

Title	Demonstrate flying skills for a commercial pilot licence (balloon)		
Level	5	Credits	8

Purpose	People credited with this unit standard are able, for a commercial pilot licence (balloon), to demonstrate: general knowledge for a balloon flight test; piloting techniques for balloon operations as contained in the syllabus in AC 61-5.
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Classification	Aviation > Aircraft Operation
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Available grade	Achieved
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Guidance Information

- 1 The test flight covered by this unit standard must be demonstrated in accordance with the Civil Aviation Rules Part 61 and 91, and other relevant rules, published by the Civil Aviation Authority of New Zealand (CAA), PO Box 3555, Wellington 6140, and their subsequent amendments.
- 2 This unit standard is aligned with the relevant parts of the prescribed syllabi of the CAA for a commercial pilot licence. Credit will be awarded on meeting the requirements of the CAA-approved assessment or examination.
- 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 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 Flight Test Standards Guides, 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 Rule Part 61 for a commercial pilot licence.

Outcomes and performance criteria

Outcome 1

Demonstrate general knowledge for a balloon flight test.

Performance criteria

- 1.1 Aircraft documents are described in accordance with industry texts and standards.
- Range includes but is not limited to – certificate of airworthiness, flight manual, maintenance requirements, radio licence, pilot logbook.
- 1.2 Balloon layout and inspection is described in accordance with the flight manual and industry standards.
- Range includes but is not limited to – balloon, burner, cylinders; fire precaution; control on ground.
- 1.3 Cylinder filling and installation is described in accordance with the flight manual and industry standards.
- 1.4 Preparation and attachment of ropes is described in accordance with the flight manual and industry standards.
- Range includes but is not limited to – trail rope, crown rope, handling line.
- 1.5 Personnel briefing is described in accordance with industry texts and standards.
- Range includes but is not limited to – experienced helper, passengers, launch crew, retrieval crew.
- 1.6 Pre-take-off checks are described in accordance with industry texts and standards.
- Range includes but is not limited to – weight and temperature, calculations, flight planning with particular reference to meteorological information, controlled airspace, obstructions.
- 1.7 Pre-flight planning is described in accordance with industry texts and standards.
- Range includes but is not limited to – weight and temperature, calculations, flight planning, meteorological information, controlled airspace, obstructions.
- 1.8 Inflation procedures are described in accordance with the flight manual and industry standards.
- Range includes but is not limited to – fuel, pre-take-off checks, instructions.

- 1.9 Actions in the event of pilot flame failure are described in accordance with industry texts and standards.
- 1.10 Properties of gas are described in accordance with industry texts and standards.
- Range includes but is not limited to – temperature variation, vapour pressure, burner power.
- 1.11 The effect of internal balloon temperature is described in accordance with industry texts and standards.
- Range may include but is not limited to – envelope temperature, maximum rate of climb limitations in the absence of an envelope temperature gauge.
- 1.12 Licence privileges are described in accordance with industry texts and standards.

Outcome 2

Demonstrate piloting techniques for balloon operations as contained in the syllabus in AC 61-5.

Performance criteria

- 2.1 Rigging and mooring is demonstrated in accordance with the flight manual and industry standards.
- Range includes but is not limited to – installation of basket, burners.
- 2.2 Ascent or descent to a specified height is demonstrated in accordance with the flight manual and industry standards.
- Range stable flight condition.
- 2.3 Rapid descent rate is demonstrated in accordance with the flight manual and industry standards.
- Range may include but is not limited to – use of parachute vent or discharge valve, use of burner to stabilise flight condition.
- 2.4 Knowledge of flying in thermals is demonstrated in accordance with the flight manual and industry standards.
- Range flying in thermals includes – entering, flying in, leaving; evidence must be either observation of practical flight or demonstration of knowledge.

- 2.5 Approaching and flying over likely sources of rising or sinking air, or adiabatic conditions, is demonstrated in accordance with the flight manual and industry standards.
- 2.6 Contour flying in open country is demonstrated in accordance with the flight manual and industry standards.
- 2.7 Stepping down in height on approach to landing area is demonstrated in accordance with the flight manual and industry standards.
- 2.8 Fuel management in flight is demonstrated in accordance with the flight manual and industry standards.
- 2.9 Recognition of wind shear, gusts, and crosswinds is demonstrated in accordance with industry texts and standards.
- 2.10 Landing area selection and general approach is demonstrated in accordance with the flight manual and industry standards.
- Range may include but is not limited to – approach to landing area over an obstruction and landing close to obstruction.
- 2.11 Intermediate landing is demonstrated in accordance with the flight manual and industry standards.
- Range may include but is not limited to – wind below 5 knots; use of trail rope, crown rope.
- 2.12 Normal landing is demonstrated in accordance with the flight manual and industry standards.
- Range may include but is not limited to – ground level reached at close to zero vertical velocity.
- 2.13 Emergency landing is demonstrated in accordance with the flight manual and industry standards.
- Range may include but is not limited to – full preparation for hard landing.
- 2.14 Landing is demonstrated in accordance with the flight manual and industry standards.
- Range may include but is not limited to – without using the parachute vent or discharge valves, using the parachute vent or Velcro rip panel.
- 2.15 Post-flight actions are carried out in accordance with the flight manual and industry standards.
- Range may include but is not limited to – closing off gas cylinder, burning out fuel remaining in lines, extinguishing pilot light.

- 2.16 Compliance with Air Traffic Services procedure is demonstrated in accordance with AIP and CAA Rules.

This unit standard is expiring. Assessment against the standard must take place by the last date for assessment set out below.

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
Review	2	20 October 2016	31 December 2027
Review	3	28 September 2023	31 December 2027

Consent and Moderation Requirements (CMR) reference

0169

This CMR can be accessed at <http://www.nzqa.govt.nz/framework/search/index.do>.