Australian Government

Department of Education, Employment and Workplace Relations

MEA241B Perform aircraft weight and balance calculations as a result of modifications

Release: 1

MEA241B Perform aircraft weight and balance calculations as a result of modifications

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	Engineer at Certificate IV to the granting of a B2 Aircraft Maintenance Engineer Licence or Aircraft Maintenance Specialist Certificate in the Avionics category under CASR Part 66, in accordance with the licensing provisions in the Assessment Guidelines. The skills and knowledge covered by the units of competency listed in the Aeroskills Training Package for Aircraft Maintenance Engineer (Avionics or Mechanical as applicable) at Certificate IV are pre-requisite to the attainment of the elements of competency specified in this unit.

Application of the Unit

Application of the unit	This unit requires application of mathematical formulae to calculate the weight and balance effect of components installed in aircraft during modification incorporation. Applications include fixed and rotary wing aircraft.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		

Employability Skills Information

Employability skills	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.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Calculate the weight and balance impact of a modification	1.1. The requirement for aircraft weighing is determined. 1.2. The new empty weight of the aircraft is determined and it is ensured that the weight is within the predetermined limits set by the Authorised Airworthiness Representative (AAR). 1.3. The new empty weight centre of gravity of the aircraft is calculated and it is ensured that the centre of gravity is within the predetermined limits set by the AAR. 1.4. Maintenance records are updated with new figures.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE
This section describes the skills and knowledge required for this unit.
Required skills
Look for evidence that confirms skills in calculating the effect on aircraft weight and centre of gravity of components installed during modification incorporation using weight and moment arm data.
Required knowledge
Look for evidence that confirms knowledge of mathematical formulae used to calculate centre of gravity of an aircraft.

Evidence Guide

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 use mathematical formulae to calculate aircraft weight and balance given weight and moment arm data and correctly update maintenance records.
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 types. Ability to interpret the instructions for configuring and weighing aircraft is critical. Evidence of transferability of skills and knowledge related to aircraft weight and calculation of centre of gravity is essential. 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. This shall be established via simulated activities at the CASR Part 147 Maintenance Training Organisation and performance during observed workplace activities.
Context of and specific resources for assessment	Competency may be assessed in the workplace or simulated workplace.
Method of assessment	
Guidance information for assessment	

Range Statement

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.	
Aircraft centre of gravity	*Aircraft centre of gravity is determined*: • using the weight and moment arm data for a modification
Application	*The work can relate to*: • scheduled or unscheduled maintenance and may involve individual activities or supervision of other personnel.
Procedures and requirements	Refer to industry standard procedures specified by manufacturers, regulatory authorities or the enterprise

Unit Sector(s)

Unit sector	

Competency field

Competency field	Aviation maintenance

Co-requisite units

Co-requisite units		