



**Australian Government**

**Department of Education, Employment and Workplace Relations**

# **MEA113C Supervise civil aircraft maintenance activities and manage human resources in the workplace**

Release: 2

## **MEA113C Supervise civil aircraft maintenance activities and manage human resources in the workplace**

### **Modification History**

Minor formatting and editorial changes made.

### **Unit Descriptor**

This is one of the units of competency that must be attained to progress from AME to the grant of an Aircraft Maintenance Engineer Licence, Aviation Maintenance Specialist Certificate or an Aircraft Maintenance Technician Authorisation. It covers the competencies required to supervise maintenance activities, apply human resource management practices applicable at the supervisor level, and contribute to workplace training and competency assessment.

The skills and knowledge covered by the units of competency at Certificate IV level listed in the MEA11 Aeroskills Training Package for the qualification leading to the applicable Aircraft Maintenance Engineer Licence sought are prerequisite to the attainment of the elements of competency specified in this unit. This includes full coverage of the CASR Part 66 Avionics or Mechanical Syllabus subjects/topics listed in the Assessment Guidelines.

### **Application of the Unit**

This unit requires application of supervisory and personnel management skills in the performance of maintenance activities.

Applications include all aviation maintenance activities.

### **Licensing/Regulatory Information**

Not applicable.

### **Pre-Requisites**

Not applicable

## 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

1. Plan maintenance for teams
  - 1.1. Maintenance tasks are identified and interpreted from available *maintenance data or schedules* in accordance with enterprise procedures
  - 1.2. Workload is organised in order of priority taking into consideration, where applicable, mandatory and optional maintenance tasks
  - 1.3. Timeframes are taken into consideration when prioritising maintenance tasks
  - 1.4. **Required resources** are obtained to facilitate planned maintenance tasks
2. Implement maintenance for teams
  - 2.1. Maintenance tasks are allocated to appropriate team members with consideration of individual's experience and qualifications
  - 2.2. Personnel are clearly briefed on their responsibility and function in the team
  - 2.3. Team members are correctly authorised to operate the required items of ground support equipment
  - 2.4. Team members are instructed to observe occupational health and safety requirements and all safety hazards are promptly identified and addressed
3. Provide guidance
  - 3.1. **Guidance** is provided to staff, appropriate to the maintenance task and individual's experience. This includes the communication of relevant maintenance data and procedures. Guidance is readily available, in person, as appropriate to the maintenance task
  - 3.2. Guidance is provided in determining the cause of difficult faults or faults not covered in maintenance manual fault diagnosis guides
4. Monitor maintenance quality
  - 4.1. Activities are checked and personnel are guided to ensure that maintenance is performed in accordance with the applicable documentation, policies and procedures
  - 4.2. Completed work including stages of maintenance are inspected for serviceability and prepared for certification on applicable documentation
5. Perform human resource management activities at the supervisor level
  - 5.1. **Human factors affecting job performance** are identified and responded to
  - 5.2. **The possibility of maintenance errors is minimised**
  - 5.3. Sound teamwork is maintained through an awareness of contributing factors
  - 5.4. Sound **employment relations** are maintained
6. Perform workplace training tasks
  - 6.1. **On-job training** is delivered
  - 6.2. The Supervisor's Verification portion of the Workplace History Sheets (Section 3) of the Log of Industrial Experience and Achievement is completed

6.3. Expert witness verification of competency for Maintenance Training Organisation (MTO) workplace assessors is provided, when required

## Required Skills and Knowledge

### Required skills

Look for evidence that confirms skills in:

- planning and implementing team maintenance activities
- applying all relevant OHS procedures
- observing human factors in team maintenance activities
- providing guidance to team members
- human resource management at team level

### Required knowledge

Look for evidence that confirms knowledge of:

- applicable state/territory and Commonwealth OHS regulations, and enterprise OHS instructions
- the correct use of applicable items of PPE
- the requirement for Confined Space Entry Permits and related training
- applicable MSDS
- ATA 113 Specification for Maintenance Human Factors Guidelines, and the following human factor elements:
  - general factors, including:
    - weaknesses in task design and support
    - motivation and attitudes, task demands and limitations in performance
    - cooperative work, communication and leadership
    - allocation of resources, workload, work conditions, double standards
  - aspects relating to the task, including:
    - physical and mental work
    - features of the task which limit efficiency or safety performance, including constraints, such as signing-off and shift changeover, time pressures, information sources, troubleshooting methods, tools and equipment
    - task performance levels: skill-based, rule-based and knowledge-based; and the limitations encountered in each category
    - complex and inter-related aircraft systems
  - limitations of individual performance, including:
    - the sources and effects of fatigue, detection and countermeasures
    - vision and lighting
    - hearing and noise
    - memory, short and long term
    - claustrophobia and acrophobia
  - the influence of external factors, including:
    - maintainability of aircraft

- guidance availability
- social environment
- physical environment, including the effects of extremes of heat and cold, and countermeasures (e.g. limited periods of exposure), noise and fumes, motion and vibration
- the causes of variability in human performance, including:
  - effects of arousal
  - limitations of perception
  - limitations of memory, and management of these
  - limitations of decision-making
  - limitations of motor-functioning
  - information processing
- factors that degrade performance, including:
  - risk motivation
  - individual differences (e.g. depth of training and experience)
  - health
  - alcohol and drugs
- errors in maintenance tasks, including:
  - omissions, incorrect installation and wrong parts
  - assumptions
  - error management by minimisation, capture and tolerance
- human factors within groups, including:
  - the distinction between groups and teams; coordination and synergy
  - types of groups: horizontal (same level of personnel) and vertical (different functions) composition
  - group characteristics; reducing overall task time; coordination
  - team characteristics; performance exceeds sum of individual performances
  - factors which lead to effective working in groups and teams: interaction, participation, open communication, clear expectations, shared leadership and self-assessment
  - team building
  - communication: the process and feedback
- organisational aspects, including:
  - functions and dysfunctionality
  - double standards: professionalism, procedures and time pressure
  - organisational culture, professional culture and work-group culture, and peer pressure
- violation of regulations, procedures and processes, including:
  - organisational failure: latent failure, error-provoking conditions and unsafe acts
  - organisational learning

- maintenance error management program
- the MEA11 Aeroskills Training Package, including relevant competency units and training pathways
- the Log of Industrial Experience and Achievement, including:
  - purpose of the Log
  - its structure and content
  - responsibility for making entries therein
  - responsibility for the certification of entries
- the role of CASR Part 147 MTOs in the training and competency assessment process, and of the role of supervisors in assisting workplace competency assessors



## 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.

<p><b>Overview of assessment</b></p>	<p>A person who demonstrates competency in this unit must be able to supervise maintenance activities, provide guidance/on-job training and manage human resources at team level while complying with all relevant legislative and regulatory requirements.</p>
<p><b>Critical aspects for assessment and evidence required to demonstrate competency in this unit</b></p>	<p>It is essential that maintenance requirements are fully identified and that all applicable aspects of supervision, supervisor level human resource management and involvement in workplace training and competency assessment are identified and applied.</p> <p>Evidence is required of underlying knowledge and skills in the supervision of maintenance activities, and in the associated compliance with airworthiness regulatory requirements. The ability must be demonstrated to apply supervisor level human resource management processes during supervision activities, deliver workplace training, and to record experience and evidence for competency assessment associated with completion of the Log of Industrial Experience and Achievement.</p> <p>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 supervision, without intervention on a maintenance supervision task that includes Groups 1 to 7 in the Range Statement. This shall be established via simulated activities at the CASR Part 147 MTO and performance during supervised workplace activities.</p>
<p><b>Context of and specific resources for assessment</b></p>	<p>Competency should be assessed under supervision, without intervention in the work environment, and/or by use of approved simulated activities in a CASR Part 147 MTO, covering the full range of maintenance supervision, supervisor level human resource management and assistance with workplace training and competency assessment, as provided for in the Range Statement.</p>
<p><b>Method of assessment</b></p>	<p>This unit must be linked in its assessment and application to those that apply to the exercise of Aircraft Maintenance Engineer Licence, Aircraft Maintenance</p>

	Specialist Certificate or Aircraft Maintenance Technician privileges in the actual maintenance of aircraft.
<b>Guidance information for assessment</b>	

## Range Statement

<p>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.</p>	
<p><b>Note</b></p>	<p>Range statements listed below are numbered to facilitate specification of the assessment requirements included in the Evidence Guide</p>
<p><b>Maintenance data or schedules</b></p>	<p>1. Maintenance data or schedules may include:</p> <ul style="list-style-type: none"> <li>• maintenance records</li> <li>• manufacturers' maintenance manuals and servicing schedules</li> <li>• computer maintenance data systems</li> <li>• service bulletins</li> <li>• airworthiness directives</li> <li>• modification incorporation instructions</li> <li>• repair instructions</li> <li>• observations and feedback from maintenance personnel and aircrew via Technical Log entries</li> <li>• AMO internal work instructions or directives.</li> </ul>
<p><b>Required resources</b></p>	<p>2. Required resources may include:</p> <ul style="list-style-type: none"> <li>• personnel</li> <li>• spares</li> <li>• lubricants</li> <li>• consumables</li> <li>• tools</li> <li>• special equipment</li> <li>• PPE</li> <li>• associated equipment including various items of ground support equipment</li> <li>• considerations regarding resources may also include: <ul style="list-style-type: none"> <li>• required numbers of personnel and their availability</li> <li>• personnel qualifications, experience and authorisations</li> <li>• availability of the listed resources</li> </ul> </li> </ul>
<p><b>Guidance in maintenance activities</b></p>	<p>3. Guidance in maintenance activities may include:</p> <ul style="list-style-type: none"> <li>• fault diagnosis procedures</li> <li>• troubleshooting</li> </ul>

	<ul style="list-style-type: none"> <li>• damage assessment</li> <li>• assessment of repair cost effectiveness</li> <li>• assessment of replacement options</li> </ul>
<b>Human factors affecting job performance</b>	<p>4. Human factors affecting job performance may include:</p> <ul style="list-style-type: none"> <li>• individual health and disability</li> <li>• social psychology</li> <li>• time pressure and workload</li> <li>• the physical work environment</li> </ul>
<b>The possibility of maintenance errors may be minimised</b>	<p>5. The possibility of maintenance errors may be minimised through:</p> <ul style="list-style-type: none"> <li>• varying the extent of supervision according to the nature of the task and work conditions</li> <li>• allowance for qualification and experience levels within the team</li> <li>• allowance for human error and 'Murphy's Law' ('If something can go wrong, it will')</li> </ul>
<b>Employment relations at supervisor level</b>	<p>6. Employment relations at supervisor level may include:</p> <ul style="list-style-type: none"> <li>• resolution or referral to management of complaints and difficulties</li> <li>• resolution of conflict within the team</li> <li>• absence of team members from the job</li> <li>• maintenance of discipline in the performance of maintenance tasks</li> <li>• allowance for cultural diversity within the team</li> <li>• knowledge of relevant sections of industrial awards, enterprise agreements, and conditions of employment and service that apply to the particular workplace</li> </ul>
<b>On-job training</b>	<p>7. On-job training involves:</p> <ul style="list-style-type: none"> <li>• the reinforcement of knowledge and skills gained in off-job training and guiding their application to specific on-job maintenance tasks</li> </ul>
<b>Application</b>	<p>The competency applies to the supervision of aircraft maintenance activities, including:</p> <ul style="list-style-type: none"> <li>• scheduled maintenance</li> <li>• unscheduled maintenance</li> <li>• configuration changes</li> <li>• modification incorporation</li> <li>• repair</li> </ul>
<b>Prescribed instructions, policy, procedures and/or regulatory</b>	<p>Prescribed instructions, policy, procedures and/or regulatory</p>

<b>requirements</b>	requirements governing maintenance activities may include: <ul style="list-style-type: none"><li>• manufacturer operating and maintenance manuals</li><li>• CASA-approved enterprise operation manuals</li><li>• quality procedures and work instructions</li><li>• OHS policies and instructions, including MSDS</li><li>• management directives</li></ul>
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## **Unit Sector(s)**

Supervision of aviation maintenance

## **Competency field**

## **Co-requisite units**

Not applicable