SaxaVord Spaceport ACP-2017-079 CAP1616 Stage 3 - CONSULT Stakeholder Consultation

V3.2 dated 17 Apr 23

Contents

This pack-up has been produced to meet the UK CAA's CAP1616 Stage 3 stakeholder consultation requirements and covers the following discussion areas, upon which your response is requested:

Introduction - Location, Background and Context

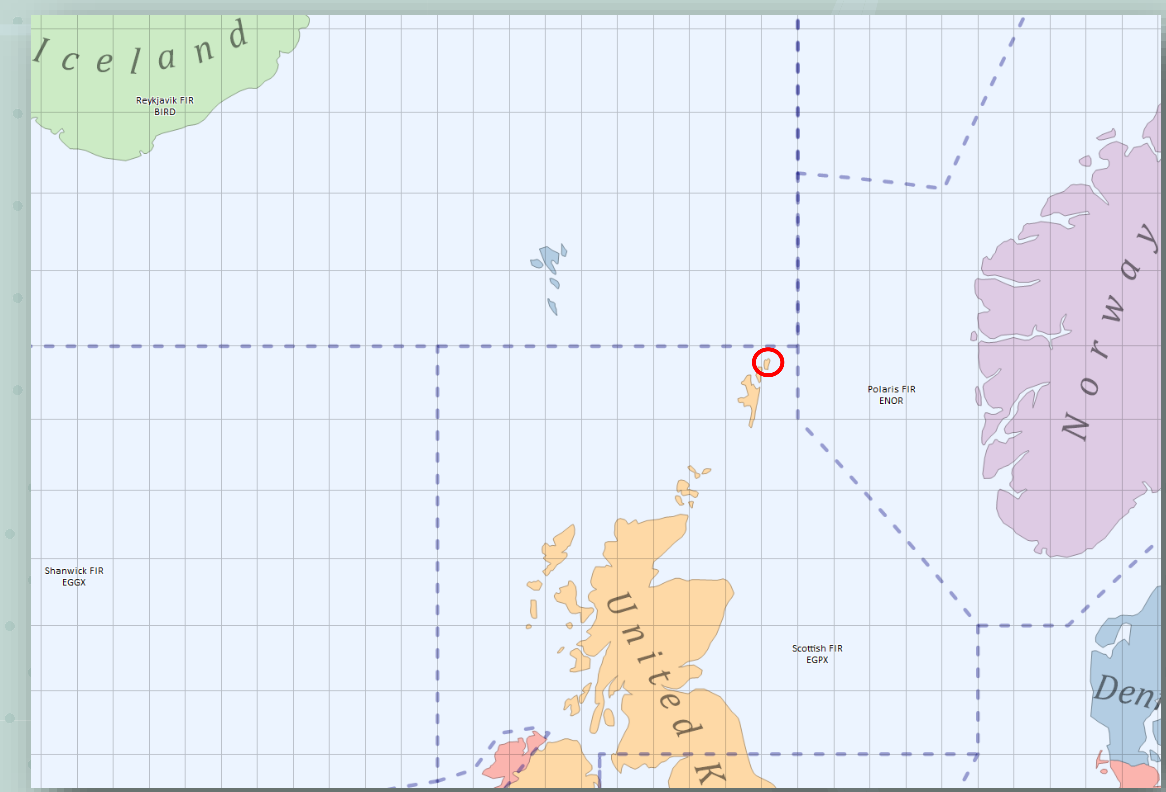
Introduction

- **ACP Sponsor Nomenclature**. The Change Sponsor for this airspace change proposal (ACP) (ACP-2017-079) is Shetland Space Centre Limited, hereinafter referred to as either "SaxaVord Spaceport" or "SaxaVord".

- SaxaVord seeks to conduct vertical launch operations for orbital and sub-orbital activities from SaxaVord Spaceport on Lamba Ness, Unst. A suitable airspace reservation of defined dimensions is required to ensure the safety of other airspace users from SaxaVord launch activities and to ensure the safety of SaxaVord launch activities from other airspace users. The proposed airspace reservation would be activated for the minimum specified periods necessary to support nominated launch operations and would extend from surface (SFC) to unlimited (UNLTD).

Location - Unst, Shetland Islands

- The Shetland Islands are a subarctic archipelago in the Northern Atlantic, between Great Britain, the Faroe Islands and Norway. It is the northernmost part of the United Kingdom.
- SaxaVord Spaceport is located on the Lamba Ness peninsula on Unst, the most northerly of the Shetland Islands.
- The site is within the northern area of the UK's airspace (i.e. the Scottish Flight Information Region (FIR)) approximately 11nm south of the northern boundary and 22nm west of the eastern boundary.



Source: skydemon

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UK Airspace Construct - General

- UK Airspace is divided into 3-dimensional blocks, which are classified from “Class A” to “Class G” airspace.
- In the UK, Class G airspace is “uncontrolled”, which means that there are no restrictions on:
  - Which aircraft can enter.
  - What equipment the aircraft must carry.
  - The routes aircraft can take.
- In the UK, all other airspace is “controlled” and aircraft are directed by air traffic control, who decide the safest and most efficient routing for all aircraft.

Current Airspace Scenario - SaxaVord

- The SaxaVord site (and its immediate surroundings), resides wholly within UK Class G airspace, which sits beneath Class C airspace.
- Above Flight Level (FL)195 (i.e. 19,500ft above mean sea level (AMSL)), commercial air traffic operates under the principle of “Free Route Airspace”, which allows flights to route direct, *vice* following prescribed routes (i.e. airways) along pre-determined navigation points.
- SaxaVord recognises that entertaining any airspace design option that does not include a proportionate airspace reservation to protect airspace users from the proposed launch operations at SaxaVord (and *vice versa*) is untenable (as outlined earlier).

SaxaVord "Current Day Operation" and Reversion

- UK aerodromes seeking to implement an airspace change would have an existing operation from which they seek to migrate; thus, there is a "current day operation" to cite as an operational baseline. Where an aerodrome's airspace change does not achieve its objectives, the aerodrome has the option to either revert back to the pre-airspace change position, or redesign (and resubmit its application).
- Unlike an airspace change at a UK aerodrome, there is no "current day" SaxaVord spaceport operation to refer to as an operational baseline; thus, there is no SaxaVord operational *status quo* to either maintain, or revert back to. Should SaxaVord identify that the implemented airspace design does not meet its objectives, then airspace activation would not take place and SaxaVord would undertake an airspace redesign.

SaxaVord Airspace Change - Background and Context

- **Background**. In 2020, as part of Stage 1 of the CAP1616 process, SaxaVord established its proposed airspace change design principles through engagement with identified stakeholders; the CAP1616 Stage 1 'Define' Gateway was passed on 29 May 20.
- In Stage 2, SaxaVord produced a list of options that addressed the ACP's Statement of Need and alignment with the Design Principles (DPs) and tested these options with stakeholders.
- Having passed the Stage 2 ("Develop and Assess") gateway on 7 Dec 22, Stage 3 is where SaxaVord undertakes the formal consultation and associated discussions with stakeholders. Additionally, SaxaVord engaged aviation stakeholders relating to a temporary ACP (ACP-2021-090). Engagement related to that application must be treated as a separate activity to stakeholder engagement associated with this application (ACP-2017-079), despite their similarities.

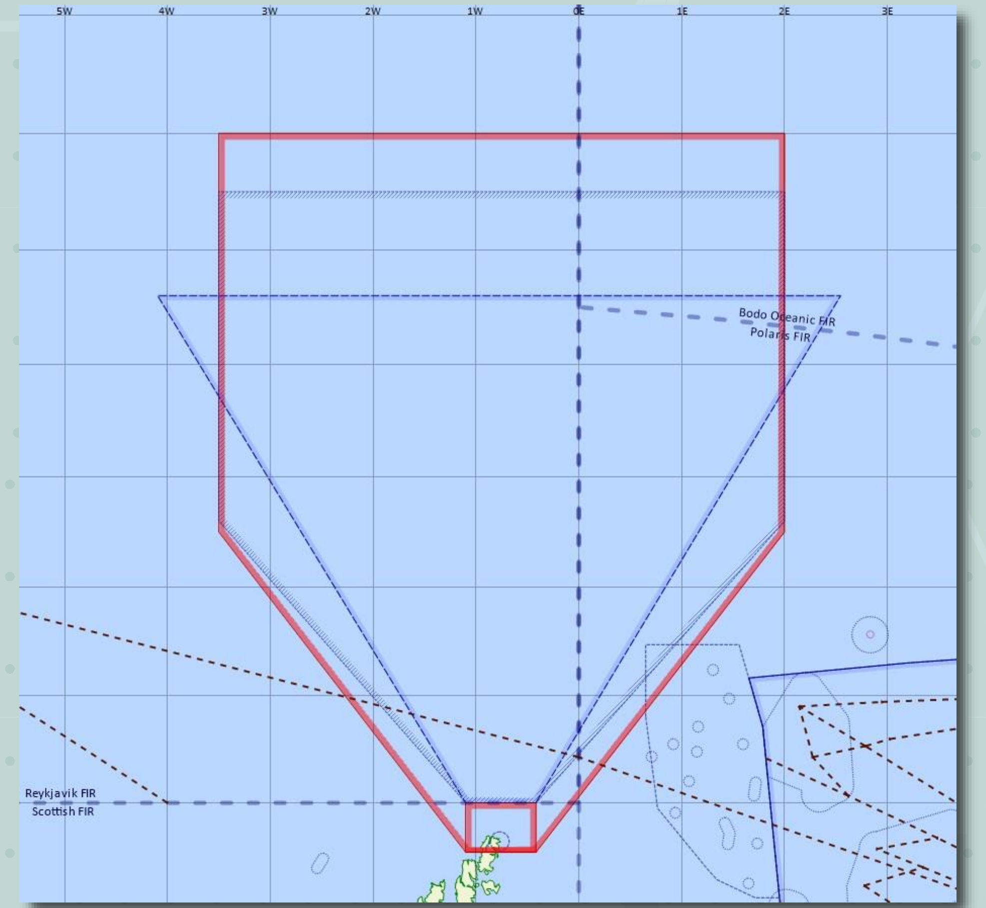
Evolution of Airspace Design From Stage 2 to Stage 3

Stage 2 Preferred Design Option

- SaxaVord recognised that conducting space launch operations in the same airspace used by commercial and other airspace users without a proportionate airspace reservation affording all airspace users "safety by exclusion" was untenable. Consequently, a "do nothing" option (i.e. no airspace reservation) was discounted and not presented to stakeholders, as it neither addressed the Statement of Need, nor did it align with the Design Principles from Stage 1.
- The airspace design options presented at Stage 2 were for a combined "box and wedge" shape with 2 variations: one non-segmented (Design Option 1), the other segmented (Design Option 2) . As a result of Stage 2, the preferred design option taken forward to Stage 3 was the segmented design (Design Option 2).
- The Stage 2 report also noted that the airspace design could evolve as the ACP process continued and options were matured and refined.

Evolution of Design

- As Stage 2 progressed, performance data for potential launch vehicles (LVs) seeking to utilise the spaceport evolved; in turn, this precipitated a refinement of the airspace design being proposed at Stage 3. The design further refines the box and introduces a revised segmentation mechanism within the wedge shape.
- The red outline indicates the stage 3 Design Option 3 compared with the dashed blue outline Stage 2 (box and wedge) design.
- The overall longitudinal dimension of the airspace has increased by 42 nautical miles (nm) and the overall latitudinal dimension has decreased by 32nm.



Source: skydemon

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Evolution of Box and Wedge Design

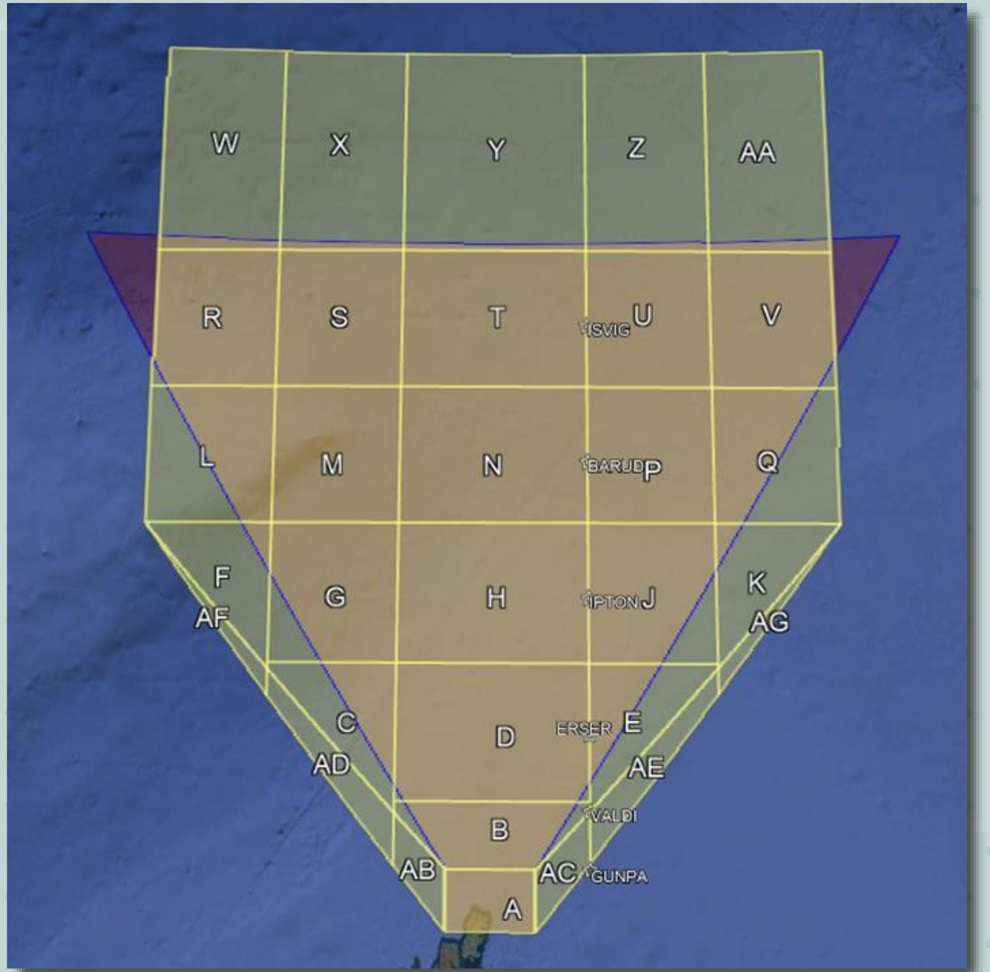
- **Box**. The co-ordinates of the corners of the box element have been rounded for ease of use. The refinement of the co-ordinates does not materially change the location or shape of the box.
- **Wedge**.
  - From the northern corners of the box, the east and west radials are now approximately +/-40° from the centreline (360°True (360T)) to accommodate the new limiting case dispersion of trajectory for a passive guidance sub-orbital LV (degrees (°) True is with reference to the geographic north pole).
  - From the southern corners of the box, additional east and west radials are added to allow for sub-orbital launch azimuths to the east and west of north (main axis of the airspace).
  - Downrange, the sides of the wedge aligned north/south, instead of the previous triangular shape, to remove unnecessary airspace volume for dispersion of trajectory of a passive guidance sub-orbital LV. The downrange limit of the wedge has been extended to accommodate the new limiting case dispersion of trajectory for a passive guidance sub-orbital LV

Evolution of Segmentation

- The original segmented design concept proposed segments based on radials and range rings. Subsequently, SaxaVord determined that this could be an unnecessarily complicated solution to implement, as there would be many complex co-ordinates and some individual segments could traverse FIR boundaries.
- Consequently, SaxaVord refined the segmentation concept for Stage 3, which uses segments based on simplified lines of latitude and longitude, in turn, allowing the activated airspace to be plotted more readily.
- Latitudes and longitudes were refined to ensure that individual segments do not traverse FIR boundaries.
- The increase in internal segments enables greater granularity in selecting the most appropriate airspace volume for a given space launch operation.
- Refined latitudes of segments were selected to avoid coincidence with established FIR boundary reporting points.

Design Option 3

- The yellow outline indicates Design Option 3 with internal segmentation compared with the red Stage 2 "box and wedge" design.
- The box element (segment "A") remains consistent.
- Design Option 3 is, therefore, SaxaVord's preferred airspace design option to be taken forward to Stage 3 consultation.



Source: Google Earth

Stage 3 Consultation Context & Purpose

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CAP1616 Stakeholder Consultation - Context

- Stage 1. In CAP1616 Stage 1, design principles (DPs) for the proposed airspace change are drawn-up through discussion between the change sponsor and affected stakeholders. SaxaVord completed this activity in early 2020.
- Stage 2. CAP1616 Stage 2 requires airspace change sponsors to test design options with its stakeholders to ensure that stakeholders are satisfied that the options address the statement of need, align with the DPs and that the sponsor has understood stakeholder feedback and observations relevant to the options. SaxaVord completed this activity in December 2022.
- Stage 3. In CAP1616 Stage 3, the change sponsor launches its formal consultation process, during which stakeholders are given the opportunity to provide relevant and timely feedback to the sponsor to enable the sponsor to conduct a final options appraisal (i.e. Stage 4).
  - Stage 3 consultation will begin on 18 April 2023 and last for 8 weeks.

Purpose of CAP1616 Stage 3 Consultation

- CAP1616 Stages 3A and 3B require the change sponsors to prepare a consultation and assesses who should be consulted.
    - Stage 3 - Steps 3A and 3B. SaxaVord completed this Gateway on 17 April 2023.
- Stage 3 then requires the change sponsors to consult with those interested parties, including, where appropriate, local communities.
- In the light of responses, the change sponsor may modify the proposed design(s) before making a formal submission (i.e. Stage 4) of the proposal to the CAA for a decision.
- Accordingly, these consultation materials set out SaxaVord's proposed Design Option 3.

Stage 3 Design - Design Option 3

Design Option 3 - Overview

- Safety in the launch area will be by exclusion, and the overall level of risk of an individual launch will be set by the UK space licensing regulator (CAA) in granting a corresponding launch operator licence for an individual launch operator.
- SaxaVord remains cognisant of stakeholder feedback from Stage 2. Since Stage 2, SaxaVord continues to discuss and progress the following with the relevant national and international organisations:
  - Letters of Agreement (LOAs)/Memoranda of Understanding (MOUs), including airspace notification and coordination and emergency and airborne security-related short-notice access procedures.
  - Identification of suitable launch windows of the minimum duration required (typically, one hour), thereby minimising the impact on the wider airspace network.
- The notification, management and coordination of airspace-related activities are ongoing with the relevant parties and will be published in due course.

Stage 3 Safety Statement

CAP1616 (Page 47, Para 157) states that at this stage (i.e. Stage 3) "there is no requirement for a change sponsor to undertake further safety work at this stage, where a sponsor has done so, it must include that information in the package of consultation documents." The Initial Safety Statement and Analysis provided at Stage 2, therefore, remain extant.

Safety in the launch area will be by exclusion.

Design Option 3 has been informed by representative orbital and suborbital cases that will encompass all anticipated LVs likely to use the SaxaVord launch site.

Launch activities by individual launch operators will be regulated and licenced by the CAA, in accordance with the UK SIA 2018 and associated SIR. The flight safety analysis of the individual licenced launch will, therefore, dictate the need for a specific airspace reservation in the launch area. For example, comparing Examples 1-8, below (Slides 25-32, respectively), show LVs requiring different airspace reservations due to different licencing requirements.

Design Option 3 - Anticipated Utilisation

- SaxaVord Spaceport anticipates up to 30 launch operations per annum; launch windows are anticipated to be of typically one hour's duration.
- SaxaVord Spaceport anticipates that the airspace will be utilised for:
  - The initial ascent phase of an orbital launch (the LV reaches earth orbit).
  - The entire flight of a sub-orbital launch (the LV follows a ballistic path and returns to the earth's surface).
- SaxaVord Spaceport's airspace design seeks to support launch azimuths (the horizontal angular direction initially taken by a launch vehicle at lift-off, measured clockwise in degrees from true north) between 330T and 030T and anticipates that:
  - The most likely launch azimuth for a sub-orbital launch will be 360T.
  - The most likely launch azimuth for an orbital launch will be Sun-synchronous Orbit (SSO) or approximately 345T.

Design Option 3 - Exemplar Airspace Utilisation

- To assist stakeholders' understanding of Design Option 3, SaxaVord has included the diagrams that follow to offer illustrative segmentation for representative launch profiles to demonstrate how Design Option 3 might be tailored to provide a suitable launch area to accommodate a specific licenced LV and launch operation.
- In the diagrams that follow, launch azimuths are shown as solid black lines and proposed areas of airspace activation are shaded red.
- "Mature" and "Immature" LVs.
  - A mature LV is one that has demonstrated a successful launch pedigree and the risk of unplanned trajectory variations is proven to be low.
  - An immature LV is one in the early stages of its development cycle; as such, it has yet to build a successful launch pedigree. Accordingly, a greater volume of airspace may be allocated for an immature LV to ensure that any unplanned trajectory variations remain within the protected area.

Design Option 3 - Exemplar Airspace Utilisation

- Active and Passive Guidance.
  - *Active Guidance*. An active guidance system uses onboard systems to control the stability and trajectory of the LV.
  - *Passive Guidance*. A passive guidance system uses the natural forces acting on the LV for stability and trajectory, for example, aerodynamics and gravity.
- Flight Termination System.
  - A flight termination system (FTS) is a safety feature that allows the LV to be terminated in the event of an anomaly.
- Trajectory Variations. Active guidance and an FTS enable tighter control over trajectory variations, thereby allowing focused activation of the airspace.

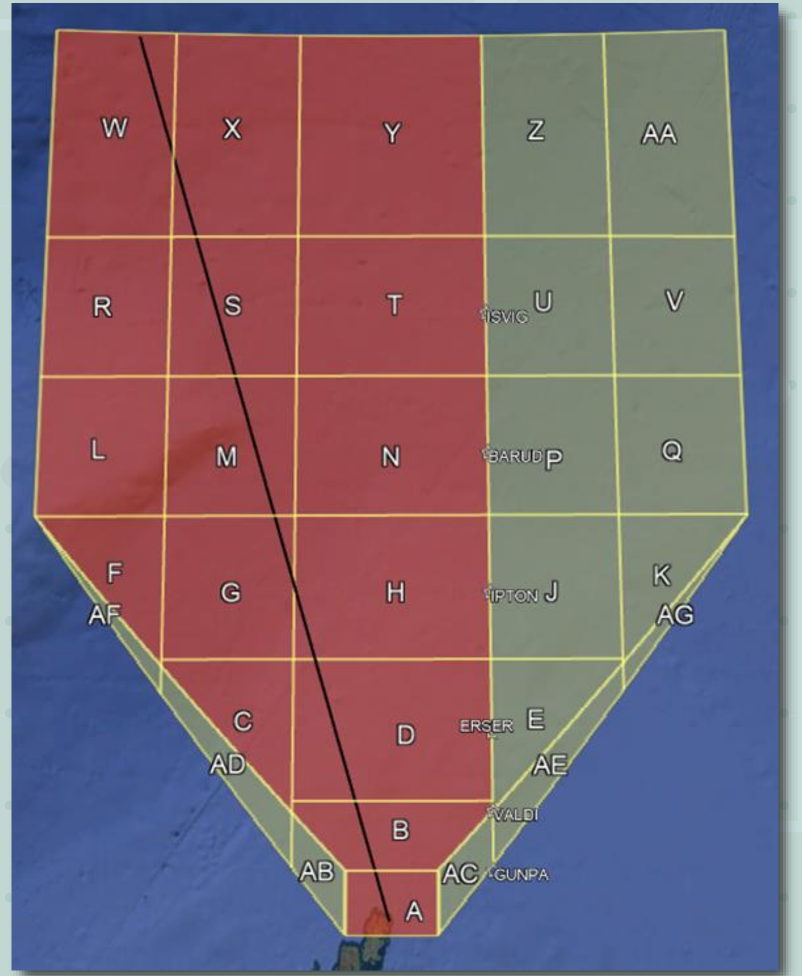
Example 1 - Orbital SSO (345T) Mature LV

- A small two-stage LV of mature design with active guidance and FTS.
- Launch azimuth 345T.
- Only area “A” of the airspace is required.
- UK FIR affected.

Source: Google Earth

Example 2 - Orbital SSO (345T) Immature LV

- A small two-stage LV of immature design with active guidance and FTS.
- Launch azimuth 345T.
- Areas "A, B, C, D, F, G, H, L, M, N, R, S, T, W, X and Y" of the airspace are required.
- UK and Icelandic FIRs affected.



Source: Google Earth

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Example 3 - Orbital (330T) Immature LV

- A small two-stage LV of immature design with active guidance and FTS.
- Launch azimuth 330T.
- Areas “A, B, C, D, F, G, L, M, R, AB, AD and AF” of the airspace are required.
- UK and Icelandic FIRs affected.

Source: Google Earth

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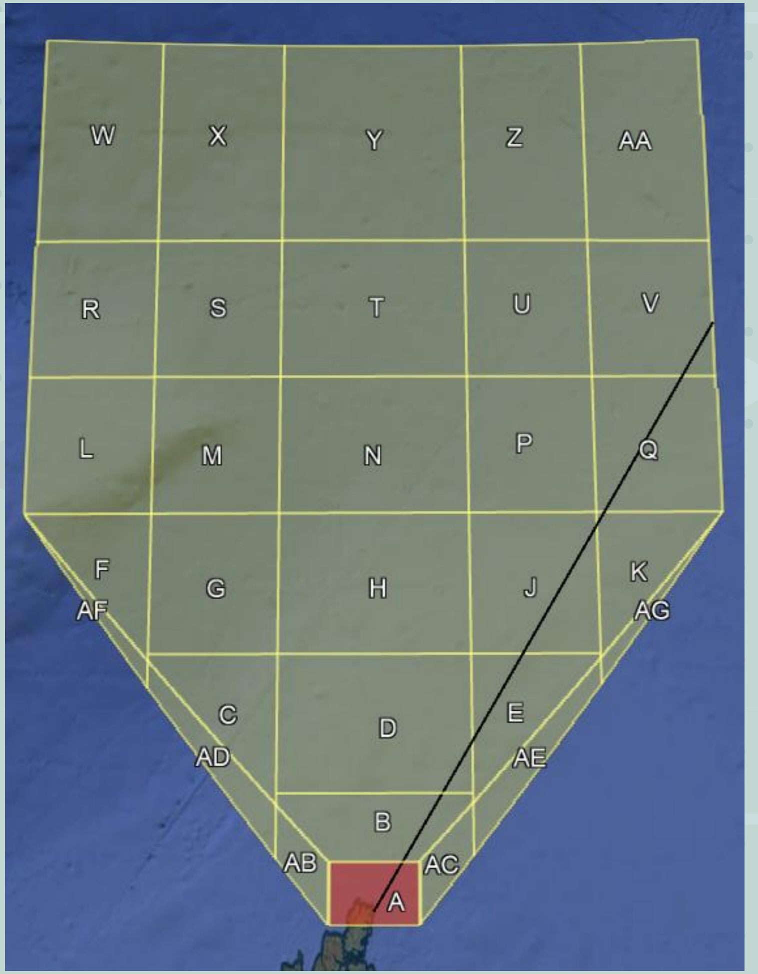
Example 4 - Orbital (030T) Mature LV

- A small two-stage LV of mature design with active guidance and FTS.
- Launch azimuth 030T.
- Only area "A" of the airspace is required.
- UK FIR affected.



Source: Google Earth

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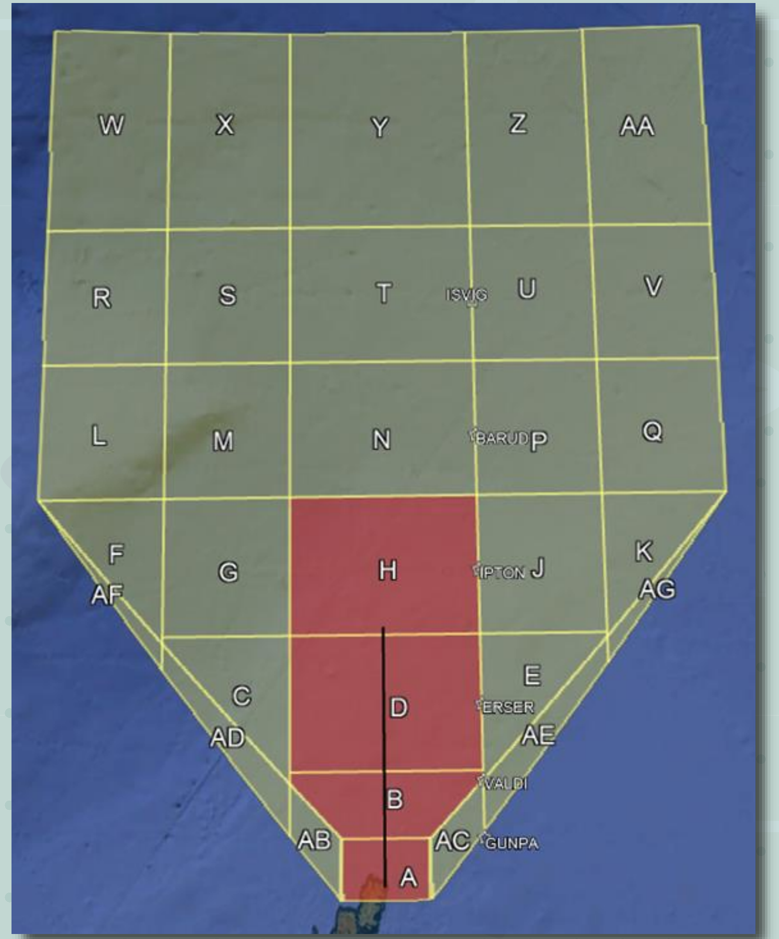
Example 5 - Sub-orbital (360T) LV

- A single-stage sub-orbital LV with passive guidance and no FTS.
- Launch azimuth 360T and approximately 230km downrange.
- The airspace is required to contain the LV and any other items returning to surface.
- All areas of the airspace are required.
- UK, Icelandic and Norwegian FIRs affected.

Source: Google Earth

Example 6 - Sub-orbital (360T) LV

- A single-stage sub-orbital LV with active guidance and FTS.
- Launch azimuth 360T and approximately 110km downrange.
- The airspace is required to contain the LV and any other items returning to surface.
- Areas “A, B, D and H” of the airspace are required.
- UK and Icelandic FIRs affected.



Source: Google Earth

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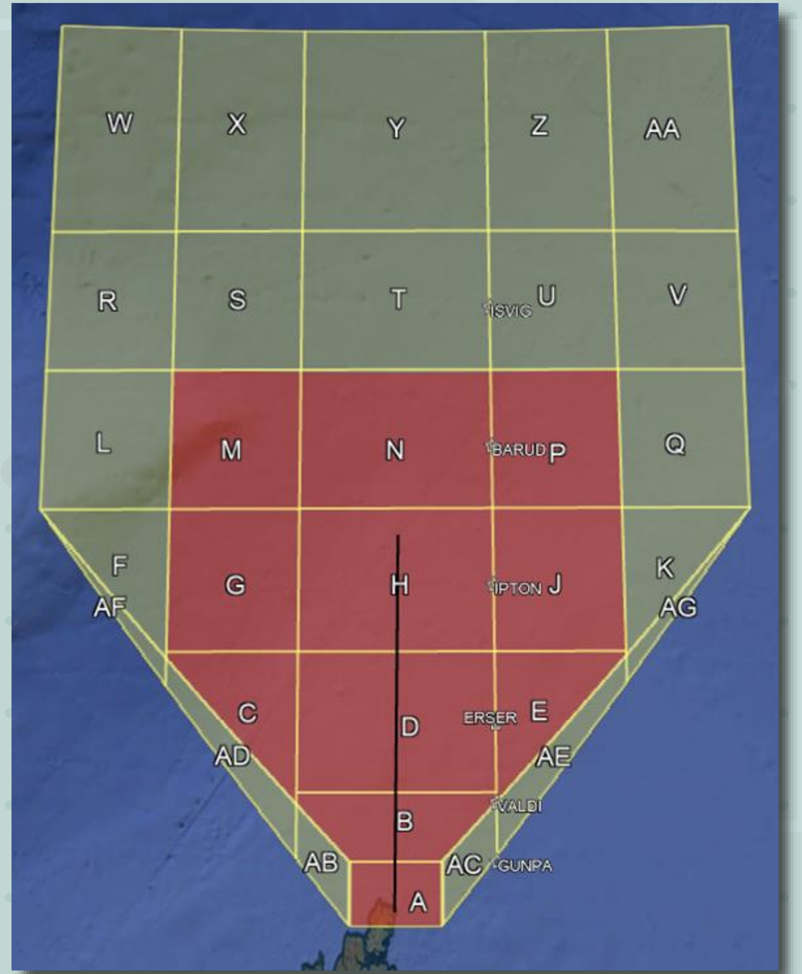
Example 7 - Sub-orbital (360T) LV

- A single-stage sub-orbital LV with passive guidance and no FTS.
- Launch azimuth 360T and approximately 150km downrange.
- The airspace is required to contain the LV and any other items returning to surface.
- Areas "A, B, C, D, E, G, H, J, M, N and P" of the airspace are required.
- UK, Icelandic and Norwegian FIRs affected.



Source: Google Earth

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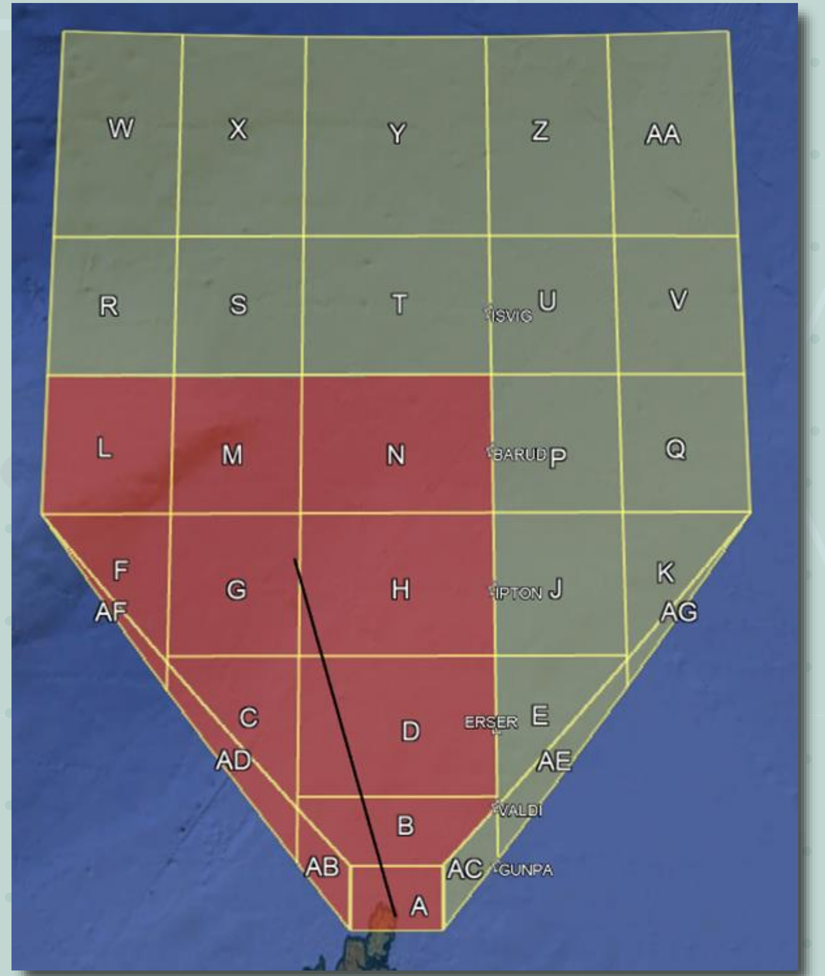
Example 8 - Sub-orbital (345T) LV

- A single-stage sub-orbital LV with passive guidance and no FTS.
- Launch azimuth 345T and approximately 150km downrange.
- The airspace is required to contain the LV and any other items returning to surface.
- Areas “A, B, C, D, F, G, H, L, M, N, AB, AD and AF” of the airspace are required.
- UK and Icelandic FIRs affected.



Source: Google Earth

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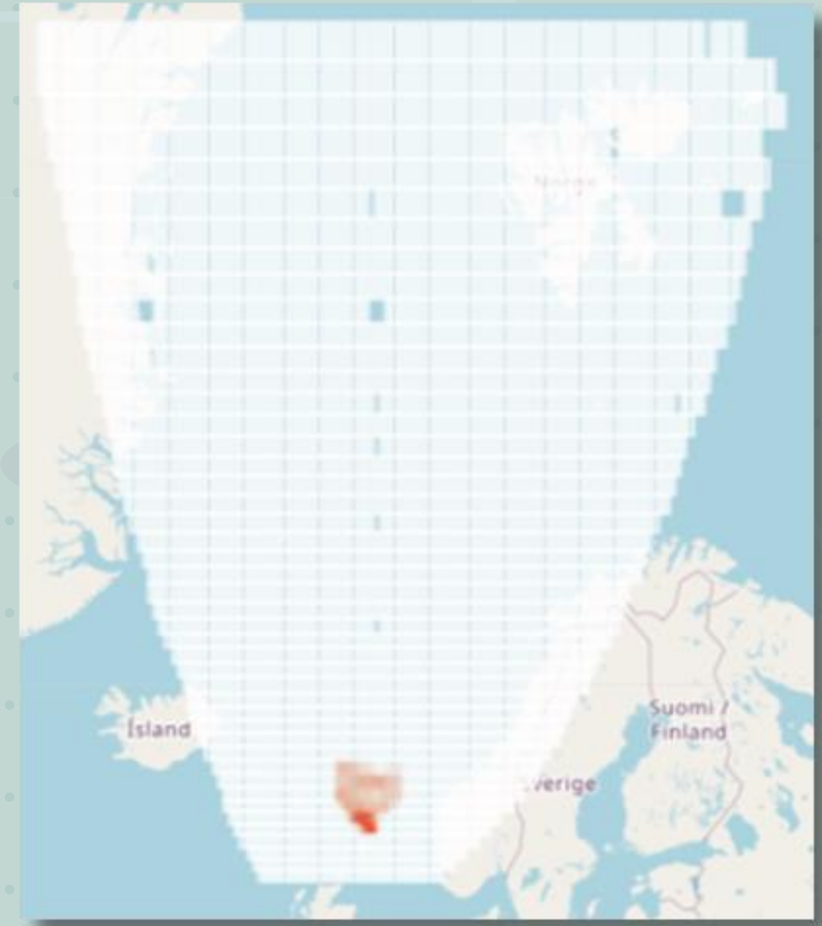
Potential Traffic Impact Analyses

Potential Traffic Impact Analyses

- SaxaVord obtained a year's worth of surveillance data for the period January to December 2019 (inclusive), selected specifically for pre-COVID-19 traffic levels; the area of interest (AOI) is depicted in white in the figure to the right. The surveillance data was analysed within the AVISIM analytics tool (Avisim - Simulation and Analytics - AVISU).
- The most limiting volume of Design Option 3, depicted as the reddened area in the figure, was selected for more detailed analysis of potential traffic re-route impact assessment.
    - Further detail on this data and analyses can be found in the Full Options Appraisal document on the UK CAA's ACP portal.



Source: Avisim (AVISU Ltd)

Design Option 3 Most Limiting Scenario - Example 5 - Sub-orbital LV (360T)

- The most limiting scenario for Design Option 3 would see the whole of the airspace volume closed to other airspace users, as per Example 5 Sub-orbital LV.
- The analysis of the traffic identified a peak day and hour (13 Aug 19 between 1300 and 1400UTC) during which 12 flights could be impacted by the activation of Design Option 3.
  - Design Options Appraisal document is available on the UK CAA's ACP portal.
- These 12 potentially impacted flights were selected for further assessment.

Source: Google Earth

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Design Option 3 - Peak Hour, Peak Day

- On the peak day and hour (13 Aug 19 between 1300 and 1400UTC), all traffic was traveling *broadly* east-west and the 12 flights were at or above FL280.
- There was no identified traffic at 7,000ft or below.
- Further detail and associated analysis on this subject may be found in the Full Options Appraisal document on the CAA's ACP Portal.

Source: AVISU

Design Option 3 - Potential Re-routes

- A simple re-route methodology[1] was applied: the same entry and exit points were maintained; flights that entered the wider AOI south of SaxaVord Spaceport launch site were re-routed to avoid Design Option 3 to the south; those entering north of the SaxaVord site were re-routed to the north.
- On the peak day and peak hour (13 Aug 19 between 1300 and 1400UTC), the 12 flights that could be impacted by Design Option 3 could be re-routed as depicted in the figure to the right. Only one flight was re-routed north of the airspace.

Source: AVISU

1. The methodology above offers a simplification of re-routing to avoid an airspace reservation; the reality, however, would be notably different. Undoubtedly, flights' routes would be planned on the ground, prior to departure, to accommodate known airspace reservations and constraints across the whole route of the flights' routes.

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Design Option 3 - Potential Re-routes

- For the 12 impacted flights, the table to the right shows the comparison between the original route through the wider AOI (Slide 34) and a re-route option.
- The data concludes that the total re-route for the 12 impacted flights could be a cumulative additional 12km.

Ser	Callsign	Original Route (km)	Re-route (km)	Route Δ (km)
1	PCH893	1116	1106	-10
2	JET1	1321	1325	4
3	UAL125	1210	1241	31
4	SWR40	1272	1266	-6
5	TSC701	1066	1047	-19
6	SWR38	1275	1277	2
7	AAL759	1268	1284	16
8	RJA12B	1063	1054	-9
9	N324CH	1054	1054	0
10	ACA845	1376	1370	-6
11	ACA891	1116	1100	-16
12	UAL47	1333	1358	25
			Total Difference	**+12km**

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Design Option 3 - Most Limiting Scenario Traffic Impact Summary

- To quantify an annual maximum re-route impact, SaxaVord assumed an absolute worst-case scenario based on the following assumptions:
  - **Launch Window Duration**. The launch window duration is one hour.
  - **Traffic Sample**. The traffic sample is 12 flights.
  - **Flight Distance**. The flight distance for each flight is 8000km.
  - **CO2e per kg of Fuel**. Flights will emit 3.18kg of CO2e (carbon dioxide equivalent) per kg of fuel burn. Carbon dioxide is the most prevalent atmospheric greenhouse gas and is the proxy by which greenhouse gas emissions are measured. CO2e allows other greenhouse gas emissions to be expressed in terms of carbon dioxide.
  - **Re-route Extension**. The 31km re-route extension was applied to ALL flights.
  - **No of Instances**. The number of instances of activation is 30 times (i.e. SaxaVord launches) per annum.

Design Option 3 - Most Limiting Scenario Traffic Impact Summary

- Extrapolating this extended flight distance across 12 flights and 30 instances (i.e. SaxaVord launches), the annual impacts for flight distance, fuel burn and CO2e could be shown to increase by 11,160km, 107tonnes and 341tonnes, respectively, representing a 0.39% (unmitigated) increase in all metrics from the assumed baseline calculations.
- SaxaVord's analysis did not consider Eurocontrol modelling and the identification of the most suitable launch windows, subject to launch trajectory and orbit location requirements; SaxaVord views these latter activities as key mitigation measures in minimising impact on the network, which would see the 0.39% (unmitigated) increase reduced further.
- The full analysis, data and commentary to support these calculations is provided in detail in SaxaVord's Full Options Appraisal document on the UK CAA's SaxaVord ACP portal.

Additional Assessment Criteria - Noise

- **Indirect Noise.** In the vicinity of the spaceport, indirect noise can be understood to be the noise resulting from the displacement of air traffic (below 7,000ft AMSL) as a result of the activation of the airspace design.

- **Indirect Noise Impact**. For the sample peak day and hour, (i.e. 13 Aug 19 and 1300-1400UTC), the data shows that there were no flights below FL280. Consequently, there was no indirect noise impact associated with re-routing air traffic below 7,000ft AMSL.

- When analysing the year's traffic data solely for aircraft operating below 7,000ft AMSL within the Design Option 3 volume, the most impacted day is the 2 Aug 19 with at most 6 low level aircraft throughput over the 24-hour period. When focussing on a single operating hour, at most only 2 aircraft are impacted and these were over the sea. Consequently, there was no indirect noise impact associated with re-routing air traffic below 7,000ft AMSL.

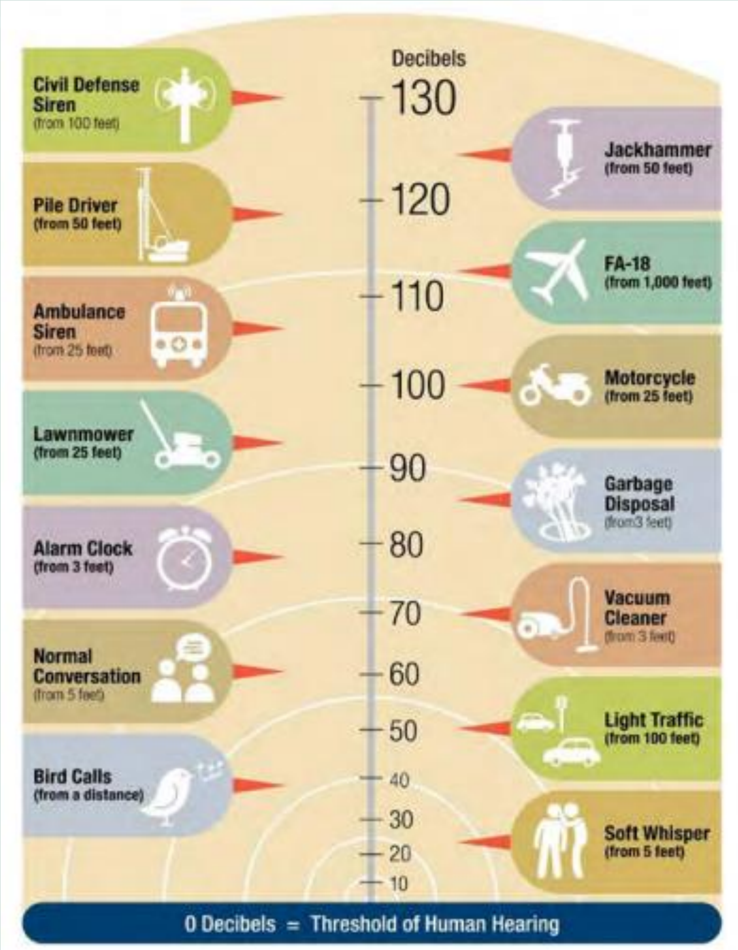
    - This data and associated analysis - *inter alia* - is outlined further within the ACP-2017-079 Full Options Appraisal document UK CAA's SaxaVord ACP portal.

Additional Assessment Criteria - Noise

- **Direct Noise**. In the vicinity of the spaceport, direct noise can be understood to be the noise resulting from the LV's launch.
- **Direct Noise Impact**. The direct impact of noise due to vertical launch spaceflight activities at SaxaVord was assessed in the SaxaVord Spaceport Assessment of Environmental Effects (AEE) V2.1 dated 30 Sep 22. The public consultation for the AEE closed on 8 Dec 22.
- For stakeholders' information, modelled noise for a SaxaVord representative LV launch from Launch Pad 1 (LP1) is presented on the next 3 Slides. The representative LV is the noisiest LV that is anticipated to be launched from SaxaVord.
- Noise contours specific to individual LVs will be determined by the individual launch operator's LV data.
  - Further detail associated with noise and environmental impacts can be found in the Full Options Appraisal document on the CAA's SaxaVord ACP portal and at the locations offered at Slide 47.

Typical A-weighted Levels of Common Sound

- "Decibel" (abbreviated dB) is a logarithmic unit used to represent sound levels.
- Weighting levels and curves have been developed to correspond to the sensitivity and perception of the human ear to different types of sound. The A-weighted decibel level (dBA) is commonly used to assess community sound.
- By way of context, typical A-weighted levels of common sound audible to the human ear are offered in the figure to the right.



Source: Blue Ridge Research and Consulting, LLC

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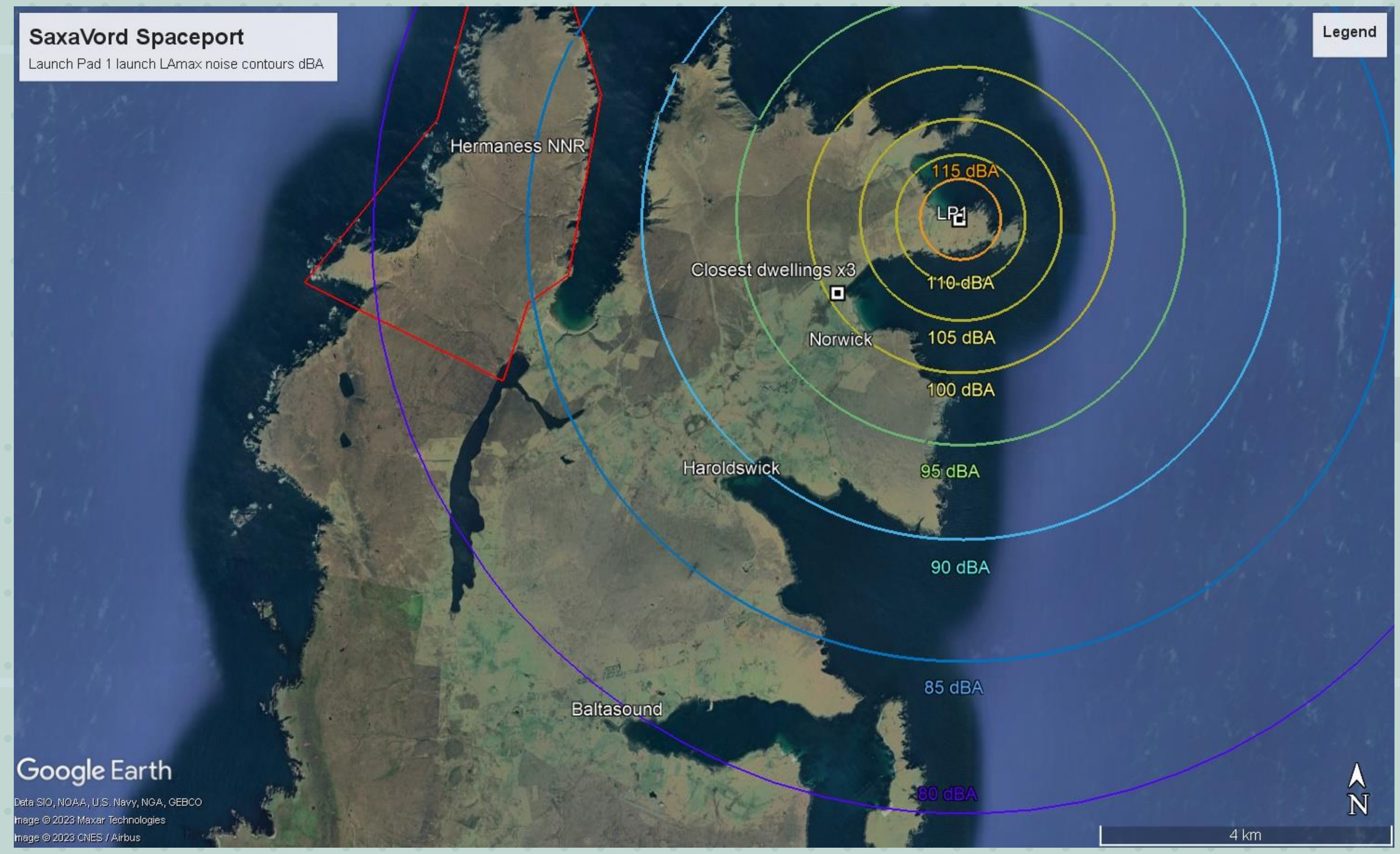
Noise Assessment - Launch Context

- Most of the noise associated with a launch is created by the rocket plume interacting with the atmosphere and the combustion noise of the propellants. Although rocket noise radiates in all directions, it is highly directive, meaning that a significant portion of the source's acoustic power is concentrated in specific directions. In addition, the noise of a launch falls as the LV moves rapidly away.
- The highest A-weighted sound level measured during a single event is called the Maximum A-weighted Sound Level (abbreviated as LAmax).
- The next slide (Slide 45) shows the LAmax contours for a launch from LP1 (the closest LP to the local community). This shows the highest sound level that would occur at outdoor locations during a launch. The sound level experienced would vary with time.
- At the closest dwellings the sound level would peak approximately 30 seconds after launch and reduce to typical background levels after approximately 185 seconds. Further away from the LP the launch noise would reduce to background levels more quickly.

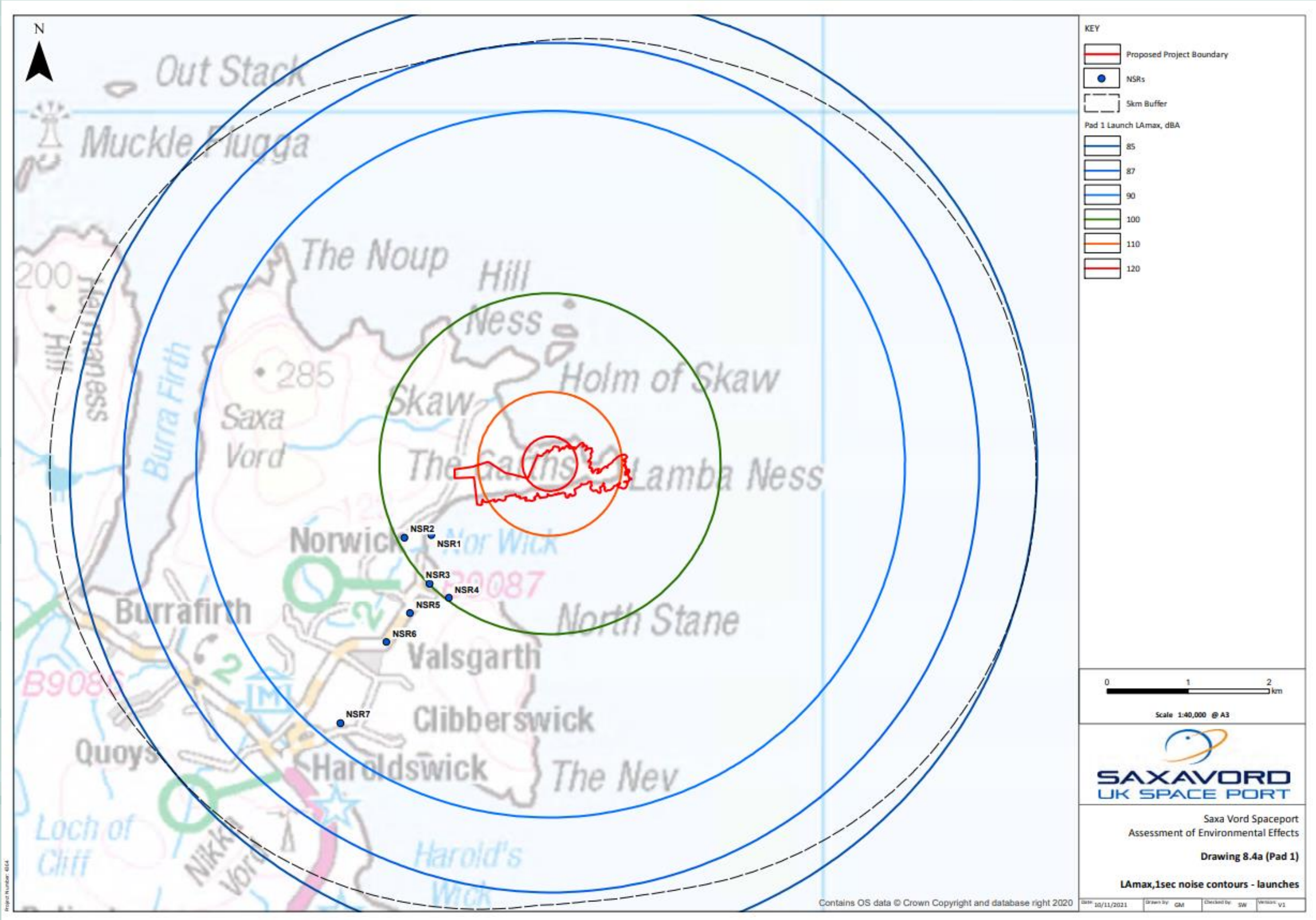
SaxaVord Spaceport LP1 Launch LAmax Noise Contours dBA



Source: Google Earth

SaxaVord Spaceport LP1 Launch LAmax Noise Contours dBA

- The diagram to the right is an extract from the SaxaVord AEE depicting LAmax one-second noise contours (to 85dB) for a representative LV from LP1 overlaid on an Ordnance Survey map.



Source: SaxaVord AEE V2.1 dated 30 Sep 22

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Further Reading - Noise & Other Assessments

Stakeholders may find further detail regarding noise and environmental assessments at the following locations:

- Assessment of Environmental Effects (AEE) (Chapter 8 Noise and Vibration):

  https://consultations.caa.co.uk/corporate-communications/public-consultation-aee-saxavord/supporting_documents/Volume%20I%20%20Volume%20II%20SaxaVord%20Spaceport%20AEE%20V2.1.pdf#Page236

- Environmental Impact Assessment (EIA) (Chapter 10 Noise and Vibration):

  https://pa.shetland.gov.uk/online-applications/files/1E931F3C90D08CCD0102CC73074A558A/pdf/2021_005_PPF-EIA_CHAPTER_10_NOISE-357745.pdf

Further Reading - Other Assessments

Stakeholders are reminding that the AEE contains a wide range of assessments; these are abridged at Chapter 16, “Summary of Environmental Effects” at the following link:

- https://consultations.caa.co.uk/corporate-communications/public-consultation-aee-saxavord/supporting_documents/Volume%20I%20%20Volume%20II%20SaxaVord%20Spaceport%20AEE%20V2.1.pdf#Page548

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Stakeholder Consultation and Response

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Stakeholder Consultation and Survey Questionnaire

- Stakeholders should note that the consultation process pertains solely to the airspace change proposal's airspace design.
- Your feedback and comments at Stage 3 will not only be welcomed, but will also allow SaxaVord to understand how your activities and operations could be impacted by the activation of the airspace design. In turn, feedback from aviation and non-aviation stakeholders, alike, will enable SaxaVord to consider appropriate mitigations to minimise identified impact(s), where possible.
- The CAA directs the use of the "Airspace Change Citizen Space" site to support the Stage 3 consultation process. The online survey questionnaire is simple, straight-forward and available at the following link https://consultations.airspacechange.co.uk/saxavord-spaceport/saxavord-spaceport-airspace-reservation, and may also be accessed through the following QR code:
- The consultation window will close on Monday 12 June 23.

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Meetings and Communications

- If requested by individual stakeholders, virtual meetings (through either Zoom or Microsoft Teams) may be held during the consultation period. Where requested, such meetings will be recorded and a corresponding brief summary produced, agreed and distributed to attendees, for all parties' records. Such artefacts would also be included in the subsequent Consultation Responses Report.
- Where *ad hoc* communications pertinent to the application take place during the consultation period, SaxaVord will summarise the conversation and send a confirmatory email to the respondent seeking an acknowledgement that the email reflects the conversation accurately.
- Stakeholders seeking such bilateral discussions are requested to contact SaxaVord at the earliest opportunity on the following email address: saxavordpacp@avisu.co.uk.
- Finally, should stakeholders have any questions relating to either the CAP1616 Stage 3 process, the application and/or the information contained within these materials, please do not hesitate in contacting SaxaVord at the email address above.

Print Version of Materials and Survey Questionnaire

- Print versions of these materials and the survey questionnaire may be obtained from the following addresses:
  - Email Address. saxavordpacp@avisu.co.uk
  - Postal Address. SaxaVord Spaceport (FAO AVISU)
Orbital House
15 Castle Road
Grantown-on-Spey
PH26 3HN
- These materials and survey questionnaire are also available in other formats, by arrangement, from the same addresses.

What Happens Next?

- Feedback and responses from stakeholders will be collated, reviewed and categorised and, where appropriate, inform the finalised airspace design. During the ensuing activity, SaxaVord will:
  - Undertake an analysis of stakeholder feedback and survey questionnaire responses and a determination of any influence that these might have on the proposed airspace design.
  - Compile the corresponding Step 3D Response Report for submission to CAA.
  - Prepare the final application documentation for submission to the CAA for the Stage 4 Gateway on Friday 30 June 2023.

Conclusion

Conclusion

This pack-up has been produced to meet the UK CAA's CAP1616 Stage 3 stakeholder consultation requirements and covered the following discussion areas:

- Introduction - Location, Background, and Context.
- Evolution of Airspace Design From Stage 2 to Stage 3.
- Stage 3 Consultation - Context & Purpose.
- Stage 3 Design - Design Option 3.
- Potential Traffic Impact Analyses.
- Stakeholder Consultation and Response.
- Conclusion.

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