



Australian Government

Department of Education, Employment and Workplace Relations

MEA509A Manufacture, repair and alter aircraft related fabric components

Revision Number: 2

MEA509A Manufacture, repair and alter aircraft related fabric components

Modification History

Minor formatting and editorial changes made. Prerequisite unit version code updated. Unit version code updated in unit descriptor.

Unit Descriptor

This unit of competency is part of the Aeroskills Life Support and Furnishing Certificate III and IV training pathways. It covers the competencies required to manufacture, repair and alter aircraft and support equipment fabric components. This unit is used in workplaces that operate under the airworthiness regulatory systems of the ADF and CASA.

This unit is equivalent to PUADEFLS009B Manufacture, repair and alter aircraft-related fabric components.

Application of the Unit

This unit requires application of skills and knowledge relating to the manufacture, repair and alteration of aircraft and support equipment fabric components. Manufacture and alteration may be to existing designs or may also involve design. Repair may involve sewing and/or the use of adhesives.

The unit applies to a range of aircraft environmental protection sets, aircraft life support equipment components, aircraft soft furnishings and associated trimming, aircrew personal fit and associated life support equipment, and to ground support equipment covers.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

MEA101B	Interpret occupational health and safety practices in aviation maintenance
MEA103B	Plan and organise aviation maintenance work activity
MEA105C	Apply quality standards applicable to aviation maintenance processes
MEA107B	Interpret and use aviation maintenance industry manuals and specifications
MEA108B	Complete aviation maintenance industry documentation
MEA109B	Perform basic hand skills, standard trade practices and fundamentals in aviation maintenance
MEA511A	Operate and maintain sewing and overlocking machines
LMFSF2002B	Machine sew materials

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.
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Elements and Performance Criteria

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| 1. Manufacture a fabric component | 1.1. Technical instructions are identified and interpreted to ensure compliance with standard procedures
1.2. Detailed working plan is produced in accordance with standard procedures
1.3. Fabric component is assembled and fittings are attached in accordance with standard procedures
1.4. Aircraft related fabric components are presented for inspection by supervisor in accordance with standard enterprise procedures
1.5. Relevant documentation is completed and processed in accordance with standard enterprise procedures |
| 2. Repair a fabric component | 2.1. Technical instructions are identified and interpreted to ensure faults are corrected in accordance with standard procedures
2.2. Fabric component is repaired in accordance with standard procedures
2.3. Repaired components are presented for inspection by supervisor in accordance with standard enterprise procedures
2.4. Relevant documentation is completed in accordance with standard enterprise procedures |
| 3. Alter a fabric component to meet customer requirements | 3.1. Customer is consulted to establish the requirements to alter the fabric component and ensure defined outcomes are met
3.2. Identified alterations beyond own authority to alter are reported to supervisor
3.3. A detailed working plan is produced, where necessary, in accordance with standard enterprise procedures
3.4. Altered fabric components are presented for inspection by supervisor in accordance with standard enterprise procedures
3.5. Relevant documentation is completed in accordance with standard enterprise procedures |

Required Skills and Knowledge

Required skills

Look for evidence that confirms skills in:

- applying OHS practices relating to fabric component manufacture, repair and alteration, including the selection and correct use of PPE, where applicable
- handling, storing and organising transport of equipment
- using MSDS
- using maintenance publications, drawings and documentation relating to fabric component manufacture, repair and alterations
- applying basic sewing techniques associated with the manufacture, repair and alteration of aircraft fabric components
- using hand sewing techniques
- using basic drawing tools
- calculating dimensions and allowable dimension variations
- completing measurements and estimating fabric requirements and other material requirements
- using pre-checking and inspection techniques to anticipate cutting problems and avoid reworking and wastage
- using relevant hand and power tools
- using the limited workplace technology related to cutting, including tools, equipment, calculators and measuring devices
- cleaning and maintaining equipment and tools

Required knowledge

Look for evidence that confirms knowledge of:

- relevant regulations, standards, enterprise procedures and maintenance publications
- OHS procedures relating to fabric component manufacture, repair and alteration, including the selection and use of PPE
- how to obtain MSDS
- basic sewing techniques using *AS 2860-1986 Textiles – stitch types – classification and terminology*
- construction principles of fabric components
- cutting equipment and techniques
- design features of finished items
- fabric types, common faults and inspection procedures
- textiles - stitch types - classification and terminology
- impact of cutting on fabrics
- geometric drawing processes and techniques
- reading and interpreting specifications
- types of corrosion and contamination that may affect aircraft fabric components

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.

Overview of assessment	A person who demonstrates competency in this unit must be able to manufacture, repair and alter aircraft-related fabric components while observing all relevant safety precautions.
Critical aspects for assessment and evidence required to demonstrate competency in this unit	The underlying skills inherent in this unit should be transferable across a range of aircraft life support equipment maintenance activities. 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. Evidence of transferability of skills and knowledge related to fabric component manufacture, repair and alteration is essential. 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. The work plan should take account of applicable safety and quality requirements in accordance with the industry and regulatory standards. A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of the unit of competency are being achieved under routine supervision on the following tasks: • recognising the limits of own authority • correctly manufacture three (3) fabric components from technical instructions using machine sewing and at least one (1) other assembly method (hand sew, press fit, adhere or staple) • recognising at least three (3) faults and identifying limits of repair for the fabric components • altering a fabric component to meet customer requirements. This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry Evidence Guide.
Context of and specific resources for	Competency should be assessed in the workplace or

assessment	simulated workplace using materials, tools and equipment specified in the maintenance manuals and applicable procedures. It is also expected that general and special purpose tools and ground support equipment would be used where appropriate.
Method of assessment	
Guidance information for assessment	

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.

Application	Application of this unit may relate to: • scheduled or unscheduled maintenance • individual or team-related activities
Procedures and requirements	Refer to industry standard procedures specified by manufacturers, regulatory authorities or the enterprise
Fabric components	Fabric components may include: • aircraft environmental protection sets and warning devices • aircraft life support equipment components • aircraft soft furnishings and associated trimming • aircrew personal fit and associated life support equipment • ground support equipment covers
Technical instructions	Technical instructions may include: • aircraft operational requirements • job orders • manufacturers' specifications • maintenance manuals • modification instructions • technical drawings
Standard procedures	Standard procedures may be found in any or all of: • state/territory/Commonwealth OHS 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 • CASR and advisory material

	standing instructions
Detailed working plan	Detailed working plan may include: - cutting plan - expected time of completion - manpower requirements - method and sequence of assembly - resource requirements (material, fittings, tools and ground support equipment) - technical sketch (working drawing)
Assembly of fabric components and attachment of fittings	Assembly of fabric components and attachment of fittings may include: - adhering - hand sewing - machine sewing - press fitting - stapling
Faults	Faults may include: - broken stitching - broken zippers - contamination - corrosion of metal parts - damaged fittings - excessive wear - incorrect manufacture - tears in fabric - ultraviolet degradation
Customers	Customers may include: - aircraft configuration authorities - aircrew - engineering maintenance managers - supervisors
Defined outcomes	Defined outcomes may include: - affect on fit of fabric components - affect on performance of altered fabric components - availability of resources - expected time of completion

Unit Sector(s)

Aircraft life support

Competency field

Co-requisite units

MEA118A Conduct self in the aviation maintenance environment