



Ready for lift-off?

House of Commons committee publishes review of UK's launch licensing regime.

Introduction

In January 2023, the UK's first attempt at satellite launch was unsuccessful when Virgin Orbit's LauncherOne rocket – launched from under the wing of a former Virgin Atlantic Boeing 747 – failed to reach the required orbit and its payload of small satellites was lost.

This failure of Virgin Orbit's maiden horizontal launch from Spaceport Cornwall prompted fierce criticism of the UK CAA's approach to licensing, which Virgin Orbit felt was "*slow, excessively bureaucratic and risk averse*." That view was shared by some of Virgin Orbit's satellite customers but, unsurprisingly, not by the CAA. Since then, the House of Commons' Science, Innovation and Technology Committee (the "**Committee**") has taken evidence from across the space industry to identify possible improvements that could be made to the UK's launch licensing regime. The Committee published its findings on 14 July 2023 in a report entitled "[*UK space strategy and UK satellite infrastructure: reviewing the licencing \[sic\] regime for launch*](#)."

Overall, the report is well balanced and is not overly critical of the CAA's approach. The report sympathises with the difficulties faced by the regulator in grappling with new, complicated regulations introduced by the UK's high-level framework legislation, the Space Industry Act 2018 ("**SIA 2018**"), which include the Space Industry Regulations 2021, the Space Industry (Appeals) Regulations 2021 and the Regulator's Licensing Rules. However, the report also acknowledges that the UK's launch licensing regime needs to be improved urgently if the UK is to have any chance of harnessing the potential of the industry and to avoid losing out to competing jurisdictions.

This article looks at the most pressing issues identified in the report, relevant evidence provided by some key players in the UK industry, and the recommendations suggested by the Committee. Whether these recommendations will be adopted by the UK Government in time to make a difference to the UK's burgeoning commercial launch industry remains to be seen.

1. A slow start for the CAA?

A common criticism from industry stakeholders was that the CAA had been slow to get to grips with the licensing regulations. After its original maiden launch date was missed in November 2022, Virgin Orbit complained that "*licences were still outstanding for the launch itself*" and appeared to blame this for the decision to reschedule the launch. Other industry players, including the manufacturers of satellites lost during the failed launch, were also critical of the CAA's oversight of the licensing process. Joshua Western, CEO of Space Forge Ltd, expressed concerns that the UK licensing process was off the pace and noted that engagement with regulators in other jurisdictions occurred more regularly. This opinion was shared by Dr Mario Kobald, CEO of German launcher system start-up HyImpulse Technologies, who expressed the view that the CAA's approach to safety margins was more conservative than the approach taken by other regulators including the US's Federal Aviation Authority (the "**FAA**").

Some industry players were less critical. In particular, Dave Ballance, Launch Operations Manager at SaxaVord Spaceport, Shetland, told the Committee that his company now enjoyed a "*very good relationship with the space regulation team*" and their application for licences was progressing well. Dr Jonas Bjarno, CTO of Orbex, shared a similar experience who, despite suffering a "*sluggish*" start, now had a "*solid working relationship*." The CAA's view is that it was not responsible for the delay to Virgin Orbit's launch. When the original launch date was missed, the

CAA highlighted that the outstanding technical issues faced by Virgin Orbit were in no way related to the timing of the licensing process. The CAA's position was that the 15-month approval timeline – as was the case with Virgin Orbit – was "*well within the expected timescales for these types of licences*" and that the timeline placed the UK on "*a competitive footing*" with other regimes around the world. By way of comparison, the Dutch Authority for Digital Infrastructure is required by law to issue licences for space activities within six months of the date of application, and in the United States the FAA introduced a Streamlined Launch and Reentry Licensing programme in 2020 that drastically reduced the time needed to obtain the necessary licences required for commercial launch activities.

In considering the evidence before it, the Committee recognised that the CAA does appear to have taken significant steps in the past year to increase staffing and to improve engagement with licence applicants. One particular step that the CAA has taken was to establish a dedicated UK Space Regulation team as part of its operations at Gatwick Airport, whose specific job it is to oversee the implementation of the Space Industry Regulations 2021. However, the Committee did not necessarily appear to share the view that the CAA's oversight of the licensing procedure is "*competitive*" when compared to other regimes. Instead, the Committee was clear that more needs to be done to improve the implementation of the relevant regulations, including by carrying out a planned review of the regulations and their implementation by no later than September 2023. As part of that review, the Committee has suggested that the UK Government should be focussing on potential methods to streamline the process, including by examining whether the CAA has the necessary level of staffing to allow it to carry out its licensing duties in a timely and efficient manner.

2. More transparency needed

Another criticism levelled at the licensing process was that there is a lack of transparency. This results in uncertainty about how long the process will take. Frank Strang, CEO of SaxaVord SpacePort, identified certainty over licensing timelines as being "*essential*" for new space companies considering launching from the UK, and this concern was shared by other industry players. For example, senior employees of Space Forge Ltd informed the Committee that the risk of delay and corresponding uncertainty over when a launch might next take place meant that investors would be unlikely to want to risk another attempt from Spaceport Cornwall. Such concerns clearly limit the competitive potential of the UK as an emerging location for launches at a crucial moment in the

development of the UK's growing roster of nascent vertical and horizontal launch sites. These include Spaceport Cornwall, Spaceport 1 in the Outer Hebrides, Space Hub Sutherland, Saxavord UK in the Shetland Islands, Spaceport Machrihanish in Argyll, Glasgow Prestwick and Spaceport Snowdonia in Wales.

The Committee appears to have taken this point on board. It has expressly acknowledged that having "*more certainty around licencing [sic] timelines could bring benefits to the UK launch sector, through providing a signal that the UK is ready and open for business.*" With that in mind, the Committee has recommended that the CAA should keep licence applicants informed about the status and likely timelines of their applications throughout the process. If possible, the Committee would like to see the CAA agreeing licensing timetables with applicants at the outset.



3. Simplification of application process

Representatives from both Virgin Orbit and SaxaVord Spaceport complained about the number of organisations that they were required to work with in order to obtain the necessary launch licences. This included not just the CAA, who is responsible for issuing launch licences under the SIA 2018, but also marine organisations, the Environment Agency and the Health and Safety Executive. Additionally, some respondents complained that they were required to provide identical information at various different points in the process and, in certain cases, to reformulate information that had been used successfully with the FAA in order to meet the CAA's specific requirements. The majority of evidence gives agreed that one way to tackle this issue would be to create a streamlined process using one point of contact to deal with each of the different licences required for launch.

The CAA agreed with stakeholders that the creation of one "*central gateway*" to manage applications would be helpful. Such a gateway could be used to coordinate efforts between applicants – including both launch and satellite operators – and the various regulators responsible for issuing the necessary licences. However, the evidence provided by the CAA also revealed some internal differences of opinion in what should happen next: while Sir Stephen Hillier MBE (Chair of the CAA) and Rob Bishton (interim Joint Chief Executive of the CAA) agreed that a "*central gateway*" would be useful, the CAA's Head of UK Space Regulation, Colin Macleod, counselled caution in making too many changes before the CAA had a proper chance to test the licensing regime, especially as significant improvements have already been made in its engagement with other regulators.



The Committee agrees that the various existing licensing procedures need to be as streamlined as possible. To that end, the Committee has recommended that the UK Government convenes a meeting of all of the regulators involved in licensing, led by the Department for Science, Innovation and Technology, to explore this issue further. The Committee has also recommended that a central portal should be used so that organisations do not need to submit the same information several times and that regulatory processes should be carried out in parallel rather than in sequence wherever possible.

4. Airspace issues

Evidence given to the Committee identified two main issues arising in connection with airspace. First, Virgin Orbit reported that they had been required to liaise with four countries (France, Ireland, Portugal and Spain) before they could commence their launch operation, which had contributed to the delay to their launch date. This is an issue that is relatively unique to launches from Spaceport Cornwall given its proximity to other territories, and one that is particularly acute for horizontal launches. Second,

Virgin Orbit also complained that the "*hazard area*" of airspace - i.e., a buffer area of airspace used to separate other air traffic from launch vehicles, their payloads, and any ensuing debris – identified by the CAA was much bigger than the same areas specified in the United States and proved difficult and costly to accommodate.

The first issue is largely a political one and the CAA's ability to solve this by itself is quite limited. The Department for Transport ("**DfT**") has an important job in securing the necessary political comfort from neighbouring countries to allow launch activities to use their airspace. This may be less of an issue for vertical launches, particularly from SaxaVord Spaceport, because such launches should not necessarily require as much use of neighbouring airspace. The second issue, regarding the size of the "*hazard area*", lies firmly within the remit of the CAA. Virgin Orbit suggested that the CAA could consider adopting less conservative assumptions to determine the necessary size of the area, but whether that will happen is unclear.

The Committee has acknowledged that the airspace issues are largely political and therefore recommended simply that the CAA and the DfT continue their efforts to obtain agreements with the relevant countries so that, if necessary, their airspace can be used with greater ease in future.

5. Proportionate liability and indemnity regime

The Committee's investigations also suggest that the UK Government needs to improve the liability and indemnity framework for licences granted under the SIA 2018. Currently, an operator carrying out spaceflight activities is strictly liable to third parties who suffer injury or damage caused by any craft or space object used for the spaceflight activity, anything falling from such a craft or space object or by any person in such a craft, unless this was caused by the third party's negligence, and is required to hold third-party liability for the duration of the licensed activities. The operator is also required to indemnify the UK Government (or listed person or body) from any claims brought against them under the Convention on International Liability for Damage Caused by Space Objects 1972 (the Liability Convention) for loss or damage caused by such spaceflight activities, and the operator is to name the UK Government as an additional insured on its third-party liability insurance.

The concern arises on the level of liability of the operator and whether this could potentially amount to an unlimited liability. Section 220 of the Space Industry Regulations 2021 – the regulations that make provision to enable the licensing and regulation of spaceflight activities – states that an operator

licence **must** specify a limit on the amount of the operator's liability in respect of third parties but it does not expressly state the value of that limit. In respect of the indemnity that the operator must give to the UK Government, section 12(2) of the SIA 2018, states that a licence **"may"** provide a limit on the amount of the operator's liability, but also provides no express value. Some comfort can be found in the insurance requirement for third-party liability, which is fixed at €60 million for *"any one occurrence"* for standard missions (see [CAP 2218](#)). The policy limit requirement may be set higher for "higher risk" missions, but no clear guidance or methodology is provided on how a mission is identified as "standard" or "higher risk", which seems to be determined on a case-by-case basis. This creates significant uncertainty for the sector, which in turn disincentivises investment and competition in the UK. Representatives from launch companies have said that they want the value for liability to be expressly stated in the primary legislation to provide greater clarity to operators and to avoid any risk of unlimited liability being imposed.¹



The UK Government has been reviewing the liability and insurance concerns of the space sector since it launched its consultation on draft insurance proposals, liability regulations and charging proposals on 13 October 2020.² The Committee was pleased to see that the UK Government has endorsed its recommendations in its earlier report of 4 November 2022, in setting liability caps for licences under the SIA 2018, noting that whilst €60 million per occurrence may be reasonable and in line with other nations, including the French Space Agency (the Centre National d'Études Spatiales, or CNES) and

European Space Agency ("**ESA**"), the industry needs flexibility to reduce this where risk of damage or injury is low.³ The Committee encouraged the UK Government to develop proposals for the variable liability approach as soon as possible, with a target to implement these proposals by June 2023.

The CAA is currently working on such proposals and the UK Space Agency has established a working group of officials, academics, industry experts, insurers and orbital operators to develop the variable liability limit approach, and good progress is being made in identifying the assessment and criteria for the approach. The UK Government had intended to consult further in early 2023, however, this seems to have been delayed with little update provided by the UK Government since 30 March 2023.

6: Economic support

Respondents to the Committee's call for evidence suggested that the UK Government needs to provide greater financial support to the sector in order to secure the success and sustainability of the UK launch industry. Whilst certain spaceports have received considerable public funding, like the horizontal launch sites – Spaceport Cornwall (£19.85 million) and Sutherland Spaceport (£14.6 million) – this has not been the case for all prospective launch sites in the UK. Whilst SaxaVord Spaceport received a small grant from the UK Space Agency, it is predominantly built on private funding and is close to achieving the UK's first vertical orbital launch. In the eyes of the industry public funding is crucial, as *"...unless you secure public sector funding nobody believes that you are real"* (Frank Strang MBE, CEO, SaxaVord Spaceport).

The UK Government has praised the UK Space Agency for the funding it has provided for the development of spaceports and launch sites in the UK, with Phase Two of its £20 million funding programme having closed on 9 June 2023. The Department for Science, Innovation and Technology is also allegedly considering further government support that may be required over the longer term. However, both the industry and the Committee feel the UK Government needs to go further. By way of example, the Norwegian spaceport Andøya has received £31 million of funding from the Norwegian government and the UK's overall investment in the space sector is lagging compared to its peers. Through the oral evidence gathered by the

¹ See comments from Alan Thompson (Skyrora) and Nicholas Smith (Lockheed Martin Space) in their oral evidence on the UK Space Strategy and UK Satellite Infrastructure, HC 98, 17 November 2021, committees.parliament.uk/oralevidence/3019/html/.

² Unlocking commercial spaceflight for the UK consultation on draft insurance and liabilities requirements to implement the Space Industry Act, 13 October 2020.

³ Royal Aeronautical Society, Consultation response, UK Space Agency, Call for evidence to inform liability and insurance policy, 25 January 2022 [Microsoft Word - UKSA orbital liability and insurance policy - in template.docx \(aerosociety.com\)](#).

Committee, it has become clear that the level, degree and form of support available from the UK Government needs to be defined, with collaboration from the whole sector and a "...*certain amount of anchor customer*" is needed from the UK Government.⁴ Without this, it will be difficult for the UK space industry to compete, especially for spaceports where their competitors are receiving significantly more government involvement, support and funding. This potential difficulty has been brought into stark focus by Virgin Orbit's decision to file for bankruptcy mere months after the failure of its maiden voyage.

7: Industry Leadership

Evidence received by the Committee showed clearly that the UK needs a single voice to coordinate the UK space program. The National Space Council was meant to fulfil that role by providing a dedicated governance structure for the industry by enabling greater coordination across the various governmental bodies, guaranteeing that industrial and academic expertise is considered in decision-making, and ensuring that national priorities on the development of the UK space and satellite sector are met. The Committee was therefore disappointed that the National Space Council had been disbanded and more recently re-established, albeit seemingly in name only. It is currently not clear how this newly formed Inter-Ministerial Group is constituted, how often it is to meet, and how it plans to consider issues "*relating to prosperity, diplomacy and national security in, through and from space, as part of coordinating overall Government policy.*"



The Committee is concerned that the lack of progress of the National Space Council in providing leadership and clarity on the UK space program is demonstrating the UK Government's impression of the UK's space sector as "*nascent and emerging.*" This inhibits the

growth and development of the National Space Strategy and stunts the progress of the UK space sector, in stark contrast to other leading space nations that have a fully established governance structures – namely NASA in the United States of America, and ESA in Europe – that are able to raise their profiles and make strategic decisions.

The Committee was, however, pleased that the UK Government is establishing a Space Sector Industry Forum, to replace the Space Leadership Council, with the purpose of providing advice and guidance to the UK Government from industry experts. The Committee has recommended that the leader of the forum, who is yet to be appointed, should be an individual with extensive experience of the space sector, i.e., a "*Space Tsar*" who is well versed in the old and new space, regulation, defence, and internationalism. The Committee referred to Simon Bowen, the Interim Chair for the British Nuclear Industry, as a role model for the type of leader the forum needs if the UK Government is serious and committed to achieving its ambitions of the UK space sector.

Conclusion

The CAA has faced a difficult challenge in implementing the launch licensing regime established by the SIA 2018. It is clear from the evidence taken by the Committee that although the regulator may have had a relatively sluggish start, it is now performing much better and engaging effectively with applicants. However, there is still much more work to do if the UK is to have a realistic chance of becoming a competitive base for launch operations and of helping other ambitious companies, like Orbex and ABL Space Systems (who are both in the running to carry out the first vertical launch from the UK), to avoid the fate of Virgin Orbit. The UK faces stiff competition from other well-established jurisdictions, including the United States, where the licensing regimes are quicker, more streamlined, and more transparent. The Committee has highlighted several important steps that could be taken by both the CAA and the UK Government to help improve the UK licensing regime and to enable the UK's fledgling commercial space launch industry to reach its full potential. For this to happen, the UK Government will need to implement the Committee's recommendations sooner rather than later.

⁴ Nicholas Smith, Regional Director for UK and Europe, Lockheed Martin Space, Oral evidence: UK Space Strategy and UK Satellite

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