

SCOTLAND'S SPACE SECTOR – VISIT NOTE

The Scottish Affairs Committee visited Glasgow on 26 October 2023 as part of its inquiry into *Scotland's space sector*.

Members who attended the visit:

- Pete Wishart MP (Chair)
- Alan Brown MP
- David Duguid MP
- Christine Jardine MP
- Mark Menzies MP
- Anum Qaisar MP

The Committee's Specialist Adviser, Professor Malcolm Macdonald, joined the Committee on this visit.

Roundtable at University of Strathclyde

The Committee held a roundtable event at the University of Strathclyde's Technology and Innovation Centre, to which a number of space companies from the Glasgow area, and other important stakeholders in the Scottish space sector, were invited. The following organisations were represented at the roundtable:

- AAC Clyde Space
- ADS Group
- Alba Orbital
- Axon Cable
- Craft Prospect
- D-CAT Ltd
- Department for Levelling Up, Housing and Communities
- Environment Systems
- EOLAS Insight
- Fire Arrow
- Fraunhofer UK

- Global Surface Intelligence
- HAELO
- Higgs Centre for Innovation
- HyImpulse UK
- Plexus Corp
- Skyrora Ltd
- Space Scotland
- Thales UK
- Trade in Space
- University of Edinburgh
- University of Glasgow
- University of Strathclyde

The discussion was structured around three topics. A summary of the issues discussed under each topic follows. Views expressed below are the views of participants in the roundtable and do not necessarily reflect the view of the Committee.

1) Challenges and opportunities for the Scottish space sector

Contributions from participants included:

- Scotland's academic pedigree in space is a 'jewel in the crown' of the Scottish space sector;
- The presence of a large number of space SMEs in Scotland is a strength, although the downside of this is that the sector is fragmented.
- The lack of a 'prime' contractor creates challenges and prevents Scotland from managing larger contracts or missions, and the Scottish sector does not have a supply chain that could enable a prime to source the majority of its inputs in Scotland;
- Once Scotland has launch capability its 'end-to-end' capability will be a unique selling point;
- There is sometimes too much focus on 'big ticket items' such as launch or missions, with less attention paid to sub-system technology and company development;
- The Scottish sector does not engage much with the European Space Agency, which has historically helped to develop companies and capabilities;

- The development of data and service products is sometimes hindered by clients and service users' immature understanding of the space sector.
- There is a lot of ambition in the sector, but no overall vision for the sector and a short-termist approach at the expense of a longer-term perspective (e.g. single-year budget settlements). There is a lack of strategic and 'systems level thinking', for example on how to use government services to improve services while developing new space capabilities;
- One consequence of single-year budgets is that UK Government capital investment is often done quickly without sufficient sector consultation. This can result in sub-optimal investments, and also the creation of local 'fiefdoms' and duplication of capability;
- There is a lack of test facilities, but investment must be carefully coordinated in view of the above;
- Government needs to get better at 'joining the dots' between different parts of its space strategy. As the space sector grows and more parts of government start to engage with space there are more 'dots' to join up and more complexity;
- The UK Space Agency's goal of maximising investment risks focusing on larger companies rather than SMEs. Generally, the UK Government's risk appetite was seen as being low, with low growth rates as a result;
- The current UK and Scottish space strategies lack SME representation;
- Scotland does not engage well at a UK level, and UK entities are seen as remote. There is a lack of visibility of Scottish companies at the UK level and vice versa, and Scotland does not collaborate at the UK or international level as well as it could.

2) UK and Scottish Government space policy: how can Governments support businesses in your sector?

Contributions from participants included:

- Space policy is not aligned in the UK in the same way as it is in countries like the United States. The UK needs an overarching goal and clear ideas about how it will be achieved. The sector is trying to align its own work but there is no plan from the UK and Scottish Governments for how this will be achieved. The Scottish Government is 'sitting on the fence' about how its goals will be achieved. The Scottish and UK Government strategies are not necessarily at odds with each other, but neither contains substantive detail. The intentions are clear but 'there is a difference between strategic intent and tactical detail';
- The UK Government is not sufficiently committed to aspects of its strategy, e.g. launch. The attitude appears to be that the commercial sector will take care of

delivering the UK's launch capability, without any drive from Government to make it happen.

- Accessing funding is difficult, particularly if you are not connected to a university. Funding applications to Scottish Enterprise, Scottish Development International and Skills Development Scotland are all separate from one another. The funding landscape is complicated, with a number of different 'pots' of money that are not tied together strategically, meaning funding happens in a piecemeal way;
- Smaller companies need public support to be able to scale up to the point where they can start to access European Space Agency funding. At present it is very difficult for companies to bridge this gap. This is a structural challenge for the Scottish sector, which is SME dominated;
- Scotland is lacking infrastructure and facilities for intermediately sized companies, compared with places like Harwell in England. Where facilities are available they are often too expensive for small companies;
- The Department for Business and Trade was not seen as a helpful body for businesses looking to scale up. Previously businesses had turned to Scottish Enterprise for this purpose;
- Year-to-year funding does not support a long-term strategy. Other countries have twenty-year funding plans. The amount the UK invests compared to its European peers like Italy, France and Germany is low;
- A number of participants were of the strong view that Government should support companies by becoming a customer, which will in turn give those companies credibility as exporters while supporting the long-term growth of those companies. The UK Government has been known to purchase services from foreign space companies without even engaging with domestic alternatives;
- The Ministry of Defence has a significant budget and is more inclined to procure domestically, but a greater proportion of Ministry of Defence contracts should be with Scottish companies;
- Government should be willing to make its datasets (e.g. Environment Agency LIDAR data) more readily available, and this will allow companies to build products using that data

3) The space workforce, skills and training

Contributions from participants included:

- There is a need to establish facts about the space workforce: to properly identify what the problem is and where it is;

- Some of the skills challenges facing the space sector are similar to those in other sectors, and many of these sectors are ‘fishing in the same pond’ for staff;
- There is a particular challenge around recruiting software developers and data scientists, who are very in demand in other sectors with which smaller space companies can’t compete;
- Some universities marketed their engineering degrees to overseas students (in part because they bring in more income), but these students often do not remain in the UK when they start work. In some cases graduates would not qualify for a UK work visa, in any case;
- Gender balance is an ‘open goal’ for maths and engineering;
- Smaller businesses like those in the space sector have fewer resources to dedicate to recruitment compared with more developed companies/industries;
- The space sector also needs vocational skills, and the shortage of welders (for example) could be quite acute in a decade’s time;
- The biggest challenge for many companies is employing mid-career staff with 5-10 years of professional experience. This was seen as an obstacle to smaller companies scaling up their businesses;
- Inward investment has not always created the jobs promised – on occasion an incoming company, because of its spending power, has attracted staff from the existing talent pool without expanding the overall availability of jobs. Government should make sure incoming companies also develop the existing space sector;
- In academia, retention of skills was an issue. There is an absence of a research career pathway, and contracts are often short term which provides less job security;
- There is potential to bring in staff from other sectors with transferrable skills, e.g. the oil and gas sector;
- The ongoing review of skills delivery by the Scottish Government had left the situation ‘up in the air’ to the concern of industry. Skills Development Scotland was a strong advocate for industry but this is less the case now;
- The UK Government is not active in the skills discussion in Scotland because the matter is devolved.
- There is a lack of understanding and of strategic vision in both Governments about what skills currently exist and how the space sector can help to develop new skills.

Tour and meeting with AAC Clyde Space

The Committee visited AAC Clyde Space at their office in the Skypark business park. AAC Clyde Space is a 'new space' company specialising in small satellite technology. The Committee met with:

- Luis Gomes – Chief Executive Officer
- Andrew Strain – Chief Technical Officer
- Peter Anderson – Chief Commercial Officer
- Richard McKay – Director of Operations, AAC Clyde Space Glasgow
- Pam Smith, VP Future Programmes

Topics covered during the meeting included:

- Clyde Space's development as a space company and its experience of growing as a company in the Scottish space sector;
- Opportunities for the Scottish space sector, and particularly the potential for 'new space' companies to use space data to provide services, both to governments and to international clients;
- How governments can use space data to deliver public services;
- Their experiences of engaging with the UK and Scottish Governments and their agencies, and how the Scottish space sector is represented in discussions with the UK Government;
- Cooperation within the Scottish space sector;
- Recruitment and retention of staff, and challenges recruiting staff from abroad such as visa costs;
- The UK and Scottish space strategies and how they can be developed;
- Foreign investment in the Scottish space sector and Scottish Enterprise's strategy for attracting investment



The Committee were also given a tour of Clyde Space's offices and manufacturing facilities.

The Committee also met with a number of junior Clyde Space staff over lunch to hear about their experiences working in the space sector. Topics discussed included:

- Staff's motivations for pursuing a career in the space sector;
- Academic and other routes into a career in the space sector;
- Gender balance on university courses in STEM subjects, and in space sector jobs;

Tour and meeting with Spire

The Committee visited Spire Global's Glasgow Office in Skypark business park. Spire is a space data and analytics company with its satellite manufacturing hub in Glasgow. The Committee met with:

- Michael Dowell, Director, Sales Engineering
- Daniel Bryce, Senior Director, Operations

The Committee was given a tour of Spire's manufacturing and test facilities and then had a meeting to discuss the company's work. Topics discussed included:

- The development of Spire as a global company and the development of its presence in Glasgow;
- The 'new space' sector and opportunities for growing the space sector;
- What the Scottish sector needs to do to ensure it is a leading player in the global space sector in the future;
- Glasgow's space sector and its strength in small satellite manufacturing;
- Cybersecurity and space;
- The development of Space Situational Awareness;
- The gender imbalance of staff in the space sector;
- The potential for UK-based launch, and the respective strengths of horizontal and vertical launch methods;



- The role governments can play as an ‘anchor customer’ to space companies by buying services from them;
- Governments’ current understanding of the space supply chain, and what governments can do to develop this.

Tour and meeting with Skyrora

The Committee visited Skyrora's manufacturing facility in Cumbernauld. Skyrora is a satellite launch company, headquartered in Edinburgh, that specialises in rockets designed to launch small satellites into space.

The Committee was given a briefing on Skyrora's work and received a tour of its manufacturing facility. The Committee met with:

- Volodymyr Levykin, CEO & Founder
- Jack James Marlow, Head of Engineering
- Dr Mykhailo Andriievskyi, Head of Propulsion
- Alan Thompson, Head of Government Affairs
- Gordon McNeill, Health and Safety Officer

Topics discussed included:

- Skyrora's objective of providing reliable UK launch capability, particularly for the Glasgow satellite cluster, and of providing in-orbit services;
- Skyrora's manufacturing process and its approach to sustainability through using greener fuels and recoverable (and potentially reusable) vehicles;
- The development of Skyrora's launch capability so far and its progress towards its first commercial launch;
- Launch regulation and the process of applying to the Civil Aviation Authority for launch licences.



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