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| <b>Title</b> | <b>Apply knowledge of aircraft radio systems to the certification of aeronautical maintenance</b> |                |           |
| <b>Level</b> | <b>6</b>  | <b>Credits</b> | <b>30</b> |

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| <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 certify the maintenance of aircraft avionics systems by applying knowledge of: radio fundamentals, high frequency communications systems, very high and ultra high frequency communications systems, emergency locator transmitters, audio systems, cockpit voice recorders, automatic direction finding systems, very high frequency omnidirectional range systems, instrument landing systems, satellite navigation systems, weather radar systems, distance measuring equipment systems, air traffic control transponder systems, area navigation systems, radio altimeter systems, collision avoidance systems, communications, addressing and reporting systems, and radio and radar system installation and maintenance 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 – Subject 15, Radio Systems 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 AC66-2.15, Examination Syllabus for Subject 15, Radio Systems 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 aircraft radio fundamentals to the certification of aeronautical maintenance.

#### Performance criteria

- 1.1 Knowledge of aircraft radio wave propagation is applied.
- 1.2 Knowledge of aircraft antenna principles is applied.
- 1.3 Knowledge of aircraft radio circuit principles is applied.
- 1.4 Knowledge of aircraft radio transmission line principles is applied.
- 1.5 Knowledge of aircraft radio receiver principles is applied.
- 1.6 Knowledge of aircraft radio transmitter principles is applied.
- 1.7 Knowledge of aircraft communication system principles is applied.

### Outcome 2

Apply knowledge of aircraft high frequency communication systems to the certification of aeronautical maintenance.

#### Performance criteria

- 2.1 Knowledge of aircraft high frequency communication system fundamentals is applied.
- 2.2 Knowledge of aircraft high frequency communication system maintenance and testing is applied.

**Outcome 3**

Apply knowledge of aircraft very high and ultra high frequency communication systems to the certification of aeronautical maintenance.

**Performance criteria**

- 3.1 Knowledge of aircraft very high frequency communication system theory is applied.
- 3.2 Knowledge of aircraft very high frequency communication system maintenance and testing is applied.
- 3.3 Knowledge of aircraft ultra high frequency communication transceivers operation is applied.
- 3.4 Knowledge of aircraft satellite communication transceiver operation is applied.

**Outcome 4**

Apply knowledge of aircraft emergency locator transmitters to the certification of aeronautical maintenance.

**Performance criteria**

- 4.1 Knowledge of aircraft emergency locator transmitter theory is applied.
- 4.2 Knowledge of aircraft emergency locator transmitter operation is applied.

**Outcome 5**

Apply knowledge of aircraft audio systems to the certification of aeronautical maintenance.

**Performance criteria**

- 5.1 Knowledge of aircraft audio integration and interphone systems is applied.
- 5.2 Knowledge of aircraft microphones is applied.
- 5.3 Knowledge of aircraft audio integration and interphone system maintenance and testing is applied.

**Outcome 6**

Apply knowledge of aircraft cockpit voice recorder systems to the certification of aeronautical maintenance.

**Performance criteria**

6.1 Knowledge of aircraft cockpit voice recorder systems is applied.

Range may include but is not limited to – purpose, requirements, performance levels.

6.2 Knowledge of aircraft cockpit voice recorder system maintenance and testing is applied.

**Outcome 7**

Apply knowledge of aircraft automatic direction finder systems to the certification of aeronautical maintenance.

**Performance criteria**

7.1 Knowledge of aircraft automatic direction finder systems principles is applied.

7.2 Knowledge of aircraft automatic direction finder system installation and maintenance is applied.

**Outcome 8**

Apply knowledge of aircraft very high frequency omnidirectional range systems to the certification of aeronautical maintenance.

**Performance criteria**

8.1 Knowledge of aircraft very high frequency omnidirectional range systems and components is applied.

8.2 Knowledge of aircraft very high frequency omnidirectional range system installation and maintenance is applied.

**Outcome 9**

Apply knowledge of aircraft instrument landing systems to the certification of aeronautical maintenance.

**Performance criteria**

9.1 Knowledge of aircraft instrument landing systems and components is applied.

9.2 Knowledge of aircraft instrument landing systems installation and maintenance is applied.

**Outcome 10**

Apply knowledge of aircraft satellite navigation systems to the certification of aeronautical maintenance.

**Performance criteria**

- 10.1 Knowledge of aircraft satellite navigation systems and components is applied.
- 10.2 Knowledge of aircraft satellite navigation system installation and maintenance is applied.

**Outcome 11**

Apply knowledge of aircraft weather radar systems to the certification of aeronautical maintenance.

**Performance criteria**

- 11.1 Knowledge of aircraft radar theory is applied.
- 11.2 Knowledge of aircraft weather radar systems is applied.
- 11.3 Knowledge of aircraft weather radar system installation and maintenance is applied.

**Outcome 12**

Apply knowledge of aircraft distance measuring equipment systems to the certification of aeronautical maintenance.

**Performance criteria**

- 12.1 Knowledge of aircraft distance measuring equipment systems is applied.  
  
Range may include but is not limited to – ground station responses, characteristics of interrogation and reply pulse trains.
- 12.2 Knowledge of aircraft distance measuring equipment system installation and maintenance is applied.

**Outcome 13**

Apply knowledge of aircraft air traffic control transponder systems to the certification of aeronautical maintenance.

**Performance criteria**

- 13.1 Knowledge of aircraft air traffic control transponder systems principles is applied.
- 13.2 Knowledge of aircraft air traffic control transponder system installation and maintenance is applied.

**Outcome 14**

Apply knowledge of aircraft area navigation systems to the certification of aeronautical maintenance.

**Performance criteria**

- 14.1 Knowledge of aircraft area navigation systems principles is applied.
- 14.2 Knowledge of aircraft area navigation system installation and maintenance is applied.

**Outcome 15**

Apply knowledge of aircraft radio altimeter systems to the certification of aeronautical maintenance.

**Performance criteria**

- 15.1 Knowledge of aircraft radio altimeter systems principles is applied.
- 15.2 Knowledge of aircraft radio altimeter system installation and maintenance is applied.

**Outcome 16**

Apply knowledge of aircraft collision avoidance systems to the certification of aeronautical maintenance.

**Performance criteria**

- 16.1 Knowledge of aircraft collision avoidance systems principles is applied.
- 16.2 Knowledge of aircraft collision avoidance system installation and maintenance is applied.

**Outcome 17**

Apply knowledge of aircraft communication, addressing and reporting systems to the certification of aeronautical maintenance.

**Performance criteria**

- 17.1 Knowledge of aircraft communication, addressing and reporting systems principles is applied.
- 17.2 Knowledge of aircraft communication, addressing and reporting system maintenance is applied.

**Outcome 18**

Apply knowledge of aircraft radio and radar system installation and maintenance to the certification of aeronautical maintenance.

**Performance criteria**

- 18.1 Knowledge of aircraft radio and radar system installation is applied.
- 18.2 Knowledge of aircraft radio and radar system maintenance is applied.
- 18.3 Knowledge of aircraft measuring instrument maintenance is applied.

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| <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       | 9 December 2010   | 31 December 2020         |
| Review       | 2       | 28 September 2017 | 31 December 2024         |
| Review       | 3       | 27 October 2022   | N/A                      |

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| <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.