



NAVIGABLE AIRSPACE DETERMINATION: Newlove Browning Architects Limited Construct New Dwelling Waimate

PURSUANT TO Rule Part 77 of the Civil Aviation Rules I, Sean Turangarau Kere Rogers, Manager Aeronautical Services, having received from Newlove Browning Architects Limited, notification of intention to construct a residential dwelling within a section of land along Gum Tree Hill Road, Green Hills and in close proximity to Waimate aerodrome, conducted an aeronautical study in consultation with such persons, representatives and organisations as I considered appropriate.

After completing the aeronautical study, I am satisfied that the proposed action, if executed, could constitute a hazard in navigable airspace.

THEREFORE I HEREBY ISSUE a

DETERMINATION OF HAZARD IN NAVIGABLE AIRSPACE

in respect of the above notification.

The following conditions are specific to this Determination:


1. The proposed dwelling is to be constructed entirely outside of the 1:20 take-off and approach OLS for runway 04/22 at Waimate aerodrome; and
2. The 1:20 take-off and approach OLS is to remain free of man-made obstacles and natural objects; and
3. Details of the proposed dwelling's location must be provided to the CAA and the Aeronautical Information Service as soon as available for inclusion on the aerodrome chart for Waimate aerodrome that is included in the Aeronautical Information Publication – New Zealand; and
4. The proposed dwelling's colours should make it conspicuous to aviation users to help them recognise and avoid it.

The provisions of this determination are in addition to and not in derogation of the provisions of any other Act, or any orders or regulations made thereunder.

This Determination of Hazard shall become final on 29th day of March 2016 unless a petition for review is received by the Director prior to that date.

This Determination of Hazard shall not expire but may be revoked, in writing, by the Director.

Dated at Wellington this 1st day of March 2016.



Sean Turangarau Kere/Rogers
Manager Aeronautical Services
(DW1326566-0)

16/77/28 AERONAUTICAL STUDY

Newlove Browning Architects Limited – Construct New Dwelling, Gum Tree Flat Road, Green Hills, Waimate

1. Study Team Composition

Peter White, Nick Jackson, Sean Rogers

2. Proposal Overview

Newlove Browning Architects Limited propose to construct a private dwelling within a section of land along Gum Tree Flat Road, Green Hills, in an area approximately in line with runway 04/22 at Waimate aerodrome and approximately 740 metres from the threshold of runway 04.

A portion of the land upon which the dwelling is proposed infringes the obstacle limitation surface (OLS) of Waimate aerodrome by approximately 10 metres. This OLS is comprised of a vertical 1:20 gradient slope from the end of the runway that also has a 1:20 gradient horizontal expansion from the same point. This OLS protects aircraft that are taking off from runway 22 or landing on runway 04 from obstacles during critical phases of flight.

The proposed dwelling is being considered at 6 metres above ground level that will infringe the vertical component of the 1:20 OLS if the building is constructed within it.

The proponent wishes to construct the dwelling outside of the 1:20 OLS but have not been able to provide sufficient information that can be verified by the Civil Aviation Authority to prove that the dwelling is constructed outside of the 1:20 OLS.

Diagrams provided by the architects show the dwelling outside of the 1:20 OLS.

An assessment by CAA using Google Earth shows part of the building within the 1:20 OLS. Google Earth's accuracy is unknown so this assessment cannot be relied upon.

An independent assessment by an organisation with CAD capability shows the building to be within the 1:20 OLS. This assessment was completed using runway threshold data from the Aeronautical Information Publication – New Zealand.

The Waimate Aero Club also expressed concern about the inconsistent data provided by the proponent.

Any construction, fence or tree growth within the 1:20 OLS is likely to increase the existing hazard to aviation activities at Waimate aerodrome.

3. Matter Considered

The Waimate aerodrome is regularly used for:

- Aerial fire-fighting using helicopters and fixed wing aircraft. A large water tank is in place at the aerodrome to facilitate this operation;
- Aero-medical evacuation;

- Agricultural aircraft engaged in top-dressing activities on local farms;
- Fixed wing flying training; and
- Recreational aviation activities.

Runway 04/22 is restricted in length due to the nature of the terrain near the threshold of runway 22 and power lines on the Waimate Highway that cause a reduction in effective operational length (EOL), with an associated displaced threshold. Any further restriction due to an increase in obstacle height within the 1:20 OLS is likely to restrict the EOL below usable lengths and render the Waimate aerodrome unusable except for helicopter operations.

Submissions were sought from local aircraft operating companies and aero clubs, from the Waimate aerodrome operator and from Airways Corporation, who provide air traffic services in the area.

Airways Corporation has advised that the project will not impact upon the provision of air traffic services in the area.

The Waimate Aero Club are concerned with the accuracy of the data provided by the proponent which they believe creates a possibility that the dwelling will infringe the 1:20 OLS. Their club is primarily engaged in light aircraft training and recreational aviation activities.

The Waimate Aero Club is concerned that that proposed dwelling, whether within or in the vicinity of the 1:20 OLS:

- Will required aircraft to operate in very close proximity to the dwelling, whether it is within the 1:20 OLS or just outside of it;
- May cause a hazard due to pilot distraction during critical phases of flight, especially during flying training when students aren't as skilled as experienced pilots. Locally based pilots are likely to include the impact of the house in their emergency briefing prior to take-off but visiting pilots may not have the same level of local knowledge and as a consequence fly very close to the house during take-off and landing;
- May cause a significant threat to student pilots and persons on the ground due to the dwelling creating limited options for emergency off-field landing in the event of an engine failure or other aircraft malfunction;
- May cause a hazard to pilots and persons on the ground should an agricultural spraying aircraft need to make an emergency immediate "dump" of the spraying load due to aircraft malfunction that limit climb capability to avoid obstacles. There are occupational health and safety issues involved with the chemicals used for top dressing and the location of a house close to an area where chemicals could be dropped may place operational limits on fixed wing agricultural operations from Waimate aerodrome;
- May cause a hazard to people and animals on the ground due to the sudden noise of low flying aircraft and the possibility of spooking animals, including horses being ridden, that could injure people or animals.

The Waimate Aero Club is also concerned that noise complaints from the proponent or any future owner of the property could have a major impact upon the operation of the aerodrome. The CAA has no role in noise protection, especially for aircraft that are

taking off and/or landing. Land use and associated noise issues is solely the responsibility of the local land planning authority.

The CAA's Aviation Safety Adviser (ASA) visited the site and advised that "*.....the site is the best runway 22 engine failure after take-off option visible from the ground.*" Limiting forced-landing options will cause an extra burden on the decision making process for pilots in the unfortunate situation of having an engine failure soon after take-off and prior to gaining sufficient altitude for the pilot to be assured of being able to return to the airfield or other suitable area. The situation of an engine failure in the early stages of the climb out after take-off is also likely to cause a hazard to the occupants of the house in the event the pilot has no other options but to land near the house.

The ASA also advised that "*...moving the house site further south east of the centre line...is a positive.*", and "*Best aviation outcome is no house sited there but in the real world of today my expectation would be the situation could be managed given there are considerably worse examples nationally.*"

The Canterbury Aero Club provided a submission in support of the Waimate Aero Club but provided no evidence of hazard identification.

4. Determination

A Determination of Hazard in Navigable Airspace, attached to this paper, has therefore been submitted for consideration and issue to Newlove Browning Architects Limited.

The following conditions apply to the Determination of Hazard:

1. The proposed dwelling is to be constructed entirely outside of the 1:20 take-off and approach OLS for runway 04/22 at Waimate aerodrome; and
2. The 1:20 take-off and approach OLS is to remain free of man-made obstacles and natural objects; and
3. Details of the proposed dwelling's location must be provided to the CAA and the Aeronautical Information Service as soon as available for inclusion on the aerodrome chart for Waimate aerodrome that is included in the Aeronautical Information Publication – New Zealand; and
4. The proposed dwelling's colours should make it conspicuous to aviation users to help them recognise and avoid it.



Peter White
Aeronautical Services Officer
29 February 2016
(DW1326492-0)