

Title	Demonstrate knowledge of, and skills for, winter flying		
Level	5	Credits	5

Purpose	People credited with this unit standard are able to demonstrate knowledge of preparation for aircraft operation in winter conditions, and winter aircraft take-off procedures; describe ice protection systems; winter pre-flight checks and procedures; hazards occurring in-flight during winter conditions; landing procedures for winter flying conditions; and secure an aircraft post-flight for winter flying conditions.
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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 *Winter Flying* (2023) (Good Aviation Practice) published by the Civil Aviation Authority (CAA).
- 2 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>.
- 3 Evidence presented for assessment against this unit standard must be in accordance with industry texts and standards.
- 4 All references to the CAA refer specifically to the Civil Aviation Authority of New Zealand.
- 5 Industry standards and recommended practices are those set in place by the CAA.
- 6 Industry texts may include but are not limited to – aircraft flight manuals, CAA Rules, CAA Advisory Circulars, CAA GAP publications, operator exposition.
- 7 For the purpose of this unit standard, *knowledge* refers to the knowledge, understanding, and application of the subject matter.
- 8 Industry requirements are that the candidate must meet the eligibility requirements of the Civil Aviation Act 1990 and the Civil Aviation Rules Part 61 for a pilot licence.

Outcomes and performance criteria

Outcome 1

Demonstrate knowledge of preparation for aircraft operation in winter conditions.

Performance criteria

- 1.1 The purpose of checking heating and defrosting systems is described.
- Range includes but is not limited to – carbon monoxide emissions.
- 1.2 Water accumulation and measures to alleviate it are described.
- Range includes but is not limited to – internal structures, control surfaces, fuselage bulkheads, pitot-static systems.
- 1.3 Fuel contamination, and measures to minimise it, are described.
- Range may include but is not limited to – condensation, fuel checks.
- 1.4 Preventative care for aircraft batteries is described.
- Range includes but is not limited to – charge, storage.
- 1.5 Problems associated with mud and slush in relation to aircraft operation are described.
- Range includes but is not limited to – spats, fairings, undercarriage bays.
- 1.6 Cleaning procedures are described.
- Range includes but is not limited to – frequency, method, lubrication.
- 1.7 Use of covers is explained.
- 1.8 Use of tie-downs is explained.
- 1.9 Personal preparation is described.
- Range includes but is not limited to – I'M SAFE checklist, spare warm clothing, survival kit.

Outcome 2

Describe ice protection systems.

Performance criteria

2.1 Aircraft ice protection systems are described.

Range systems may include but are not limited to – pitot heat, de-icing fluids, pneumatic boots, propeller de-icing, windscreen de-icing, rotor-blade anti-icing.

Outcome 3

Describe winter pre-flight checks and procedures.

Performance criteria

3.1 Pre-flight checks and procedures are described.

Range includes but is not limited to – weather (departure, enroute, destination); covering of snow, ice, or frost; pitot-static systems.

3.2 Engine start and warm-up procedures are described.

Outcome 4

Demonstrate knowledge of winter aircraft take-off procedures.

Performance criteria

4.1 Taxiing techniques are described.

Range includes but is not limited to – ice, snow, heavy rain, fog, windscreen misting.

4.2 Potential hazards to aircraft during take-off are stated.

Range includes but is not limited to – snow, ice, slush, mud, wet grass.

4.3 Take-off techniques are described.

Range may include but is not limited to – runway position, abort decision point, take-off path, loss of visual ground reference, exit flight path.

Outcome 5

Describe hazards occurring in-flight during winter conditions.

Performance criteria

5.1 The causes of induction icing are described.

5.2 Preventative measures to resolve induction icing are described.

5.3 Actions in the event of loss of visibility are described.

- 5.4 Actions in the event of freezing rain are described.
- 5.5 Hazards associated with snowfall are described.
- 5.6 The effects of whiteout, and actions to be taken in the event of encountering whiteout, are described.

Outcome 6

Describe landing procedures for winter flying conditions.

Performance criteria

- 6.1 Approach and landing procedures in fog are described.
- 6.2 Approach and landing procedures on to wet surfaces are described.
- 6.3 Approach and landing procedures on snow are described.
- 6.4 The effects of snow ingestion on aircraft engines are described.

Outcome 7

Secure an aircraft post-flight for winter flying conditions.

Performance criteria

- 7.1 Aircraft is secured.

Range includes but is not limited to – covering, topping up tanks, control locks, tie-down.

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	9 December 2010	31 December 2018
Review	3	20 October 2016	31 December 2027
Revision	4	30 August 2018	31 December 2027
Review	5	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.