

<b>Title</b>	<b>Assess forest health from the air</b>		
<b>Level</b>	<b>4</b>	<b>Credits</b>	<b>4</b>

<b>Purpose</b>	People credited with this unit standard are able to: demonstrate knowledge of aerial assessment and detection surveys; plan and prepare for aerial detection surveys of forest health disorders; and carry out aerial assessment and detection surveys for forest health protection.
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<b>Classification</b>	Forestry > Forest Health Surveillance
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<b>Available grade</b>	Achieved
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### Guidance Information

- 1 This unit standard covers aerial surveys of general forest health and not surveys of specific forest health disorders such as *Dothistroma pini*.
- 2 Definitions
 

*Accepted industry practice* – approved codes of practice and standardised procedures accepted by the wider forestry industry as examples of best practice.

*Insurer* refers to the insurance company providing insurance to the forest owner, forest manager, or contractor who is undertaking the aerial surveillance work.

*Worksite procedures* – documented procedures used by the organisation carrying out the work and applicable to the tasks being carried out. They may include but are not limited to – standard operating procedures, site safety procedures, equipment operating procedures, quality assurance procedures, housekeeping standards, procedures to comply with legislative and local body requirements.
- 3 Reference
 

*Civil Aviation Rules* refers to the Civil Aviation Rules developed in accordance with the Civil Aviation Act 1990 and any subsequent amendments. These rules can be found at <https://www.aviation.govt.nz/rules>.

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### Outcomes and performance criteria

#### Outcome 1

Demonstrate knowledge of aerial assessment and detection surveys.

**Performance criteria**

- 1.1 The flight specifications recommended for aerial surveillance are defined in accordance with civil aviation regulations and accepted industry practice.
- Range altitude, airspeed, transect type and width, weather conditions.
- 1.2 Safe methods of approaching, boarding and disembarking from fixed and rotary winged aircraft are explained in accordance with civil aviation regulations and accepted industry practice.
- 1.3 The requirements for minimum safe operating heights and allowable dispensations which are defined in Rule 91 of the Civil Aviation Rules are stated.
- 1.4 Recommended flight duration and total flight time per day for forest health surveillance work are stated in accordance with civil aviation regulations and accepted industry practice.
- 1.5 Personal and organisational insurance cover requirements are described in accordance with worksite procedures.

**Outcome 2**

Plan and prepare for aerial detection surveys of forest health disorders.

**Performance criteria**

- 2.1 The plan for an aerial survey is developed from the identification and description of the forest area to be surveyed in accordance with worksite procedures.
- Range plan to include – area to be assessed for detected problem, level of cover negotiated with owner, tree age class, tree species, disorder types.
- 2.2 Identical transect lines or route lines are plotted manually on two maps taking account of important features of the forest, or plotted as waypoint tracks using a Global Positioning System (GPS) unit.
- 2.3 An aircraft that meets forest health surveillance work requirements is hired, including a commercially-rated pilot, in accordance with accepted industry practice, and the requirements of the insurer.
- Range power rating, climbing rate, ease of access to and quality of ground visibility, seating capacity, unit hire cost.
- 2.4 At least two observers are organised for the aerial detection survey flight in accordance with accepted industry practice.
- 2.5 The use of all of the standard symbols used to plot forest health symptoms on maps is described in accordance with accepted industry practice.

2.6 The pilot is briefed on the forest health objectives and flight specifications in accordance with accepted industry practice before boarding the aircraft.

Range flight specifications – flight duration, route, altitude, airspeed, transect width.

**Outcome 3**

Carry out aerial assessment and detection surveys for forest health protection.

**Performance criteria**

3.1 Navigation checks are carried out to ensure that the pilot is flying on the predetermined transect or route line.

Range checks may include but are not limited to – compass bearings, ground reference points, GPS.

3.2 Abnormal symptoms affecting tree health are identified from the air.

Range symptoms may include but are not limited to – tree mortality, dead and dying tree tops, defoliation, off-colour trees, storm and/or climatic damage, fire damage; a minimum of three symptoms is required.

3.3 The locations of detected symptoms are recorded as waypoints using a GPS unit, or plotted on maps for later identification on the ground, in accordance with accepted industry practice.

3.4 The incidence and severity of detected symptoms are assessed and recorded in accordance with accepted industry practice.

3.5 Records of the aerial detection and/or assessment survey are completed in accordance with accepted industry practice.

Range take-off and landing times; total flight time confirmed with pilot; flight time over each forest block; master map showing plots of disorders or infection severity classes.

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<b>Planned review date</b>	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	28 February 1997	31 December 2017
Review	2	29 August 2001	31 December 2017
Review	3	17 September 2010	31 December 2017
Review	4	10 December 2015	N/A
Rollover and Revision	5	28 May 2020	N/A
Rollover	6	26 April 2024	N/A

**Consent and Moderation Requirements (CMR) reference**

0173

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

**Comments on this unit standard**

Please contact Muka Tangata - People, Food and Fibre Workforce Development Council [qualifications@mukatangata.nz](mailto:qualifications@mukatangata.nz) if you wish to suggest changes to the content of this unit standard.