

<b>Title</b>	<b>Apply knowledge of turbine engines to the certification of aeronautical maintenance</b>		
<b>Level</b>	<b>6</b>	<b>Credits</b>	<b>25</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 turbine engine: operation, design and construction, ignition systems, fuel systems, lubrication systems, air and cooling systems, indicating and instrumentation systems, power augmentation systems, control systems, fire protection systems, noise suppression systems, starting systems, installation, storage, transportation, operating and ground running, and propeller systems 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 8 Turbine Engines 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 AC66-2.8, Examination Syllabus for Subject 8, Turbine Engines 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 turbine engine operation to the certification of aeronautical maintenance.

#### Performance criteria

- 1.1 Knowledge of turbine engine operation fundamentals is applied.
- 1.2 Knowledge of turbine engine performance is applied.

### Outcome 2

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

Range air inlet, compressor section, combustion section, turbine section, exhaust section, engine sub-assembly and system components.

#### Performance criteria

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

### Outcome 3

Apply knowledge of turbine engine ignition systems to the certification of aeronautical maintenance.

#### Performance criteria

- 3.1 Knowledge of turbine engine ignition systems and components is applied.
- 3.2 Knowledge of turbine engine ignition system and component maintenance is applied.

- 3.3 Knowledge of turbine engine ignition system and component inspection and certification is applied.

#### **Outcome 4**

Apply knowledge of turbine engine fuel systems to the certification of aeronautical maintenance.

##### **Performance criteria**

- 4.1 Knowledge of turbine engine fuels is applied.
- 4.2 Knowledge of turbine engine fuel systems and components is applied.
- 4.3 Knowledge of turbine engine fuel system and component maintenance is applied.
- 4.4 Knowledge of turbine engine fuel system and component inspection and certification is applied.

#### **Outcome 5**

Apply knowledge of turbine engine lubrication systems to the certification of aeronautical maintenance.

##### **Performance criteria**

- 5.1 Knowledge of turbine engine lubricants is applied.
- 5.2 Knowledge of turbine engine lubrication systems and components is applied.
- 5.3 Knowledge of turbine engine lubrication system and component maintenance is applied.
- 5.4 Knowledge of turbine engine lubrication system and component inspection and certification is applied.

#### **Outcome 6**

Apply knowledge of turbine engine air and cooling systems to the certification of aeronautical maintenance.

##### **Performance criteria**

- 6.1 Knowledge of turbine engine air and cooling systems and components is applied.
- 6.2 Knowledge of turbine engine air and cooling system and component maintenance is applied.
- 6.3 Knowledge of turbine engine air and cooling system and component inspection and certification is applied.

**Outcome 7**

Apply knowledge of turbine engine indicating and instrument systems to the certification of aeronautical maintenance.

**Performance criteria**

- 7.1 Knowledge of turbine engine indicating and instrument systems and components is applied.
- 7.2 Knowledge of turbine engine indicating and instrument system and component maintenance is applied.
- 7.3 Knowledge of turbine engine indicating and instrument system and component inspection and certification is applied.

**Outcome 8**

Apply knowledge of turbine engine power augmentation systems to the certification of aeronautical maintenance.

**Performance criteria**

- 8.1 Knowledge of turbine engine power augmentation systems and components is applied.
- 8.2 Knowledge of turbine engine power augmentation system and component maintenance is applied.
- 8.3 Knowledge of turbine engine power augmentation system and component inspection and certification is applied.

**Outcome 9**

Apply knowledge of turbine engine control systems to the certification of aeronautical maintenance.

**Performance criteria**

- 9.1 Knowledge of turbine engine control systems and components is applied.
- 9.2 Knowledge of turbine engine control system and component maintenance is applied.
- 9.3 Knowledge of turbine engine control system and component inspection and certification is applied.

**Outcome 10**

Apply knowledge of turbine engine fire protection systems to the certification of aeronautical maintenance.

**Performance criteria**

- 10.1 Knowledge of turbine engine fire protection systems and components is applied.
- 10.2 Knowledge of turbine engine fire protection system and component maintenance is applied.
- 10.3 Knowledge of turbine engine fire protection system and component inspection and certification is applied.

**Outcome 11**

Apply knowledge of turbine engine noise suppression systems to the certification of aeronautical maintenance.

**Performance criteria**

- 11.1 Knowledge of turbine engine noise suppression systems and components is applied.
- 11.2 Knowledge of turbine engine noise suppression system and component maintenance is applied.
- 11.3 Knowledge of turbine engine noise suppression system and component inspection and certification is applied.

**Outcome 12**

Apply knowledge of turbine engine starting systems to the certification of aeronautical maintenance.

**Performance criteria**

- 12.1 Knowledge of turbine engine starting systems and components is applied.
- 12.2 Knowledge of turbine engine starting system and component maintenance is applied.
- 12.3 Knowledge of turbine engine starting system and component inspection and certification is applied.

**Outcome 13**

Apply knowledge of turbine engine installation, storage and transportation to the certification of aeronautical maintenance.

**Performance criteria**

- 13.1 Knowledge of turbine engine installation, storage and transportation is applied.

- 13.2 Knowledge of turbine engine maintenance related to engine installation, storage and transportation is applied.
- 13.3 Knowledge of turbine engine inspection and certification related to engine installation, storage and transportation is applied.

### Outcome 14

Apply knowledge of turbine engine operation and ground running to the certification of aeronautical maintenance.

#### Performance criteria

- 14.1 Knowledge of turbine engine operation and ground running is applied.
- 14.2 Knowledge of turbine engine testing, inspection and certification is applied.

### Outcome 15

Apply knowledge of turbine engine propeller systems to the certification of aeronautical maintenance.

#### Performance criteria

- 15.1 Knowledge of turbine engine propeller systems and components is applied.
- 15.2 Knowledge of turbine engine propeller system and component maintenance is applied.
- 15.3 Knowledge of turbine engine propeller system and component inspection and certification 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>.

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**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.