
Proposed restricted area – North Gisborne
– airspace user consultation

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Introduction

New Zealand based company, Vortex Power Systems (VPS), have applied for the designation of a restricted area to conduct demonstration trials of a new power generation technology that may involve a hazard to aircraft.

In support of their application, VPS advised the basis for the technology and proposed restricted area:

The technology uses waste heat from <80°C hot water recovered from thermal processes in industry, to generate and power a controllable freestanding atmospheric vortex which in turn drives a turbine and generates electrical power.

The plan is for the Demonstration Unit to generate an atmospheric vortex akin to a waterspout that should extend up into the atmosphere. VPS acknowledge that the vortex will be highly turbulent and would pose a significant risk to air users who came within 10m of the core. As a safety precaution, VPS wish to establish an area of restricted airspace for the Demonstration Vortex to operate within.

Further information on the technology and proposed operation is contained in the attached document - Vortex Power Systems aeronautical study

Proposed restricted area

The proposed restricted area would be activated by NOTAM when a demonstration trial is to take place, from the surface to 30000 ft AMSL. Given the vortex is anticipated to be capable of being lent over by up to 30 degrees, VPS are proposing a radius of 1500m up to 8000 ft, and 5000m up to 30,000 ft (FL300). Refer to Figure 3 in the attached aeronautical study.

The operating schedule is proposed at 1-4 hour periods initially up to three times per week from March 2022 until 2025.

The proposed area sits outside of the current Gisborne control zone by 1.5 NM, and within the current control area from 8000 ft – FL300. Airways have proposed performance based navigation implementation for November 2023, including changes to controlled airspace around Gisborne.

Conditions on operations within the restricted area may be imposed to ensure that activity is fully contained and clear of aircraft operating outside. These may include the application of vertical and lateral buffers, and meteorological minima. In addition to the activation by NOTAM, VPS are proposing that Airways NZ be the administering authority for the airspace and have engaged with Airways to coordinate activation times to minimise the effects on controlled flights, particularly post November 2023.

Possible effect to IFR aircraft

There is no effect on the current instrument flight procedures into/out of Gisborne aerodrome. IFR aircraft transiting above the restricted area within the control area from 8000 ft up to FL300 may be impacted.

The Airways proposed PBN implementation in November 2023 creates significant impacts on instrument flight procedures in the wider Gisborne area, including a larger portion of the proposed area being within controlled airspace and directly affecting a planned missed approach hold.

Possible effect to VFR aircraft

There are no published aerodromes within the proposed restricted area.

VPS have consulted with some local VFR operators that may transit through the proposed restricted area. In particular, some aerial topdressing operations may need to be conducted within the proposed area. VPS intend on preparing weekly schedules for operators to coordinate and minimise impacts.

The one VFR flight path identified as being affected by the proposed restricted area is traffic transiting north from Gisborne up the east coast of the north island.

The other identified aviation activity within the proposed restricted area would be scenic overflights. It is not known how often this takes place and how many would possibly be affected.

Consultation

Prior to designating airspace, Civil Aviation Rule 71.9 requires the Director to consult with affected persons, organisations and representative groups within the aviation industry before making a designation or classification of airspace.

The Director invites feedback in regard to the proposed airspace change.

At this stage it is not intended that CAA will hold an airspace consultation meeting unless this is specifically requested by users.

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 (chartered aerodromes only)

- Gisborne aerodrome (Gisborne Airport Ltd)
- Gisborne Hospital heliport (Tairāwhiti District Health Board)
- Hastings aerodrome (Hawke's Bay & East Coast Aero Club)
- Napier aerodrome (Hawkes Bay Airport Authority)
- Opotiki aerodrome
- Rangitikei aerodrome
- Waipukurau (Central Hawkes Bay Aero Club)

- Wairoa aerodrome (Wairoa District Council)
- Wairoa Hospital heliport (Wairoa Care Hawkes Bay)

Operators, Organisations and User Groups

Major operators, organisations and user groups have been identified as:

- Air Gisborne
- Air New Zealand
- Aircraft Owners and Pilots Association
- Airways Corporation of New Zealand
- Balloon Association of New Zealand
- Central Hawkes Bay Aero Club
- Eagle Flight Training
- Gliding New Zealand
- Hawke's Bay & East Coast Aero Club
- Massey School of Aviation
- Model Flying New Zealand
- Napier airspace user group
- New Zealand Agricultural Aviation Association
- 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
- Recreational Aircraft Association of New Zealand
- Royal New Zealand Air Force
- Skyline Aviation Ltd
- Sport Aircraft Association New Zealand

- Sport Aviation Corp

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

[2023 airspace reviews | aviation.govt.nz](#)

Notifications will be sent to CAA email notification subscribers to Airspace Notifications – Briefing Areas 2, 3, 4 and 5.

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

If there are further questions regarding the VPS trial technology and planned trial operations, please contact VPS staff directly in the first instance – contact details are:

Billy Bowman - billy@vortexpowersystems.com

Perzaan Mehta – perzaan@vortexpowersystems.com

Submissions

This document forms part of the consultation process. Submissions are sought from any interested person, organisation or representative group.

Submissions are accepted either electronically or via mail.

Please address submissions to:

Team Coordinator
Aviation Security and Infrastructure
2023 East Coast Airspace Review
Civil Aviation Authority of New Zealand
PO Box 3555
Wellington 6140

Email: aeronautical.services@caa.govt.nz

Reference – 22 ASD 37 Gisborne restricted area

Closing date for submissions is **Thursday 5th January 2023**.

Further information

For further information contact:

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