
Overview

This unit is about evaluating and adjusting manual operations to optimise production. It covers non-routine adjustments made to manual operations to improve quality of output and/or rate of production. It is suitable for process industries' personnel who work within an organisational context which requires them to achieve clearly defined specifications. The work is such that the individual would be expected to clarify and resolve processing issues either as the process operator, quality technician or in a 'trouble shooting' role.

Examples of production operations that might be involved include:

1. Laminating
2. Assembly
3. Welding/bonding
4. Fabrication
5. Re-treading tyres

This unit deals with the following:

6. Monitor and evaluate manual operations
7. Adjust manual operations to optimise production

During this work you must take account of the relevant worksite operational requirements, procedures and safe working practices as they apply to you.

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Performance criteria

- You must be able to:*
- P1 Work safely at all times, complying with health and safety, environmental and other relevant **regulations, legislations and guidelines**
 - P2 **Monitor** manual operations over a period of time using appropriate **sources** of information
 - P3 Identify **variances** over a period of time sufficient to identify patterns and levels of **variance**
 - P4 Analyse output patterns against **specifications** to clarify the nature of the problem
 - P5 Investigate the problem thoroughly to identify the likely **cause** of the problem
 - P6 Promptly report any equipment malfunction or failure to the appropriate person
 - P7 Carry out prescribed quality checks to assess deviations from the product specification
 - P8 Seek advice from **others** when you are uncertain about the cause of deviations or the appropriate corrective actions
 - P9 Record all test results and assessments in sufficient detail to enable decisions to be made by interested parties
 - P10 Identify the cause and effects of deviations from **specification**
 - P11 Adjust the operations in the correct sequence and at the appropriate stage in the process to achieve the required **specifications**
 - P12 Adjust the operation as necessary, to optimise the efficiency and effectiveness of the production process
 - P13 Record any changes made to the operations and take appropriate **action** to amend the processing specification
 - P14 Record information about the nature and effects of deviations, and the remedial **actions** taken, in the required format
 - P15 Pass information to the appropriate people within the specified timescale in accordance with organisational procedures

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Knowledge and understanding

You need to know and understand:

- K1 The specific organisational health, safety and environmental policies and other **regulations, legislation and guidelines** for your work area and why they are important
- K2 The different types potential **hazards**, how they can be minimised and the action to take in the event of a work area hazard
- K3 What the workplace procedures are for reporting potential **hazards** you are unable to deal with
- K4 When, which and how personal protective equipment should be used
- K5 The importance of checking equipment, how to do this and to whom you should report defects
- K6 What risks are associated with the working environment
- K7 What risk control measures are in place and how to comply with them
- K8 Where to find **work procedures** and production requirements and how to interpret these
- K9 What sort of documents are kept and how to complete them and the implications of not maintaining them accurately and legible
- K10 The importance of disposing of waste **materials** safely and how to do this
- K11 The sorts of **problems** that might occur and who you should report these to
- K12 The purpose and importance of **quality assurance** checks, and when and how these should be carried out
- K13 What the results of the quality checks will tell you about the cause and effects of deviations from the product specification
- K14 What processing operations are required to produce the product
- K15 The sequence of processing operations required
- K16 The importance of monitoring operations to identify variances and how and when this should be done
- K17 How to collect and collate data from different **sources**
- K18 The importance of monitoring operations over a period of time and the implications of reaching conclusions on data collected on a single occasion
- K19 What length of monitoring time is appropriate for the process operations
- K20 How to analyse output against specifications
- K21 How to differentiate between variances caused by equipment malfunction or failure, those caused by non-conforming materials and those caused by processing problems
- K22 Who to consult when you are uncertain of the cause and effects of deviations from specification
- K23 How to present test results and assessments to facilitate decision making about the appropriate corrective actions to take

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- K24 The importance of adjusting operations to achieve the required specifications and how to do this
- K25 The safety limits that apply to different processing operations and the risks associated with making adjustments outside of these limits
- K26 The importance of following the prescribed sequence for adjusting operations and the implications of making adjustments out of sequence
- K27 The circumstances when processing specifications need to be amended to show changes made to processing operations and the organisational procedures for doing this
- K28 What safe working practices apply to your own job role in evaluating and adjusting manual processing operations
- K29 What safe operating procedures apply to the different processing equipment used in manual operations

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Additional Information

Glossary

1. **Documentation:** Records, analysis sheets, report sheets, log book
2. **Regulations/Legislation/Guidelines:** organisational procedures and guidelines, Work place Policies, Health, safety and environmental requirements and regulations relevant to the work and work area being carried out
3. **Problems:** those you can deal with directly, those which require the assistance of another operator to solve, those which you need to report and seek specialist assistance, those with an obvious probable cause, those with two or more possible causes, those with no obvious cause
4. **Hazards:** and control measures: waste, spillage, obstructions use of tools, hazardous materials. personal protective equipment, equipment, lifting and moving items
5. **Materials:** residual materials that can be recycled, waste materials for disposal
6. **Operating Procedures/Work Procedures:** Work instructions, Method Statements, Standard Operating Procedures
7. **Monitor:** equipment performance, materials performance, quality of output, quantity of output
8. **Sources:** visual inspections of products, equipment monitoring devices, test outcomes
9. **Variance:** quality of output, production rate
10. **Cause(s)** of variances: equipment malfunction or failure, non-conforming materials, processing problems
11. **Others:** co-workers, supervisor/line manager, technical specialists
12. **Specification(s):** product, production
13. **Action(s):** reporting changes to the person responsible for maintaining specifications, making changes to specifications within the limits of your authority
14. **Quality assurance** that will be determined by: The nature of the equipment being maintained, company policy, company national or international standards.

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