



**Australian Government**

**Department of Education, Employment and Workplace Relations**

# **MSS403023A Monitor a levelled pull system of operations**

**Release: 1**

## **MSS403023A Monitor a levelled pull system of operations**

### **Modification History**

New unit, superseding MSACMT423A Monitor a manufacturing levelled pull system\* - Not equivalent

\* Prerequisite *MSACMT280A- Undertake root cause analysis* - removed

### **Unit Descriptor**

This unit of competency covers the skills and knowledge required to monitor the operation of a pull system in a work area and recommend improvements.

### **Application of the Unit**

This unit covers the skills needed to monitor a pull operations system in a work area or team operation although knowledge of the overall pull system in the enterprise is also required. The unit is targeted at individuals, such as team leaders and senior operators, who have an overview of the work area or team operation and the ability to implement corrective action in the event of discrepancies.

The unit covers the skills needed to monitor daily working of the system, identify problems and take appropriate action on problems. The operations system may be a total demand pull system or it may be a mixed push/pull system.

This unit primarily requires the application of skills associated with using information and problem solving skills to monitor pull system and analyse discrepancies. It also requires skills in initiative and enterprise, and planning and organising to determine and act on opportunities for improvement. Aspects of self-management and learning are required to ensure own ability to improve systems.

The unit is based on manufacturing principles but can be contextualised for other types of organisations. For pull systems in an office environment the unit MSS405033A Optimise office systems to deliver to customer demand, should be used.

### **Licensing/Regulatory Information**

Not applicable.

### **Pre-Requisites**

Not applicable.

## Employability Skills Information

This unit contains employability skills.

### Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.

Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

### Elements and Performance Criteria

1	Monitor the pull system	1.1	Identify the pacemaker process
		1.2	Identify rate of production set by the pull system
		1.3	Determine actual rate of production at key parts of the process
		1.4	Identify types of inventories within process
		1.5	Compare actual inventories with planned inventories
		1.6	Note discrepancies between actual and planned rates and inventories
2	Take corrective action	2.1	Determine causes of discrepancies
		2.2	Determine action required to rectify causes of discrepancies
		2.3	Take appropriate action in conjunction with relevant stakeholders
3	Test/improve the pull system	3.1	Identify recurrent discrepancies
		3.2	Determine causes of discrepancies
		3.3	Determine action required to rectify cause

- 3.4 Identify unnecessary levels of inventories
- 3.5 Discuss impacts of reduced inventories with relevant stakeholders
- 3.6 Take/initiate appropriate action to rectify recurrent discrepancies/reduce levels of unnecessary inventory
- 3.7 Monitor the system to determine the effects of changes

## Required Skills and Knowledge

This section describes the skills and knowledge required for this unit.

### Required skills

Required skills include:

- identifying order process used by the team or in work area
- analysing processes and cycle times and determining the pacemaker process
- distinguishing between pacemaker process and bottlenecks
- distinguishing between cycle stock, buffer stock and safety stock
- leading processes to identify causes of discrepancies
- considering a range of appropriate action in the event of discrepancy, including considering the appropriateness of changes to:
  - production processes
  - cycle times
  - equipment and set-up
  - work organisation
  - training and skill development of employees
  - the delegations and authority of the team members or employees in work area and team or work group leader to influence the actions required, for example:
    - actions which can be sanctioned by the individual team member
    - actions which can be sanctioned by the team or work group leader
    - actions requiring management sanction
    - actions requiring expert intervention

### Required knowledge

Required knowledge includes:

- operations and equipment used in the enterprise
- capabilities of equipment
- abilities and skills of personnel
- ultimate customer order process and relationship to demand pull for team or area
- inventories held by enterprise
- stakeholders relevant to team or area
- a range of possible actions available to address discrepancies

## Evidence Guide

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

<p><b>Critical aspects for assessment and evidence required to demonstrate competency in this unit</b></p>	<p>A person who demonstrates competency in this unit must be able to provide evidence of the ability to:</p> <ul style="list-style-type: none"> <li>• identify the demand pull system used in their area or team</li> <li>• identify pacemaker process</li> <li>• identify types of inventories used by team or area</li> <li>• determine appropriate actions to rectify discrepancies between actual and planned rates of production</li> <li>• implement and monitor changes to rectify discrepancies.</li> </ul>
<p><b>Context of and specific resources for assessment</b></p>	<p>Assessment of performance must be undertaken in a workplace using or implementing one or more competitive systems and practices.</p> <p>Access may be required to:</p> <ul style="list-style-type: none"> <li>• workplace procedures and plans relevant to work area</li> <li>• specifications and documentation relating to planned, currently being implemented, or implemented changes to work processes and procedures relevant to the assessee</li> <li>• documentation and information in relation to production, waste, overheads and hazard control/management</li> <li>• reports from supervisors/managers</li> <li>• case studies and scenarios to assess responses to contingencies.</li> </ul>
<p><b>Method of assessment</b></p>	<p>A holistic approach should be taken to the assessment.</p> <p>Competence in this unit may be assessed by using a combination of the following to generate evidence:</p> <ul style="list-style-type: none"> <li>• demonstration in the workplace</li> <li>• workplace projects</li> <li>• suitable simulation</li> <li>• case studies/scenarios (particularly for assessment of contingencies, improvement scenarios, and so on)</li> <li>• targeted questioning</li> <li>• reports from supervisors, peers and colleagues (third-party reports)</li> <li>• portfolio of evidence</li> </ul>

	<p>In all cases it is expected that practical assessment will be combined with targeted questioning to assess underpinning knowledge.</p> <p>Where applicable, reasonable adjustment must be made to work environments and training situations to accommodate ethnicity, age, gender, demographics and disability.</p>
<b>Guidance information for assessment</b>	<p>Assessment processes and techniques must be culturally appropriate and appropriate to the oracy, language and literacy capacity of the assessee and the work being performed.</p>

## Range Statement

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

<b>Competitive systems and practices</b>	<p>Competitive systems and practices may include, but are not limited to:</p> <ul style="list-style-type: none"> <li>• lean operations</li> <li>• agile operations</li> <li>• preventative and predictive maintenance approaches</li> <li>• monitoring and data gathering systems, such as Systems Control and Data Acquisition (SCADA) software, Enterprise Resource Planning (ERP) systems, Materials Resource Planning (MRP) and proprietary systems</li> <li>• statistical process control systems, including six sigma and three sigma</li> <li>• Just in Time (JIT), kanban and other pull-related operations control systems</li> <li>• supply, value, and demand chain monitoring and analysis</li> <li>• 5S</li> <li>• continuous improvement (kaizen)</li> <li>• breakthrough improvement (kaizen blitz)</li> <li>• cause/effect diagrams</li> <li>• overall equipment effectiveness (OEE)</li> </ul>
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	<ul style="list-style-type: none"> <li>• takt time</li> <li>• process mapping</li> <li>• problem solving</li> <li>• run charts</li> <li>• standard procedures</li> <li>• current reality tree</li> </ul> <p>Competitive systems and practices should be interpreted so as to take into account:</p> <ul style="list-style-type: none"> <li>• the stage of implementation of competitive systems and practices</li> <li>• the size of the enterprise</li> <li>• the work organisation, culture, regulatory environment and the industry sector</li> </ul>
<b>Pull system</b>	<p>A pull system in a operations system is one where:</p> <ul style="list-style-type: none"> <li>• operations are done to order and not for holding large inventories of parts and completed stock</li> <li>• work flow is done according to demand pull from the next work stage</li> <li>• operations are in response to customer demand</li> </ul> <p>The pull system must be flexible and have cycle times set by parameters calculated from customer demand indicators</p>
<b>Production</b>	<p>Production in this unit is primarily used in a manufacturing sense and may include:</p> <ul style="list-style-type: none"> <li>• repetitive production of items (e.g. components and whitegoods)</li> <li>• continuous or batch production (e.g. hydrocarbons, chemicals and cement)</li> </ul> <p>The term production may also be contextualised to allow for the unit to be applied to divisions or organisations supplying supporting services (e.g. transport and logistics, and utilities)</p>
<b>Pacemaker</b>	<p>Pacemaker processes refer to:</p> <ul style="list-style-type: none"> <li>• process or scheduling points which sets the pace for the flow of operations through the enterprise. It needs to be distinguished from processes which are temporarily setting the pace for other processes because of faults, breakdowns, inefficiencies, poor design and/or waste. These should be categorised as bottlenecks and made targets for corrective action.</li> </ul>



<b>Types of inventories</b>	Inventories within process may include: <ul style="list-style-type: none"> <li>• cycle stock which reflects the replenishment quantity and frequency</li> <li>• buffer stock to meet demand variability and forecast errors</li> <li>• safety stock required to guard against quality and delivery failures upstream</li> </ul>
<b>Determine cause</b>	Determine cause may include the individual/team leader: <ul style="list-style-type: none"> <li>• analysing cause themselves</li> <li>• identifying that expert analysis is required and requesting this analysis</li> <li>• setting up an improvement team to analyse cause</li> <li>• identifying that the cause of the discrepancy is upstream or downstream of the team or area</li> </ul>
<b>Action required</b>	Action required includes: <ul style="list-style-type: none"> <li>• actions to align actual and planned rates of production and inventories. The actions will vary and will depend on assessment of the discrepancy and the nature of the operation</li> </ul>
<b>Stakeholders</b>	Stakeholders include: <ul style="list-style-type: none"> <li>• managers</li> <li>• supervisors</li> <li>• employees</li> <li>• shareholders</li> <li>• occupational health and safety (OHS) mechanisms/representatives</li> <li>• industrial relations mechanisms/representatives</li> <li>• suppliers</li> <li>• customers</li> <li>• service providers</li> </ul>

## Unit Sector(s)

Unit sector

Competitive systems and practices

## **Custom Content Section**

Not applicable.