

Title	Demonstrate knowledge of human factors 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 10, able to demonstrate knowledge of: general human factors; physiology and the effects of flight; flying and health; aviation psychology; ergonomics in relation to flying; and first aid and survival.
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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 10, 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.10.
- 5 In the context of this unit standard the term *human factors* is about human performance and human limitations both in the air and on the ground. It encompasses the medical, psychological, ergonomic, and engineering aspects associated with private aircraft operations.
- 6 All references to the CAA refer specifically to the Civil Aviation Authority of New Zealand.
- 7 Industry standards and recommended practices are those set in place by the CAA.
- 8 Industry texts may include but are not limited to – aircraft flight manuals, CAA Rules, CAA Advisory Circulars, NZCAA Flight Test Standard Guides, operator exposition.

- 9 For the purpose of this unit standard, *knowledge* refers to the knowledge, understanding, and application of the subject matter.
- 10 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 general human factors.

Performance criteria

- 1.1 Airmanship and responsibility are described.
- 1.2 Human factors, models and programmes are defined and explained.

Outcome 2

Demonstrate knowledge of physiology and the effects of flight.

Performance criteria

- 2.1 The atmosphere is described.
- 2.2 Circulation and respiratory systems are described.
- 2.3 The causes and effects of hypoxia is defined and described.
- Range may include but is not limited to – causes, symptoms, prevention.
- 2.4 The causes and effects of hyperventilation are defined and described.
- 2.5 The causes and effects of entrapped gases are defined and described.
- 2.6 The causes and effects of decompression sickness are defined and described.
- 2.7 Vision and visual perception are identified and described.
- 2.8 Hearing and balance are described.
- 2.9 Spatial orientation is defined and described.
- 2.10 Gravitational forces are explained.
- 2.11 Motion sickness is described.
- 2.12 Flight anxiety is explained and described.

Outcome 3

Demonstrate knowledge of flying and health.

Performance criteria

- 3.1 Medical fitness requirements to fly are described.
- 3.2 Restrictions related to alcohol and drugs are explained.
- Range may include but is not limited to – effects on performance.
- 3.3 Effects of blood donation on health are described.
- 3.4 Environmental hazards present in the aviation environment are described.
- Range may include but is not limited to – carbon monoxide, fuel, lubricating oils, hydraulic fluids.
- 3.5 Stress management is defined and described.
- 3.6 Sleep and fatigue (alertness management) are described and explained.
- 3.7 Ageing is identified and described.
- Range may include but is not limited to – physiological and behavioural changes.

Outcome 4

Demonstrate knowledge of aviation psychology.

Performance criteria

- 4.1 Information processing is identified and described.
- Range may include but is not limited to – human sensors, types of memory, perception.
- 4.2 Situational awareness is defined and described.
- 4.3 Judgement and decision making is described.
- Range may include but is not limited to – hazardous attitudes, risk assessment techniques, decision making models.
- 4.4 Social psychology and flight deck management are defined and described.
- Range may include but is not limited to – teamwork, leadership, communication.
- 4.5 Threat and error management is explained and described.

4.6 Culture is identified and described.

Range may include but is not limited to – safety culture, safety reporting in aviation.

Outcome 5

Demonstrate knowledge of ergonomics in relation to flying.

Performance criteria

5.1 Flight deck design is described.

5.2 Design of controls is explained.

5.3 Instrumentation, displays, and alerts are explained and described.

5.4 Documents and procedures are described.

Range may include but is not limited to – normal checklists, emergency checklists.

Outcome 6

Demonstrate knowledge of first aid and survival.

Performance criteria

6.1 Basic principles of first aid are described.

6.2 Survival requirements are stated and explained.

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.