

Title	Demonstrate knowledge of aeroplane principles of flight and performance for commercial aeroplane operations		
Level	5	Credits	15

Purpose	People credited with this unit standard are able to demonstrate knowledge of aeroplane principles of flight and performance for commercial aeroplane operations.
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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 22 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 aeroplane principles of flight and performance for commercial aeroplane operations.

Performance criteria

- 1.1 Aeroscience is defined and described.
- Range may include but is not limited to – units of measurement, speed, velocity, acceleration, Newton's three laws of motion.
- 1.2 The atmosphere is described.
- Range may include but is not limited to – air density, ISA sea-level pressure, density altitude.
- 1.3 Basic aerodynamic theory and its associated principles for aviation are described.
- 1.4 Lift and its associated principles for aviation are described.
- 1.5 Drag and its associated principles for aviation are described.
- 1.6 Lift augmentation and its principles and effects on flight are explained.
- Range may include but is not limited to – lift augmentation devices.
- 1.7 Flight controls and their principles of operation are described.
- 1.8 Stalling and spinning and their principles are described.
- 1.9 Straight and level flight is described.
- 1.10 Climbing and descending, and the factors affecting climb performance, are described.
- 1.11 Turning is described.
- 1.12 Propeller theory and the principles of propeller operation are described.

1.13 Stability is defined and explained.

Range may include but is not limited to – static stability, dynamic stability, longitudinal stability.

1.14 Asymmetric flight is explained.

1.15 Aeroplane range and endurance are defined and explained.

1.16 Aeroplane performance is defined and explained.

Range may include but is not limited to – take-off distance required, take-off distance available; wind-component graphs; landing distance.

Replacement information	This unit standard replaced unit standard 15352.
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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.