

Title	Demonstrate knowledge of air navigation and flight planning for commercial aircraft operations		
Level	5	Credits	15

Purpose	People credited with this unit standard are, for commercial aircraft operations, able to: demonstrate knowledge of the fundamentals of air navigation; demonstrate knowledge of aeronautical charts; use a circular slide rule to perform calculations; demonstrate knowledge of flight planning; and demonstrate knowledge of visual navigation procedures.
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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 18 for a commercial pilot licence. Credit will be awarded on meeting the requirements of the CAA-approved assessment or examination.
- 2 Commercial aircraft operations are those which are 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 and standards.
- 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, CAA Flight Test Standards Guides, operator exposition, New Zealand Defence Force (NZDF) Policy.
- 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 2023 and the Civil Aviation Rules Part 61 for a commercial pilot licence.
- 10 In accordance with the provisions of Civil Aviation Rule Part 61 for Pilot Licences and Ratings and the associated Advisory Circulars, the CAA accepts specific NZDF flight crew qualifications and associated flight experience towards a number of the prescribed eligibility requirements for the issue of a New Zealand pilot licence and associated ratings.

Outcomes and performance criteria

Outcome 1

Demonstrate knowledge of the fundamentals of air navigation for commercial aircraft operations.

Performance criteria

- 1.1 The form of the earth is described.
- Range may include but is not limited to – parallels of latitude, meridian of longitude, Greenwich (Prime) Meridian.
- 1.2 Direction on the earth is described.
- Range may include but is not limited to – relative bearing, back bearing, limitations when deriving bearings and distances from a chart.
- 1.3 Distance on the earth is defined and calculated.
- 1.4 Aircraft speed and velocity are defined and explained.
- 1.5 Aircraft position referencing is defined and described.
- 1.6 Altimetry is defined and described.
- 1.7 Time is defined and explained.
- Range may include but is not limited to – Local Mean Time (LMT), Coordinated Universal Time (UTC), New Zealand Standard Time (NZST), New Zealand Daylight Time (NZDT).

Outcome 2

Demonstrate knowledge of aeronautical charts for commercial aircraft operations.

Performance criteria

- 2.1 Properties and principles of aeronautical charts are described.

2.2 Aeronautical charts are interpreted and described.

Range includes but is not limited to – operational data.

Outcome 3

Use a circular slide rule to perform calculations for commercial aircraft operations.

Range the 1 in 60 rule.

Performance criteria

3.1 Computations are calculated.

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

3.2 The triangle of velocities is defined, calculated, and solved.

Outcome 4

Demonstrate knowledge of flight planning for commercial aircraft operations.

Performance criteria

4.1 Route selection factors are described.

4.2 Chart preparation is demonstrated.

4.3 Flight plan preparation is demonstrated.

4.4 Fuel planning is calculated.

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

Outcome 5

Demonstrate knowledge of visual navigation procedures for commercial aircraft operations.

Performance criteria

5.1 The techniques and procedures for VFR are described.

5.2 Special procedures are described.

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

5.3 Enroute diversion calculations are defined and performed.

5.4 The use of the Global Navigation Satellite System is explained.

Replacement information	This unit standard replaced unit standard 15362.
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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	18 June 2010	31 December 2018
Revision	2	18 February 2011	31 December 2018
Review	3	20 October 2016	31 December 2027
Review	4	28 September 2023	31 December 2027
Review	5	29 May 2025	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.