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**2017 proposed amendment to Christchurch  
control zone – revised design  
– airspace user consultation**

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## Background

The provider of air traffic services in New Zealand, Airways Corporation of New Zealand Ltd (Airways), is progressively introducing new performance-based navigation (PBN) instrument procedures at controlled aerodromes as part of their PBN Implementation Plan.

In late December 2016, Airways submitted an application to amend the Christchurch control zone (CTR) and control areas (CTA) to contain new PBN instrument procedures. Consultation was initiated with users in February with a cut-off date of 6 April 2017 for submissions<sup>1</sup>.

A total of seven submissions were received.

- Three airline operators supported the changes;
- NZHGPA raised no objection provided that NZG853 was not amended, or any airspace over the Port Hills;
- The following issues were raised:
  - Eastern boundary difficult to define;
  - Proposed Tosswill visual reporting point (VRP) too hard to find;
  - Proposed Two Track VRP too hard to find, name difficult to use with routing instructions i.e. “track to Two Track”, “Direct (to) Two Track”;
  - Potential safety issue with removal of City Sector which will mean aircraft will have to remain 1500 ft or below over the City. Also may result in noise complaints.
- Aerodrome operator at Forest Field raised safety issues with the lowering of controlled airspace to circuit height over the aerodrome;
- Canterbury Airspace User Group submission contained no comments on the proposed airspace but requested changes to the Rangiora and Banks common frequency zones (CFZ) boundaries in association with the proposed airspace changes.

Due to visual navigation chart (VNC) annual update cut-off deadline in late April, further consultation would not have been completed by the Director in time to appropriately consider and resolve the issues raised. With the exception of one necessary airspace amendment to NZT828 (containment for the RNAV (GNSS) RWY 11 approach), deferment

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<sup>1</sup> Refer to CAA document ‘Application for amendment to Christchurch control zone and terminal control area boundaries’ published February 2017 (<http://www.caa.govt.nz/assets/legacy/airspace/2017-Christchurch-CTR.pdf>) and Airways’ petition (<http://www.caa.govt.nz/assets/legacy/airspace/CH-CTR-Amend-2017-Petition-and-Definitions.pdf>)

did not prevent the implementation of new PBN procedures, but realisation of full benefits from the new procedures will not occur until the airspace is changed.

To ensure that the safety issues raised were appropriately addressed, implementation of the proposed change was deferred until November 2018 (with the exception of amendment to NZT828) to enable this to occur with no increased risk to the existing situation.

## Industry liaison

To progress resolution of the specific issues raised, CAA facilitated a workshop with representatives of the interested parties who had made submissions.

The workshop was held at Airways Development Centre, Christchurch on Wednesday 18 October and was attended by:

CAA	Sean Rogers, Manager Aeronautical Services Paula Moore, Aeronautical Services Officer – ATS (Airspace) Carlton Campbell, Aviation Safety Adviser
Airways	Andy Boyd, Manager Operation and OS Blueprint John Wagtendonk, ATS Operations Specialist Lachie Falconer, Team Leader Christchurch Tower
Canterbury Aero Club/IAANZ	Nathan Clarke, Chief Flying Instructor
Forest Field aerodrome	Pam Collings, aerodrome operator
Canterbury Airspace User Group	Juliet Earle (Garden City Helicopters) Angus Johnstone (CIAL)

The main items of discussion were as follows:

1. South-east corner boundary, suitability of proposed Tosswill VRP with revised boundary and possible alternatives.
2. To make navigation easier, simplification of the southern and eastern boundaries by straightening the lines and removing the 'kinks' was agreed to. The possibility of using additional ground features to define the boundaries was explored, but there were no suitable locations that would not result in significant increase in controlled airspace.
3. Potential issue with the north-west portion of the instrument sector containing the curved approaches and heavy category aircraft wake turbulence separation inside the CTR if boundary extends beyond that originally requested – this is to be investigated further with instrument sector boundaries to be fully assessed.
4. Amending the proposed lower limit of CTA in the vicinity of Forest Field from 1500 ft to 2000 ft.
5. Non-controlled airspace changes:

- a. Consequential CFZ boundary amendments
- b. Possible boundary change to low flying zone (LFZ) NZL862 section in CTR (south-eastern tip over the Waimakariri River) to remove this portion

## **Final airspace design**

### **Christchurch control zone**

Rule 71.55(b) requires that a CTR be as small as practical, which can differ from as small as possible. When assessing Airways' proposed CTR, the kinked nature of the boundary design did not meet the criteria of practical.

CAA's policy is to ensure that the simplification of airspace configuration should be a prime requisite, in order to reduce airspace incursions by making it as easily navigable as possible and simplify aeronautical charts.

Proposed realignments to the CTR boundary were made, but, as stated earlier, there was insufficient time to consult with users prior to the cut-off date for the 2018 VNC update.

Airways has now redesigned the CTR boundary – refer to figure in Appendix 1 – to address the issues raised and simplify the boundary.

### **VFR transit lane**

As explained earlier, the southern boundary of NZT828 Eyrewell was amended to protect RNAV approaches onto RWY 11 with effect from 9 November 2017.

The redesign of the CTR has resulted in the northern portion of NZT828 now being outside controlled airspace and therefore a further change is necessary to align with the revised CTR boundary – North Eyre Road.

To protect the curved RNAV approach to RWY 20 small portion of the existing VFR transit lane remaining within the CTR would be disestablished. The eastern boundary would be amended to follow Two Chain road from the river to the intersection with North Eyre Road.

The amended Eyrewell VFR transit lane is shown in Figure 1 in the next section below.

### **Control areas**

In addition to the amendment to NZT828, to provide the full 2 NM buffer containment for the RNAV (GNSS) RWY 11 approach, the lower level of controlled airspace would need to be amended. Refer to page 8 of Airways' petition for further detail of the containment required.

RNAV approaches are often designed to incorporate a T- or Y-bar arrangement based on a runway aligned final segment preceded by an intermediate segment and up to three initial segments either side of and long the final approach track to form a T or Y. This

allows direct entry to the procedure from any direction. A T-bar arrangement is primarily used in New Zealand.

It was proposed to extend the north-western boundary of Christchurch CTA/C, lower limit 1500 ft, westwards by up to 1.75 NM. This would have placed the boundary between the CTAs with lower limits of 2500 and 1500 ft overhead Forest Field aerodrome with an adverse effect on the circuit joining height.

Forest Field aerodrome is approximately 10 NM west of Christchurch airport, elevation 402 AMSL. There are six crossing runways – 05/23, 10/28 and 18/36. All circuits are left hand.

The lowering of controlled airspace over Forest Field would result in a lowered circuit height to possibly 1100 ft (700 ft above ground level) from 1400 ft, to allow space for an overhead joining height of 1500 ft. This could result in more noise which would affect the aerodrome's 'fly neighbourly' policy.

The deferment to the controlled airspace changes meant that only one side of the T-bar arrangement for the approach could be published from the south (DODSO-GODUM), with a slightly reduced containment buffer (approximately 1.75 NM). The north side of the T-bar (LIDRA-GODUM) was not acceptably contained within the existing controlled airspace.

The proposed solution is to make minor adjustments to the CTA/C lower limit 1500 ft/2500 ft boundary, and to add a new CTA/C with a lower limit of 2000 ft AMSL overhead Forest Field aerodrome. Refer to Figure 1 below. This would enable the initial segment T-bar from the north side of the final approach track to be re-instated.

The black dashed line shows the 2 NM buffer from the nominal track used when designing controlled airspace. Canterbury Aero Club requested that if possible, the north-eastern and south-western boundaries of the new CTA/C be extended laterally to better align with prominent geographical landmarks e.g. Tram Road to the north.



Pond:	S 43 26 27.4, E 172 26 16.2	Large agricultural pond abeam the Waimakariri River near the location of existing VRP Pine (but not exactly the same location).  Pond VRP is a corner boundary point of amended NZT828 Eyrewell.
Land Fill	S 43 27 53.9, E 172 42 40.9	Land fill area 7.8 NM to the east of NZCH near the coast.
Bridge:	S 43 24 46.8, E 172 30 51.3	4.5 NM NNW of NZCH where South Eyre Road crosses the waterway.
Mandeville:	S 43 22 45.4, E 172 32 04.4	6.5 NM N of NZCH, junction of Tram Road and McHugh's Road.

Following user feedback, Airways are no longer requesting new VRPs Two Track and Tosswill as per the original petition.

Swannanoa VRP will be retained.

### **Common frequency zones**

As a consequential of the proposed amendment to the Christchurch CTR, the boundaries of Rangiora, Canterbury and Banks Peninsula CFZs would be realigned with to the new CTR boundary.

CAUG has submitted a request for further changes to the Rangiora and Banks Peninsula CFZs.

The proposal is to extend the northern boundary of Banks Peninsula CFZ to the Waimakariri River, with the Rangiora CFZ boundary moved to the Waimakariri River. The eastern boundary of both CFZs would be extended seawards of the coastline by approximately 2 NM.

Refer to Figure 2.



This document will be sent directly to the organisations listed below. It would be appreciated if you would kindly forward the document to your members for consideration and comment.

**Aerodrome operators (charted aerodromes/heliports shown on VNC D2 only)**

- Burwood Hospital heliport (Canterbury Health Ltd)
- Christchurch aerodrome (Christchurch International Airport Ltd)
- Christchurch Hospital heliport (Canterbury Health Ltd)
- Forest Field (P A Collings)
- Rangiora (Waimakariri District Council)
- West Melton (Canterbury Aero Club (Inc))

**Operators, Organisations and User Groups**

- Air Freight NZ Ltd
- Air New Zealand Group – includes Mount Cook and Air Nelson
- Aircraft Owners and Pilots Association
- Airways Corporation of New Zealand
- Airwork Flight Operations
- Balloon Association of New Zealand
- Canterbury Aero Club (Inc)/International Aviation Academy of New Zealand
- Canterbury Airspace User Group
- Garden City Helicopters
- Gliding New Zealand
- Jet Connect
- Jetstar Airways Ltd
- Model Flying New Zealand
- New Zealand Airline Pilots Association
- New Zealand Aviation Federation
- New Zealand Hang Gliding and Paragliding Association
- New Zealand Helicopter Association
- New Zealand Parachute Federation
- New Zealand Parachute Industry Association
- Qantas Airways Ltd
- Recreational Aircraft Association of New Zealand
- Royal New Zealand Air Force
- Sport Aircraft Association New Zealand
- Sport Aviation Corp
- Virgin Australia

This document is also available on the CAA website at the following link:

<http://www.caa.govt.nz/airspace/airspace-review/>

Notifications will be sent to CAA email notification subscribers to Airspace Notifications – Briefing Areas 6, 7, 8, 9 and 10.

If there are any further questions regarding the review process, please contact Paula Moore – contact details below.

## **Submissions**

This document forms part of the consultation process. Submissions are sought from any interested person, organisation or representative group to provide further information relevant to this proposal.

Submissions are accepted either electronically or via mail.

Please address submissions to:

Group Executive Officer  
Aviation Infrastructure and Personnel  
Civil Aviation Authority of New Zealand  
PO Box 3555  
Wellington 6140

Fax: 04 569 2024

Email: [dianne.parker@caa.govt.nz](mailto:dianne.parker@caa.govt.nz)

Reference – 2017 Proposed amendment to Christchurch control zone – revised airspace design.

Closing date for submissions is **Thursday 22 February 2018**.

## **Further information**

For further information contact:

Paula Moore  
Aeronautical Services Officer – Air Traffic Services (Airspace)  
Civil Aviation Authority of New Zealand  
P O Box 3555  
Wellington 6140  
Phone: (DDI) 04 560 9525  
Email: [paula.moore@caa.govt.nz](mailto:paula.moore@caa.govt.nz)

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### Appendix A – revised Christchurch CTR design

