SEMBIT3-11 - SQA Unit Code F9HT 04
Applying set-up reduction techniques

Overview

This unit covers the competences required for applying set-up reduction techniques. It involves applying the principles and processes of set-up reduction to a machine or process set-up, changeover, clean- down or turnaround activity that is a bottleneck or constraint which affects the process, such as capacity, flexibility, lead time, inventory or other business performance measure.

You will be expected to identify and confirm where the problems occur within the set-up process, and to determine where improvements can be made. You will need to set suitable quantifiable objectives and targets against which the improvements are to be made. The activities will require you to co-ordinate and carry out set-up reduction activities on different machines or processes, and to make improvements to the current set-up, which will include such things as reduced set-up time, improved safety, improved quality and improved work practice.

You will also be required to produce changes to standard operating procedures for the new set-up, which include all of the new steps to be carried out, the time required for each step, differentiation between internal and external steps, standard equipment and its location (e.g. cutting tools, clamps, hand tools, inspection equipment) and information required for a quick set-up, and its location (e.g. CNC programs, drawings and manufacturing instructions).

Your responsibilities will require you to comply with organisational policy and procedures for the activities undertaken, and to report any problems that you cannot solve, or that are outside your responsibility, to the relevant authority. You will be expected to take full responsibility for your own actions within the activity, and for the quality and accuracy of the work that you carry out.

Your underpinning knowledge will provide a good understanding of your work, and will provide an informed approach to the techniques and procedures used. You will need to understand the principles and procedures of set-up reduction, and its application, in adequate depth to provide a sound basis for carrying out the activities to the required criteria.

Applying safe working practices will be a key issue throughout.

SEMBIT3-11 - SQA Unit Code F9HT 04
Applying set-up reduction techniques

Performance criteria

You must be able to:

- P1 work safely at all times, complying with health and safety and other relevant regulations and guidelines
- P2 identify a machine or process set-up activity that is a bottleneck or constraint which affects productivity
- P3 co-ordinate and carry out the set-up reduction activity on the chosen machine or process, using the appropriate techniques
- P4 identify and confirm problems or conditions within the current set-up, where improvements can be made
- P5 define quantifiable objectives/targets for improvements to the chosen set-up
- P6 co-ordinate improvements to the current set-up, to meet the identified objectives and targets
- P7 produce changes to standard operating procedures (SOPs) or other approved documentation that will sustain the improvements made to the set-up requirements

SEMBIT3-11 - SQA Unit Code F9HT 04
Applying set-up reduction techniques

Knowledge and understanding

You need to know and understand:

K1 the health and safety requirements of the area in which you are carrying out the set-up reduction activities
K2 how a machine or process is selected for a set-up reduction activity
K3 from whom authority is gained for the release of people and resources for the set-up reduction activity
K4 the application of the Deming cycle (plan, do, check, act)
K5 how to structure and run a set-up reduction activity
K6 how improvements to the set-up can be achieved
K7 how to evaluate improvement ideas and select those that will give most benefit for the least spend
K8 how to set quantifiable targets and objectives for the improved set-up
K9 how to correlate information to create or update standard operating procedures (SOPs) or other approved documentation for the revised set-up
K10 how to distinguish between internal and external activities with reference to set-up
K11 problem solving and the application of root cause analysis
K12 the difference between `motion' and `work'
K13 what constitutes a value adding and non-value adding activity?
K14 the extent of your own authority, and to whom you should report in the event of problems that you cannot resolve

Additional Information

Scope/range related to performance criteria

You must be able to:

1. make improvements to the current set-up which cover **three** of the following:
   - 1.1. reduced set-up time
   - 1.2. improved safety
   - 1.3. improved quality
   - 1.4. improved work practice
   - 1.5. improved regulatory compliance
   - 1.6. reduced cost
2. identify and apply improvements to the new set-up, which covers **three** of the following:
   - 2.1. all of the new steps, and the time required for each step
   - 2.2. differentiation between internal and external steps
   - 2.3. standard equipment and its location (eg, cutting tools, clamps, hand tools, inspection equipment)
   - 2.4. information required for a quick set-up, and its location (such as CNC programs, drawings and manufacturing instructions)
   - 2.5. methods and standards
   - 2.6. documentation for co-ordination control

SEMBIT3-11 - SQA Unit Code F9HT 04
Applying set-up reduction techniques

Developed by	SEMTA
Version number	1
Date approved	December 2008
Indicative review date	December 2013
Validity	Current
Status	Original
Originating organisation	SEMTA
Original URN	11
Relevant occupations	Business, Administration and Law; Associate Professionals and Technical Occupations; Business management; Business and Finance Associate Professionals
Suite	Business Improvement Techniques Suite 3 2008
Key words	Engineering, business, improvement, techniques, applying, set-up reduction, constraints, improvements