

**Airways New Zealand Petition
to
The Director of Civil Aviation
to
amend the Whenuapai CTR/D
and
nearby GAAs**

15 December 2018

Prepared by: John Wagtendonk
ATS Policy and Standards
Airways New Zealand
03 3581620
j.wagtendonk@airways.co.nz

Airways submit a petition to amend the Whenuapai Control Zone (WP CTR/D NZA155), NZG151 North Shore and NZG154 Whenuapai as detailed and supported by this document.

Appendix A (from page 24) contains copies in full, de-personalised where possible, of the feedback we received from our Consultation Document dated 8 November 2018.

Accompanying documents:

1. Completed CAA Form 24071/01

WP CTR near North Shore Aerodrome

During consultation, the North Shore aerodrome (NZNE) operator requested less WP CTR to the north east near NZNE as the existing CTR boundary is very close (in to 1.5 NM) to the aerodrome making it difficult for VFR operations at NZNE to remain outside the CTR. CTR infringements are very possible and may have occurred.

The northeastern corner of the WP CTR near NZNE needs to be sufficient to contain the WP RWY 21 ILS/DME and VOR/DME Cat A and B teardrop approaches. Diagram 2 below depicts the ILS/DME approach along with the 2.5 NM buffer for airspace containment outbound and on base turn.

To address as much as possible the North Shore operator’s request, we request the WP CTR be reduced near NZNE as depicted in Diagram 2.

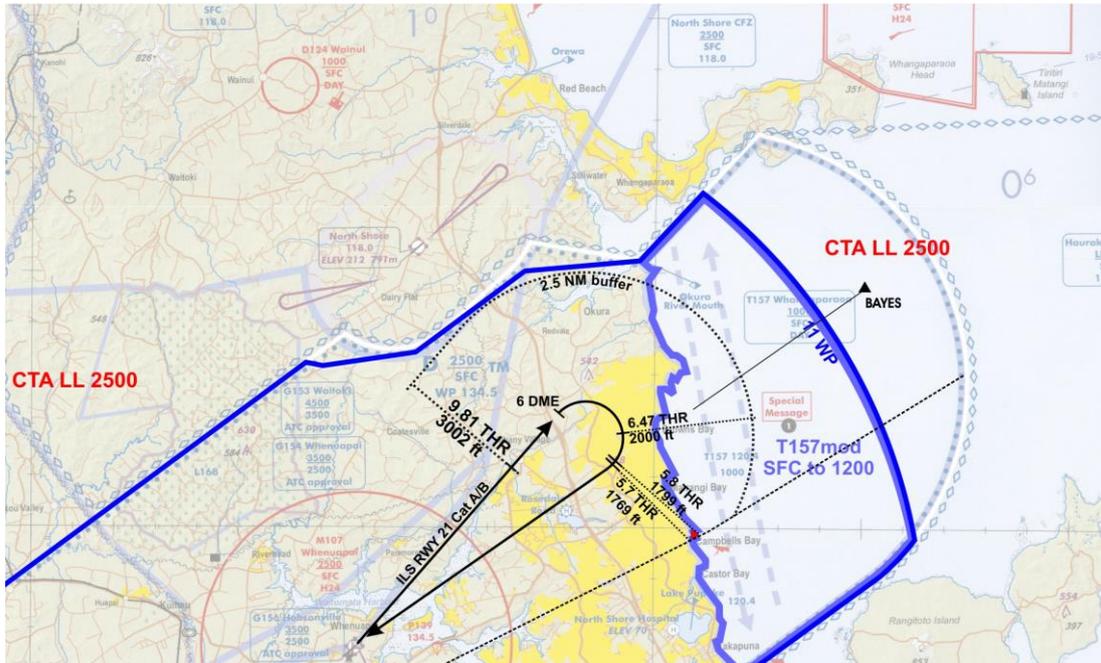


Diagram 2 Requested WP CTR near North Shore aerodrome (NZNE).



Diagram 3 Google Earth image of the requested WP CTR boundary (blue line) near NZNE. White line is the existing CTR boundary.

The NZNE operator has indicated that that CTR boundary is fantastic and will be of real tangible benefit.

Note: Airways received some feedback from GA regarding the possibility of ‘flipping’ the RWY 21 teardrop approaches to allow less CTR near NZNE. The Airways response to that feedback is given on page 19.

Containment of RWY 21 approaches

The eastern boundary of the requested CTR is brought in to 11 NM WP DME as shown in Diagram 4 below.

That boundary would be sufficient to contain the VOR/DME RWY 21 Cat A/B teardrop approach and a potential RNAV approach to RWY 21 as shown in Diagram 4 below. A 2 NM lateral buffer is used for airspace containment of this RNAV procedure until established inbound where a VOR splay is applied.

Note: The current planning is for the RNAV RWY 21 approach to have the ‘T-bar’ based on BAYES rather than 8 NM as shown in Diagram 4. However, there would be facility for joining the inbound track closer than at BAYES.

In accordance with the airspace design policy, the proposed WP CTR design provides airspace containment for all the RWY 03 and 21 approaches based on a 300 ft per NM profile flown in a continuous descent throughout the approach, without levelling off during the base turn. The profile is measured from the runway threshold (THR) at THR elevation. This is inline with AIPNZ ENR 1.5 – 2 para 1.3.3

For containment, the instrument flight procedures, including their lateral buffers, need to be at least 500 ft above the lower limit of CTA or within CTR.

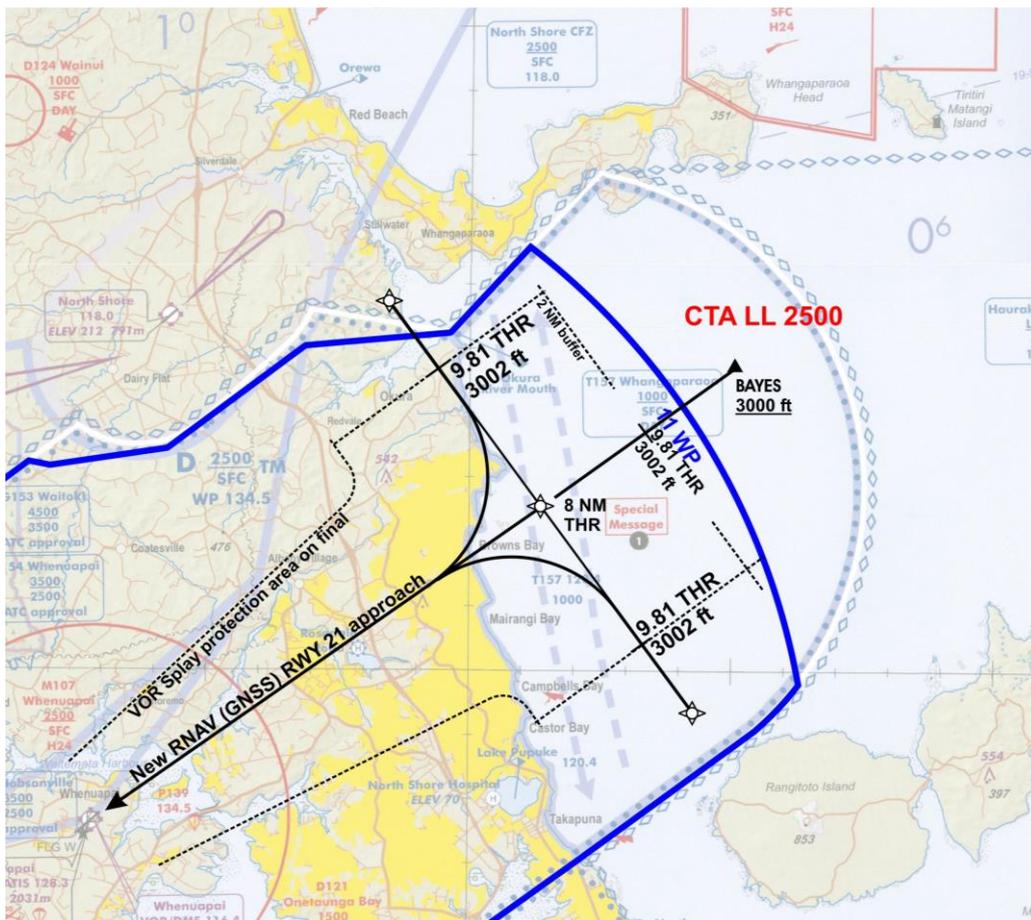


Diagram 4 Depicting eastern boundary of requested new CTR at 11 WP DME
This boundary would contain a potential RNAV RWY 21 approach to 8 NM final (see Note above).

The CTR eastern boundary at 11 WP is sufficient to contain the ILS/DME and VOR/DME RWY 21 Cat C/D approaches which are at or above 3000 ft in the overlying AA CTA until established inbound which occurs inside 10 NM. A VOR splay that protects the inbound tracks is within the CTR boundary as depicted on Diagram 5 below.

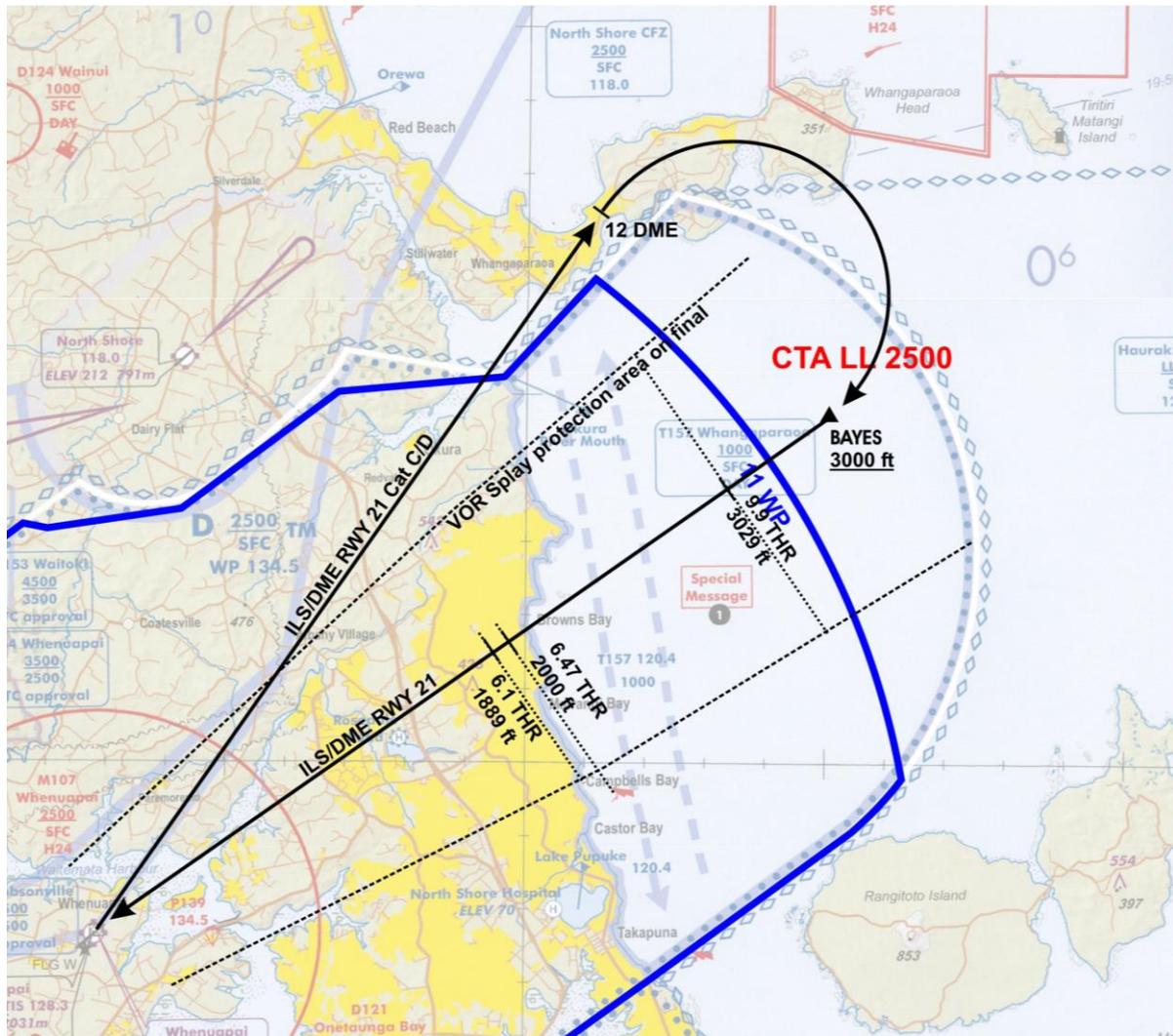


Diagram 5 Depicting the ILS/DME RWY 21 Cat C/D teardrop approach and the inbound track of the ILS/DME approach with its VOR splay. For the Cat C/D teardrop, the profile passes/leaves 3000 ft when inbound so only the inbound leg needs to be contained by the CTR.

Containment of RWY 03 approaches

As depicted in Diagram 6 below, the 12.5 NM WP DME arc defining the western end of the proposed CTR is sufficient to contain the base turn (including the required 2.5 NM lateral buffer) for the teardrop for the ILS/DME approach to RWY 03 Cat A and B.

The requested CTR also contains the teardrop for the VOR/DME RWY 03 Cat A and B approach.

The diagram also shows that straight-in ILS/DME approaches from 3000 ft are contained by the proposed CTR.

The CTR is wide enough to contain the VOR splay that protects the inbound leg of the approaches.

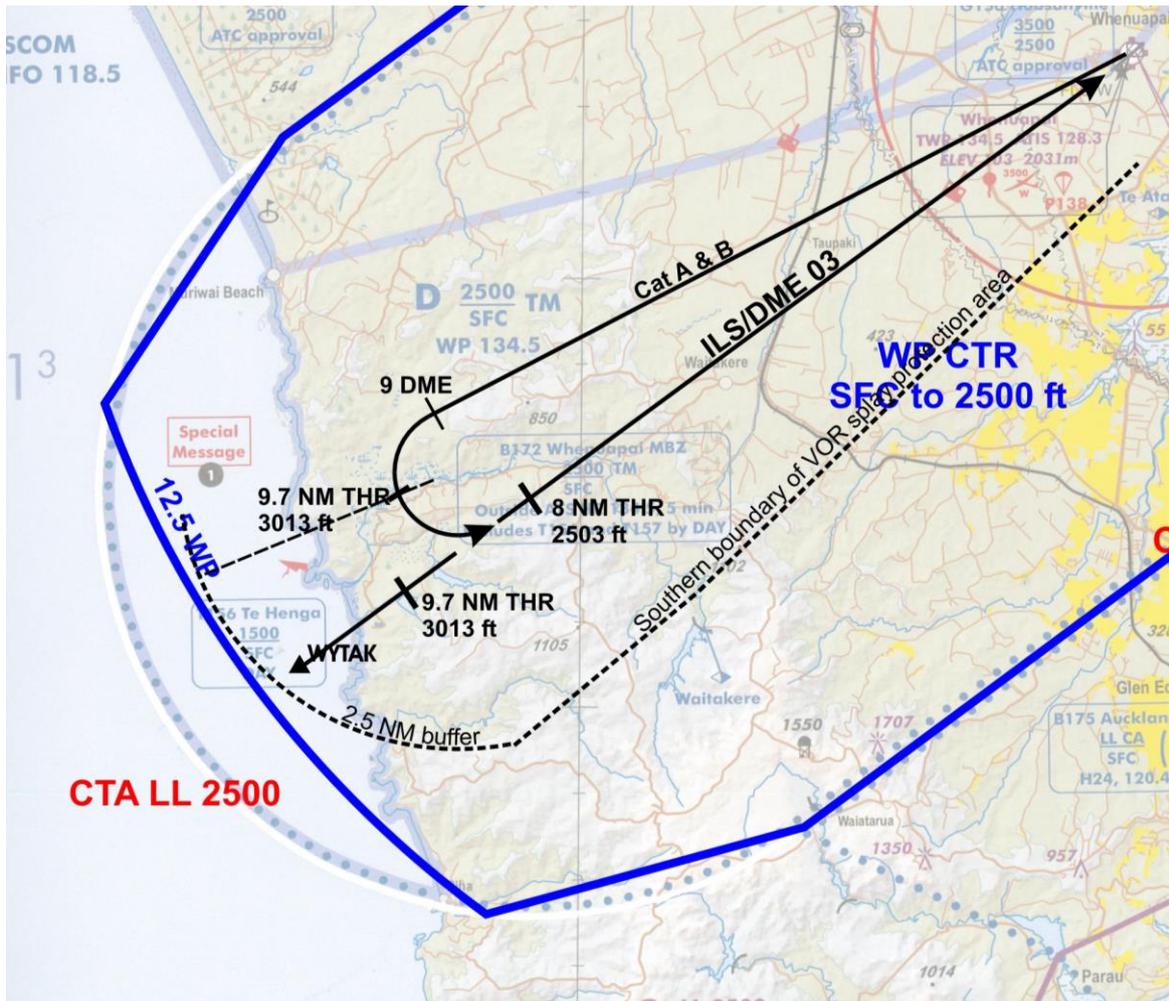


Diagram 6 Depicting containment of the Cat A and B teardrop for the ILS/DME RWY 03 approach and straight-in ILS/DME approaches. A distance/altitude checkmark is shown at 8 NM THR where the 300 ft per NM profile passes 2503 ft and another checkmark at 9.7 NM THR where the profile passes 3013 ft (or would leave 3000 ft)

As depicted in Diagram 7 and 8 below, the requested CTR is sufficient to contain the RWY 03 Cat C/D ILS/DME teardrop approach and a potential new RNAV RWY 03 approach

As for the RWY 21 approach, the current planning is for the RNAV RWY 03 approach to have the 'T-bar' based on WYTAK rather than 8 NM as shown in Diagram 8. However, there would be facility for joining the inbound track closer that at WYTAK.

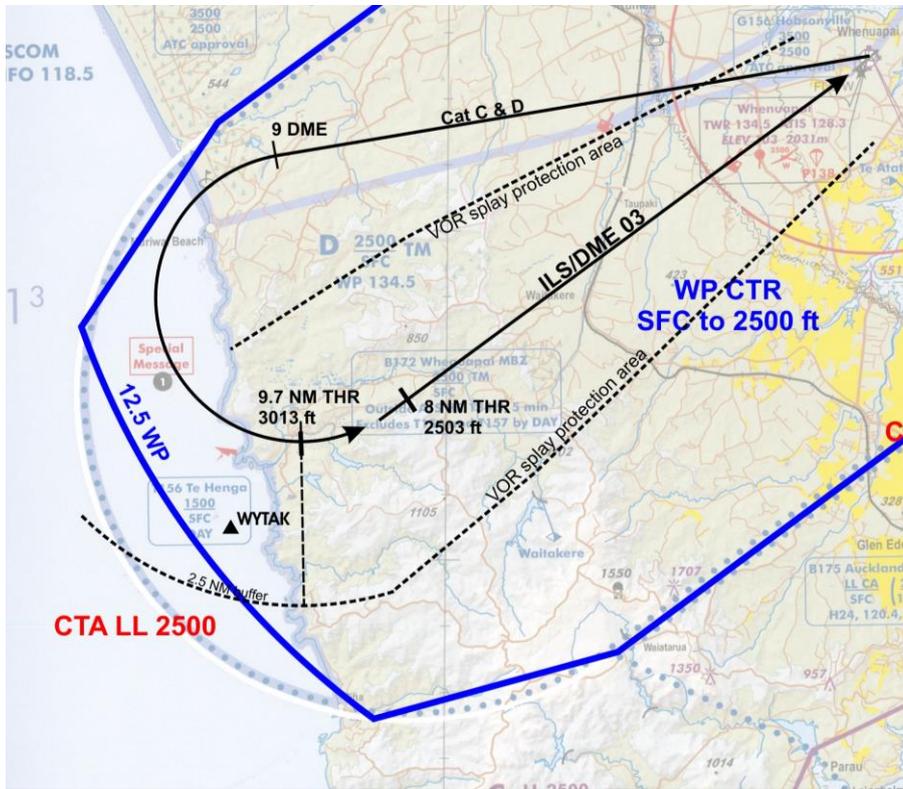


Diagram 7 Depicting containment of the Cat C and D teardrop for the ILS/DME RWY 03 approach.

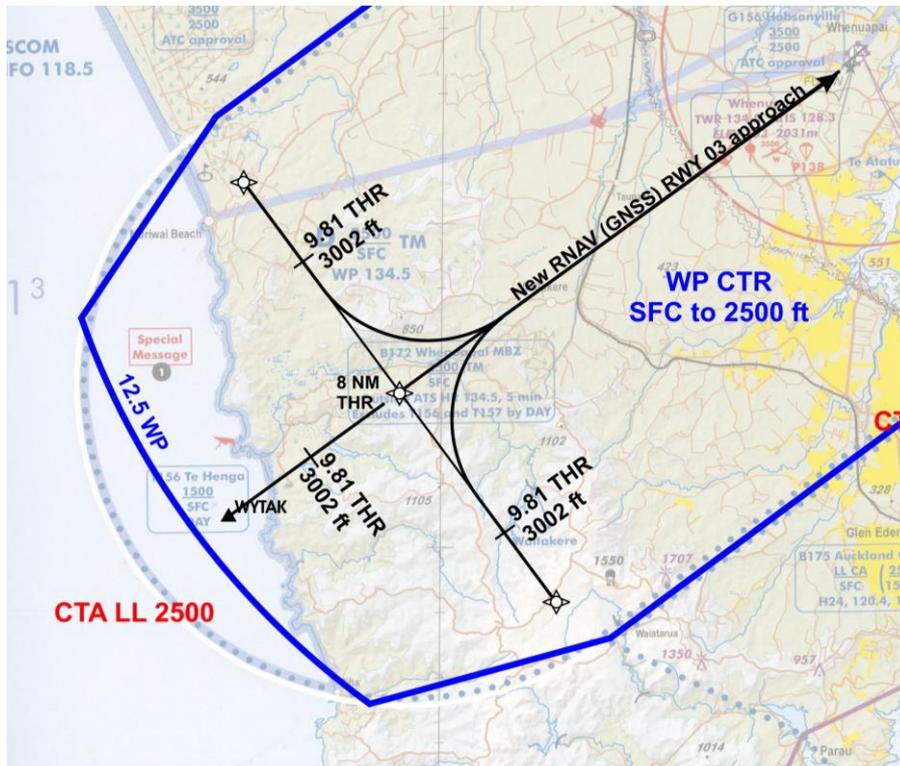


Diagram 8 Depicting planned new RNAV RWY 03 approach.

Containment of RWY 03 and 21 circling areas

The approach Cat A, B and C circling areas are fully contained by the requested CTR.

Diagram 9 below depicts the Cat D circling area, 5.28 NM radius centred on the RWY thresholds. As can be seen, this circling area is not fully contained by the existing CTR or the requested CTR.

The Airways understanding is that it would be rare for a Cat D aircraft to fly a circling approach at NZWP so it seems unjustifiable to us to widen the CTR to contain a rare Cat D circling approach.

If full containment of Cat D circling approaches is required then the CTR would need to be widened north and south by around 0.6 NM.

Our request is that the CTR 'width' is left as it currently is in this area. That results in the containment of Cat D circling remaining as it currently is – mostly, but not fully contained. If this request is accepted, the approach charts would be amended to include a statement such as "CAT D circling airspace containment not assured".

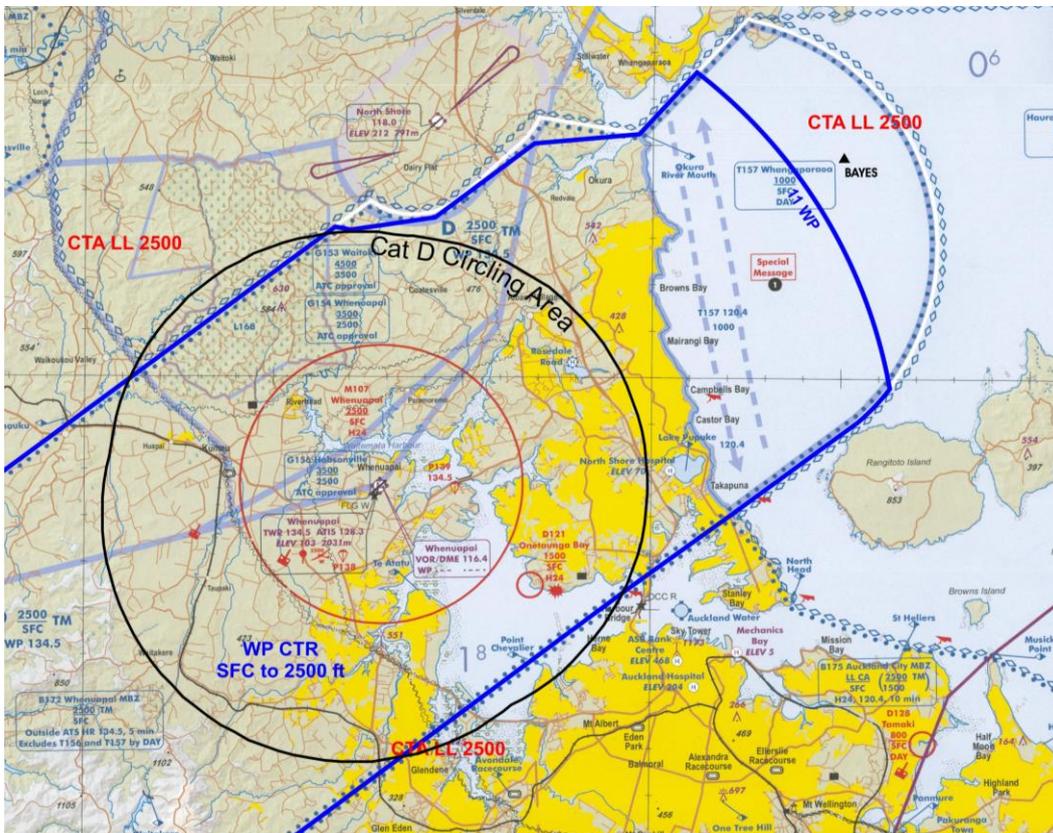


Diagram 9 Cat D circling area..

The primary user of the WP approaches and circling approaches is the RNZAF. Feedback received from them is in support of the Airways request that not full containment of the Cat D circling area is retained with an appropriate AIPNZ notation.

Containment of RWY 03 and 21 missed approaches and departures

The RWY 03 and 21 missed approaches and departures straight ahead to 3000 ft are contained by the proposed DRAFT CTR.

Containment of RWY 08 and 26 IFPs

The RWY 08 and 26 missed approaches and departures are contained by the requested CTR.

The RWY 08 and 26 RNAV and VOR/DME approaches are not fully contained by the current CTR and would not be fully contained by the requested CTR.

Diagram 10 below indicates (black shading) the additional airspace below 2500 ft that would be needed to fully contain the RWY 08 and 26 approaches. Following work by Aeropath, some refinement could be possible to that extended airspace design but the end result would be similar.

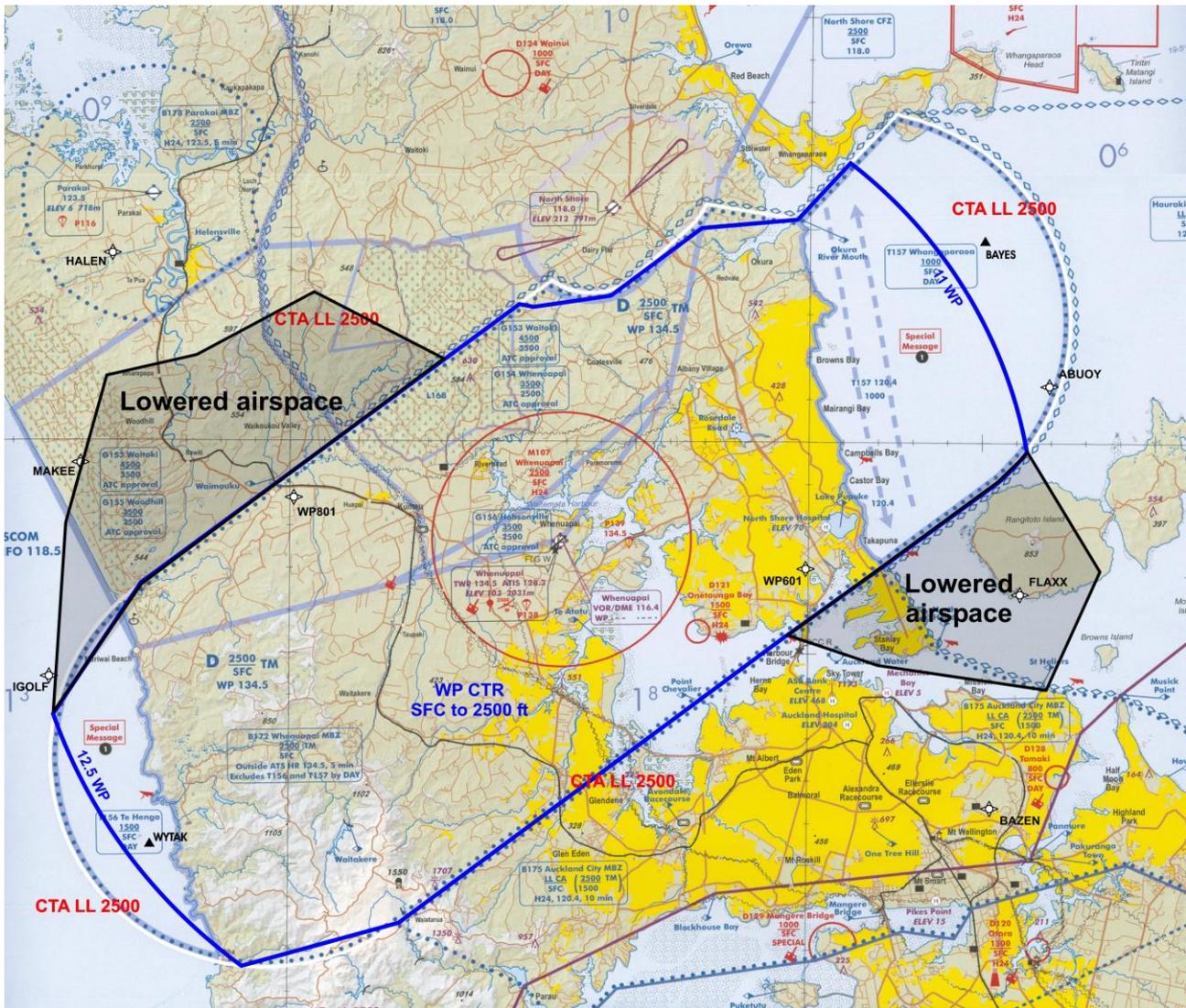


Diagram 10 Depicting areas of additional airspace needed for full containment of the RWY 08 and 26 approaches.

The Airways understanding from feedback from GA operators is that they would be very strongly opposed to any expansion of low level airspace in those areas. The Auckland Airspace Users Group (AAUG) feedback included;

The impact of lowering the airspace in the vicinity of Rangitoto Island/North Head to fully contain the RWY 26 approach would be significant. The currently uncontrolled airspace in this vicinity is regularly used by general aviation aircraft. Activities include helicopter and seaplane operations from the adjacent heliports and water aerodrome, aircraft overflying Auckland City, and also aircraft transiting the Auckland area. The area immediately seaward of a line joining Musick Point, North Head, and Okura River Mouth is the main north-south thoroughfare for general aviation aircraft. Most pilots try to avoid straying too far from land, it is already constrained inland by the built up area and corresponding minimum height limits, so vertical separation is the primary tool used to minimise collision risk. Lowering the airspace will compress activities into an even smaller volume of airspace.

Lowering the airspace in the vicinity of Waimauku to fully contain the RWY 08 approach would, for similar reasons to those stated at Point 6 above, have detrimental implications for general aviation aircraft. Whilst this area doesn't experience the same volume of traffic as Rangitoto Island/North Head it is regularly used by pilots from North Shore and Parakai Aerodromes and aircraft that use the west coast as an alternate north-south thoroughfare.

The Airways understanding is that the RWY 08 and 26 approaches are seldom used (around 5% of approaches) - mainly for training and occasional operational use in strong westerlies.

With the requested CTR, the RWY 08 and 26 approaches are not completely uncontained – there are only portions of the approaches that are not contained. For example, the RWY 26 RNAV approach is contained whilst at or above 3000 ft.; applying the 300 ft per NM airspace containment profile, containment would cease when leaving 3000 ft at 9.9 NM from THR and containment would be regained once inside 4.9 NM THR. That is for full containment including lateral buffers. The nominal track only (without the lateral buffers) would be outside controlled airspace between 6.5 NM and 9.9 NM.

The RNZAF is the aerodrome operator and primary user of NZWP and the approaches. Their feedback is that the lack of full containment within the current WP CTR or any future revisions is accepted. They support the Airways proposal to remain with the status quo and include within the AIPNZ charts appropriate notation regarding airspace containment, ideally including stating which portion of the approaches are not contained. (e.g. Airspace containment not assured between 9.9 NM and 4.9 NM from THR).

With the approach charts annotated as containment not assured (or similar), pilots would be aware of the lack of containment and could be able to refrain from using the approach and use a RWY 03 or 21 approach if they wanted full containment.

The requested CTR contains the circling areas for Cat A, B and C circling approaches and most of the Cat D circling area therefore, a pilot who intends flying only fully contained approaches could probably still do so using the RWY 03 or 21 approach and circle to land on RWY 08 or 26.

Having considered all the above, the Airways request is for the WP CTR to be as shown in Diagram 1, without extended airspace to fully contain the RWY 08 and 26 approaches (i.e. those approaches not fully contained) with;

- the WP RNAV RWY 08 and 26 approaches being amended to raise the minimum procedure commencement altitudes to 3000 ft.; and
- the approaches annotated on AIPNZ approach charts as “Airspace containment not assured (further details)” or other similar wording. This process to include exploring the possibility of the annotations including the distances on final at which the approach is not contained.

The RNZAF’s feedback regarding the lack of full containment of the RWY 08 and 26 approaches included the request that, if feasible, a notation is added to the VNC indicating the lack of containment of those approaches. That would highlight to nearby VFR operations just outside the WP CTR the possibility of IFR aircraft flying the instrument approach being in the same area.

Feedback from a local operator regarding the proposed lack of full containment of the RWY 08 and 26 approaches was that, on the VNC “the purple elongated teardrop symbol could be used which is consistent with other instrument approaches in class G airspace.”

Feedback from the AAUG included the comment...

We note the RNZAF request that a notation be placed on the VNC regarding lack of containment of these approaches. We are not opposed to considering this, perhaps the instrument approach symbols used at aerodromes outside controlled airspace may provide a solution in this regard.

To Airways knowledge VNC do not include notations regarding lack of containment of IFR procedures at controlled aerodromes. **However, with this petition we are requesting that CAA consider the requests** for VNC annotation we have mentioned above, and consult further as they see fit, to determine if appropriate annotations on VNC could and should be made that will warn VFR aircraft of IFR aircraft potentially flying the RWY 08 or 26 instrument approach at NZWP.

WP CTR eastern transit lane (T157mod)

The requested CTR includes a transit lane in the eastern portion of the CTR similar to the existing airspace arrangement. The upper limit is requested to be 1200 ft – 200 ft higher than the existing.

The 1200 ft upper limit is determined by the containment of the ILS/DME RWY 21 Cat A and B teardrop approach. As previously mentioned, the airspace is designed in accordance with the airspace design policy which applies a 300 ft per NM profile flown in a continuous descent throughout the approach, without levelling off during the base turn.

Diagram 11 below depicts the requested transit lane (T157mod). Also depicted is the ILS/DME Cat A and B teardrop approach for RWY 21 along with its 2.5 NM lateral airspace containment buffer and southern edge of the VOR splay (the containment buffer on final). Distance/altitude checkmarks are shown calculated at the 300 ft per NM from THR airspace containment profile.

As shown on Diagram 11, at 5.7 NM from THR the full width of the containment buffer for the teardrop approach lies just inland of the coast. At 5.7 THR the 300 ft/NM profile is 1769 ft. The transit lane must be 500 ft or more below the approach airspace containment profile for the full width of the containment buffers. Therefore, the upper limit of the transit lane seaward of the coast can be 1200 ft.

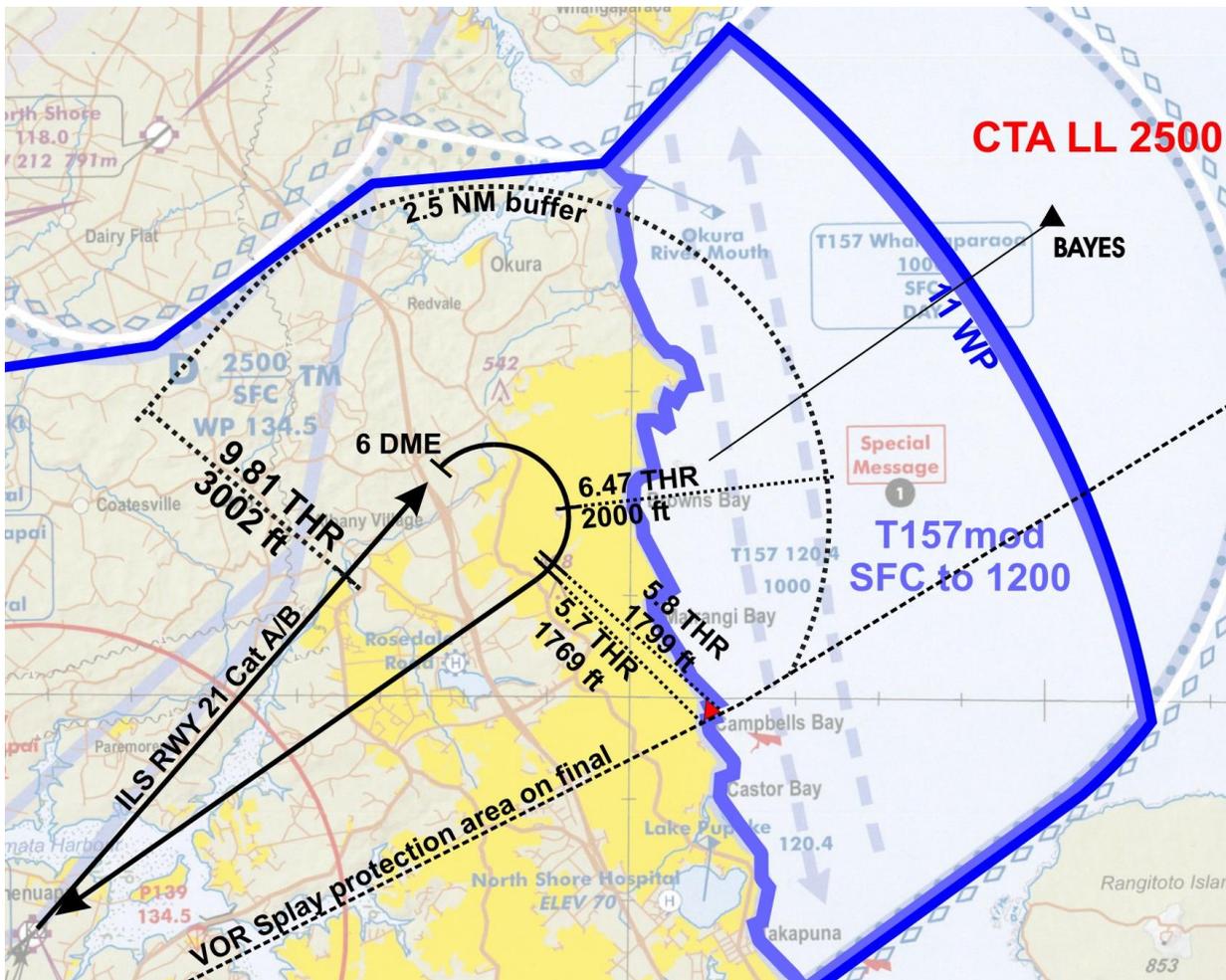


Diagram 11 The geometry of the ILS/DME RWY 21 teardrop approach indicating that the transit lane upper limit could be up to 1200 ft, at least 500 ft below the profile of the approach.

RNZAF feedback

The RNZAF feedback is that they are opposed to a proposal for the transit lane to be raised above 1000 ft – their feedback copied below.

The proposal again assumes aircraft will fly the published 2.9° or 3.0° glide paths. If the upper limit of T157 was increased above 1000ft then an aircraft flying the RWY 21 VOR/DME Cat C/D procedure via a step down approach could fly perpendicularly through the transit lane and increase the potential for conflict. This could also occur in the VOR/DME Cat A/B approach, though less likely due to the probable aircraft flight path and performance, but is a consideration for any LOC/DME approach too.

In addition, operators of Cat D aircraft advised such a change would introduce potential conflict should extended upwind RWY 03 or downwind RWY 21 circuits be required given their circuit altitude of 1500 ft.

Finally, the CTR immediately above T157 is often utilised to facilitate military training, especially airdrop of both equipment and personnel. Increasing the upper limit of T157 would significantly raise the potential for conflict during what is a high workload period for military flight crews and is therefore extremely undesirable.

That RNZAF feedback was in response to earlier proposals we put to them. Their later feedback to our later 8 November 2018 proposal was that their position on the raising of the T156 and T157 vertical limits has not changed and therefore their previous objections above remain valid—the RNZAF did however note the specific reference made by Airways (in this version) to the previous RNZAF objections. *(A copy in full of their feedback to our earlier consultation with them is included in Appendix A.)*

GA operator feedback

From previous consultation, the Airways impression is that general aviation operators desire a raising of the transit lane to help alleviate safety issues they believe exist with the existing 1000 ft limit – all of it which is over water. The AAUG feedback included;

The constraints that determine the eastern transit lane height are noted, and the proposed increase to 1200 feet is supported. Whilst it is only a 200 foot increase over present day, any increase in the airspace available to assist with see-and-be-seen separation is positive.

Note: *The AAUG feedback included further comments they make in response to some of the RNZAF's feedback about the transit lane upper limit. A full copy of the AAUG feedback is given in Appendix A.*

Resulting Airways position

Airways considered the RNZAF's opposition to raising the upper limit due to their method of descending on the approaches and other operational needs and GA's desire for a bit more height being available over water in this busy area of transiting, opposing direction VFR traffic. We do not have additional information regarding exactly what the risks to the operations are and therefore what mitigations, if any, could be put in place by any of the operators to address the various risks or issues.

We feel that it is not our place to make a determination as to which should be the more prevailing feedback and that this conflicting need for airspace is best addressed during the consultation CAA will carry out in the lead-up to the Director determining what, if any, changes will be made to the airspace.

Therefore, we have based our transit lane request solely on the airspace design policy of applying a 300 ft per NM gradient for departures and approaches – this being in-line with AIPNZ ENR 1.5 – 2 paras 1.3.2 and 1.3.3. That policy allows for the upper limit to be 1200 ft so this is what we are requesting. We highlight to CAA the RNZAF's opposition to raising the upper limit above 1000 ft and anticipate that the RNZAF will reiterate their position during consultation carried out by CAA.

Airways agrees to the lower 1000 ft upper limit for the transit lane if this is what results from the CAA deliberations.

WP CTR western transit lane (T156mod)

The requested CTR includes a transit lane in the western portion of the CTR similar to the existing airspace arrangement. T156mod would be seaward of the coast as depicted on Diagram 12 below with an upper limit of 2000 ft; 500 ft higher than the existing transit lane.

The 2000 ft upper limit of the transit lane complies with the airspace design policy of 300 ft per NM climb/descent profile.

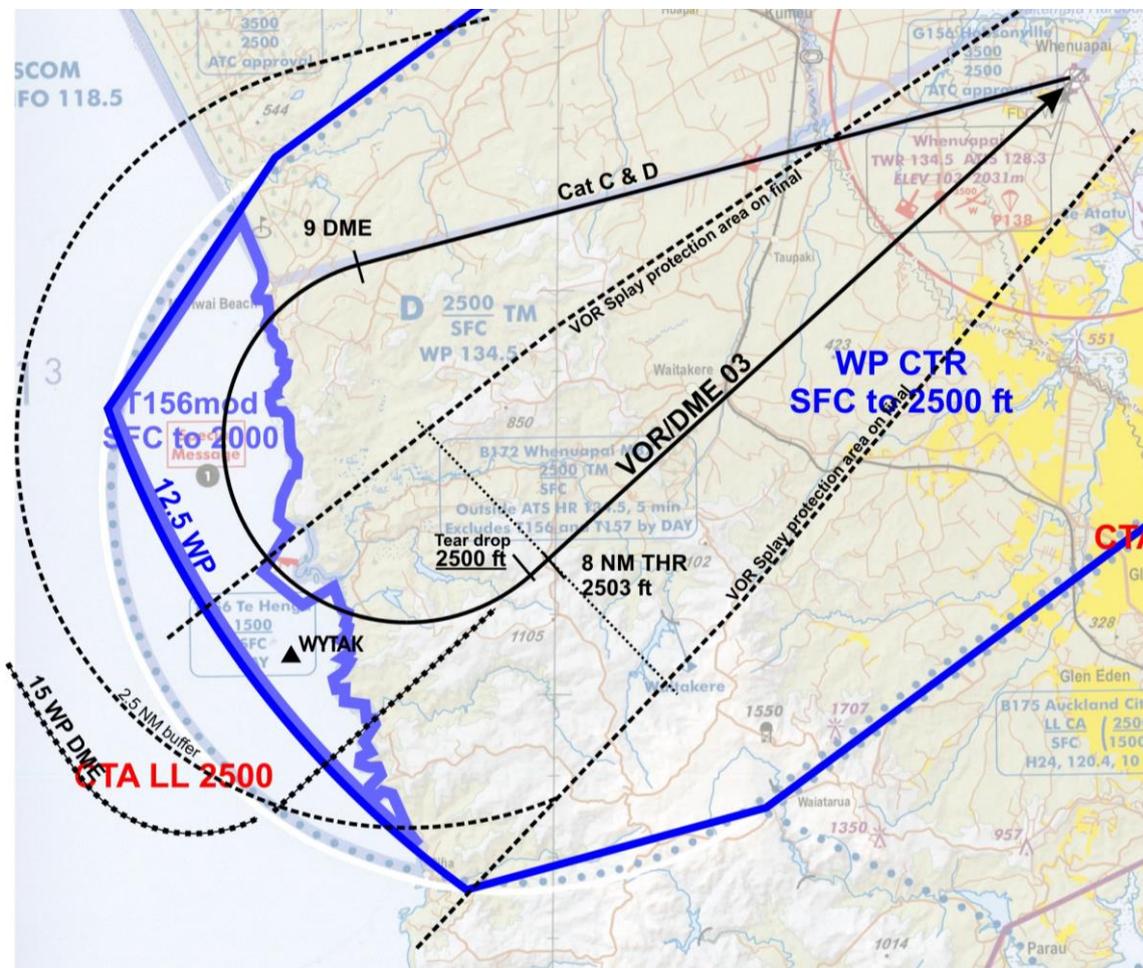


Diagram 12. Depicting T156mod and the containment requirements for the Cat A and B teardrop to ILS RWY 03.

The RNZAF's feedback regarding the 2000 ft upper limit is copied below.

Increase in upper altitude limit of T156 to 2000 ft.

The proposal assumes aircraft will fly the RWY 03 VOR/DME Cat A/B/C/D published 3.5° glide path. If the upper limit of T156 was increased then an aircraft flying the same procedure via a step down approach (this remains a military training requirement) could fly perpendicularly through the transit lane and increase the potential for conflict, this is also a consideration for any LOC/DME approach. **Opposed** as presented but acceptable if **Modified** to an upper limit of 1800ft.

Alternatively, NZWP approach plates could be **Modified** to increase the OCA step height to "not below 2000 feet", i.e. 2000.

The AAUG feedback supported the raised upper limit – their feedback stating;

The constraints that determine the western transit lane height are noted, and the proposed increase to 2000 feet is supported. This 500 foot increase coupled with the reduced 12.5nm lateral boundary provides greater flexibility for general aviation aircraft operating along the west coast.

Note: *The AAUG feedback included further comments they make in response to some of the RNZAF's feedback about the transit lane upper limit. A full copy of the AAUG feedback is given in Appendix A.*

Similar to the eastern transit lane, the Airways request for 2000 ft upper limit is based solely on the airspace design policy and highlights to CAA the varying feedback regarding the upper limit of the western transit lane. We anticipate that the CAA consultation process will result in the most appropriate upper limit being determined.

Airways agrees to the upper limit for T156 being any level 2000 ft or lower.

In the event that either or both transit lanes do have their upper limit raised, Airways is willing to work with the RNZAF to explore possible changes to descent profiles as published for IFR approaches to try to alleviate issues they have with the raised upper limit of the transit lane(s).

Keeping the transit lane seaward of the coast as it is now results in a simple, easy to follow airspace layout. However, there is a possibility that a small southern portion of the transit lane could be brought about 1 NM inland of the coast as shown in Diagram 13 below.

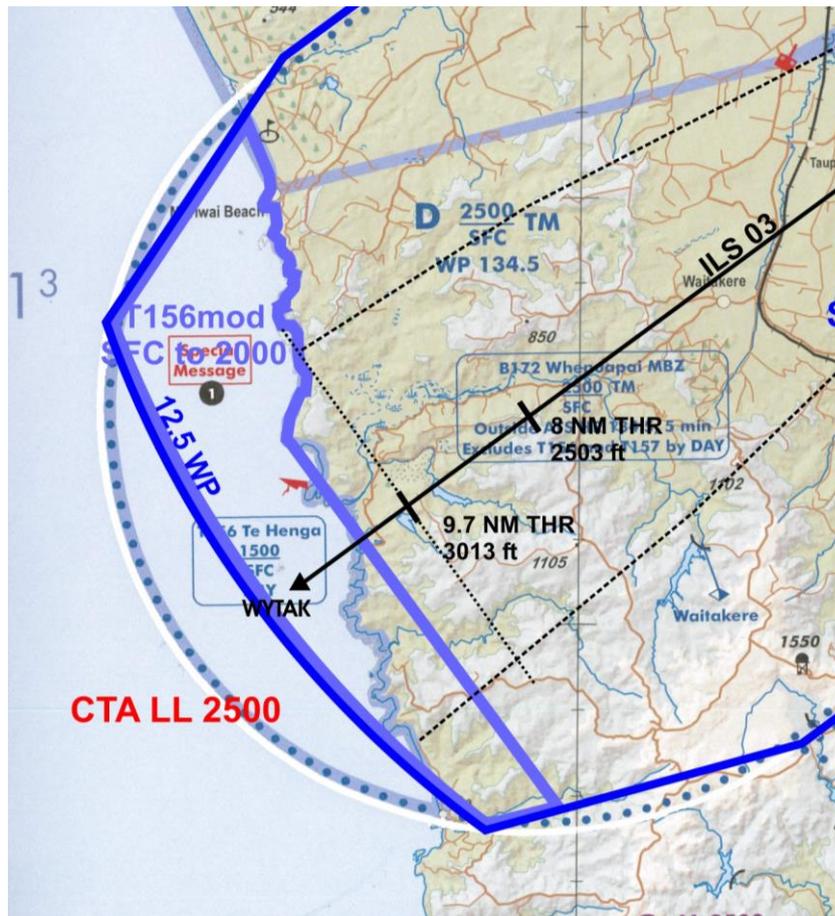


Diagram 13. Depicting possible T156mod slightly inland of the coast in the southern portion.

The RNZAF feedback about that possibility is;

Changing the transit lane lateral dimensions introduces a source for potential positional error by transiting pilots, as opposed to 'seaward of the coast'. Units stated GA/VFR aircraft location would be more predictable based off prominent geographic reference and therefore 'seaward of the coast' remains preferential; also questioned was the practicality of placing the transit lane over predominantly high ground which is often not suitable for transit under VMC. The proposal is therefore **Opposed**.

The AAUG feedback is;

With electronic charting and moving map displays becoming more prevalent in general aviation aircraft, situational awareness is achievable without needing prominent geographic boundary features. This being the case, the possible extension of the western transit lane inland from the coast is supported.

Having considered that feedback, Airways has elected to request the transit lane as shown on Diagram 12 without the portion inland of the coast. But we highlight to CAA this possibility and anticipate that the option may be raised during their consultation.

Airways agrees to the boundary being brought inland of the coast as per Diagram 13 if that is what their deliberations arrive at.

CTA

Airways has considered truncating the CTR at the inner boundaries of the transit lanes and adding CTA blocks below 2500 ft to provide containment of the IFPs. That arrangement was rejected by Airways for petitioning because of the added workload and distraction for Auckland Approach who would need to control those CTA blocks and drawing them away from their main airport of focus which is operations at Auckland. The methods of operating by the RNZAF, particularly with VFR low level heavy turboprops, would require AATMA sector to either control them or delegate airspace (CTA/D) to WPTWR, in this case the needs of the customer (RNZAF) are better served by a CTR/D as proposed by this petition.

AAUG's feedback about that was:

The operational implications of further reducing the CTR size and introducing CTA blocks in the approach path areas is noted and understood. We are supportive of the proposed structure which provides a compromise taking controller workload, aerodrome user requirements, and general aviation operations into account.

GAA boundaries

A portion of the boundary between G151 and G154 is coincident with the current WP CTR boundary. The CTR boundary could be changed without needing to also change the boundary between G151 and G154. However, charting would be simplified somewhat if the GAA boundary was also changed to follow any changes to the CTR boundary.

One possibility of that is in Diagram 14 below. The boundaries are altered south-east of NZNE to align with the requested WP CTR.

Also, in response to the suggestion from North Shore Aero Club (NSAC), the southern boundary of G151 and matching G154 boundary is requested to be modified to follow the edge of riverhead forest and associated Blackbridge Road. This boundary is the same as the boundary for L168 to where it meets the CTR boundary.

NSAC's feedback stated that the boundary like that would make training operations within the North Shore GAA G151 much easier from a navigational perspective, particularly when taking into account student pilots being the lowest common denominator.

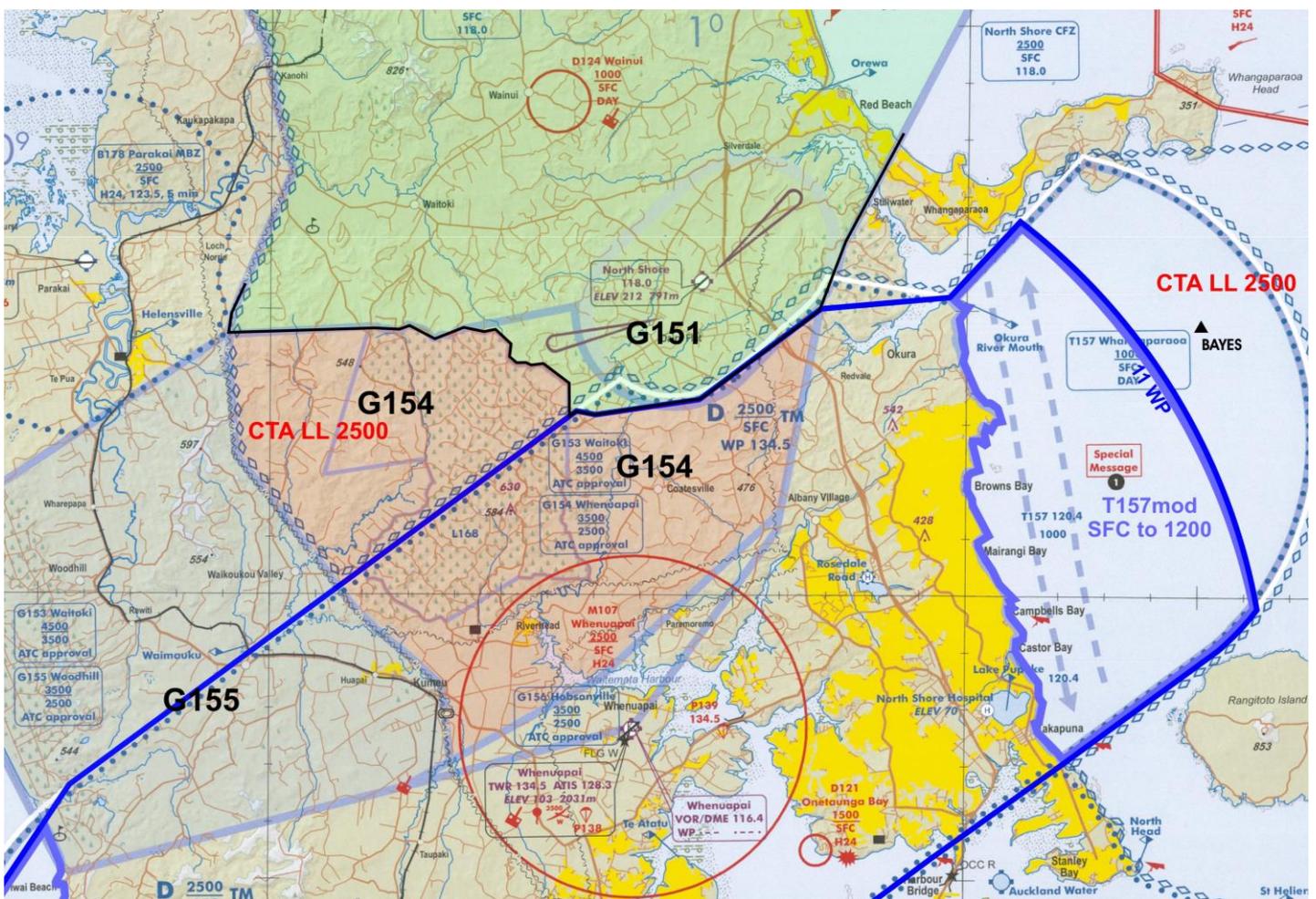


Diagram 14 Possible GAA boundary (black line) change with the proposed WP CTR.

One little possible issue with the boundary like that following the LFZ boundary is that it may be difficult to interpret from the overlapping boundary lines where the LFZ L168 boundary lies. Airways suggests that this possible issue is discussed during the CAA consultation.

Consequential changes

Some small alteration to the North Shore CFZ to follow an amended CTR boundary would probably also be needed.

There may be other consequential changes needed not identified by Airways.

Airways consultation and feedback

On 30 November 2017, Airways circulated to interested parties our proposal for changes to the WP CTR. That proposed airspace change and consultation was associated with the introduction of new PBN procedures to Whenuapai.

Feedback from that consultation raised the issue of the CTR boundary near North Shore aerodrome. The closeness of the WP CTR to NZNE was causing issues and with real possibilities of airspace infringements occurring. To address that feedback/issue Airways felt that we needed time to work through the issue and come up with possible options for consideration. Since the cut-off to CAA for the submission of an airspace petition was fast approaching, we elected to delay any petition for 12 months to give us time to work on this issue.

Flipped RWY 21 teardrop approaches

One option that we explored in July 2018 to address the CTR near NZNE and try to reduce the extent of WP CTR in that area was to 'flip' the teardrop ILS/DME and VOR/DME RWY 21 approaches so that they had left-hand base turns to the south of the inbound tracks. This did allow the CTR boundary to be moved to generally follow the southern bank of the Okura Estuary.

A further consequence of flipped teardrop RWY 21 approaches was that the different geometry of the flipped approach verses the coast would allow the upper limit to T157 to be 1300 ft.

During late August 2018, Airways consulted the RNZAF about the possibility of flipping their WP teardrop Cat A and B approaches and explaining the reason why the possibility was being raised (i.e. to address the CTR boundary issue near NZNE). That consultation also requested their feedback to the rest of the draft WP CTR including the raised upper limit and partially inland boundary of the western transit lane T156.

The RNZAF responded on 19 September 2018. They were opposed to flipping the RWY 21 approaches;

The current teardrop procedures minimise flightpath over infrastructure and residential housing—the proposals significantly alter the ground tracks to be predominantly over residential housing areas for almost the entirety of each procedure and is therefore **Opposed**.

Airways also had issues with flipping the teardrop Cat C and D approaches to RWY 21 as the outbound tracks further south than present could impact on some arrivals to NZAA RWY 23L.

Some other options regarding changes to the RWY 21 approaches were also considered. The outcome of all that consideration and RNZAF feedback was that we elected not to proceed with the possibility of flipping the RWY 21 teardrop approaches.

From that consultation with the RNZAF late August the CTR design presented in this petition was developed and our Consultation Document 8 November 2018 was sent to interested parties for their feedback (also copied to CAA).

We received feedback from three operators and one individual – the operators being the RNZAF, the North Shore Aero Club and the Auckland Airspace User Group. All that feedback is copied in full in Appendix A.

The feedback from AAUG and the individual both raised/requested the flipping of the RWY 21 teardrop approaches to facilitate a bit more class G airspace around NZNE. Our response to those requests is that, as detailed above, we did indeed consider at length this possibility and raised it with the RNZAF. However, on consideration of the information we had and the opposition of the user of the approaches, the RNZAF, we elected not to pursue the possibility.

We believe this petition document provides our responses to the various points raised in the feedback we received.

Again we highlight the varying views in the feedback regarding the upper limit of the transit lanes and we feel it is best to resolve this question during the CAA consultation that we anticipate will take place before the Director makes any changes to the WP CTR.

Airspace definitions

Amend WP CTR NZA155 to be;

All that airspace bounded by the arc of a circle of 11 NM radius centred on S36° 47' 12" E174° 37' 52" WP VOR/DME from;

S36° 38' 23.06" E174° 46' 03.28" new point on existing CTR boundary clockwise to;
S36° 45' 02.17" E174° 51' 19.28" then a straight line from;
S36° 45' 02.17" E174° 51' 19.28" to;
S36° 46' 02.50" E174° 50' 03.70" existing NZA155 seq 1 point to;
S36° 56' 18.30" E174° 33' 09.70" existing NZA155 seq 2 point to;
S36° 57' 18.09" E174° 28' 41.53" then the arc of a circle of 12.5 NM radius centred on
S36° 47' 12" E174° 37' 52" WP VOR/DME from;
S36° 57' 18.09" E174° 28' 41.53" clockwise to;
S36° 51' 27.59" E174° 23' 12.95" then a straight line from;
S36° 51' 27.59" E174° 23' 12.95" to;
S36° 48' 19.81" E174° 25' 37.66" existing NZA155 seq 3 point to
S36° 41' 38.90" E174° 36' 38.79" new point on existing CTR boundary to;
S36° 41' 43.00" E174° 37' 00.00" to;
S36° 41' 28.15" E174° 39' 12.02" to;
S36° 39' 52.04" E174° 41' 51.23" to;
S36° 39' 38.60" E174° 44' 37.70" existing NZA155 seq 8 point, Okura River Mouth VRP to;
S36° 38' 23.06" E174° 46' 03.28"

Vertical limits: SFC ft to 2500 ft
Classification: Class D
ATC Authority: WP Tower 134.5

T156mod Te Henga

Amend transit lane NZT156 Te Henga to be;

All that airspace bounded by a line that follows the mean high water mark from
S36° 48' 55.83" E174° 25' 09.95" where the new CTR boundary crosses the coast to;
S36° 56' 52.36" E174° 28' 01.02" where the new 12.5 WP CTR boundary crosses the coast then;
the arc of a circle of 12.5 NM radius centred on S36° 47' 12" E174° 37' 52" WP VOR/DME from;
S36° 56' 52.36" E174° 28' 01.02" clockwise to;
S36° 51' 27.59" E174° 23' 12.95" then a straight line from;
S36° 51' 27.59" E174° 23' 12.95" to
S36° 48' 55.83" E174° 25' 09.95" where the new CTR boundary crosses the coast

Italic co-ords estimated locations (not exactly sure where the mean high water mark lies).

Vertical limits: SFC ft to 2000 ft

T157mod Whangaparaoa

Amend transit lane NZT157 Whangaparaoa to be;

All that airspace bounded by the arc of a circle of 11 NM radius centred on S36° 47' 12" E174° 37' 52" WP VOR/DME from;

S36° 38' 23.06" E174° 46' 03.28" new point on existing CTR boundary clockwise to;
S36° 45' 02.17" E174° 51' 19.28" then a straight line from;
S36° 45' 02.17" E174° 51' 19.28" to;
S36° 46' 02.50" E174° 50' 03.70" existing NZA155 seq 1 point to;
S36° 47' 48.1" E174° 47' 09.1" existing NZT157 seq 2 point then;
a line that follows the mean high water mark from
S36° 47' 48.1" E174° 47' 09.1" existing NZT157 seq 2 point to;
S36° 39' 38.60" E174° 44' 37.70" existing NZT157 seq 3 point, Okura River Mouth VRP then;
a straight line from
S36° 39' 38.60" E174° 44' 37.70" existing NZT157 seq 3 point, Okura River Mouth VRP to;
S36° 38' 23.06" E174° 46' 03.28" new point on existing CTR boundary

Vertical limits: SFC ft to 1200 ft

G151mod North Shore

Amend GAA NZG151 North Shore to be;

All that airspace bounded by a straight line from

S36° 29' 05.0" E174° 48' 27.3" existing NZG151 seq 1 point to;
S36° 39' 17.5" E174° 41' 59.4" existing NZG151 seq 2 point to;
S36° 39' 52.04" E174° 41' 51.23" new CTR boundary point to;
S36° 41' 28.15" E174° 39' 12.02" new CTR boundary point to;
S36° 41' 43.00" E174° 37' 00.00" new CTR boundary point to;
S36° 41' 38.90" E174° 36' 38.79" new point on existing CTR boundary to;
S36° 41' 45.30" E174° 36' 28.23" new point on existing CTR boundary where it crosses L168 boundary to;
S36° 41' 11.5" E174° 36' 29.6" existing NZL168 seq 1 point then;
a line following Blackbridge Road and Bald Hill Road from;
S36° 41' 11.5" E174° 36' 29.6" existing NZL168 seq 1 point to;
S36° 40' 09.5" E174° 32' 09.6" existing NZL168 seq 9 point then a straight line from;
S36° 40' 09.5" E174° 32' 09.6" existing NZL168 seq 9 point to;
S36° 40' 21.1" E174° 29' 03.1" existing NZG154 seq 5 point then;
a line following the HT line from;
S36° 40' 21.1" E174° 29' 03.1" existing NZG154 seq 5 point to;
S36° 29' 09.4" E174° 27' 04.8" existing NZG151 seq 9 point then;
the arc of a circle of 20 NM radius centred on S36° 47' 12" E174° 37' 52" WP
S36° 29' 09.4" E174° 27' 04.8" existing NZG151 seq 9 point clockwise to;
S36° 29' 05.0" E174° 48' 27.3" existing NZG151 seq 1 point

Vertical limits: 2500 ft to 3500 ft

Active: During daylight hours

ATC Authority: Auckland (Approach) 124.3

G154mod Whenuapai

Amend GAA NZG154 Whenuapai to be;

All that airspace bounded by a straight line from

S36° 39' 52.04" E174° 41' 51.23" new CTR boundary point to;

S36° 43' 26.2" E174° 41' 01.0" existing NZG154 seq 2 point to;

S36° 46' 22.9" E174° 37' 07.1" existing NZG154 seq 3 point to;

S36° 47' 49.9" E174° 33' 56.0" existing NZG154 seq 4 point then;

a line following the HT line from;

S36° 47' 49.9" E174° 33' 56.0" existing NZG154 seq 4 point to;

S36° 40' 21.1" E174° 29' 03.1" existing NZG154 seq 5 point then a straight line from;

S36° 40' 21.1" E174° 29' 03.1" existing NZG154 seq 5 point to;

S36° 40' 09.5" E174° 32' 09.6" existing NZL168 seq 9 point then;

a line following Bald Hill Road and Blackbridge Road from;

S36° 40' 09.5" E174° 32' 09.6" existing NZL168 seq 9 point to;

S36° 41' 11.5" E174° 36' 29.6" existing NZL168 seq 1 point then a straight line from;

S36° 41' 11.5" E174° 36' 29.6" existing NZL168 seq 1 point to;

S36° 41' 45.30" E174° 36' 28.23" new point on existing CTR boundary where it crosses L168 boundary to;

S36° 41' 38.90" E174° 36' 38.79" new point on existing CTR boundary to;

S36° 41' 43.00" E174° 37' 00.00" new CTR boundary point to;

S36° 41' 28.15" E174° 39' 12.02" new CTR boundary point to;

S36° 39' 52.04" E174° 41' 51.23" new CTR boundary point

Vertical limits: 2500 ft to 3500 ft

Active: By approval of ATC

ATC Authority: Auckland (Approach) 124.3

Appendix A Feedback received.

RNZAF feedback to our 13 August 2018 proposal to them.
Email dated 19 September 2018

RNZAF Base Auckland Response to Airways New Zealand Whenuapai Control Zone

Reference:

- A. Airways New Zealand Consultation Document: possible amendment of the Whenuapai Control Zone 'Further Consultation' dated 13 August 2018
- 1. Ref A requested feedback to possible amendment of the Whenuapai Control Zone (WP CTR) as proposed by Airways New Zealand. The following is the RNZAF position on each of the proposals, developed following wide consultation with key New Zealand Defence Force (NZDF) airspace users and command elements.

WP CTR boundary modification near NZNE

- 2. Flip the RWY 21 ILS/DME and VOR/DME Cat A and B teardrop procedures, as per diagrams 6 and 7 of Ref A.
 - a. The current teardrop procedures minimise flightpath over infrastructure and residential housing—the proposals significantly alter the ground tracks to be predominantly over residential housing areas for almost the entirety of each procedure and is therefore **Opposed**.
- 3. Proposal to realign north-eastern boundary to follow Okura Estuary, as per diagram 10-12 of Ref A.
 - b. The proposal is dependent upon the reversal of RWY 21 ILS/DME and VOR/DME Cat A and B teardrop procedures which was opposed in para 2a and is therefore **Opposed** as presented.
 - c. The RNZAF is however open to minor boundary realignment which we believe will meet the request of the NZNE operator whilst retaining the regulatory requirements. An alternative **Modified** CTR boundary is proposed in Figure 1 below (red line); this provides operators at NZNE the ability to easily enter or vacate the local pattern without cutting airspace boundary corners whilst preserving the safety buffer applied to the current RWY 21 ILS/DME Cat A and B approach.

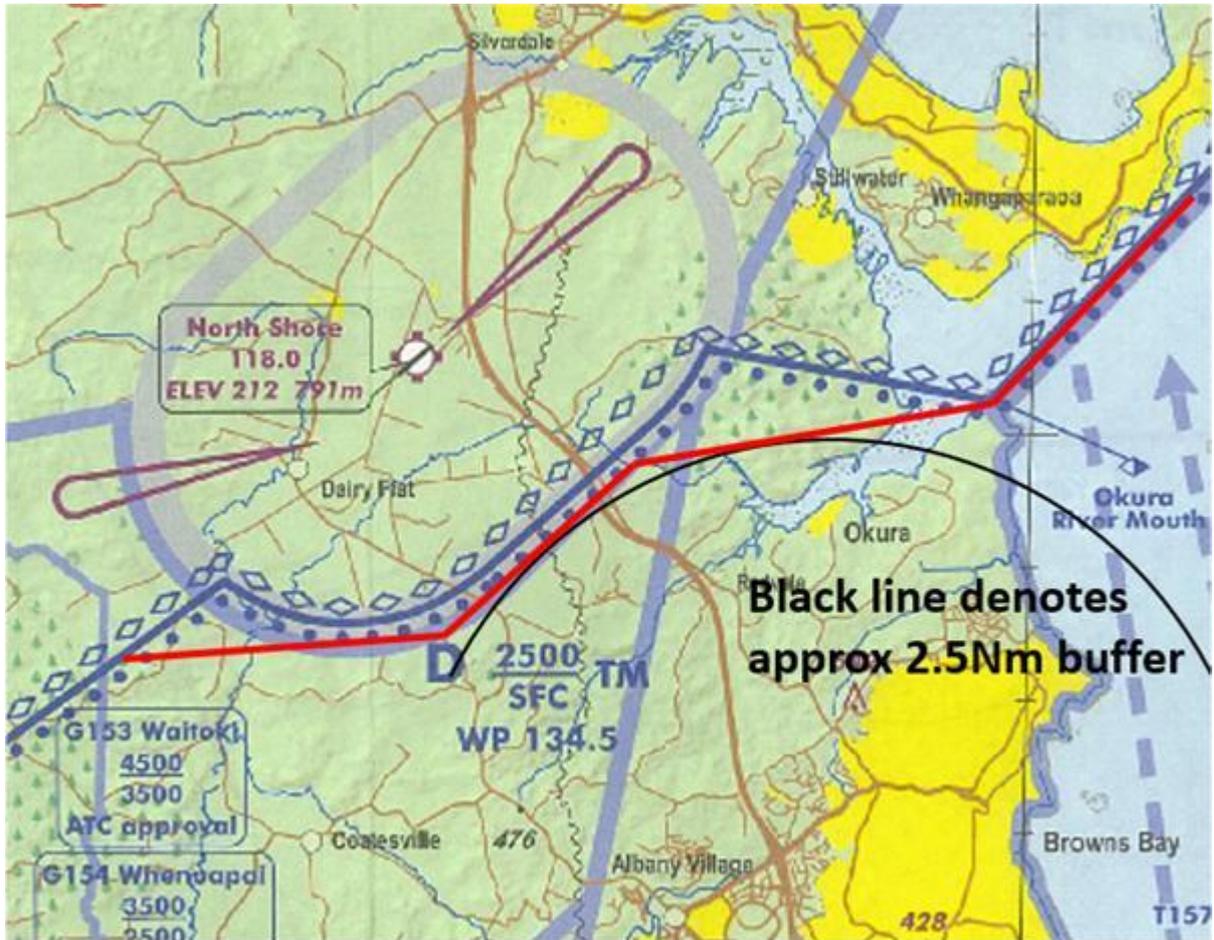


Figure 1. RNZAF proposed CTR modification.

8 NM Initial Approach Fix waypoint

4. Proposal to include an 8 NM IAF with associated Initial Fixes, as per Ref A diagram 5.
- d. This remains as proposed during the initial consultation in 2017; in addition operators of Cat C and D aircraft have requested the 12 NM IAF to be maintained for safety and operational requirements. Proposal for the addition of 8 NM IAF with associated Initial Fixes is **Supported**.

Cat C and D Teardrop

5. Deleting VOR/DME Cat C/D Teardrop establishment segment.
- e. User units require the Cat C and D Teardrop options to remain, primarily for training purposes as similar procedures are not available at RNZAF Ohakea. The proposal to delete Cat C and D Teardrop options is therefore **Opposed**.

Cat D Circling Containment

6. Cat D Circling Containment is not fully contained within the existing WP CTR or any proposed CTR changes.
- f. The lack of full containment within the current WP CTR or any future revisions is accepted. Proposal to remain with the status quo and include a statement within the AIP plate of 'Cat D circling airspace containment not assured' is **Supported**.

RWY 08 and 26 Containment

7. RWY 08 and 26 RNAV and VOR/DME approaches are not fully contained by the current airspace or within any possible revisions.
- g. The lack of full containment within the current WP CTR or any future revisions is accepted. Proposal to remain with the status quo and include a statement within the AIP plate of 'Airspace containment not assured' is **Supported**. Request this is statement also includes 'between 9.9 NM and 4.9 NM from THR' if feasible along with a similar note be included on the applicable VNC.

RNAV RWY 08 and 26 Commencement Altitudes

8. Increase the RNAV RWY 08 and 26 minimum commencement altitudes to 3000 ft.
- h. The lack of full containment within the current WP CTR or any future revisions is accepted. Proposal to raise the commencement altitude to 3000 ft and include a statement within the AIP plate of 'Airspace containment not assured' is **Supported**. Comments in para 7a above relating to further amplification and inclusion on VNC also apply here.

T156 and Western CTR modification

9. Increase in upper altitude limit of T156 to 2000 ft.
 - i. The proposal assumes aircraft will fly the RWY 03 VOR/DME Cat A/B/C/D published 3.5° glide path. If the upper limit of T156 was increased then an aircraft flying the same procedure via a step down approach (this remains a military training requirement) could fly perpendicularly through the transit lane and increase the potential for conflict, this is also a consideration for any LOC/DME approach. **Opposed** as presented but acceptable if **Modified** to an upper limit of 1800ft.
 - j. Alternatively, NZWP approach plates could be **Modified** to increase the OCA step height to "not below 2000 feet", i.e. 2000.
10. T156 lateral boundary changes.
 - k. Changing the transit lane lateral dimensions introduces a source for potential positional error by transiting pilots, as opposed to 'seaward of the coast'. Units stated GA/VFR aircraft location would be more predictable based off prominent geographic reference and therefore 'seaward of the coast' remains preferential; also questioned was the practicality of placing the transit lane over predominantly high ground which is often not suitable for transit under VMC. The proposal is therefore **Opposed**.

T157 and Eastern CTR modification

11. Increase in altitude to 1300ft.
 - l. The proposal again assumes aircraft will fly the published 2.9° or 3.0° glide paths. If the upper limit of T157 was increased above 1000ft then an aircraft flying the RWY 21 VOR/DME Cat C/D procedure via a step down approach could fly perpendicularly through the transit lane and increase the potential for conflict. This could also occur in the VOR/DME Cat A/B approach, though less likely due to the probable aircraft flight path and performance, but is a consideration for any LOC/DME approach too.

- m. In addition, operators of Cat D aircraft advised such a change would introduce potential conflict should extended upwind RWY 03 or downwind RWY 21 circuits be required given their circuit altitude of 1500 ft.
 - n. Finally, the CTR immediately above T157 is often utilised to facilitate military training, especially airdrop of both equipment and personnel. Increasing the upper limit of T157 would significantly raise the potential for conflict during what is a high workload period for military flight crews and is therefore extremely undesirable.
 - o. As a result any increase to the current upper limit of T157 is **Opposed**.
12. Lateral boundary changes.
- p. The proposal to reduce the CTR boundary to 11 NM results in minimal impact as is therefore **Supported**.

G151 and G154 modification

13. Realignment of G151 and G154 should changes to the WP CTR proceed.
- q. As the boundaries are above the NZWP CTR, this has minimal impact to military operations. To avoid complicating charts it would be logical for any boundary to remain coincident with the WP CTR, whether current or realigned under this airspace review.

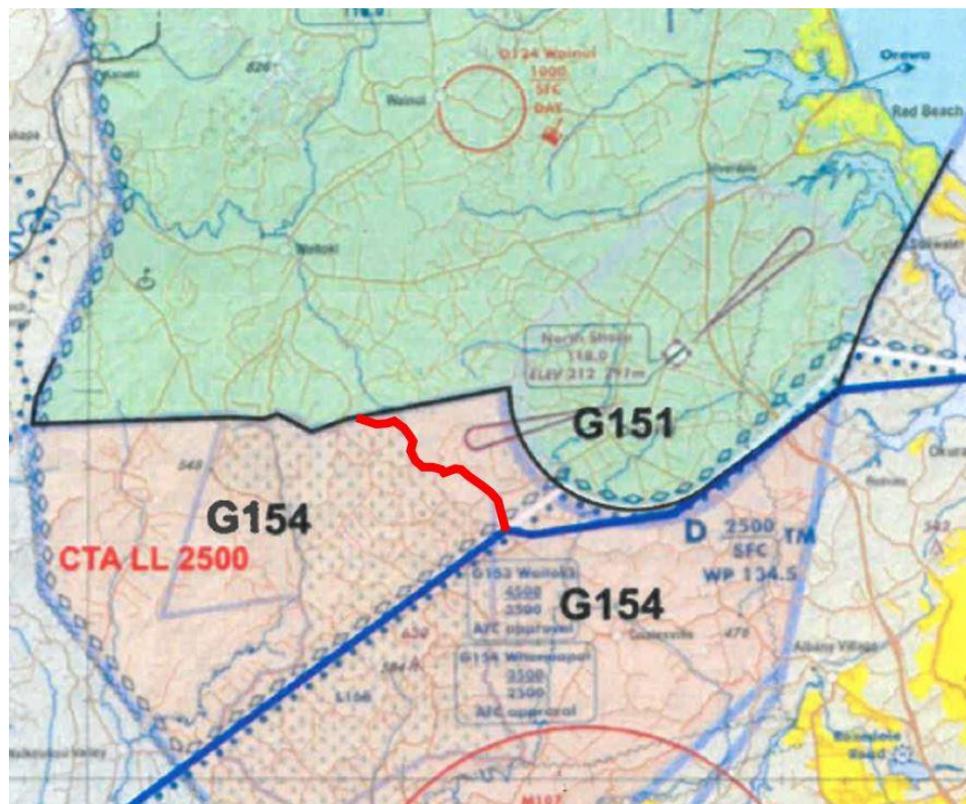
RNZAF feedback to our 8 November 2018 Consultation Document.
Email dated 10 December 2018

Thanks for the opportunity to provide further feedback. The RNZAF notes the changes made by Airways to this version of the document which satisfactorily address the majority of our concerns. That said, the RNZAF position on the raising of the T156 and T157 vertical limits has not changed and therefore our previous objections remain valid—the RNZAF does however note the specific reference made by Airways (in this version) to the previous RNZAF objections.

If you require any further comment or clarification, please respond direct to.....

Hi Guys, overall looks good to me, my observations are as follows:

1. The WP CTR boundary closest to NZNE being pulled slightly SSE is fantastic and will be of real tangible benefit. It will allow aircraft to fly directly to NZNE from Okura River Mouth without conflicting with the WP CTR, and it will also improve CTR clearance for aircraft that have extended upwind (following a EFATO simulation for instance). Generally it should also prevent unauthorised incursions close to NZNE.
2. Regarding the potential establishment of new lower areas of CTA to contain IFP's for runways 08 and 26, I personally think this would be excessive. The main reason being it would make the airspace even more complicated for VFR aircraft to navigate. Also it doesn't seem justified given those approaches are seldom used. If left as it, instead of a note being added to the VNC to warn VFR aircraft of aircraft potentially engaged in an instrument approach, the purple elongated teardrop symbol could be used which is consistent with other instrument approaches in class G airspace.
3. G151 southern boundary could be modified to follow the edge of the riverhead forest and associated road (as shown by the red line in the picture attached). This would make training operations within the North Shore GAA much easier from a navigational perspective, particularly when taking into account student pilots being the lowest common denominator.



Individual's feedback to our 8 November 2018 Consultation Document
Email dated 10 December 2018

For the sake of the North Shore circuit traffic, could the Wheneuapi approach to RWY 21 have the teardrop of the VOR & ILS approaches swapped to the other side?

Currently any aircraft crossing the beacon on the ILS or VOR track outbound tracking North-ish, turn right, and track inbound for the runway. The reason the Wheneuapi airspace is so close to North Shore (from the consultation document pictures) is to protect the IFR outbound traffic. If this was swapped so that the outbound traffic tracked East-ish, then turn left to intercept the inbound, then this could give North Shore more space in their circuit.

Swapping the outbound track to the other side might mean enlarging Wheneuapi's airspace toward North Head and Harbour Bridge, but there isn't an airfield there, only a water-field (what is the correct name for an area used by seaplanes for taking off and landing?).

Auckland Airspace User Group's feedback to our 8 November 2018 Consultation Document
Updated feedback email dated 12 December 2018

Thank you for your email of 27 November and the opportunity to comment on the consultation document proposing amendments to the Whenuapai Control Zone.

The following comments broadly follow the order of items in the consultation document;

1. The upper limit remaining at 2500 feet and the width of the CTR being broadly unchanged is understood, given the type of aircraft operating at the aerodrome.
2. The constraints that the existing RWY 21 instrument approach procedures place upon the changes to the CTR boundary in the vicinity of North Shore aerodrome are noted. If the existing RWY 21 procedures are retained then the proposed CTR boundary amendments are supported. Notwithstanding this conditional support, we would like to see consideration given to amending the RWY 21 procedures to a left hand tear drop rather than right hand as we believe this would move the protection/buffer zone away from North Shore aerodrome and thereby enable a more significant CTR boundary change in this vicinity.
3. The constraints that determine the eastern CTR boundary are noted, and the proposed shift of the boundary to 11nm WP DME is supported.
4. Similarly, the constraints that determine the western CTR boundary are noted, and the proposed shift of the boundary to 12.5nm WP DME is supported.
5. Continued acceptance of the fact that the Category D circling area is not fully contained within the CTR north and south of the aerodrome is supported, as is the proposed annotation of this fact within the AIP.
6. The impact of lowering the airspace in the vicinity of Rangitoto Island/North Head to fully contain the RWY 26 approach would be significant. The currently uncontrolled airspace in this vicinity is regularly used by general aviation aircraft. Activities include helicopter and seaplane operations from the adjacent heliports and water aerodrome, aircraft overflying Auckland City, and also aircraft transiting the Auckland area. The area immediately seaward of a line joining Musick Point, North Head, and Okura River Mouth is the main north-south thoroughfare for general aviation aircraft. Most pilots try to avoid straying too far from land, it is already constrained inland by the built up area and corresponding minimum height limits, so vertical

separation is the primary tool used to minimise collision risk. Lowering the airspace will compress activities into an even smaller volume of airspace.

7. Lowering the airspace in the vicinity of Waimauku to fully contain the RWY 08 approach would, for similar reasons to those stated at Point 6 above, have detrimental implications for general aviation aircraft. Whilst this area doesn't experience the same volume of traffic as Rangitoto Island/North Head it is regularly used by pilots from North Shore and Parakai Aerodromes and aircraft that use the west coast as an alternate north-south thoroughfare.
8. We do not support the inclusion of the above extended airspace in the proposed CTR amendment, however we do support the raising of the minimum procedure commencement altitudes for RWY 08 and 26, and the proposed annotation in the AIP regarding lack of full containment.
9. We note the RNZAF request that a notation be placed on the VNC regarding lack of containment of these approaches. We are not opposed to considering this, perhaps the instrument approach symbols used at aerodromes outside controlled airspace may provide a solution in this regard.
10. The constraints that determine the eastern transit lane height are noted, and the proposed increase to 1200 feet is supported. Whilst it is only a 200 foot increase over present day, any increase in the airspace available to assist with see-and-be-seen separation is positive. It is acknowledged that our request for consideration of changing to a left hand tear drop on the RWY 21 instrument approaches may have implications for the maximum transit lane height. We remain open to considering this aspect when more information becomes available.
11. We note the RNZAF feedback to the proposed increase in the eastern transit lane height and respond as follows;
 - a. Yes, a Category C/D aircraft that elects to fly the approach by step down will fly through the transit lane. Plenty of literature exists around the wisdom of flying dive-and-drive approaches.
 - b. No, a Category A/B aircraft that elects to fly the approach by step down will not fly through the transit lane because the approach has a minimum altitude of 1800 feet at 6nm WP DME that keeps the aircraft above the transit lane even if the aircraft diverges laterally from the approach track.
 - c. No, an aircraft that elects to fly the LOC/DME approach by step down will not fly through the transit lane because the approach has a minimum altitude of 1600 feet at 6nm IWP DME that keeps the aircraft above the transit lane.
 - d. If a Category D aircraft extends upwind or downwind at circuit altitude (1500 feet) it is not going to conflict with the transit lane at 1200 feet.
 - e. The proposal is that the window of airspace above the transit lane change from 1000-2500 feet today to 1200-2500 feet in the future. We are surprised that this significantly raises conflict potential.
12. The constraints that determine the western transit lane height are noted, and the proposed increase to 2000 feet is supported. This 500 foot increase coupled with the reduced 12.5nm lateral boundary provides greater flexibility for general aviation aircraft operating along the west coast.
13. We note the RNZAF feedback to the proposed increase in western transit lane height and respond as follows;
 - a. An aircraft that elects to fly the VOR/DME approach by step down will not fly through the transit lane because the approach has a minimum altitude of 2500 feet at 7.1nm WP DME at which point the aircraft is well inside the CTR.

- b. An aircraft that elects to fly the LOC/DME approach by step down will not fly through the transit lane because the approach has a minimum altitude of 2500 feet at 7.4nm IWI DME at which point the aircraft is well inside the CTR.
 - c. The suggestion to utilise obstacle clearance altitude to preserve airspace containment is neither required nor supported.
14. With electronic charting and moving map displays becoming more prevalent in general aviation aircraft, situational awareness is achievable without needing prominent geographic boundary features. This being the case, the possible extension of the western transit lane inland from the coast is supported.
15. The operational implications of further reducing the CTR size and introducing CTA blocks in the approach path areas is noted and understood. We are supportive of the proposed structure which provides a compromise taking controller workload, aerodrome user requirements, and general aviation operations into account.
16. Amendment of the G151/G154 boundary to follow the amended CTR boundary is supported to simplify charting.