



Australian Government

MEA266 Terminate and repair aircraft optical fibre cable

Release: 1

MEA266 Terminate and repair aircraft optical fibre cable

Modification History

Release 1 - New unit of competency

Application

This unit of competency requires application of hand skills and knowledge of aircraft optical fibre cable termination and repair methods in aircraft maintenance hangars and workshops during scheduled or unscheduled maintenance. Work may be performed individually or as part of a team.

The unit is part of all Avionic Certificate IV training pathways. The unit 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

Aviation maintenance

Unit Sector

Elements and Performance Criteria

Elements describe the essential outcomes		Performance criteria describe the performance needed to demonstrate achievement of the element	
1. Prepare to terminate or repair aircraft optical fibre cable	1.1	The system is isolated and it is confirmed that the optical source is not transmitting	
	1.2	The requirement to terminate or replace an existing termination is confirmed from maintenance data	
	1.3	The extent of damage is identified	
	1.4	Equipment required for compliance with work health and safety (WHS) requirements is assembled and required personal protective equipment (PPE) is obtained and worn during termination and/or repair activities	
	1.5	Required tools, optical connectors, materials and	

			test equipment are assembled ready for use
2.	Terminate aircraft optical fibre cable	2.1	Optical fibre cable is prepared for termination in accordance with the applicable maintenance data or manufacturer's instructions
		2.2	The specified optical connector is fitted in accordance with relevant maintenance data or manufacturer's instructions
3.	Repair aircraft optical fibre cable	3.1	The extent of damage to the optical fibre cable is determined and assessed for repair or for cable replacement
		3.2	If damage is within specified limits the repair method is determined from the applicable maintenance data
		3.3	The repair is performed in accordance with the applicable repair method while observing all applicable WHS requirements
4.	Remove fibre hazards from work area	4.1	The work area is cleaned and all waste materials are packaged and disposed of in accordance with WHS requirements and enterprise procedures
5.	Test terminated and/or repaired optical fibre cable	5.1	Terminated and/or repaired fibre optic cable is tested for loss and strength of light transmission in accordance with maintenance data or manufacturer's specifications
		5.2	Optical fibre cable is connected to light transmitter and optical receiver

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.

Relevant specifications and

- ARINC Specification 801 Fibre Optic Connectors

- maintenance data include:
- ARINC Specification 802 Fibre Optic Cables
 - ARINC Specification 805 Fibre Optic Test Procedures
 - ARINC Specification 806 Fibre Optic Installation and Maintenance Procedures
 - CASA AC21-99 Aircraft Wiring and Bonding, Section 2 Chapter 19
- Procedures and requirements include:
- Industry standard procedures specified by manufacturers, regulatory authorities or the enterprise

Unit Mapping Information

New unit of competency

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 MEA266 Terminate and repair aircraft optical fibre cable

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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:

- observing WHS procedures and selecting and correctly using PPE, including observance of laser safety procedures
- fitting optical connectors
- cleaning and polishing of optical connectors
- repairing optical fibre cable by splicing
- thorough clean-up of work area and correct packaging and disposal of waste
- testing of terminated and repaired optical fibre cables
- connecting optical fibre cable to the light transmitter and optical receiver.

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:

- types of optical connector
- materials and procedures for cleaning and polishing optical connectors
- tools and materials used for fitting optical connectors
- optical fibre cable construction and characteristics, including:
 - strain relief and bend radius
 - cable installation precautions
- methods of splicing optical fibre cable
- light transmission methods and applications
- types of optical receiver
- test equipment:
 - calibrated light source and light receiver
 - power meter
 - optical time domain reflectometers
- cable inspection and testing
- AS/NZS 2211:2006 Safety of laser products (Parts 1 and 2)
- WHS procedures associated with optical fibre cable termination and repair, including laser safety procedures

- PPE required for optical fibre termination and repair
- relevant maintenance manuals
- relevant regulatory requirements and standard procedures.

Assessment Conditions

- Competency should be assessed in the work environment or simulated work environment using tools and equipment specified in the applicable aircraft maintenance manuals. It is also expected that applicable general-purpose tools and test equipment found in most routine situations would be used where appropriate.
- Evidence of knowledge about optical fibre data transmission systems will be necessary to supplement evidence of ability to interpret requirements and terminate and repair optical fibre cable before undertaking any action. 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 representative range of tasks, including:
 - termination of optical fibre cable using a range of connector types
 - repair of optical fibre cable.
- 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).
- Where the unit is to be used for CASA licensing purposes the Assessor must also meet the criteria specified in the CASR Part 147 Manual of Standards.

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