

**SUPPORTING COMMERCIAL SPACEPLANE OPERATIONS IN THE UK**  
**Consultation on criteria to determine the location of a UK spaceport**

**Response from:**

**Andrew Chadwick**

Q1. Do you agree with the CAA's high-level recommendation that, if a decision were taken to proceed, sub-orbital operations should preferably commence, either on a permanent or a temporary basis, from one (or more) of the following:

- an existing EASA-certificated aerodrome;
- an existing UK CAA-licensed aerodrome; and/or
- an existing UK military aerodrome, subject to approval from the MOD.

Response:

In the short term, I accept the CAA's recommendation that an existing aerodrome should be considered. However, I would not wish government to exclude options for investors to propose alternative sites, with more longer-term ambitions, either previously licensed aerodromes or new sites, that would need to be licensed for air and space operations. All business options should be considered.

Q2. Do you agree that in order to make maximum use of existing infrastructure, the location should preferably still be active but at a low level of aircraft movements and should have existing and appropriate ground infrastructure/facilities and service provision?

Response:

No. As a licensed aerodrome the operator should reserve the right to operate spaceplanes irrespective of the level of activity at the aerodrome. It is anticipated that spaceplane operations would – in the short to medium term at least – occur at a relatively low annual rate, and hence revenue. Therefore, it is to be anticipated that daily aerodrome operations would be managed to enable spaceplane operations on a case-by-case basis.

In addition, and as stated in my response to Q1, companies or individuals interested in investing in this initiative should be given the option to either use existing facilities or develop bespoke infrastructure and facilities to enable longer-term spaceplane operations. We should welcome this kind of investment and initiative.

It is noted that the sites proposed by the CAA would each require development to facilitate spaceplane operations.

Q.3 Do you agree that greenfield sites should not be considered?

Response:

It is anticipated that the economic and environmental arguments against the use of greenfield sites would preclude this option. Therefore, I agree that greenfield site should not be considered for this initiative.

Q4. Do you agree with CAA's analysis identifying the criteria to be considered in identifying a permanent location for a UK spaceport? If not, please explain why.

Response:

Yes. It is important that when identifying a permanent location for a UK spaceport, consideration should not just be given to the aerodrome site itself but also to environmental, meteorological, and economic issues.

Q5. Do you think there are any other criteria that should also be taken into consideration? If so, please explain why.

Response:

Yes, sustainability.

It is important that investment in a UK spaceport should not be short term, and it should be dedicated to the development of UK skills and innovation, not a satellite for overseas companies or operators. It should take into account a long-term development and investment plan for the area in which it is located and nationally.

Investment and plans must be identified for:

- ▶ the development of a UK centre for spaceplane operations;
- ▶ a supporting supply chain;
- ▶ UK jobs;
- ▶ the advancement of space innovation and science in the UK;
- ▶ educational facilities;
- ▶ links to UK education facilities;
- ▶ housing and supporting infrastructure;
- ▶ science and technology spin-off initiatives.

Q6. Do you agree that these are relevant criteria? What weight should be attached to them?

Response:

I believe that site location and the issues relating to economic investment and sustainability, as detailed in Q5, should have the highest priority.

Q7. If more than one location closely meet the essential operating criteria, safety, meteorological, environmental and economic criteria, do you agree that we should also consider factors around the contribution to local and national growth? If so, what weight should be given to these factors?

Response:

Yes. It is important that investment in a UK spaceport should not be short term, and it should be dedicated to the development of UK skills and innovation, not a satellite for overseas companies or operators, providing little or no benefit to the UK. Indeed, prospective operators should demonstrate in their plans, the added economic value their site provides both locally and nationally. It should take into account a long-term development and investment plan.

Investment and plans must be identified for:

- ▶ the development of a UK centre for spaceplane operations;
- ▶ a supporting supply chain;
- ▶ UK jobs;
- ▶ the advancement of space innovation and science in the UK;
- ▶ educational facilities;
- ▶ links to UK education facilities;
- ▶ housing and supporting infrastructure;
- ▶ science and technology spin-off initiatives.

Q8. Do you agree with the CAA's analysis and strong recommendation that until there is a better understanding of sub-orbital spaceplane safety performance, spaceplane operations should only take place in areas of low population density and the resulting view that only a coastal location is suitable to protect the uninvolved general public?

Response:

It is a reasonable assumption that, until there is a better understanding of sub-orbital spaceplane safety performance, spaceplane operations should only take place in areas of low population density and, in the short term, coastal locations are best suited for this. However, it should be noted that a site should be selected not just on it's location but also if the aerodrome operator can provide a satisfactory safety case for the proposed spaceplane operations.

Q9. What are your views on the CAA's shortlist of eight potential sites?

Response:

There is a bias in the CAA's shortlist towards military sites. Whilst the sites may meet some of the site infrastructure requirement criteria, it sends the wrong message to investors, operators and the public. It suggests that operations would be managed and operated by the military. Therefore, I believe that consideration should only be given to civil certified sites to enable civil space operations.

It would be interesting to understand whether the CAA consulted with potential investors looking to invest in new or other existing sites, or whether they just concentrated on existing aerodromes only.

Q10. Are there any locations on the CAA's shortlist which you consider should be disregarded? If yes, please give your reasoning.

Response:

All the military sites should be disregarded. Selection of a military site sends the wrong message to investors, operators and the public. It suggests operations would be managed and operated by the military. In addition, a number of these sites do not have the supporting infrastructure, investment, or facilities to support the development of the other economic factors in considering a UK centre of excellence. – schools, housing, shopping, access to skilled personnel, etc. – and are positioned, due to the nature of their operations, some distance from urban centres, and in some unappealing areas to live unlikely to attract a skilled workforce and their families.

Q11. Are there any additional locations that you consider should be on the CAA's short list? If yes, please explain why.

Response:

If the intention is for the UK to purely support US company spaceplane operations, and taking into account the ITAR restrictions in doing so, then the CAA may wish to consider RAF Fairford as a potential solution, particularly as I understand that it was previously designated as an emergency landing area for the UK Space Shuttle. I appreciate that this is a military site, but in this example, if it is only supporting US operations, then this is unlikely to be an issue, although it would be expected that – as a US dedicated site – investment would come primarily from the US.

Submitted by:

Andrew Chadwick  
Summerdown  
High Street  
Tilshead  
Salisbury  
Wiltshire  
SP3 4RY

Tel: 01980 621209

Email: [summerdown.chadwick@btinternet.com](mailto:summerdown.chadwick@btinternet.com)

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