



Australian Government

MEA511 Operate and maintain sewing machines and overlockers

Release: 1

MEA511 Operate and maintain sewing machines and overlockers

Modification History

Release 1 - New unit of competency

Application

This unit of competency requires application of skills and knowledge relating to the operation and maintenance of sewing machines and overlockers in the maintenance of items of aircraft life support equipment and in the fabrication and maintenance of items of aircraft soft furnishings.

The unit is part of the Aeroskills Life Support and Furnishing Certificate III and IV training pathways. It is used in workplaces that operate under the airworthiness regulatory systems of the Australian Defence Force (ADF) and the Civil Aviation Safety Authority (CASA).

Pre-requisite Unit

Competency Field

Aircraft life support

Unit Sector

Elements and Performance Criteria

Elements describe the essential outcomes.	Performance criteria describe the performance needed to demonstrate achievement of the element.
1. Plan work and prepare work area	1.1 Work is planned to maximise safety and productivity
	1.2 Work area is cleared and cleaned to provide work table free of obstructions and clear access to sewing/overlocking machine
	1.3 Safe working environment is established
	1.4 Suitable electrical power outlets, if required, are identified
	1.5 Assistance to move and position work piece is obtained if necessary
2. Select thread and	2.1 Type of material to be sewn, type of stitch to be used and nature of duty to which finished product is to be

needle		subjected is determined to assist in selection of thread and needle
	2.2	Suitable thread is selected with regard to thread material, diameter of thread, tensile strength and colour
	2.3	Appropriate needle is chosen to suit type of thread, type of stitch and material to be sewn
3. Set up machine	3.1	Machine is examined for damage, missing components or other defects
	3.2	Power cords are examined for knots, unsafe routing and insulation damage
	3.3	Machine is safely connected to power and correct 'power-on' procedure is followed
	3.4	Condition of needle is checked to ensure it is sharp, clean and free from rust and dirt
	3.5	Needle is fitted to machine
	3.6	Machine is threaded and thread is checked for free travel from spool
	3.7	Thread tension and other machine settings are checked and adjusted using test pieces if necessary
4. Operate machine	4.1	Work piece is correctly aligned to machine
	4.2	Machine is operated in accordance with standard procedures while observing all relevant work health and safety (WHS) requirements
	4.3	Work piece is appropriately fed into machine
	4.4	Performance of machine is monitored through regular checking of thread tension and other settings and inspection of stitching in finished product
5. Inspection, quality, labelling and documentation	5.1	Work piece is removed from machine using assistance if necessary
	5.2	Completed work is inspected to verify that it meets applicable technical instructions
	5.3	Any areas in need of rework or rectification are identified and marked

		5.4	Rework is performed or other appropriate action arranged
		5.5	Completed product is labelled or tagged and any necessary documentation completed in accordance with standard enterprise procedures
6.	Clean up and maintain equipment	6.1	Machine is switched off using correct 'power off' procedures
		6.2	Machine is cleaned and programmed maintenance, which is within the province of the operator, is performed in accordance with enterprise requirements and manufacturer's specifications while observing all relevant WHS requirements, including the use of material safety data sheets (MSDS)
		6.3	Worn or damaged needles are disposed of in accordance with safe working practice
		6.4	Supervisor is notified of any abnormal conditions requiring maintenance or repair

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Range of Conditions

This field allows for different work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included.

Procedures and requirements include:

Working environment includes:

- Industry standard procedures specified by manufacturers, regulatory authorities or the enterprise
- Work organisation procedures and practices relating to the sewing/overlocking of materials
- Safe use of sewing/overlocking machines and relevant hand and power tools
- Storage, safe handling and disposal of needles, threads and materials associated with sewing/overlocking
- Reporting actions which include verbal and written communication in accordance with enterprise policies

	and procedures
	• Oral, written or visual communication, including completion of standard forms, interpretation of information and instructions associated with workplace activities, and recording and reporting of work outcomes • Procedures for safety, environmental protection, housekeeping and quality as specified by equipment and materials manufacturers, regulatory authorities and the enterprise
Standard procedures are found in any or all of:	• Commonwealth/state/territory WHS legislation, regulations and codes • Australian Standards • equipment manufacturers' specifications and procedures • Industry practices • Safety manual • Maintenance schedules • Work instructions • Maintenance organisation manual • MSDS • Defence regulations and instructions • Civil Aviation Safety Regulations (CASRs) and advisory material • Standing instructions
Technical instructions include:	• Aircraft operational requirements • Job orders • Manufacturers' specifications • Maintenance manuals • Modification instructions • Technical drawings

Unit Mapping Information

Release 1 – equivalent to MEA511A Operate and maintain sewing machines and overlockers

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=ce216c9c-04d5-4b3b-9bcf-4e81d0950371>

Assessment Requirements for MEA511 Operate and maintain sewing machines and overlockers

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Performance Evidence

Evidence required to demonstrate competency in this unit must be relevant to and satisfy all of the requirements of the elements and performance criteria under the specified conditions of assessment, and must include:

- applying relevant WHS procedures
- interpreting and applying work instructions and established procedures
- planning and coordinating work activities
- locating and interpreting technical information about machines and materials used in aircraft life support and furnishing
- selecting appropriate needle and thread
- identifying unsatisfactory machine performance
- using relevant hand and power tools
- using relevant chemicals and cleaning agents and dispose of waste products
- maintaining machines and work area
- applying all relevant safety practices
- communicating effectively within the workplace
- documenting and transferring information.

The underlying skills inherent in this unit should be transferable across a range of aircraft life support equipment maintenance activities involving the use of sewing machines/overlockers. It is essential that fabric component manufacture, repair and alteration procedures and safety precautions are fully observed, understood and complied with. Ability to interpret fabric component requirements and apply them in practice is critical.

This is to be demonstrated through demonstration of the ability to perform appropriate manufacturing, repair and alteration tasks that are within the bounds of the individual's authority.

Knowledge Evidence

Evidence required to demonstrate competency in this unit must be relevant to and satisfy all of the requirements of the elements and performance criteria and include knowledge of:

- precautions and safe working practices based on relevant WHS legislation, codes of practice, policies and procedures
- advanced work piece construction principles and methods
- characteristics of a wide range of materials used in aircraft life support and furnishing
- operating principles of a wide range of sewing/overlocking machines

- types of needles and threads and their applications
- types of stitching and their applications
- standard industry practice for needle storage and safe disposal
- the range of sewing/overlocking machines, hand tools and power tools used in sewing/overlocking processes and their appropriateness for particular applications
- relevant quality standards for sewn/overlocked products
- power sources, such as single phase, three phase and weather protected outlets
- electrical isolation procedures for sewing/overlocking machines
- safety and environmental requirements of relevant industry and enterprise procedures
- general housekeeping policies and procedures
- recording and reporting procedures.
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Assessment Conditions

- Access is required to:
 - real or appropriately simulated situations involving the sewing or overlocking of materials used in aircraft life support equipment and in aircraft soft furnishings
 - information on specifications of materials used in sewing and overlocking, settings for machines, relevant safety procedures and regulations, quality standards, and enterprise procedures
 - all necessary facilities, sewing/overlocking machines and associated hand and power tools.
- Assessment may occur on the job or in an industry approved simulated environment.
- The work plan should take account of applicable safety and quality requirements in accordance with the industry and regulatory standards.
- The following conditions of assessment represent the requirements of the Regulators (ADF and CASA) and maintenance stakeholders and must be rigorously observed.
- A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements and performance criteria of the unit of competency are being achieved under routine supervision on a sufficient number of occasions or over sufficient period of time to ensure consistent performance across a typical range of sewing and overlocking requirements performed at the enterprise.
- This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry Evidence Guide (for details refer to the Companion Volume Assessment Guidelines).
- Assessors must satisfy the requirements of the National Vocational Education and Training Regulator (Australian Skills Quality Authority, or its successors).

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