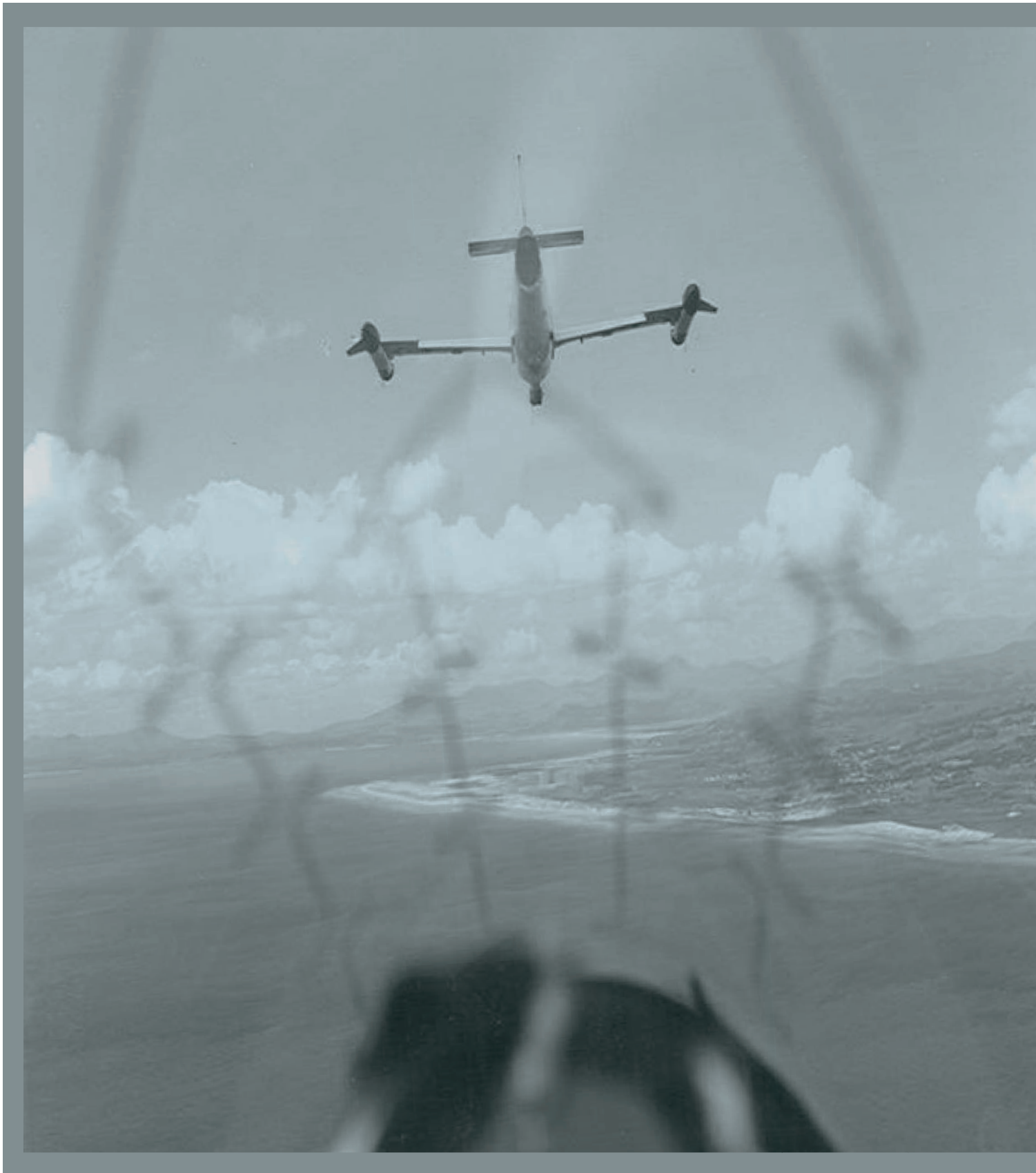


Encouraging enterprise and innovation

Supporting commercial
spaceplane operations in the UK

Llanbedr Airfield Estates LLP
response to the Department for
Transport's review:
**CONSULTATION ON CRITERIA
TO DETERMINE THE LOCATION
OF A UK SPACEPORT**





Llanbedr Airfield Estates LLP is fully committed in assisting the UK Government in achieving its ambitions set out in the Government's Space Innovation and Growth Strategy 2014-2030 and Space Growth Action Plan, specifically in relation to establishing a Spaceport in the UK by 2018. We are delighted to have been shortlisted as a potential location to site the Space Port, following the extensive review/analysis by the Civil Aviation Authority of the technical aspects required to safely achieve this.

Llanbedr Airfield Estates LLP are already working closely with the Welsh Government, the Department for Transport, the Ministry of Defence and QinetiQ in developing Llanbedr Aerodrome as Europe's leading Test and Evaluation Centre for RPAS (remotely piloted air systems) to meet the UK's future requirements in this sector and promote and encourage the use of the UK as a leading location from which European and world wide customers can ultimately operate.

A natural progression and integration of this development and operating environment is to encompass the siting of the UK Spaceport.

Collectively with the Welsh Government and QinetiQ we have extensive experience, skills and knowledge in delivering projects of the nature proposed and would welcome the opportunity of being further invited to put forward our detailed proposals/submission for the siting of the UK Spaceport at Llanbedr Aerodrome.

We have pleasure in the first instance in now submitting our responses to the consultation report on the criteria to determine the location of a UK Spaceport.

The Welsh Government and QinetiQ have independently directly submitted their own responses on this consultation.



Lee Paul MRICS

Chief Executive Officer

Llanbedr Airfield Estates LLP

3 October 2014

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

1

Llanbedr Airfield Estates LLP (LAE) agree with the CAA's high level recommendation that sub orbital operations should preferably commence from either an existing EASA-certified aerodrome and/or an existing UK CAA-licensed aerodrome.

LAE fully supports the CAA's high level recommendation that the safety of operations is a critical factor in selecting the location of a UK Spaceport and the safety environment associated with operations at an appropriately regulated aerodrome would be consistent with these.

Although Llanbedr Aerodrome is currently neither EASA-certified or licensed by the UK CAA we are presently in discussions with the CAA over becoming a licensed aerodrome by early 2015 and we are committed to these timescales. All necessary safety management systems and associated documentation along with a number of infrastructure works to the aerodrome to meet the licensing standards are presently being implemented.

Although many of the safety aspects associated with a UK military aerodrome are consistent with those undertaken at either an EASA-certified or a UK CAA-licensed aerodrome, LAE would not support locating the UK Spaceport at an existing UK military aerodrome primarily due to the conflict of

operations between military exercises/training and tourism travel. LAE believe the military would not be in a position to allow private space travel to take priority over military operations at a UK military aerodrome.



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?

2

Llanbedr Airfield Estates LLP (LAE) agree and fully support the recommendation that, in order to make maximum use of existing infrastructure, the siting of a UK Spaceport should be at an existing active aerodrome with a low level of aircraft movements with appropriate ground infrastructure/facilities and service provision.

Not only would this minimise the initial capital and revenue costs of the project, it would:

- substantially de-risk the venture financially and operationally
- increase a locations attractiveness to potential private sector investors
- reduce the potential burden on the public sector
- assist with meeting the timescales proposed for operations to commence.

LAE understand that during initial Spaceport operations there is likely to be a requirement for “other operations” at the aerodrome including activities on the ground, to be “sterilised” primarily for safety reasons.

It is understood that this sterilisation period may be up to two hours at a time,

consequently the requirement for siting the UK Spaceport at an aerodrome with a low level of aircraft movements.

In light of this requirement LAE would be concerned at the suitability of any aerodrome whose core business presently consists of high levels of “committed” passenger transport flights and / or military training taking place which would impact and potentially conflict with Spaceport operations. Within the initial / early operating years of the Spaceport it would be difficult to envisage how these conflicting activities could safely and sustainably operate side by side.

Llanbedr offers the dual benefits of an existing, established aerodrome with extensive infrastructure/facilities and service provision, all of which are presently in the process of being substantially upgraded to meet both the CAA licensing requirements and the development of the site as Europe’s leading test and evaluation centre for RPAS, coupled with low levels of aircraft movements none of which are commercial or scheduled.

Do you agree that greenfield sites should not be considered?

3

Llanbedr Airfield Estates LLP (LAE) agree that green field sites should not be considered as an option for the siting of a UK Spaceport primarily on the principles of sustainable development but also on the grounds of the considerable uncertainty/delays which may arise in meeting the Spaceport's timelines, having regard to such issues as planning permission, environmental issues, land acquisition and airspace approvals. In addition to which, the cost implications may make the project financially unviable.

LAE therefore agree wholeheartedly with the CAA in that the designation and construction of a new, purpose built Spaceport on a green field is not a realistic option.

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.

4

Llanbedr Airfield Estates LLP (LAE) fully endorses the CAA's analysis underpinning the criteria to be considered in identifying a permanent location for a UK Spaceport.

LAE accept that the CAA have specifically concentrated on the technical suitability of potential sites to house the UK Spaceport.

References have been made to a number of other factors throughout the CAA report, over and above the technical suitability, which should be taken into account prior to any final selection of the preferred site.



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

5

In addition to the essential operating criteria, safety, meteorological, environmental and economic criteria and contribution to local and national growth, Llanbedr Airfield Estates LLP (LAE) believe the following further criteria should be taken into consideration:

- synergy with existing operations at the aerodrome. LAE are currently working closely with the DfT, MOD and the Welsh Government in establishing at Llanbedr aerodrome a UK test and evaluation environment for large, remotely piloted aircraft systems (RPAS) to meet current and future demand from both the military and civil operators across Europe and ultimately world wide. In this context there is considerable synergy between RPAS and spaceplane operations and from a UK Government perspective it would appear expedient to consider a location's capacity to meet both requirements going forward.

LAE expresses their concern on the lack of synergy between spaceplane operations and the military commitments at MOD aerodromes and busy passenger transport traffic at other aerodromes.

- the ability of the aerodrome selected to site the UK Spaceport to deliver the project within the timescales set down. Ultimately there will be a need to secure both planning

permissions and the collective support and commitment to the project from the local population. Without such support and approvals the ability to deliver the project within the timescales could be seriously compromised. A policy of following the “line of least resistance” should be considered.

LAE are already in positive discussions with the local planning authority, adjoining landowners, local councils, local businesses and the local population.

- consideration should be given to the indirect costs of disruption to normal operations at the existing aerodromes both in the period and post commencement of initial operations beginning but also during the period of works at the aerodrome (eg runway extension works) to ensure the essential operating criteria are provided in advance of 2018. This will be particularly pertinent where any aerodrome has only one operational runway.

LAE has three operational runways at Llanbedr aerodrome and insignificant levels of air movements. Consequently there would be no disruption to their existing or future operations during construction works and post-initial operations commencing.

- a close understanding of the “customer’s” requirements and working with them



collectively to provide their required facility in a cost effective manner.

LAE are already in close discussions with XCOR concerning their requirements for a UK base and have entered into a working relationship with them to ensure their requirements are fully understood and complied with during the design stages.

- the ability to provide the paying customer with an experience over and above their space flight. It will be necessary to be able to offer the “tourist” a range of opportunities over and above the space flight during their visit.

Llanbedr is sited in the Snowdonia National Park, an area of extensive natural beauty, which has an array of other leisure and tourist pursuits to be enjoyed.

- what other benefits could be made available to businesses setting up at the chosen location?

Llanbedr Aerodrome has been designated an Enterprise Zone with the resultant advantages and benefits this brings.

- the experience and skills of the ‘partnership’ who will ultimately deliver and operate a UK Spaceport at the chosen aerodrome.

LAE together with the Welsh Government and QinetiQ already have a close working partnership agreement in place for the development and operation of Llanbedr Aerodrome as Europe’s leading test and evaluation facility for RPAS. This agreement has now been extended to incorporate the delivery and subsequent operation of the UK Spaceport at Llanbedr.

The Welsh Government have an extensive track record of delivering substantial capital regeneration projects within Wales and are fully committed to helping the UK realise its vision to host Europe’s first Spaceport.

QinetiQ have a considerable body of knowledge, expertise and many years of experience in the regulation of aerodromes, air traffic management, flexible use of airspace and Danger Area operation. Furthermore, they have a wide technical expertise in the aerospace and defence arena generally and specifically QinetiQ incorporates a Space division.

The Partners of LAE have extensive knowledge, experience and track record of transforming several former MOD properties into viable new commercial enterprises including the development of and subsequent operation of a former MOD airfield into a fully approved CAA-licensed aerodrome.

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

6

The fundamental criteria chosen rightly focuses on the safety aspects of operating a Spaceport in the UK to protect the uninvolved general public. This is the key criteria and therefore the primary weighting should be attached to it.

The CAA's analysis and resultant selection process has rightly concentrated on this critical aspect.

Once the safety aspects have been addressed, the other criteria including meteorology conditions and economic impact should be considered to establish the viability of the proposed project at the location chosen.

Subsequent to the consideration of these matters, the selection criteria should include the other matter highlighted in our response to Q5 above.



If more than one location closely meets 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?

7

The location and urban context surrounding a UK Spaceport is important in terms of support systems available to sustain it, including human resources and infrastructure. It must co-exist with an urban economy and be in a location where local labour force is large enough to handle it.

The Spaceport will act as a catalyst for scientific advancement and innovation enabling the growth of the space and aerospace sectors directly and job stimulation in the wider supply chain. The 'cluster' effect will promote innovation, competitiveness and increased productivity.

The presence of existing business in these sectors, along with those in the biotechnology and pharmaceutical sectors together with academic clusters of

excellence will only contribute to local and national growth and high skilled jobs.

Llanbedr is close to the 'heartland' of the UK with a large labour force and identified as key for further development with plans for HS2 and with three major international airports, Liverpool, Manchester and East Midlands providing air transport links.

Consequently there should not only be an existing concentration of such business and facilities within the location of the UK Spaceport, there should be sufficient availability of stock (or the ability to create such) and support for new business to relocate and establish themselves at the Spaceport location. Good multi-modal transport links and a close connection to major areas of conurbations are therefore pivotal in helping to achieve this.

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?

8

Llanbedr Airfield Estates LLP (LAE) agrees with the basis of this recommendation entirely and would add to this the need to ensure there are no particular heavily built up areas within close proximity to either the main runway / near the required safety zones or areas earmarked for storage of fuels and other explosive materials.

LAE would also be concerned if land adjoining the aerodrome was capable of or earmarked for future new development particularly residential development, thereby increasing the population within that area and safety to the uninvolved public.

Although LAE fully accept a coastal location is a pre requisite LAE believe two further issues should be considered in relation to such a location:

- the aerodrome should have the ability to grow over time to meet future demand and growth, consequently the aerodrome should have the ability to safeguard significant areas of land either within the aerodrome itself or adjoining the aerodrome to facilitate this
- the aerodrome must have good transport links to cater for general logistics of staff / visitors and business growth. A too remote a location may detract visitors and staff and businesses locating at the site.



“...the resulting view that only a coastal location is suitable to protect the uninvolved general public?”



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

9

The CAA have over the course of the past two years undertaken a detailed review of what would be required, both from an operational and regulatory perspective, to enable spacelanes to operate from the UK within the timescales proposed.

The detailed review has taken the key operational requirements, namely the essential operating capability, airspace complexity and population density, for a UK Spaceport and used these to make an initial assessment of all existing aerodromes within the UK to identify which may be suitable locations for a Spaceport to allow operations to begin by 2018 or earlier.

The resultant shortlist has met these technical criteria. None of the operators of the short listed aerodromes have been approached by the CAA review team as part of this selection.

LAE have within their responses to the other questions raised expressed their views on a number of matters which they believe should be considered collectively when ultimately selecting the preferred site to house the UK Spaceport.

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

10



Llanbedr Airfield Estates LLP (LAE) has concern over the inclusion of a number of military aerodromes within the CAA's shortlist due to:

- the potential conflict of operations between Spaceport operations and military operations/training. We believe military operations should always take priority and should not be compromised. This would not suite the commercial needs of the operation of spaceplanes.
- the potential inability of Spaceport visitors/staff etc to access the site due to the security implications which are in place (and always subject to increased measures) at military establishments
- the potential inability for businesses to develop around/adjacent to the Spaceport to create the

"cluster" due to the implications on the military use /security of the aerodrome

- the ongoing uncertainty over whether the site would be declared surplus to military requirements and earmarked for disposal on the open market with the remit for the MOD to seek to maximise its asset value

LAE would also have concern regarding siting the UK Spaceport initially at any busy commercial aerodrome with a commitment to a minimum number of passenger transport flights. There would be potential conflict of operations in the event the non Spaceport activities having to be "sterilised" during spaceplane operations. In a number of instances this may have a detrimental affect on

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

11

existing commercial operations and impact on the sustainability of the aerodrome.

The complexity and use of nearby airspace is a vital factor in selecting a Spaceport site as spaceplane operations are likely to disrupt normal aviation activity. It is predicted that there will be an on going annual increase in air traffic numbers in the UK and this together with a number of other factors will mean that spaceplane operations in the future will be taking place in an increasingly complex airspace environment. Due consideration to this should therefore also be made when ultimately selecting the preferred site to locate the UK Spaceport.

LAE has no plans or commitments to provide any commercial airline passenger traffic from the aerodrome.

LAE would also have concern over the siting of a UK Spaceport in:

- too remote a location with limited accessibility by road/rail. A viable Spaceport will involve synthesis of many different types of transportation, it must be multi-modal.
- an area with extreme weather conditions not conducive to Spaceport operations

Both of these factors would likely impact on the economic potential and viability of operations in a location of this nature.

Having regard to the CAA's high level recommendations particularly in relation to the essential operating criteria and safety factors along with the timelines proposed Llanbedr Airfield Estates LLP do not believe any other locations should be considered to be added to the CAA's current short list of potential aerodromes to locate a UK Spaceport.

The CAA themselves have already extensively reviewed all civil and military aerodromes within the UK to identify those sites that meet the fundamental criteria set down.

For further comment or clarification on any aspect of this submission please contact:

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