

Title	Demonstrate knowledge of air navigation and flight planning for private aircraft operations		
Level	3	Credits	5

Purpose	People credited with this unit standard are, for private aircraft operations in accordance with Subject No 6, able to demonstrate knowledge of: fundamentals of air navigation; aeronautical maps and charts; mental dead or deduced reckoning; flight planning; and visual navigation procedures; and to use a circular slide rule to calculate computations.
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Classification	Aviation > Aircraft Operation
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Available grade	Achieved
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Guidance Information

- 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 6, 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 Evidence presented for assessment against this unit standard must be in accordance with industry texts, standards and Subject No 6.
- 5 All references to the CAA refer specifically to the Civil Aviation Authority of New Zealand.
- 6 Industry standards and recommended practices are those set in place by the CAA.
- 7 Industry texts may include but are not limited to – aircraft flight manuals, CAA Rules, CAA Advisory Circulars, NZCAA Flight Test Standard Guides, operator exposition.
- 8 For the purpose of this unit standard, *knowledge* refers to the knowledge, understanding, and application of the subject matter.

- 9 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.

Outcomes and performance criteria

Outcome 1

Demonstrate knowledge of fundamentals of air navigation.

Performance criteria

- 1.1 The form of the earth is described.
- Range may include but is not limited to – general shape, rotation, geographic poles.
- 1.2 Direction on the earth is described.
- Range may include but is not limited to – method of indicating direction, earth's magnetic field.
- 1.3 Distance on the earth is defined and calculated.
- 1.4 Speed is defined.
- 1.5 Position referencing is defined and described.
- 1.6 Altimetry is defined and described.
- 1.7 Principles and terminology of air navigation are defined, described, and applied.
- Range may include but is not limited to – 1:60 rule.
- 1.8 Time is defined and described.
- Range may include but is not limited to – date/time groups; Coordinated Universal Time (UTC), Standard Time (NZST), Daylight Time (NZDT).
- 1.9 Triangle of velocities is defined and calculated.

Outcome 2

Demonstrate knowledge of aeronautical maps and charts.

Performance criteria

- 2.1 Properties and principles of maps and charts are described.
- 2.2 Aeronautical maps and charts are interpreted and described.

Outcome 3

Use a circular slide rule to calculate computations.

Performance criteria

3.1 Computations are calculated.

Range may include but is not limited to – mathematical equations, time and distance, fuel consumption, fuel burn rate, conversions.

Outcome 4

Demonstrate knowledge of mental dead or deduced reckoning.

Performance criteria

4.1 In-flight revisions are estimated and described.

Range may include but is not limited to – 1:60 rule, driftlines, headings, ETA, effect of variations in heading speed and altitude, limitations affecting navigation in conditions of reduced visibility.

Outcome 5

Demonstrate knowledge of flight planning.

Performance criteria

5.1 Route selection requirements are described.

5.2 Map preparation is demonstrated.

5.3 Flight plan preparation is demonstrated.

5.4 Fuel planning calculations are carried out.

Range may include but is not limited to – expected fuel burn, minimum fuel required.

5.5 Load planning calculations are carried out.

Outcome 6

Demonstrate knowledge of visual navigation procedures.

Performance criteria

6.1 Flight management requirements are described.

6.2 Special procedures are described.

Range may include but is not limited to – re-establishing position if lost, diverting, navigating at low level.

Planned review date	31 December 2028
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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	31 December 2027
Review	3	28 September 2023	N/A

Consent and Moderation Requirements (CMR) reference	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 if you wish to suggest changes to the content of this unit standard.