

<b>Title</b>	<b>Demonstrate knowledge of, and skills for, winter flying</b>		
<b>Level</b>	<b>5</b>	<b>Credits</b>	<b>5</b>

<b>Purpose</b>	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.
----------------	--

<b>Classification</b>	Aviation > Aircraft Operation
-----------------------	-------------------------------

<b>Available grade</b>	Achieved
------------------------	----------

---

### 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.

<b>Planned review date</b>	31 December 2028
----------------------------	------------------

#### 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

<b>Consent and Moderation Requirements (CMR) reference</b>	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](mailto:qualifications@ringahora.nz) if you wish to suggest changes to the content of this unit standard.