

# Chalgrove Airfield

Technical Review and Assessment in relation to  
Redevelopment of Chalgrove Airfield: Summary Report

September 2019



## Quality information

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## Revision History

<u>Revision</u>	<u>Revision date</u>	<u>Details</u>	<u>Authorized</u>	<u>Name</u>	<u>Position</u>

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## 1. Introduction

- 1.1.1 Homes England is promoting land at Chalgrove Airfield to deliver a new 21<sup>st</sup> Century market town. The proposed development is for 3,000 houses, employment space, local services and community infrastructure alongside the retention of existing airfield operations.
- 1.1.2 AECOM, in conjunction with Cyrrus and leading experts from Cranfield University has been appointed by Homes England (HE) to prepare a technical review and objective assessment in relation to the ability to bring forward the redevelopment of Chalgrove Airfield, alongside the safeguarding of land and re-provision of a new runway to support the ongoing operations of Martin Baker Aircraft Company Ltd (MBACL) within the wider site.
- 1.1.3 AECOM has been provided with MBACL Representations to South Oxfordshire District Council dating from August 2018 and February 2019. These have been used as a basis for critically assessing the legislative and regulation requirements, alongside the specific technical requirements specified by MBACL.

### 1.2 Existing Situation at Chalgrove Airfield

- 1.2.1 The lease under which MBACL operate restricts activities to those solely related to the manufacturing and testing of aircraft ejection seats. The airfield currently has a single operational runway (12/30) which is promulgated for use under Ordinary Licence No. P683 that is issued by the CAA. All air movements to and from the airfield operate within Class G (uncontrolled) Airspace.
- 1.2.2 There are two other runways (currently in poor condition), that are not licenced by the CAA for aircraft use, although one of these (06/24) is used under a separate licence specifically related to low level altitude testing of ejector seats. This licence is reviewed on an annual basis.
- 1.2.3 In addition to the runways, there are a number of manufacturing and testing facilities within the eastern part of the airfield, currently used by Martin Baker.
- 1.2.4 Whilst there is an informal agreement in place between MBACL and RAF Benson in relation to the use of the airfield by military helicopters, the use of the airfield is not critical to the future RAF operations. This was confirmed in 2016 by the transfer of the site from the MoD to Homes England as a result of the airfield being identified as surplus as part of a wider strategic review of the Defence Estate.

### 1.3 Martin Baker Aircraft Company Ltd Position

- 1.3.1 MBACL consider that Proposed Development should not be permitted on the existing airfield site on the basis that the redevelopment would be incompatible with their activities and could prejudice the long term feasibility of operating from the site. Their representations raise numerous potential issues regarding their current operation with particular reference to aviation activity, Control of Major Accident Hazards (COMAH) Regulations, testing and Health and Safety.
- 1.3.2 It is noted, that MBACL's assessment is based on earlier versions of the proposed Homes England scheme which has since been subject to a number of iterative design revisions and other changes locally – which addresses many of the concerns raised.

- 1.3.3 It is also important to note that while the parameters of the scheme are to be fixed through an Outline Planning Application, much of the detail is subject to future reserved matters applications – providing flexibility in the way in which the scheme can respond to potential conflicts or changes to how MBACL testing is undertaken in the future. This is particularly the case for those areas to the north of the development area, closest to the airfield operations, which would not be built out until the latter parts of the scheme’s delivery.

## **1.4 Technical Review and Assessment Overview**

- 1.4.1 The assessment and technical review is structured around a number of key considerations relevant to determining the opportunity to co-locate activities. It considers the relationship between the current activities and the long term delivery programme for the airfield’s redevelopment, recognising that the scheme design and delivery programme for the development is over a 12 year period and that there are a number of years remaining on MBACL lease.

- 1.4.2 The main considerations taken forward as part of the assessment include:

- **Part 1:** The Long Term Requirement for MBACL Existing Operations and Ability to Continue with Specialised Activities
- **Part 2:** The Ability to Accommodate a CAA Compliant Runway within the Safeguarded Airfield Land
- **Part 3:** The Ability to Accommodate the Existing and Future MBACL Operations onsite
- **Part 4:** The Opportunity for MBACL Activities to be Undertaken Elsewhere

- 1.4.3 The assessment addresses each of the points raised by MBACL, within the context of the final scheme design. It is considered that that in the majority of cases the position taken by MBACL is remote, unrealistic, or to varying degrees exaggerated.

- 1.4.4 For each of the key considerations, the assessment has concluded:

### ***Part 1: The Long-Term Requirement for MBACL Existing Operations and ability to continue Specialised Activities***

- 1.4.5 The requirement for ejector seats is expected to change significantly in the years ahead. Whilst there is ongoing global investment in 6<sup>th</sup> generation multi-role fighter aircraft, the longer term, demand for ejector seats can reasonably be expected to be less given the emergence of and significant investment in, remotely piloted systems. That is not to say there will be no requirement, but that the scale and nature of products requiring testing and manufacturing at Chalgrove will be significantly different to today. To date, no evidence has been provided by MBACL either through the publication of a Business Plan or otherwise to confirm that the long term nature of testing and manufacture within the site will remain unchanged.

- 1.4.6 When this is combined with the ageing nature of the Gloster Meteor test vehicle – now more than 50 years old and with limited operational life remaining, it is likely that MBACL will either have to reconsider the manner in which they conduct their trials and what aircraft may succeed it. This presents an opportunity for MBACL to consider the requirements of the replacement aircraft / test activities in tandem with the Homes England proposals which could deliver a pragmatic solution for both parties.
- 1.4.7 Planning consent has been granted for the development of 200 homes off Marley Lane, in the absence of any objections from MBACL. When considering the potential impact of this, alongside the concerns raised by MBACL about development on the airfield, this poses a major risk to the continued use of Chalgrove Airfield for high speed jet testing (being less than 450m south of the principal test runway) and establishes a precedent that additional housing (and by extension other developments) are acceptable on land immediately adjacent to the airfield. With the low level licence renewed by the Civil Aviation Authority (CAA) on an annual basis, there is a high probability that there would be significant difficulties relating to the continued testing under the existing arrangements, with considerable uncertainty regarding future licence renewal – regardless of whether or not the redevelopment of Chalgrove Airfield went ahead.

### ***Part 2: The Ability to Accommodate a CAA Compliant Runway within the Safeguarded Land***

- 1.4.8 There is some uncertainty about the exact requirements of any replacement runway(s). The existing runway at Chalgrove airfield is only declared as 1,784m, with this assessment identifying a number of potential non-compliance issues with current CAA guidance. There is also only one licenced runway compared to the need for ‘three’ as specified by MBACL.
- 1.4.9 Early engagement with MBACL established a need for a runway length of 1,500m, although this is no longer their position. It can be demonstrated that a 1,500m runway is sufficient to accommodate the arrival and departure of the Meteor aircraft (for which the principal aircraft movements relate) as well as other aircraft types set out in the MBACL representations.
- 1.4.10 The proposed runway has been designed to 1,500m, comprising a 1,350m long runway with 150m long starter extensions at each end. Therefore, the proposed runway provides a Take-Off Run Available (TORA) and an Accelerate Stop Distance Available (ASDA) of 1,500m and a Landing Distance Available (LDA) of 1,350m. The proposed runway is capable of being designed to CAA standards in accordance with CAP168 requirements and the potential significant environmental effects have been fully tested as part of preparation of a future planning submission.
- 1.4.11 While it is considered that the aircraft movements specified by MBACL can be met within the current proposal, there is one potential exception to this – the C130 Hercules which, at maximum take-off weight (and depending on the variant) could require a runway length of up to 1,783m (as set out by Lockheed Martin, its manufacturer). However, given that this is identical to the current runway length at Chalgrove Airfield, it is unlikely that the maximum take-off weight is required by current activities and therefore all aircraft types would be able to continue to operate as today on a shorter runway. In the event that this is not the case, there are opportunities to provide more flexible runway options using the land recently acquired by Homes England or to utilise alternative military airfields within 30 miles of Chalgrove – with the frequency of C130 movements unlikely to impact upon day to day operations.

### ***Part 3: The Ability to Accommodate the Existing and Future MBACL Operations on Site***

- 1.4.12 Having established that a replacement runway can be appropriately incorporated into the site in a way that meets the necessary design standards and regulatory specifications, the assessment has considered in turn each of the specified tests and safety requirements set out by MBACL.
- 1.4.13 The assessment demonstrates that all of the necessary legislative and regulatory requirements can be met (and in some instances improved), alongside MBACL specific requirements where these are considered relevant on the basis that:
- The Parameters that will form part of the Outline Planning Application will not impact on the MBACL factory site, which is retained in its existing location, together with all the adjacent test rigs without being compromised on security or privacy grounds.
  - The Parameters respond to the requirements of the Health and Safety Executive, providing sufficient clearances between the factory site and the nearest built element of proposed buildings in accordance with current COMAH/HSE regulations.
  - The General Exclusion Zone (GEZ) identified by MBACL directly correlates with the land which MBACL controls and would be required to identify as being managed under its health and safety responsibilities. There is no legislation or regulatory requirements that specify the extent of a GEZ and all of the 'danger areas' identified by MBACL are significantly less than this. Under the Parameters, 124ha (the equivalent of around 80 football pitches) will continue to be safeguarded solely for the use by MBACL and will be under their sole control at all times, meaning that its health and safety responsibilities can continue to be met.
  - No information has been provided on the detailed low level altitude testing licence requirements. In the absence of any detail, air show safety requirements (CAP403) that reflect a scenario of large populations in close proximity to low flying fast jet aircraft has been used as a proxy. It can be demonstrated that the necessary separation distance are significantly exceeded and that the simulated danger zone identified by MBACL can be accommodated.
  - During aircraft testing, the new airspace requirements necessitated by the proposed runway would direct movements away from the populated areas of Thame and Didcot, reducing overflying of densely populated areas.
  - There are no restrictions on undertaking Parachute Test Vehicle testing, the specific requirements of MBACL can be met and if necessary land now within Homes England's control can be made available for overflying. Given the low frequency of tests, this land could be managed so that MBACL have control during testing.
  - The Parameters allow for suitable test areas and adequate separation between the runway / dedicated ground test areas and areas of built development in order to achieve the specified safety zones. In some instances, increasing the separation distances between the test areas and populated areas than is currently the case.

- The environmental impacts associated with all testing arrangements have been assessed through detailed environmental appraisal as part of developing the scheme.

1.4.14 In addition, there is sufficient flexibility provided by the Parameters and the illustrative masterplan, that if required, could allow for different design approaches to be adopted as part of future Reserved Matters applications. This is particularly the case for those areas of the proposed development that would be closest to MBACL activities, and are delivered later in the build period.

#### ***Part 4: The Opportunity for MBACL Activities to be Undertaken Elsewhere***

1.4.15 Although it can be demonstrated that the ability to safeguard the activities of MBACL through the redevelopment of Chalgrove Airfield can be achieved within the parameters of the proposed scheme, it can also be demonstrated that, in the unlikely event this was not the case, there are opportunities to that could be considered elsewhere.

1.4.16 In addition to utilising alternative military airfields to facilitate potential C130 movements that may require MTOW to be achieved, other opportunities exist that include:

- Chalgrove is not the only site in the MBACL portfolio where High Speed tests can be conducted. As confirmed in MBACL submission, there is a precedent for low level altitude testing being carried out overseas (at the Toulouse site) for at least two years whilst MBACL had no licence to operate in the UK. It is also understood that high level altitude testing will be carried out there and therefore it is not unreasonable that there are opportunities (when considered alongside the analysis in Part 1) for MBACL testing regime to be rationalised in the future;
- Homes England has significant land holdings immediately adjacent to the northern part of the existing airfield. Due diligence has demonstrated that a longer 1,800m runway can be accommodated within this land and / or there are opportunities to provide a longer runway by varying the runway alignment as shown within the current Parameters;
- The land acquisition to the north also safeguards alternative locations for test facilities (with increased separation).
- The current parameters and / or the land acquisition to the north could allow for adequate space to enable the consolidation of MBACL activities i.e. there is likely to be sufficient space to accommodate other MBACL activities - including the potential to consolidate some or all of the Denham facilities at Chalgrove.

## 1.5 Summary

- 1.5.1 The assessment has critically assessed the potential for the MBACL activities to co-exist alongside Homes England's development proposals.
- 1.5.2 **Part 1** has identified a number of long term structural changes within the defence industry which could be expected to impact on the demand or nature of MBACL manufacturing and testing in the future. When considered alongside ageing test aircraft and other changes within the locality of Chalgrove Airfield there is an opportunity to consider future requirements within the context of the proposed development to identify a solution that is mutually beneficial.
- 1.5.3 **Part 2** when read alongside the detailed aviation statement, demonstrates that a runway, capable of meeting specified air traffic movements, can be delivered within the proposed Parameters in accordance with CAA standards.
- 1.5.4 **Part 3** demonstrates how the existing testing regime can be accommodated within the Parameters, meeting the necessary legislative and regulatory requirements as well as the MBACL specified safety requirements, where these are proven to be relevant.
- 1.5.5 **Part 4** confirms that while it can be demonstrated that there is no reason as to why MBACL requirements could not be met alongside the proposed development, there are a number of opportunities to undertake activities elsewhere in the unlikely event there is a change in circumstances. Opportunities include utilising alternative airfields and test facilities where Martin Baker already undertake testing activities as well as land recently acquired immediately adjacent to the airfield within Homes England control.
- 1.5.6 It can therefore be demonstrated that there is no impediment to retaining and safeguarding MBACL activities as part of the redevelopment and any outstanding concerns are not considered sufficient to warrant the development from not coming forward.



