ACP-2022-049

Temporary Danger Area

BVLOS demonstration of Cargo UAV within the Orkney Islands

16th of November – 22nd of December 2023

Between 16th of November – 22nd of December 2023 a Remotely Piloted Aircraft System (RPAS) will operate within a TDA complex connecting 5 aerodromes across the Orkney Islands between SURFACE and 2500 FT AMSL:

- Kirkwall
- Eday
- North Ronaldsay
- Papa Westray
- Westray

1. The RPAS operating within this TDA are fixed-wing twin-engine aircraft of 400 kg MTOW and 10 m wingspan.

2. As the RPAS will be operating Beyond Visual Line of Sight and does not have full Detect and Avoid capability, a Temporary Danger Area (TDA) complex will be established as below. The RPAS is equipped with an ADS-B OUT capability, Mode-S transponder and navigation and position lighting.

3. The UAS will be operated under exemption issued by the CAA directly to the operator.

4. The TDA is sponsored by Windracers in accordance with Airspace Change reference ACP-2022-049.

5. The TDA complex consists of three areas, only those areas required for a flight will be activated to minimise impact to other air users.

6. The TDA will be activated via NOTAM requested by Windracers, at least 24 hours in advance of operations. There will be a NOTAM for each day of operation. Should the UAS complete the return flight one hour or more before the end of the TDA activation, Windracers will endeavour to de-activate the TDA.

7. The impact of operations will be monitored throughout with the view to adjust the activation period if necessary.

8. Flight schedules will be agreed with key airspace stakeholders through a Concept of Operations. Any such agreements shall by strictly adhered to.

REQUIRED DANGER AREAS WILL BE NOTIFIED BY NOTAM

9. **TDA-A** When required between 16th of November – 22nd of December 2023, a TDA is established within the area bounded by straight lines joining successively the following points:

    a) 585819N 025518W
    b) 585750N 025204W
    c) 591113N 024441W
    d) 591140N 024757W
    e) 585819N 025518W

10. The TDA is established between SURFACE and 2500 FT AMSL with a width of 1.73 NM.

11. A Danger Area Activity Information Service (DAAIS) will be available from Kirkwall Tower/Approach on frequency 118.305 MHz.

12. Information about the Temporary Danger Area and UAS Activity will also be available on Kirkwall information ATIS on frequency 108.600 MHz.

13. **TDA-B** When required between 16th of November – 22nd of December 2023, a TDA is established within the area bounded by straight lines joining successively the following points:

    a) 591140N 024757W
    b) 591113N 024441W
    c) 591353N 024326W
    d) 592126N 022447W
    e) 592246N 022703W
    f) 591457N 024624W
    g) 591140N 024757W

14. The TDA is established between SURFACE and 2500 FT AMSL with a width of 1.73 NM.

15. A Danger Area Activity Information Service (DAAIS) will be available from Kirkwall Tower/Approach on frequency 118.305 MHz.

16. Information about the Temporary Danger Area and UAS Activity will also be available on Kirkwall information ATIS on frequency 108.600 MHz.

17. **TDA-C** When required between 16th of November – 22nd of December 2023, a TDA is established within the area bounded by straight lines joining successively the following points:

    a) 591140N 024757W
    b) 591113N 024441W
    c) 591707N 024151W
    d) 592158N 025325W
    e) 592152N 025704W
    f) 592008N 025658W
    g) 592012N 025415W
    h) 591622N 024543W
    i) 591140N 024757W

18. The TDA is established between SURFACE and 2500 FT AMSL with a width of 1.73 NM.

19. A Danger Area Activity Information Service (DAAIS) will be available from Kirkwall Tower/Approach on frequency 118.305 MHz.

20. Information about the Temporary Danger Area and UAS Activity will also be available on Kirkwall information ATIS on frequency 108.600 MHz.

21. Further enquiries can be made to Airspace Regulation (Utilisation), Safety and Airspace Regulation Group, Civil Aviation Authority on ARops@caa.co.uk.

22. As part of the ACP process requirements, Windracers are collecting feedback regarding this TDA and its impact over its duration which will be shared with the CAA. All feedback regarding this may be sent via email to operations@windracers.org.

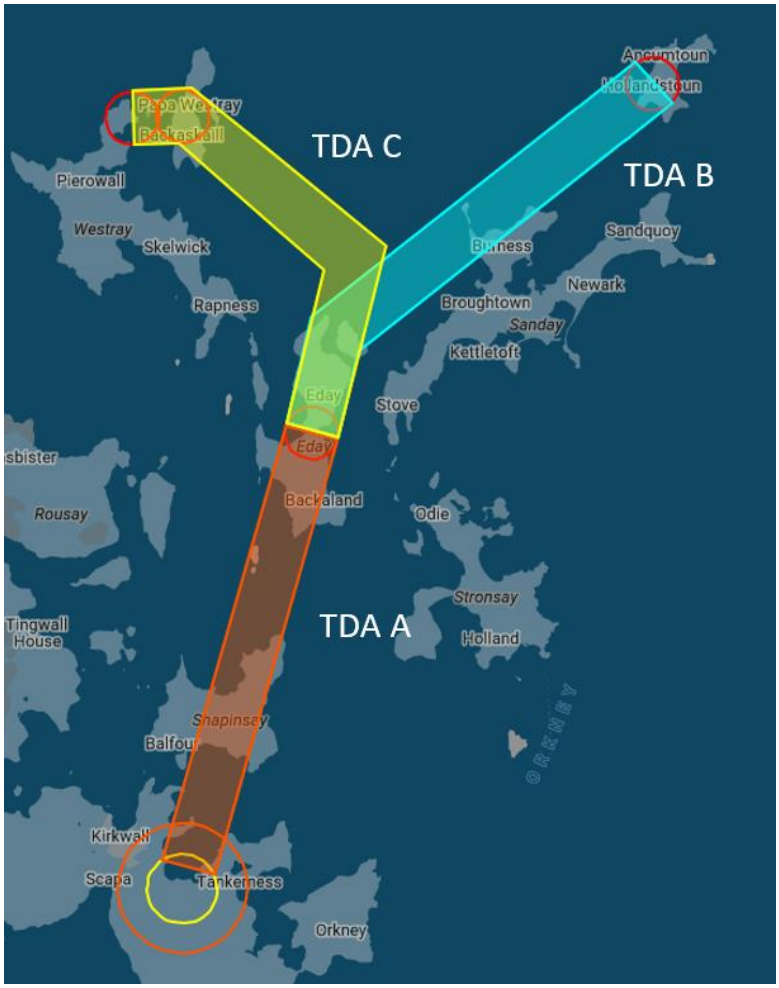

Figure 1 TDA Segments

NOISE ASSESSMENT

23. A noise assessment was carried out on the 17/03/2023 at Llanbedr airfield, Wales for ULTRA. This test adhered to the guidelines provided by the CAA's Environmental Regulators.

24. The test was carried out by commanding ULTRA into a standard circuit at 850ft, with the decibel meter positioned as close to the centre of the circuit as possible. The test was run for a total of 10 minutes, with an LA_{max} value of 52.7 dB being recorded.

25. Using the inverse square law and applying the 10 dB tonal penalty, an altitude threshold of 652.3ft was calculated (see Figure below).

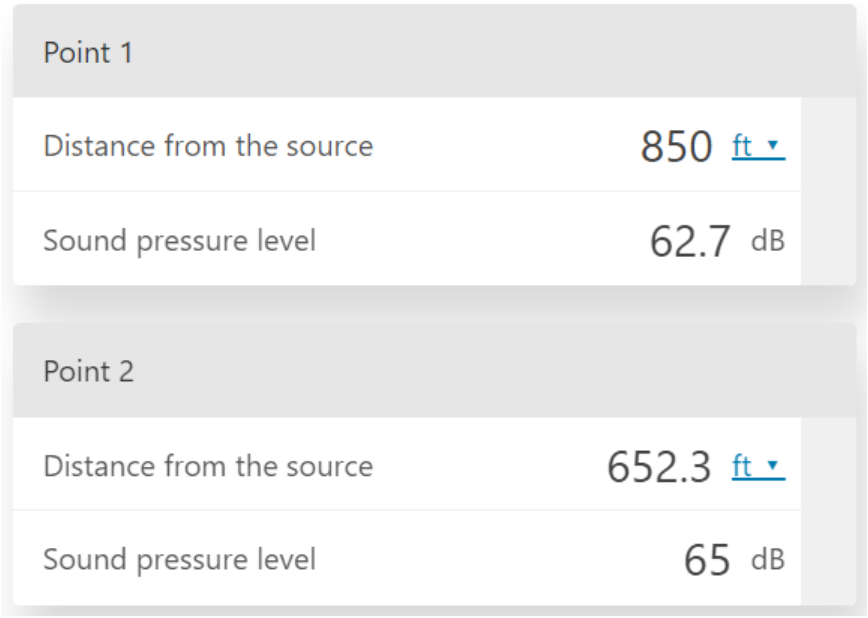

Figure 2 - Distance attenuation calculation

26. Planned flights are at 1000ft AMSL and therefore do not require notification of noise levels.