

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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Entry information	
Recommended skills and knowledge	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.

Explanatory notes

- 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 In the context of this unit standard the term *human factors* are 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.
- 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.

Outcomes and evidence requirements

Outcome 1

Demonstrate knowledge of general human factors in accordance with Subject No 10.

Evidence requirements

- 1.1 Airmanship and responsibility are described in accordance with industry texts and standards.
- 1.2 Human factors, models and programmes are defined and described in accordance with industry texts and standards.

Outcome 2

Demonstrate knowledge of physiology and the effects of flight in accordance with Subject No 10.

Evidence requirements

- 2.1 The atmosphere is described in accordance with industry texts and standards.
- 2.2 Circulation and respiratory systems are described in accordance with industry texts and standards.
- 2.3 The causes and effects of hypoxia is defined and described in accordance with industry texts and standards.

Range may include but is not limited to – causes, symptoms, prevention.
- 2.4 The causes and effects of hyperventilation are defined and described in accordance with industry texts and standards.
- 2.5 The causes and effects of entrapped gases are defined and described in accordance with industry texts and standards.
- 2.6 The causes and effects of decompression sickness are defined and described in accordance with industry texts and standards.
- 2.7 Vision and visual perception are described and identified in accordance with industry texts and standards.
- 2.8 Hearing and balance are described in accordance with industry texts and standards.

- 2.9 Spatial orientation is defined and described in accordance with industry texts and standards.
- 2.10 Gravitational forces are explained in accordance with industry texts and standards.
- 2.11 Motion sickness is described in accordance with industry texts and standards.
- 2.12 Flight anxiety is explained and described in accordance with industry texts and standards.

Outcome 3

Demonstrate knowledge of flying and health in accordance with Subject No 10.

Evidence requirements

- 3.1 Medical fitness requirements to fly are described in accordance with industry texts and standards.
- 3.2 Restrictions related to alcohol and drugs are explained in accordance with industry texts and standards.

Range may include but is not limited to – effects on performance.
- 3.3 Effects of blood donation on health are described in accordance with industry texts and standards.
- 3.4 Environmental hazards present in the aviation environment are described in accordance with industry texts and standards.

Range may include but is not limited to – carbon monoxide, fuel, lubricating oils, hydraulic fluids.
- 3.5 Stress management is defined and described in accordance with industry texts and standards.
- 3.6 Sleep and fatigue (alertness management) are described and explained in accordance with industry texts and standards.
- 3.7 Ageing is identified and described in accordance with industry texts and standards.

Range may include but is not limited to – physiological and behavioural changes.

Outcome 4

Demonstrate knowledge of aviation psychology in accordance with Subject No 10.

Evidence requirements

4.1 Information processing is identified and described in accordance with industry texts and standards.

Range may include but is not limited to – human sensors, types of memory, perception.

4.2 Situational awareness is defined and described in accordance with industry texts and standards.

4.3 Judgement and decision making is described in accordance with industry texts and standards.

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 in accordance with industry texts and standards.

Range may include but is not limited to – teamwork, leadership, communication.

4.5 Threat and error management is explained and described in accordance with industry texts and standards.

4.6 Culture is identified and described in accordance with industry texts and standards.

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

Outcome 5

Demonstrate knowledge of ergonomics in relation to flying in accordance with Subject No 10.

Evidence requirements

5.1 Flight deck design is described in accordance with industry texts and standards.

5.2 Design of controls is explained in accordance with industry texts and standards.

5.3 Instrumentation, displays, and alerts are explained and described in accordance with industry texts and standards.

5.4 Documents and procedures are described in accordance with industry texts and standards.

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

Outcome 6

Demonstrate knowledge of first aid and survival in accordance with Subject No 10.

Evidence requirements

- 6.1 Basic principles of first aid are described in accordance with industry texts and standards.
- 6.2 Survival requirements are stated and explained in accordance with industry texts and standards.

Planned review date	31 December 2021
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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	N/A

Consent and Moderation Requirements (CMR) reference	0169
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This CMR can be accessed at <http://www.nzqa.govt.nz/framework/search/index.do>.

Please note

Providers must be granted consent to assess against standards (accredited) by NZQA, before they can report credits from assessment against unit standards or deliver courses of study leading to that assessment.

Industry Training Organisations must be granted consent to assess against standards by NZQA before they can register credits from assessment against unit standards.

Providers and Industry Training Organisations, which have been granted consent and which are assessing against unit standards must engage with the moderation system that applies to those standards.

Requirements for consent to assess and an outline of the moderation system that applies to this standard are outlined in the Consent and Moderation Requirements (CMR). The CMR also includes useful information about special requirements for organisations wishing to develop education and training programmes, such as minimum qualifications for tutors and assessors, and special resource requirements.

Comments on this unit standard

Please contact ServiceIQ qualifications@serviceiq.org.nz if you wish to suggest changes to the content of this unit standard.