STEPHENSON HARWOOD

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One small step closer: the UK's first fully licensed vertical spaceport

In December 2023, the UK Civil Aviation Authority ("**CAA**") issued a vertical launch licence to the SaxaVord spaceport in Shetland. SaxaVord now holds the very first vertical launch licence in not only the UK but Western Europe as well. This is a significant achievement for both the CAA and the UK's nascent space industry, taking the UK one small step closer to its first vertical commercial rocket launch. This article takes a closer look at the route taken by SaxaVord to obtain its licence and the precise terms of that licence, before looking ahead to the next steps for the spaceport and for the UK's launch industry as a whole.

The journey so far

The road towards regulatory approval for SaxaVord's vertical launch facility has been long and understandably rigorous. SaxaVord submitted its formal application for a Spaceport to the CAA back in March 2022, meaning that it has taken over 22 months for its application to be approved. As part of the licensing process, the CAA has assessed SaxaVord's compliance against exacting safety, security, financial and environmental standards. The CAA will also have assessed whether SaxaVord's key personnel are fit and proper persons to operate a spaceport and, given its potential geopolitical significance, will have assessed whether the spaceport causes any issues in respect of the UK's national interest and international obligations.

As part of the licensing process, the CAA will have reviewed the following information in accordance with part 5 of the Space Industry Regulations 2021:

- a siting assessment, to allow the CAA to assess whether the proposed site of the spaceport is suitable;
- a safety case, demonstrating that SaxaVord has identified the risks for the spaceport and has implemented a plan to keep those risks as low as possible;
- an assessment of the potential environmental effects that will be caused by launches from SaxaVord; and
- a draft security programme and cybersecurity strategy.

During this period, the CAA's role in overseeing the UK's launch licensing regime has been under some public scrutiny, with the House of Commons' Science, Innovation and Technology Committee publishing a review of the regime and the CAA's performance in administering it in September last year (see our article on the review here for more information).

One of the key issues identified by industry participants in the review, including representatives from SaxaVord, was that the application process was too convoluted and required engagement with too many different organisations. It is to be hoped that the successful completion of the CAA's first vertical launch licensing application process will yield important lessons for both the regulator and the industry.

The licence

The CAA has granted SaxaVord's licence using its powers under the Space Industry Act 2018 and the Space Industry Regulations 2021. As this is the very first licence granted to a vertical launch spaceport in the UK, it is worth considering the licence in more detail and unpacking the requirements it imposes upon SaxaVord.

In short, the licence permits SaxaVord to carry out vertical launches, which are considered "Licensed Activities" for the purposes of the licence. However, SaxaVord's ability to carry out launches is subject to certain practical restrictions on how those launches may be undertaken, as follows:

- SaxaVord cannot carry out more than one launch per day, four launches per calendar month, and 30 launches per year.
- All launch azimuths (i.e., the direction taken by the space vehicle upon launch) must be between 330° and 030° relative to true north. This ensures that all launch trajectories remain entirely clear of inhabited areas (namely, over the sea).

SaxaVord's licence also specifies that, until the CAA has granted an operator (that is, any organisation intending to launch from the spaceport) a licence to launch from SaxaVord, the spaceport must not permit any such operator to store or handle any materials that could generate a major accident hazard anywhere at SaxaVord. At present, the CAA is yet to grant any potential operator a licence to operate from SaxaVord.

SaxaVord's ongoing regulatory obligations

Additionally, just because SaxaVord has now received its vertical launch licence from the CAA does not mean that the spaceport's licensing relationship with the CAA is at an end. The CAA will now maintain a close oversight over SaxaVord's activities to ensure that it continues to meet the conditions of its licence. In conjunction with this monitoring, SaxaVord is required to keep the CAA regularly updated in accordance with the terms of a "Reporting Plan" that was issued to SaxaVord in parallel with its licence. Prior to the first launch from the spaceport, SaxaVord is required to provide the CAA with a wide range of information relating not just to practical and technical matters that are directly relevant to the proposed launch, but also financial information relating to the viability of SaxaVord itself.

For all subsequent launches, SaxaVord will be required to provide technical information relating to each planned launch. This will include details relating to the launch vehicle (such as its dimensions, propellant type and payload) as well as to the launch parameters (including the proposed launch trajectory and the location of impact zones for returning materials).

As part of its application, SaxaVord was required to provide an assessment of the environmental effects of its proposed activities: under the terms of the licence, the CAA has a wide discretion to require SaxaVord to update this assessment if it deems this is required. The most recent version of SaxaVord's environmental effects assessment, which was open for public consultation, was published by the CAA on 29 January 2024. SaxaVord's spaceport on the Lamba Ness Peninsula, in the northeast of Unst, Shetland, is favourable due to the high latitude and geographic location providing the best orbital access conditions in the UK. However, environmental and ecological factors, including that the spaceport is adjacent to the nesting sites of various birds, are key considerations for ensuring that proportionate steps are identified or taken to avoid, mitigate or offset the risks and the potential effects of the launches.

This regulatory burden is understandably rigorous, and it is one that all prospective spaceport operators must take very seriously. Should SaxaVord breach the terms of its licence, the CAA is empowered under section 15 of the Space Industry Act 2018 to revoke, amend or suspend the spaceport's licence. The CAA is also empowered to do this if SaxaVord enters into insolvency or administration, or if it appears to the CAA that there has been a "material change" to any of the information provided by SaxaVord in relation to its licence.

Needless to say, this gives the CAA very wide powers to take action against the spaceport if it feels it is necessary to do so.

What next for SaxaVord?

It goes without saying that a launch site is nothing without launch vehicles to operate from it. Now that SaxaVord has obtained its vertical launch licence, the next step is for it to attract operators who are willing to launch vehicles from the spaceport.

Fortunately industry observers and space enthusiasts may not have too much longer to wait as SaxaVord's efforts to become Europe's leading vertical launch site before the end of the decade appear to have begun in earnest. The Shetland-based launch company HyImpulse UK, which received a £3.4 million grant to develop its hybrid propulsion system in December 2023, has now committed to conduct two suborbital launches from SaxaVord from August 2024 and has already received the necessary licence for one of those launches from the CAA. Beyond that, HyImpulse UK plans to operate full orbital launches from late 2025, with commercial operations to follow by 2030 at the latest. In addition to HyImpulse, SaxaVord is expected to host vertical launches by ABL Space Systems, Skyrora and RFA, all within the next couple of years.

The rest of the UK

Of course, SaxaVord is not the only licensed launch facility in the UK. Spaceport Cornwall is also fully licenced by the CAA. However, that licence is purely for horizontal launches and the spaceport's maiden launch last year, featuring the now defunct Virgin Orbit, was unsuccessful. In light of that failure, it will be interesting to see whether SaxaVord's launches are more successful and whether, as a result, vertical launching emerges as a more commercial approach in the years ahead.

Besides SaxaVord and Spaceport Cornwall, there are several other potential launch sites located throughout the UK, each of which may be capable of taking up the mantle of the UK's premier spaceport if the current frontrunners fails. Perhaps foremost amongst these is Spaceport Snowdonia, located at Llanbedr in Gwynedd, which recently received a grant of over £800,000 from the UK Space Agency for the development of a new Space Technology Test Centre, and whose close proximity to Cardigan Bay provides a ready-made hazard area for the purpose of both horizontal and vertical launches.

All of these initiatives fall in line with the UK Government's National Space Policy (2015) and National Space Strategy (updated in 2022), through which the UK aims to become the European hub for commercial spaceflight and related sector technologies. The establishment of the UK's first commercially viable vertical launch spaceport will be one giant leap forward in relation to this objective.

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