

<b>Title</b>	<b>Apply knowledge of basic aeroplanes to the certification of aeronautical maintenance</b>		
<b>Level</b>	<b>6</b>	<b>Credits</b>	<b>20</b>

<b>Purpose</b>	<p>This knowledge-based unit standard is one of a series intended for people certifying the release to service of aircraft or aeronautical components following maintenance or repair.</p> <p>People credited with this unit standard are able to apply knowledge of aeroplane: aerodynamics, design and construction, flight control systems, hydraulic systems, landing gear systems, fuel systems, heating and ventilation systems, weight and balance control, equipment and furnishings, and inspection and testing to the certification of aeronautical maintenance.</p>
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<b>Classification</b>	Aeronautical Engineering > Aeronautical Maintenance Certification
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<b>Available grade</b>	Achieved
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### Guidance Information

- 1 The Civil Aviation Authority of New Zealand (CAA) Aircraft Maintenance Engineer Licence – Examination Subject 4, Aeroplanes 1 is the national standard, and is linked to international standards.
- 2 This unit standard is aligned with the Civil Aviation Authority of New Zealand Advisory Circular AC66-2.4, Examination Syllabus for Subject 4, Aeroplanes 1 and will be evidenced by meeting these requirements. This is available on the CAA website at <http://www.caa.govt.nz>.
- 3 *Applied knowledge* – will be in the context of aeronautical maintenance as defined by Civil Aviation Rules Part 1 as follows: ‘in relation to an aircraft or aircraft component, means all work and inspections performed to ensure the continued airworthiness of the aircraft or component, and all modifications’; will include making judgements regarding the scope, processes, and quality of maintenance for release to service certification; and will be in accordance with industry texts as defined by the candidate’s workplace or enterprise.
- 4 *Industry texts* include but are not limited to –  
published aeronautical training manuals or text books;  
enterprise exposition;  
manufacturer publications;  
government and local body legislation;  
airworthiness or regulatory authority requirements.

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## Outcomes and performance criteria

### Outcome 1

Apply knowledge of aerodynamics to the certification of aeronautical maintenance.

#### Performance criteria

- 1.1 Knowledge of lift production by an aerofoil is applied.
- 1.2 Knowledge of the forces acting on an aeroplane in flight is applied.
- 1.3 Knowledge of flight manoeuvres and the aerodynamic effects of flight controls is applied.
- 1.4 Knowledge of the effects of aeroplane design features is applied.

### Outcome 2

Apply knowledge of aeroplane design and construction to the certification of aeronautical maintenance.

#### Performance criteria

- 2.1 Knowledge of aeroplane design principles is applied.
- 2.2 Knowledge of aeroplane construction principles is applied.
- 2.3 Knowledge of aeroplane structure maintenance is applied.
- 2.4 Knowledge of aeroplane structure inspection and certification is applied.

### Outcome 3

Apply knowledge of aeroplane flight control systems to the certification of aeronautical maintenance.

#### Performance criteria

- 3.1 Knowledge of aeroplane flight control systems and components is applied.
- 3.2 Knowledge of aeroplane flight control system and component maintenance is applied in accordance with industry texts.
- 3.3 Knowledge of aeroplane flight control system and component inspection and certification is applied.

**Outcome 4**

Apply knowledge of aeroplane hydraulic systems to the certification of aeronautical maintenance.

**Performance criteria**

- 4.1 Knowledge of aeroplane hydraulic systems and components is applied.
- 4.2 Knowledge of aeroplane hydraulic system and component maintenance is applied.
- 4.3 Knowledge of aeroplane hydraulic system and component inspection and certification is applied.

**Outcome 5**

Apply knowledge of aeroplane landing gear systems to the certification of aeronautical maintenance.

**Performance criteria**

- 5.1 Knowledge of aeroplane landing gear systems and components is applied.
- 5.2 Knowledge of aeroplane landing gear system and component maintenance is applied.
- 5.3 Knowledge of aeroplane landing gear system and component inspection and certification is applied.

**Outcome 6**

Apply knowledge of aeroplane fuel systems to the certification of aeronautical maintenance.

**Performance criteria**

- 6.1 Knowledge of aviation fuels is applied.
- 6.2 Knowledge of aeroplane fuel systems and components is applied.
- 6.3 Knowledge of aeroplane fuel system and component maintenance is applied.
- 6.4 Knowledge of aeroplane fuel system and component inspection and certification is applied.

**Outcome 7**

Apply knowledge of aeroplane heating and ventilation systems to the certification of aeronautical maintenance.

**Performance criteria**

- 7.1 Knowledge of aeroplane heating and ventilation systems and components is applied.
- 7.2 Knowledge of aeroplane heating and ventilation systems and component maintenance is applied.
- 7.3 Knowledge of aeroplane heating and ventilation system and component inspection and certification is applied.

**Outcome 8**

Apply knowledge of aeroplane weight and balance control to the certification of aeronautical maintenance.

**Performance criteria**

- 8.1 Knowledge of the relationship between weight and centre of gravity on aeroplane flight performance is applied.
- 8.2 Knowledge of the aeroplane weighing process is applied.
- 8.3 Knowledge of aircraft weight and balance calculation is applied.

**Outcome 9**

Apply knowledge of aeroplane equipment and furnishings to the certification of aeronautical maintenance.

**Performance criteria**

- 9.1 Knowledge of aeroplane equipment and furnishings is applied.
- 9.2 Knowledge of aeroplane equipment and furnishings maintenance is applied.
- 9.3 Knowledge of aeroplane equipment and furnishings inspection and certification is applied.

**Outcome 10**

Apply knowledge of aeroplane inspection and testing to certification of aeronautical maintenance.

**Performance criteria**

- 10.1 Knowledge of aeroplane servicing is applied to aeroplane inspections.
- 10.2 Knowledge of the requirements for ground and air testing of aeroplanes following maintenance is applied.

<b>Planned review date</b>	31 December 2027
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#### Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	19 August 2004	31 December 2020
Review	2	9 December 2010	31 December 2020
Review	3	28 September 2017	31 December 2024
Review	4	27 October 2022	N/A

<b>Consent and Moderation Requirements (CMR) reference</b>	0028
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This CMR can be accessed at <http://www.nzqa.govt.nz/framework/search/index.do>.

#### Comments on this unit standard

Please contact Ringa Hora Services Workforce Development Council [qualifications@ringahora.nz](mailto:qualifications@ringahora.nz) if you wish to suggest changes to the content of this unit standard.