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| <b>Title</b> | <b>Demonstrate aircraft technical knowledge and principles of flight for private aircraft operations</b> |                |           |
| <b>Level</b> | <b>3</b>   | <b>Credits</b> | <b>10</b> |

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| <b>Purpose</b> | People credited with this unit standard are, for private aircraft operations in accordance with Subject No 12, able to demonstrate: aircraft technical knowledge used; and knowledge of the principles of flight. |
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| <b>Classification</b> | Aviation > Aircraft Operation |
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| <b>Available grade</b> | Achieved |
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| <b>Entry information</b>                |   |
| <b>Recommended skills and knowledge</b> | Industry requirements are that the candidate must meet the eligibility requirements of the Civil Aviation Act 1990 and the Civil Aviation Rule Part 61 for a private pilot licence. |

### Explanatory notes

- 1 This unit standard is aligned with the relevant parts of the prescribed syllabi of the Civil Aviation Authority of New Zealand (CAA) for Subject No 12, for a private pilot licence. Credit will be awarded on meeting the requirements of the CAA approved assessment or examination.
- 2 Private aircraft operations are those which are not performed for hire or reward.
- 3 Definitions, abbreviations, and acronyms used in this unit standard are to be found in:
  - a *Civil Aviation Rules Part 1* on the CAA website at <https://www.caa.govt.nz>, and
  - b *Aeronautical Information Publication (AIP)* published by Aeronautical Information Management (AIM), PO Box 294, Wellington 6140 or on the AIM website at <http://www.aip.net.nz>.
- 4 All references to the CAA refer specifically to the Civil Aviation Authority of New Zealand.
- 5 Industry standards and recommended practices are those set in place by the CAA.
- 6 Industry texts may include but are not limited to – aircraft flight manuals, CAA Rules, CAA Advisory Circulars, NZCAA Flight Test Standard Guides, operator exposition.
- 7 For the purpose of this unit standard, *knowledge* refers to the knowledge, understanding, and application of the subject matter.

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## Outcomes and evidence requirements

### Outcome 1

Demonstrate aircraft technical knowledge used in private aircraft operations in accordance with Subject No 12.

### Evidence requirements

- 1.1 Major components of a conventional airframe, the basic operation and function, and the principles involved for the different types of aircraft used for private operations are described in accordance with industry texts and standards.
- Range may include but is not limited to – monoplane (high wing, low wing); biplane; fuselage, wings, tail section, control surfaces, undercarriage, powerplant.
- 1.2 Aircraft piston engine types, the purpose of major components, and the basic principle of operation are described in accordance with industry texts and standards.
- Range may include but is not limited to – four stroke, in-line, horizontally opposed, radial.
- 1.3 Carburation and its principles and operation are described in accordance with industry texts and standards.
- 1.4 Fuel systems and fuel, components, and their principles and operation are described in accordance with industry texts and standards.
- 1.5 Lubrication and cooling systems, their components, and their principles are described in accordance with industry texts and standards.
- 1.6 Engine handling and its principles are described in accordance with industry texts and standards.
- 1.7 The electrical system, major components, and their principles are described in accordance with industry texts and standards.
- 1.8 Pressure instruments and their principles of operation are described in accordance with industry texts and standards.
- 1.9 Gyroscopic instruments and their properties and principles of operation are described in accordance with industry texts and standards.
- 1.10 Magnetic compass and its principles are described in accordance with industry texts and standards.

**Outcome 2**

Demonstrate knowledge of the principles of flight in accordance with Subject No 12.

**Evidence requirements**

- 2.1 The atmosphere is described in accordance with industry texts and standards.  
 Range may include but is not limited to – principle gases; pressure, temperature, air density.
- 2.2 Basic aerodynamic theory and its associated principles for aviation are described in accordance with industry texts and standards.
- 2.3 Flying controls and their principles of operation are described in accordance with industry texts and standards.
- 2.4 Straight and level flight is described in accordance with industry texts and standards.
- 2.5 Climbing and descending, and the factors affecting climb performance, are described in accordance with industry texts and standards.
- 2.6 Turning is described in accordance with industry texts and standards.
- 2.7 Stalling and spinning and their principles are described in accordance with industry texts and standards.
- 2.8 Propeller theory and the principles of operation are described in accordance with industry texts and standards.
- 2.9 Take-off and landing performance and their principles are described in accordance with industry texts and standards.
- 2.10 Aircraft loading and its principles are described in accordance with industry texts and standards.

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| <b>Planned review date</b> | 31 December 2021 |
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**Status information and last date for assessment for superseded versions**

| Process      | Version | Date            | Last Date for Assessment |
|--------------|---------|-----------------|--------------------------|
| Registration | 1       | 26 March 2007   | 31 December 2018         |
| Review       | 2       | 20 October 2016 | N/A                      |

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| <b>Consent and Moderation Requirements (CMR) reference</b> | 0169 |
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This CMR can be accessed at <http://www.nzqa.govt.nz/framework/search/index.do>.

**Please note**

Providers must be granted consent to assess against standards (accredited) by NZQA, before they can report credits from assessment against unit standards or deliver courses of study leading to that assessment.

Industry Training Organisations must be granted consent to assess against standards by NZQA before they can register credits from assessment against unit standards.

Providers and Industry Training Organisations, which have been granted consent and which are assessing against unit standards must engage with the moderation system that applies to those standards.

Requirements for consent to assess and an outline of the moderation system that applies to this standard are outlined in the Consent and Moderation Requirements (CMR). The CMR also includes useful information about special requirements for organisations wishing to develop education and training programmes, such as minimum qualifications for tutors and assessors, and special resource requirements.

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**Comments on this unit standard**

Please contact ServiceIQ [qualifications@serviceiq.org.nz](mailto:qualifications@serviceiq.org.nz) if you wish to suggest changes to the content of this unit standard.