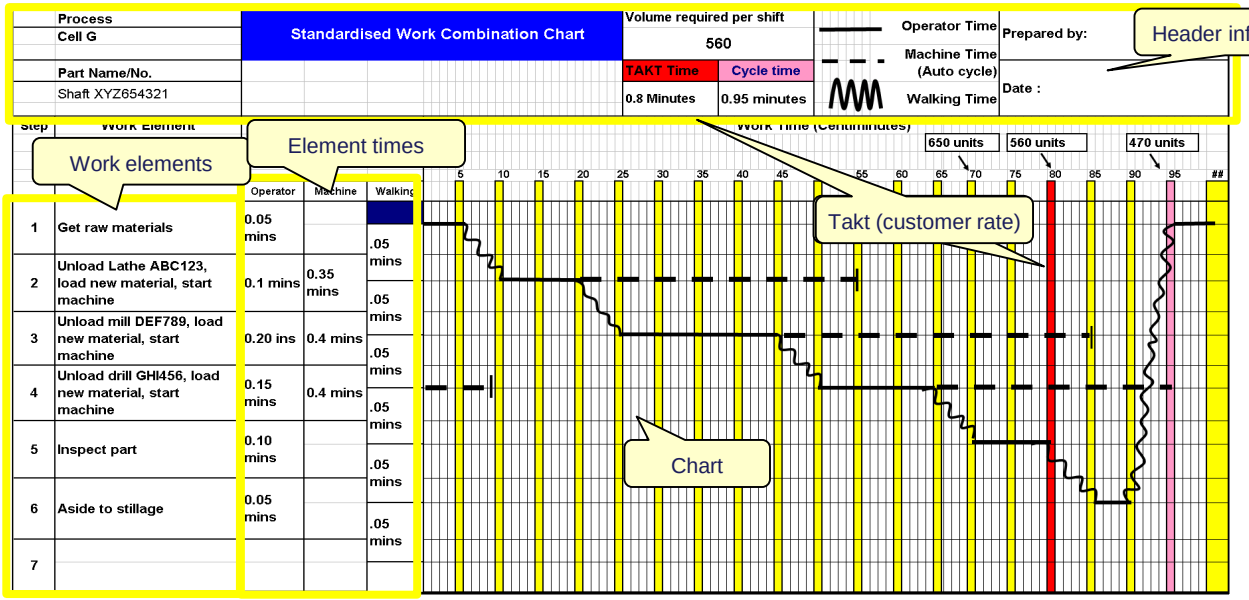

- The Standardised Work Chart highlights safety points, quality points and standard WIP relevant to each stage of the process

# 2. Implement appropriate standardised procedure



## Standardised Work Combination Charts record man / machine interactions

Standardised Work Combination chart example




Standardised Work Combination highlights the cycle times and completion of the sequence of work elements within the required Takt time

$$\text{Takt} = \frac{\text{Loading Time}}{\text{Customer Requirements}}$$

(where Loading Time = Total time – Planned stoppages)

# 2. Implement appropriate standardised procedure

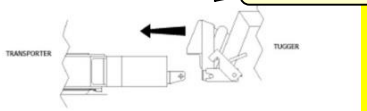
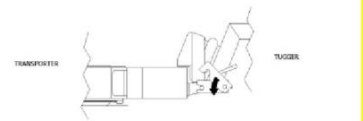
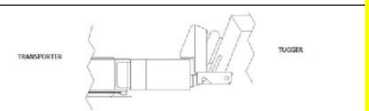


## Standard operating procedures depict the best current method of carrying out a task

Example Standard Operating Procedure

**Standard Operating Procedure**

| | | | | | |
|---|---|---|---|---|---|
| SOP Reference Number : ASOP_E_007 | | Process Name: Connecting the Tuggers To The Airbeds. | | | Process Objective: The safe connection of the Tuggers to the Airbeds. |
| Area/Engine Type: C.D.C | ACR or PTS Number | Op No. or PTS Section + Item No | Skill Point | Quality Point | Health & Safety Point |

| Ref: | Operation Description | Who | When | Key Points/Tools | Sketch / Photo |
|---|---|---|---|---|---|
| 1 | Line up the Tugger with the attachment bracket on the Airbed. Connect the air supply to the Tugger and make sure that the locking lugs on the Tugger are lifted up as shown in the sketch. | Operator | Every Operation | |  |
| 2 | Slowly drive the Tugger toward the Airbed until the locating lugs engage with the attachment bracket on the Airbed. Push the locking lugs down onto the attachment bracket as shown in the sketch. | Operator | Every Operation | |  |
| 3 | The Tugger is now locked onto the Airbed as shown in the sketch. Connect air line and control lines to Airbed. | Operator | Every Operation | |  |

| | | | | |
|---|---|---|---|---|
| Author/Owner: | Katie Travers | Issue Date: 07/12/06 | Issue 1 | Authorised by: Simon Reeve |
| Page 1 of 1 | Retention Category: B | Security Classification: Controlled | | |

Header information

Pictures

Operation step description

Footer information

- Standard operating procedures reflect Key Points relating to: -
  - Safety
  - Quality
  - Productivity
- Position at the machine or work place for easy reference
- Advise if any tooling, gauging or fixtures are required
- Ensure that photos are clear and of good definition

# 2. Implement appropriate standardised procedure



## Implement Standardised Working

Skills Matrix - Example

| | A | B | C | D | E |
|---|---|---|---|---|---|
| **Standard Operation** | Can do with reference to standard operation sheet | Can do without reference to SOS | Completes the standard operation in controlled manner and to required safety level | Can train others in the standard operation | Can improve the standard operation |
| **Specification** | Can build OK specification to specification data | Can build ok specification with occasional reference to spec data | Can build ok specification without reference to specification data | Can train others in specification | Can identify related specification errors |
| **Quality** | Understands the quality standard required | Can achieve quality standard required | Can achieve quality standard and understands acceptable deviations | Can train others in quality standard | Can take corrective quality actions |
| **Speed** | Can complete standard operation in 3x standard time or quicker | Can complete standard operation in 1.3 x standard time or quicker | Can complete standard operation in standard time | Can train others in standard time achievement | Can complete operation in 0.9x standard time or quicker |

- Use a structured training and competency assessment approach. Refer to section subject area trainers or People and Knowledge for more information.
- Create personal development plans
  - Use skills matrix to determine training and development needs for operators
- Identify potential competency gaps in process coverage

# 2. Implement appropriate standardised procedure



## Implement Standardised Working


- Assign operators to standardised working
  - Use skills matrix to assign competent operators to each assignment An established skill profile is required to assess where employee's can work
- Real time attendance is required to allow people deployment for rapid production changes and issues
- Chart located alongside control board

# Gate checklist 2: Implement appropriate standardised procedure



- ☑ Best existing method(s) analysed and optimised for Safety, Quality and Productivity
- ☑ Most appropriate documentation selected to display the optimised method
- ☑ Documentation is completed and displayed
- ☑ Training system in place to establish standardised working
- ☑ Skills monitoring updated and displayed

# 3. Audit standardised working procedures



## Audit standardised working procedures to ensure that key points are being observed

Auditing the operation

- Create audit format and system
- Make it a key part of the First Line Manager or Supervisor role
- Keep the audit quick and simple
- Have a defined frequency but maintain a certain level of “spontaneity”
- Conduct audit
- Leaders audit each others area – not their own
- Pick three stations at random for the audit
- Generate feedback
- Score the audit and show areas for development

# 3. Audit standardised working procedures



## Audit standardised working procedures to ensure that key points are being observed

Extract from an Example Audit Procedure

**Standard Operation Establishment Audit**

| No | | Diagnostic Criterion | Diagnostic Method |
|---|---|---|---|
| 1 | O | All standard operations are written for the three stations | Supervisor to show the audit team his work assignments and the team will select three at random for audit. |
| | ☐ | Not all the standard operations have been written for the selected stations. | |
| | X | No standard operations have been written for the selected stations. | |
| 2 | O | All standard operation sheets have the vital and care points matched to the Quality vital and care points matched to the Quality process chart. All safety points clearly identified. | Audit team physically check the three standard operation sheets.<br>O 2-3 sheets match required criteria<br>☐ 1-2 sheets match required criteria<br>X No sheets match the required criteria |
| | ☐ | | |
| | X | Not all standard operation sheets have the vital and care points matched to the Quality process chart. | |
| 3 | O | The standard operation sheets include all the main steps, key points with clear sketches and explanations | Audit team physically check the three standard operation sheets.<br>O All sheets match required criteria<br>☐ 1-2 sheets match required criteria<br>X No sheets match the required criteria |
| | ☐ | The standard operation sheets include all the main steps, key points. | |
| | X | The standard operation sheets have some of the main steps, key points missing. | |
| 4 | O | All sheets include torque, settings, adjustments and specifications required. | Audit team physically check the three standard operation sheets.<br>O All sheets match required criteria<br>☐ 1-2 sheets match required criteria<br>X No sheets match the required criteria |
| | ☐ | Not all the required detail is included in the standard operation sheet. | |
| | X | None of the required detail is included in the standard operation. | |

- Create audit format and system
  - Make it a key part of the First Line Manager or Supervisor role
  - Keep the audit quick and simple
  - Have a defined frequency but maintain a certain level of “spontaneity”
- Conduct audit
  - Leaders audit each others area – not their own
  - Pick three stations at random for the audit
- Generate feedback
  - Score the audit and show areas for development

# 3. Audit standardised working procedures



## Identify Improvement possibilities

- Review the audit results and clarify any deviations
- Reasons for method deviation
- Reasons for documentation being out of date or unavailable
- Reasons for operation and key points not being understood
- Set the action plan for improvement
- Training requirements
- Improvements in communication; briefing process and displays

# Gate checklist 3: Audit standardised working procedures

BACK Map

- ☑ Audit format agreed and understood by user groups
- ☑ Audit procedure and frequency is defined and audits being conducted by relevant personnel
- ☑ Audit results used to generate improvements in Safety, Quality and Productivity