

Title	Demonstrate helicopter technical knowledge and principles of flight for private helicopter operations		
Level	3	Credits	10

Purpose	People credited with this unit standard are, for private helicopter operations in accordance with Subject No 14, able to demonstrate: helicopter technical knowledge used; and knowledge of the principles of flight.
----------------	---

Classification	Aviation > Aircraft Operation
-----------------------	-------------------------------

Available grade	Achieved
------------------------	----------

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 14, 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 14.
- 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 helicopter technical knowledge used in private helicopter operations.

Performance criteria

- 1.1 Helicopter piston engine types, the purpose of major components, and the basic principle of operation are identified and explained.
- Range may include but is not limited to – four stroke, in-line, horizontally opposed, radial.
- 1.2 Carburation and its principles and operation are described.
- 1.3 Fuel systems and fuel, components, and their principles and operation are described.
- 1.4 Lubrication and cooling systems, their components, and their principles are identified and explained.
- 1.5 Transmission systems, the major components, and their function and operation are described.
- 1.6 Rotor systems, and their basic purpose and principles of operation are described.
- 1.7 The electrical system, major components, and their principles are explained.
- 1.8 Pressure instruments and their principles of operation are described.
- 1.9 Gyroscopic instruments and their properties and principles of operation are explained.
- 1.10 Magnetic compass and its principles are described.

Outcome 2

Demonstrate knowledge of the principles of flight.

Performance criteria

- 2.1 The atmosphere is described.
- Range may include but is not limited to – principle gases; pressure, temperature, air density.
- 2.2 Basic aerodynamic theory and its associated principles to aviation are defined and described.

- 2.3 Rotary wing aerodynamics and its associated principles are explained.
- 2.4 The anti-torque (tail) rotor and its purpose is described.
- 2.5 Hovering flight is described.
- 2.6 Forward flight is explained.
- 2.7 Climbing and descending, and the factors affecting climb performance, are described.
- 2.8 Turning is described.
- 2.9 Autorotative flight and its principles are explained.
- 2.10 Hazardous flight conditions are stated.
- Range may include but is not limited to – conditions leading to, symptoms, pilot actions.
- 2.11 Helicopter performance and its principles are stated.
- 2.12 Helicopter loading and its principles are explained and calculated.

Planned review date	31 December 2028
----------------------------	------------------

Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	26 March 2007	31 December 2016
Review	2	20 October 2016	31 December 2027
Review	3	28 September 2023	N/A

Consent and Moderation Requirements (CMR) reference	0028
--	------

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.