



**Australian Government**

# **MEA351 Maintain airframe systems of basic light fixed wing aircraft**

**Release: 2**

# MEA351 Maintain airframe systems of basic light fixed wing aircraft

## Modification History

Release 2. Equivalent to MEA351 Maintain airframe systems of basic light fixed wing aircraft with amended prerequisite codes.

## Application

This unit of competency requires application of hand skills and the use of system/component knowledge and applicable maintenance publications and test equipment to inspect, test and troubleshoot, and replace components of airframe systems of fixed wing aircraft that have fixed undercarriage and a normally aspirated engine driving a fixed pitch propeller, or a small gas turbine engine. This may be done during the performance of scheduled or unscheduled maintenance. Maintenance may be performed individually or as part of a team.

The unit is part of the Mechanical Certificate IV (Aircraft Maintenance Stream) training pathway.

Where a Civil Aviation Safety Authority (CASA) licensing outcome is sought this unit forms part of the CASA requirement for the granting of the chosen maintenance certification licence under Civil Aviation Safety Regulation (CASR) Part 66, in accordance with the licensing provisions in the Companion Volume Implementation Guide.

## Pre-requisite Unit

|        |                                                                                              |
|--------|----------------------------------------------------------------------------------------------|
| MEA107 | Interpret and use aviation maintenance industry manuals and specifications                   |
| MEA154 | Apply work health and safety practices in aviation maintenance                               |
| MEA155 | Plan and organise aviation maintenance work activities                                       |
| MEA156 | Apply quality standards during aviation maintenance activities                               |
| MEA157 | Complete aviation maintenance industry documentation                                         |
| MEA158 | Perform basic hand skills, standard trade practices and fundamentals in aviation maintenance |

## 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.

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|----|--------------------------------------------------------------------|-----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. | Inspect basic light fixed wing airframe systems                    | 1.1 | Relevant maintenance documentation and modification status, including system defect reports, where relevant, are used to identify specific inspection requirements                                                                                                                                                            |
|    |                                                                    | 1.2 | Isolation tags are checked and aircraft configured for safe system inspection and operation in accordance with the applicable maintenance manual                                                                                                                                                                              |
|    |                                                                    | 1.3 | Airframe system components are visually or physically checked for external signs of defects in accordance with applicable maintenance manual while observing all relevant work health and safety (WHS) requirements, including the use of material safety data sheets (MSDS) and items of personal protective equipment (PPE) |
|    |                                                                    | 1.4 | Defects are correctly identified and reported                                                                                                                                                                                                                                                                                 |
| 2. | Test/adjust basic light fixed wing airframe systems and components | 2.1 | Aircraft and system are prepared in accordance with applicable maintenance manual for the application of power/system operation                                                                                                                                                                                               |
|    |                                                                    | 2.2 | Airframe system is functionally tested in accordance with maintenance manual for evidence of serviceability or malfunction                                                                                                                                                                                                    |
|    |                                                                    | 2.3 | System adjustment/rigging is performed in accordance with maintenance manual                                                                                                                                                                                                                                                  |
| 3. | Troubleshoot basic light fixed wing airframe systems               | 3.1 | Available information from maintenance documentation, inspection and test results is used, where necessary, to assist in fault determination                                                                                                                                                                                  |
|    |                                                                    | 3.2 | Maintenance manual fault diagnosis guides and logic processes are used to ensure efficient and accurate troubleshooting to line replacement level                                                                                                                                                                             |
|    |                                                                    | 3.3 | Specialist advice is obtained, where required, to assist with the troubleshooting process                                                                                                                                                                                                                                     |
|    |                                                                    | 3.4 | Airframe system faults are located and the causes of the faults are clearly identified and correctly recorded in maintenance documentation, where required, in                                                                                                                                                                |

|    |                                                                      |     |                                                                                                                                                                                                 |
|----|----------------------------------------------------------------------|-----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|    |                                                                      |     | accordance with standard enterprise procedures                                                                                                                                                  |
|    |                                                                      | 3.5 | Rectification requirements are determined                                                                                                                                                       |
| 4. | Remove and install basic light fixed wing airframe system components | 4.1 | System is rendered safe in accordance with the applicable maintenance manual and isolation tags are fitted, where necessary, to ensure personnel safety                                         |
|    |                                                                      | 4.2 | Airframe system component removal is carried out in accordance with the applicable maintenance manual while observing all relevant WHS requirements, including the use of MSDS and items of PPE |
|    |                                                                      | 4.3 | Required maintenance documentation is accurately completed and correctly processed                                                                                                              |
|    |                                                                      | 4.4 | Removed components are tagged, sealed and packaged in accordance with specified procedures                                                                                                      |
|    |                                                                      | 4.5 | Components to be installed are checked to confirm correct part numbers, serviceability and modification status                                                                                  |
|    |                                                                      | 4.6 | Mass balance of control surfaces to be installed is checked in accordance with the applicable maintenance manual, if required                                                                   |
|    |                                                                      | 4.7 | Installation is carried out in accordance with the applicable maintenance manual                                                                                                                |
|    |                                                                      | 4.8 | Required maintenance documentation is completed and processed in accordance with standard enterprise procedures                                                                                 |

## 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.

|                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|---------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Maintenance documentation includes:</b>  | <ul style="list-style-type: none"><li>• Servicing schedules</li><li>• Maintenance manuals</li></ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Airframe systems include:</b>            | <ul style="list-style-type: none"><li>• Flight control systems</li><li>• Fixed undercarriage shock absorbers</li><li>• Master/slave cylinder brake systems</li><li>• Fuel systems</li><li>• Cabin heating systems</li></ul>                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>Airframe system components include:</b>  | <ul style="list-style-type: none"><li>• Ailerons, elevators, rudders, trim tabs, flaps and slats</li><li>• Flight control wheels or sticks, cables, pulleys, guides, fairleads, bellcranks, rods, torque tubes, chains, sprockets, trim wheels or handles and rudder pedals or bars</li><li>• Fixed undercarriage hydraulic and rubber shock absorbers</li><li>• Wheels and brake units</li><li>• Brake master cylinders and rigid or flexible plumbing</li><li>• Rigid or flexible fuel tanks, selector/shutoff valves and rigid or flexible plumbing</li><li>• Cabin heater ducting and control valves</li></ul> |
| <b>Procedures and requirements include:</b> | <ul style="list-style-type: none"><li>• Industry standard procedures specified by manufacturers, regulatory authorities or the enterprise</li></ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                |

## Unit Mapping Information

Release 2. Equivalent to MEA351 Maintain airframe systems of basic light fixed wing aircraft

## Links

Companion Volume implementation guides are found in VETNet -

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