# CAA Operational Assessment

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| **Title of Airspace Change Proposal (ACP)** | Enabling Remotely Piloted Aircraft Operations at RAF Fairford - HALE |
| **Change sponsor** | Ministry of Defence (MoD) |
| **Project reference** | ACP-2021-078 |
| **Account Manager** | [redacted] |
| ***Case study commencement date*** | 13 Dec 2023 |
| ***Case study report as at*** | 24 Jan 2024 |

*Instructions*

In providing a response for each question, please ensure that the 'status' column is completed using the following options:

- YES
- NO
- PARTIALLY
- N/A

To aid the SARG Lead it may be useful that each question is also highlighted accordingly to illustrate what is:

resolved YES not resolved PARTIALLY not compliant ...NO...

## Executive Summary

The original intent of this ACP was to establish suitable airspace structures in the vicinity of Royal Air Force (RAF) Fairford to enable the operation of the US Air Force's High Altitude Long Endurance (HALE) and Medium Altitude Long Endurance (MALE) Remotely Piloted Aircraft (RPA), from the unit. The US HALE and MALE RPAs do not have a CAA-approved detect and avoid (DAA) capability that could enable the potential for operating beyond visual line of sight (BVLOS) in UK airspace. Therefore, suitable airspace structures are necessary to enable the transit of US HALE and MALE RPAs through the airspace before being subject to a separate Operational Agreement for onwards transit and tasking.

During stage 2 of the ACP process, it was agreed that the sponsor, due to increased complexity of the US MALE RPA operations, could remove the US MALE RPA requirement and create a new ACP for that element (ACP-2022-083). A process to achieve this, while remaining in-process of CAP1616 version 4 (v4), was agreed and completed during stage 2 with Gateway sign-off.

The proposal developed and evolved during the ACP process in response to stakeholder feedback and now consists of 4 Danger Area (DA) structures, EDG218 A from Surface (SFC) to Flight Level (FL)75, EDG218 B from FL50 to FL240, EDG218 C from FL160 to FL500 and EDG218 D from FL200 to FL500. To enable US HALE RPA operations all DAs would usually be activated. A Danger Area Crossing Service (DACS) will be always operated by RAF Brize Norton Air Traffic Control (ATC) and 78 Sqn RAF (U) Swanwick when the DAs are active. Due to the location and impacts of the DAs the sponsor has proposed mitigations which includes reduced operating times, reduced activation durations and reduced airspace volumes (subject to approval of a dispensation from the SARG Special Use Airspace (SUA) Safety Buffer Policy).

**Technical Amendment: Following a request by the CAA to the sponsor for clarification on onwards operations the sponsor was asked to consider a technical amendment to the airspace design. That amendment sees the upper level of the DA complex (segment C and D) rise to FL660 rather than FL500 as stated in the final submission.**

From an operational and technical assessment perspective, this ACP and the associated dispensation from the SARG SUA Safety Buffer Policy is recommended for approval with 5 draft conditions, which relate to the finalising of the Operational Agreement for operations above FL500, the finalising of the relevant Letters of Agreement (LoAs) (which have been provided in mature draft form at this stage) and the development of some operational detail within the draft LoAs.

| 1. | Justification for change and options analysis (operational/technical) | Status |
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| 1.1 | Is the explanation of the proposed change clear and understood? | Yes |
| | The sponsor provided several documents to support the ACP with version 1 being dated 8 December 2023. The main document provides a clear explanation of the change proposal that can be easily understood by the stakeholder community. The proposed permanent DA complex is from SFC to FL500 centred on RAF Fairford to allow US HALE RPA to arrive and depart the aerodrome and climb to FL500 before transiting to its operational location.<br><br>**Note:** Once at FL500 the US HALE RPA will be required to leave the proposed DA complex and transit to its operational theatre. This ACP is only focussed on arrival and departure from RAF Fairford and any arrangements for transit above FL500 do not form part of this ACP. Arrangements for transit above FL500 is potentially subject to a separate Operational Agreement between the MoD and CAA.<br><br>**Technical Amendment:** Following a request by the CAA to the sponsor for clarification on onwards operations the sponsor was asked to consider a technical amendment to the airspace design. That amendment sees the upper level of the DA complex | |

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| | (segment C and D) rise to FL660 rather than FL500 as stated in the final submission. | |
| 1.2 | Are the reasons for the change stated and acceptable? | **Yes** |
| | The justification for change is driven by CAP 722 the CAA Guidance and Policy on Unmanned Aircraft System Operations in UK Airspace. This states that BVLOS operations require either a CAA-approved DAA capability or to remain within a block of airspace that is segregated from other airspace users.<br><br>The requirement for these types of operations to be conducted from RAF Fairford is to support NATO's Agile Combat Employment Concept, which means that the US Air Force are making significant infrastructure investments on airbases in the UK and other allied nations. This leads to an emerging requirement for military aircraft, including RPA, to operate regularly from RAF Fairford.<br><br>**Note:** The proposed DAs are designed to support US HALE RPA only and is not sufficient to support US MALE RPA which is subject to a separate requirement in ACP-2022-083. This requirement was originally part of this ACP but was split into a separate ACP following feedback about the impact and complexity of accommodating US MALE RPA. | |
| 1.3 | Have all appropriate alternative options been considered, including the 'do nothing' option? | **Partially** |
| | The sponsor has worked extensively with stakeholders when developing design options and presented several variations at Stage 2 that met the Design Principles, including a 'do-nothing' option, which would prevent US HALE RPA from operating in accordance with CAP 722. The design options presented at Stage 2 have been modified following feedback from stakeholders and in order to minimise impacts and maintain operational flexibility.<br><br>The sponsor has included different upper limits to the DAs in Stage 2 but this was only up to FL600. Both the London and Scottish UIRs are up to FL660 and therefore the CAP 722 policy regarding segregation of BVLOS operations must be considered. The sponsor is relying on a bespoke Operational Arrangement to be in place between the CAA and MoD to facilitate onwards transits.<br><br>**Clarification question to sponsor 11 January 2024 with reply dated 12 January 2024.**<br><br>**Question:**<br><br>*Are US HALE RPA able to operate and transit above FL500 and/or above FL660?*<br><br>**Sponsor response:**<br><br>*The official ceiling of Global Hawk performance is FL600, so it looks like operating above FL660 would not be possible.* | |

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| 1.4 | Is the justification for the selection of the proposed option sound and acceptable? | **Partially** |
| | The justification for the selection of the proposed option is considered sound and acceptable for the arrival and departure segments of the US HALE RPA operations.<br><br>To arrive at the selected proposed option the sponsor has followed the CAP 1616 v4 process, as evidenced through successful navigation of the required CAP 1616 v4 Gateways and has articulated the rationale for the consideration and discounting of other possible options as they have progressed.<br><br>The changes have included re-orientating the airspace, changing the size, shape and altitudes and operating times. All changes have been with the aim of reaching an acceptable solution that will allow US HALE RPA operations while minimising impacts to stakeholders including service providers and other airspace users. These arguments have been accepted at each stage as appropriate, proportionate and acceptable.<br><br>However, the design of the airspace is based upon an Operational Agreement between the CAA and MoD for onward transit above FL500 which is yet to be agreed.<br><br>**Technical Amendment:** Following a request by the CAA to the sponsor for clarification on onwards operations the sponsor was asked to consider a technical amendment to the airspace design. That amendment sees the upper level of the DA complex (segment C and D) rise to FL660 rather than FL500 as stated in the final submission. | |

| **2.** | **Airspace description and operational arrangements** | **Status** |
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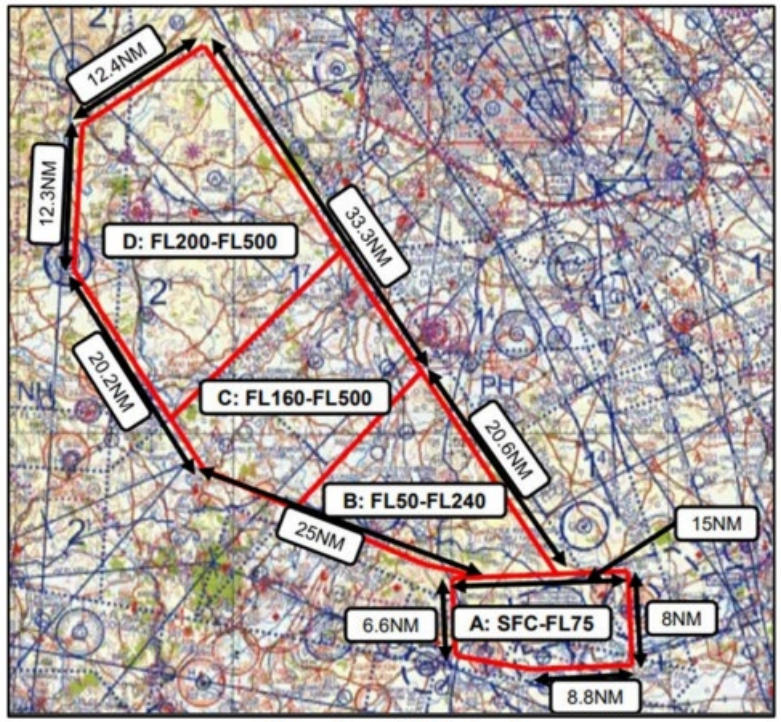
| 2.1 | Is the type of proposed airspace design clearly stated and understood? | **Partially** |
| | The proposal is to introduce a DA, activated by NOTAM by RAF Fairford through the Military Airspace Management Cell (MAMC). It comprises 4 volumes of airspace as follows:<br><br>▪ A volume of airspace in the vicinity of RAF Fairford from EGD218 A surface up to FL75 (segment A)<br>▪ A volume of airspace to the northwest of RAF Fairford from EGD218 B FL50-FL240 (segment B)<br>▪ A volume of airspace to the northwest of RAF Fairford from EDG218 C FL160-FL500 (segment C)<br>▪ A volume of airspace to the northwest of RAF Fairford from EDG218 D FL200-F500 (segment D)<br><br>The 4 volumes of airspace are joined laterally to allow for the safe and efficient climb and descent of US HALE RPA between RAF Fairford and the transit altitude of FL500 while remaining fully within segregated airspace. | |



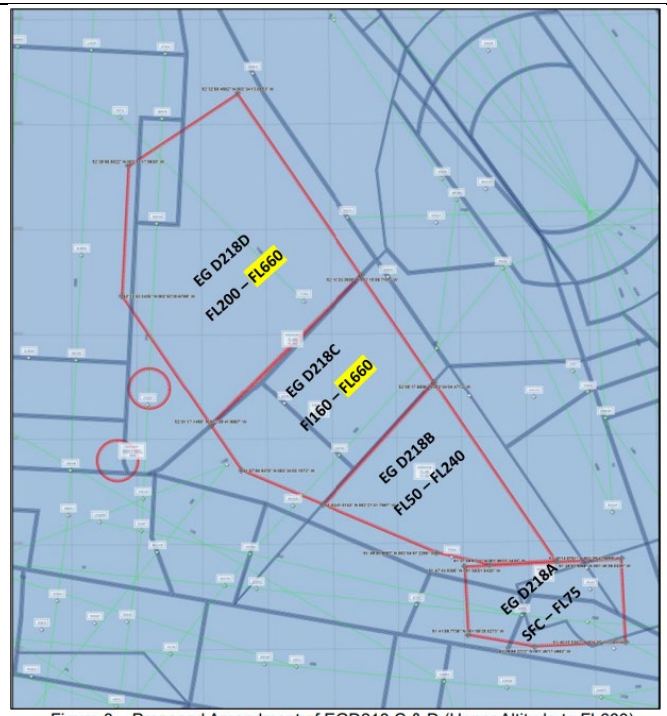




Figure 3 – Proposed Amendment of EGD218 C & D (Upper Altitude to FL660)

**Note:** The use of DAs is stated clearly in the engagement material and subsequent formal submission documentation. In parts of the material, it is incorrectly stated that the structure will provide segregation of the US HALE RPA activity from other airspace users. A DA is established when it is considered that aerial activity could be hazardous to flight. While a DA does not provide formal segregation, the specific use of a DA is subject to the safety management processes to ensure the containment of hazardous activity within the defined area. The sponsor's description of the effect of the DAs is not considered to unacceptably obscure the proposed design and its purpose.

**Note:** The ACP is only for departure and arrival to and from RAF Fairford. The airspace will allow the US HALE RPAs to climb to FL500 and no operational sorties will be conducted within the proposed DAs. The US HALE RPA will need to transit from the proposed DAs above FL500 to their operational airspace (outside of the London and Scottish FIRs/UIRs). Arrangements for transit above FL500 is subject to a separate Operational Agreement between the MoD and CAA and is not part of this ACP.

The Operational Arrangement is not in place and in order to future proof the airspace for other assets to utilise, consideration should be given to raising the top level of EDG218 C and EDG218 D to FL660. Doing so would allow US HALE RPA to operate

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| | in accordance with CAP 722 and then proceed to their operational airspace as agreed in the Operational Agreement or future more capable US HALE RPA to operate under due regard (above FL660) as they will be outside the London and Scottish FIRs/UIRs.<br><br>Following internal CAA discussions it is likely that in order for US HALE RPA to enter and exit the London and Scottish FIRs/UIRs they will need to be segregated as per CAP 722.<br><br>**Technical Amendment: Following a request by the CAA to the sponsor for clarification on onwards operations the sponsor was asked to consider a technical amendment to the airspace design. That amendment sees the upper level of the DA complex (segment C and D) rise to FL660 rather than FL500 as stated in the final submission.**<br><br>**<u>Recommended draft condition 1</u>**<br><br>**It is recommended that a condition is placed on the approval of this ACP such that the airspace may not be activated until suitable airspace arrangements are approved by the CAA to facilitate entry and exit routes into and out of the DAs contained within this ACP.**<br><br>**And,**<br><br>**<u>Recommendation 1</u>**<br><br>**It is recommended that a condition is placed on the approval of this ACP such that the airspace may not be activated until suitable airspace arrangements are approved by the CAA to facilitate entry and exit routes into and out of the DAs contained within this ACP.** | |
| 2.2 | Are the hours of operation of the airspace and any seasonal variations stated and acceptable? | **Yes** |
| | The proposed airspace is expected to be activated 2-3 times per week for up to 3 hours per activation. This window of up to 3 hours is intended to not only accommodate arrivals and departures but also to ensure that airspace is active for a sufficient time to account for emergency or contingency scenarios. Activation will be by NOTAM.<br><br>The hours of activation will be between 1 hour after sunset and 1 hour prior to sunrise. The sponsor understands the impact that may occur on the shoulders of these hours during winter months and will restrict activation to no earlier than 2000 UTC and no later than 0530 UTC for normal operations. However, the sponsors expect activation outside of this window to be very rare and will be coordinated as soon as possible if and when required.<br><br>**Clarification question sent to sponsor 18 December 2023 with reply dated 21 December 2023.**<br><br>**Question:** | |

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| | *On Page 9 the sponsor has the following statement: 1 hour after sunset to 1 hour before sunrise but it then goes on to say because of impacts in winter you will restrict the activation to no earlier than 2000 UTC and no later than 0530 UTC for normal operations. Any activation outside of this window are expected to be rare.*<br>*- Please can you provide some detail as to what might constitute a rare occasion?*<br>*- And can you confirm our assumption is correct in that activation on rare occasions means outside 2000UTC to 0530 UTC but still within the 1 hour after sunset and 1 hour before sunrise (as this is mentioned on page 47)?*<br>**Sponsor response:**<br>*USAFE's intention is to schedule all activations between the shorter window of either 2000-0530 UTC or 1hr after sunset to 1hr prior to sunrise. The reason for introducing the potential for rare activation outside of 2000-0530 UTC (but still no earlier than 1hr after sunset and no later than 1hr prior to sunrise) is to allow for operational flexibility in the event of an unforeseen urgent defense requirement. It is difficult to speculate about what such an urgent requirement may look like, but it would be outside of normal operations. Our hope would be to never need to exercise this operation flexibility as we are aware of the additional impact it would have on network traffic. Due to this remote possibility, we conducted the impact analysis based on the "worst case" scenario of 1hr after sunset to 1hr prior to sunrise throughout the year.* | |
| 2.3 | Is any interaction with adjacent domestic and international airspace structures stated and acceptable including an explanation of how connectivity is to be achieved? Has the agreement of adjacent States been secured in respect of High Seas airspace changes? | **Yes** |
| | There is no interaction with international airspace structures or agreement required of adjacent States in respect of High Seas airspace.<br>The proposed airspace interacts with: Midlands CTA, Upper Airspace CTA, Cotswold CTA 15, Cotswold CTA 17, PEPZA CTA 10, PEPZE CTA 11, Brize Norton CTR, ATS Routes P17 and N92 and is the vicinity of London Oxford Airport, Cotswold Airport (Kemble), Gloucestershire Airport and RAF Brize Norton. Aircraft using these adjacent areas will need to avoid the DAs and route around them unless they use the DACS which is being proposed by the sponsor.<br>The submission includes several LoAs, in mature draft form, that explain how transit of US HALE RPA will be achieved to and from RAF Fairford. The LoAs are discussed further at para 2.6 below. | |
| 2.4 | Is the supporting statistical evidence relevant and acceptable? | **Yes** |
| | No movement data provided for the US HALE RPA. Traffic data presented to support the impact assessments are acceptable and have been provided via stakeholder engagement with NATS. | |

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| 2.5 | Is the analysis of the impact of the traffic mix on complexity and workload of operations complete and satisfactory? | **Yes** |
| | The purpose of the airspace change proposal is to segregate the US HALE RPA operations from the activities of other airspace users in the vicinity. As such, there is not expected to be a significant change in the levels of complexity or workload because of the introduction of the proposed airspace.<br><br>The analysis presented is satisfactory.<br><br>**Technical Amendment:** Following a request by the CAA to the sponsor for clarification on onwards operations the sponsor was asked to consider a technical amendment to the airspace design. That amendment sees the upper level of the DA complex (segment C and D) rise to FL660 rather than FL500 as stated in the final submission.<br><br>NATS confirm there were no aircraft identified above FL500. | |
| 2.6 | Are any draft Letters of Agreement and/or Memoranda of Understanding included and, if so, do they contain the commitments to resolve ATS procedures (ATSD) and airspace management requirements? | **Partially** |
| | The ACP submission refers to several new and existing LoAs that will need to be finalised prior to commencement of US HALE RPA operations from RAF Fairford. These include:<br><br>▪ LoA between NATS (En-Route), 78 Sqn RAF(U) Swanwick and USAFE A3 – presented in draft<br>▪ LoA between UK AMC and USAFE – presented in draft<br>▪ Annex E - SOP between RAF Brize Norton and USAFE RAF Fairford – presented in draft<br><br>These LoAs are all in advanced draft form and contain suitable commitments where appropriate for access to military aircraft. However, there is a lack of detail on any procedures for allowing priority aircraft to access the DA complex. In line with CAA policy civilian aircraft can not enter the DA segment where the US HALE RPA is operating but the sponsor needs to ensure it is clear on what procedure the US HALE RPA will follow should it either need to loiter in a DA or vacate a DA to allow priority access.<br><br>The ATS Inspector has also highlighted in the ATM Safety Review that there are some areas where operational detail is missing such as: loss link procedures. Some information within the LoAs (NATS and AMC) are inconsistent and require checking to ensure the details are fully aligned.<br><br>**Recommended draft condition 2**<br><br>**It is recommended that a condition is placed on the approval of this ACP such that the airspace may not be activated** | |

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| | **until all LoAs have been completed and signed copies provided to CAA Airspace Regulation and NERL are in receipt of approval from SARG before utilising agreed procedures.**<br>**<u>Recommended draft condition 3</u>**<br>**It is recommended that a condition is placed on the approval of this ACP such that the airspace access arrangements for priority emergency aircraft, aircraft with an emergency and aircraft acting in support of an emergency and more detail with regards any lost-link procedures are detailed in all LoAs.**<br>**<u>Recommended draft condition 4</u>**<br>**It is recommended that a condition is placed on the approval of this ACP such that the sponsor is advised that operation of the UA HALE RPA requires segregation from other airspace users and, as such, any arrangements for the provision of a DACS must recognise this requirement. Therefore, at this stage, requests to cross active DAs, within which the US HALE RPA is being operated, are not to be approved and operating procedures and LoAs must reflect this position.** | |
| 2.7 | Should there be any other aviation activity (low flying, gliding, parachuting, microlight site etc) in the vicinity of the new airspace structure and no suitable operating agreements or ATC Procedures can be devised, what action has the change sponsor carried out to resolve any conflicting interests? | **Yes** |
| | Due to the frequency of activation, timings of the airspace activation (overnight) and reduced activation window adopted by the sponsor there is minimal impacts on other airspace users.<br>**Note:** Currently here are limited users operating at high level but there is an anticipation that more military and commercial users will be seeking to utilise higher airspace (above FL500) in the future and therefore the CAA should consider any future implications when making a decision about this ACP. | |
| 2.8 | Is the evidence that the airspace design is compliant with ICAO SARPs, airspace design & FUA regulations, and Eurocontrol guidance satisfactory? | **Yes** |
| | The airspace design is compliant with CAA Policy Document 20200721-CAA Policy for the Establishment of Permanent and Temporary Danger Areas issued by SARG and in accordance with CAP 740 and CAP 722. | |
| 2.9 | Is the proposed airspace classification stated and justification for that classification acceptable? | **Yes** |

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| | The proposal is for the introduction of 4 DAs, which will not alter the background classification of the airspace within which they will be established. The sponsor has provided justification for the use of DAs, rather than the introduction of a more restrictive airspace classification, for example, which has been consistently applied throughout the airspace change process. A key component of this justification is that use of DAs is the most economical airspace construct in terms of hours of activation, access to the airspace by the broadest spectrum of airspace users and manpower resource. This justification is acceptable. | |
| 2.10 | Within the constraints of safety and efficiency, does the airspace classification permit access to as many classes of user as practicable? | **Partially** |
| | The use of DAs, coupled with a clear commitment to the provision of a DACS, ensures access to as many classes of airspace user as possible, within the constraints of safety and efficiency.<br>**Recommended draft condition 3 and 4** at para 2.6 above applies. | |
| 2.11 | Is there assurance, as far as practicable, against unauthorised incursions? (This is usually done through the classification and promulgation). | **Yes** |
| | Changes to the airspace, if approved, will be notified through the AIRAC cycle be published on aeronautical charts and detailed within the appropriate section of the AIP. Notification of activation and deactivation of the DAs will by NOTAM. This will be coordinated via the Military Airspace Management Cell (MAMC) as Managed Airspace. | |
| 2.12 | Is there a commitment to allow access to all airspace users seeking a transit through controlled airspace as per the classification, or in the event of such a request being denied, a service around the affected area? | **Yes** |
| | The proposal seeks to introduce DAs rather than controlled airspace; the sponsor has stated a clear commitment to the provision of a DACS to ensure access to all airspace users, where possible and within the constraints of safety and efficiency. | |
| 2.13 | Are appropriate arrangements for transiting aircraft in place in accordance with stated commitments? | **Partially** |
| | The sponsor has stated a clear commitment to the provision of a DACS managed by RAF Brize Norton Air Traffic Control (Brize RADAR). The details are referenced in the provided document, ACP-2021-078 Enabling Remotely Piloted Aircraft Operations from RAF Fairford - HALE Stage 4 - Final Submission, and detailed in the draft LoA between NATS En Route, 78 Sqn RAF(U) Swanwick and USAFE A3 which has also been submitted.<br>The CAA notes that operation of the US HALE RPA requires segregation from other airspace users and, as such, any | |

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| | arrangements for the provision of a DACS must recognise this requirement. Therefore, at this stage, requests to cross active DAs within which the US HALE RPA is being operated, are not to be approved and operating procedures and LoAs must reflect this position.<br><br>There is a lack of detail on how emergency service aircraft, aircraft with an emergency and aircraft acting in support of an emergency will be afforded priority access to the DAs. As stated above no other aircraft (unless military-registered) is permitted access to a DA in which the US HALE RPA is operating.<br><br>**Recommended draft conditions 2, 3 and 4** at para 2.6 above applies. | |
| 2.14 | Are any airspace user group's requirements not met? | **Yes** |
| | The sponsor has provided clear evidence of engagement with a broad range of airspace users and stakeholders that are impacted, or potentially impacted, by the proposed airspace. There is no intelligence to suggest that any airspace user groups remain unrepresented. | |
| 2.15 | Is any delegation of ATS justified and acceptable? (If yes, refer to Delegated ATS Procedure). | **N/A** |
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| 2.16 | Is the airspace design of sufficient dimensions with regard to expected aircraft navigation performance and manoeuvrability to contain horizontal and vertical flight activity (including holding patterns) and associated protected areas in both radar and non-radar environments? | **Partially** |
| | The sponsor has completed internal analysis (which is not provided due to operational security) to define the volumes of airspace that are required to appropriately contain the vehicle, including a significant amount of work to adjust manoeuvres, such that it minimises the volume of airspace required to contain these manoeuvres. As such, it is accepted that the proposed volumes of airspace are sufficient in this regard.<br><br>However, the current design is up to FL500 and the London and Scottish FIRs/UIRs are up to FL660 and CAP 722 states that all BVLOS operations require either a CAA-approved DAA capability or to remain within a block of airspace that is segregated from other airspace users. Therefore, by only having the 4 DAs up to FL500 the US HALE RPA are potentially unable to route outside of those DAs as there is no segregated airspace solution in place. The Operational Arrangement alluded to in the ACP and being developed between the CAA and MoD is not in a mature state at this time and the detail is not known in full.<br><br>**Recommendation 1** at para 2.1 above applies.<br><br>**Technical Amendment:** Following a request by the CAA to the sponsor for clarification on onwards operations the sponsor | |

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| | was asked to consider a technical amendment to the airspace design. That amendment sees the upper level of the DA complex (segment C and D) rise to FL660 rather than FL500 as stated in the final submission. | |
| 2.17 | Have all safety buffer requirements (or mitigation of these) been identified and described satisfactorily (to be in accordance with the agreed parameters or show acceptable mitigation)? (Refer to buffer policy letter). | **Yes** |
| | **Note:** The reference document for this ACP is the SARG policy statement Special Use Airspace – Safety Buffer Policy for Airspace Design Purposes Segregated Airspace (the Safety Buffer Policy) dated 17 July 2023.<br><br>Due to the intense utilisation of the airspace surrounding RAF Fairford, the sponsor is seeking the following dispensations to the SARG SUA Safety Buffer Policy to minimise impacts to other users.<br><br>Vertical Dispensation: the sponsor is NOT seeking dispensation from the 2,000 ft vertical buffer. The 2,000 ft vertical buffer will be applied externally. Adherence to the vertical buffer will be ensured procedurally via LoAs with NATS and MoD ATS providers.<br><br>Lateral Dispensation: the sponsor is seeking dispensation from the established lateral buffer from edges of TMAs, CTRs, CTAs (excluding the Upper CTAs) and from ATS Routes above FL195 to 3nm in all cases.<br><br>The request was made with the following mitigating factors:<br>▪ US HALE RPA operating from RAF Fairford will operate at or below 150kts IAS, within the proposed DAs at all times.<br>▪ US HALE RPA will operate on pre-coordinated predictable arrival and departure procedures, which will ensure the US HALE RPA remains contained within the DAs during climb and descent.<br>▪ US HALE RPA will use pre-coordinated and predictable lost link and emergency procedures, which will ensure the US HALE RPA remains contained within the DAs.<br>▪ A 2nm internal buffer will be maintained in Segments B, C, and D.<br>▪ An internal buffer will not be applied to all portions of Segment A. The safety buffer will be achieved through vertical means with an altitude restriction of at or below FL60 until 3nm from the boundary of COTSWOLD CTA 4. The lowest usable FL in CTA 4 will be FL70.<br>▪ An LoA with NATS and MoD ATC will detail how this is to be achieved.<br>▪ An external FBZ of 1nm will be applied above FL245 AND where the airspace abuts CTAs or has an interaction with an ATS Route.<br>▪ Due to the proximity of adjacent CTAs and ATS routes to each segment of the proposed DA, a 1nm FBZ will | |

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| | be required for all segments of the DAs.<br>▪ Reduced risks will exist due limited periods of operations:<br>▪ Activation window during periods of lower traffic density (primarily between 2000 – 0530 UTC).<br>▪ Activation expected only 2-3 times per week.<br>▪ Activation duration expected of only 6-9 hours per week.<br>▪ Reduced risk will exist due to the planned provision of a DACS.<br>▪ Detailed LoAs with NATS, 78 Sqn RAF (U) Swanwick, RAF Brize Norton ATC and MAMC will be accomplished for the scheduling/activation/deactivation of the airspace and management of US HALE RPA activity within the danger areas.<br>It is noted that the provision of positive ATM is presented as one of the mitigation measures in the application for dispensation from the SARG SUA Safety Buffer Policy as discussed above. This measure provides mitigation to incursion of the safety buffer by those air systems operating within the SUA, and to incursion by those air systems operating outside the SUA.<br>Finally, the submission document, draft LoAs and the application for dispensation from the SARG SUA Safety Buffer Policy were reviewed by an ATM Regulator, who concluded that there are no reasons to object from an ATM Oversight perspective.<br>**Recommendation 2**<br>**It is recommended that the application for dispensation from the SARG SUA Safety Buffer Policy, as described in Annex B of the document, 20231208-ACP-2021-078 Enabling Remotely Piloted Aircraft Operations from RAF Fairford - HALE Stage 4 - Final Submission, is approved in full.** | |
| 2.18 | Do ATC procedures ensure the maintenance of prescribed separation between traffic inside a new airspace structure and traffic within existing adjacent or other new airspace structures? | **Yes** |
| | The procedures proposed and described by the sponsor, and detailed at para 2.3 and 2.17 above, are considered to be suitable to maintain prescribed separation between traffic operating within the proposed airspace structures and those operating in the adjoining CAS structures. | |
| 2.19 | Is the airspace structure designed to ensure that adequate and appropriate terrain clearance can be readily applied within and adjacent to the proposed airspace? | **Yes** |
| | Pilots will maintain responsibility for their own terrain clearance when operating within the proposed airspace structures. | |

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| 2.20 | If the new structure lies close to another airspace structure or overlaps an associated airspace structure, have appropriate operating arrangements been agreed? | **Partially** |
| | These operating arrangements are in the process of being agreed through the provision of appropriate LoAs, which are currently in mature draft form.<br>**Recommended draft condition 2** at para 2.6 above applies. | |
| 2.21 | Where terminal and en-route structures adjoin, is the effective integration of departure and arrival routes achieved? | **Partially** |
| | These operating arrangements are in the process of being agreed through the provision of appropriate LoAs, which are currently in mature draft form.<br>**Recommended draft condition 2** at para 2.6 above applies. | |

| 3. | Supporting resources and communications, navigation, and surveillance (CNS) infrastructure | Status |
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| 3.1 | Is the evidence of supporting CNS infrastructure together with availability and contingency procedures complete and acceptable? The following are to be satisfied: | **N/A** |
| | **Communication:** Is the evidence of communications infrastructure including RT coverage together with availability and contingency procedures complete and acceptable? Has this frequency been agreed with AAA Infrastructure? | **N/A** |
| | The existing CNS infrastructure is considered sufficient to enable the addition of the proposed DAs; no further evidence has been required of the sponsor in this regard. | |
| | **Navigation:** Is there sufficient accurate navigational guidance based on in-line VOR or NDB or by approved RNAV-derived sources, to contain the aircraft within the route to the published RNP value in accordance with ICAO/ Eurocontrol standards? For example, for navaids, has coverage assessment been made, such as a DEMETER report, and if so, is it satisfactory? | **N/A** |
| | The existing CNS infrastructure is considered sufficient to enable the addition of the proposed DAs; no further evidence has | |

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| | been required of the sponsor in this regard. | |
| | **Surveillance:** Radar provision – have radar diagrams been provided, and do they show that the ATS route/airspace structure can be supported? | **N/A** |
| | The existing CNS infrastructure is considered sufficient to enable the addition of the proposed DAs; no further evidence has been required of the sponsor in this regard. | |
| 3.2 | Where appropriate, are there any indications of the resources to be applied, or a commitment to provide them, in line with current forecast traffic growth acceptable? | **N/A** |
| | The existing CNS infrastructure is considered sufficient to enable the addition of the proposed DAs; no further evidence has been required of the sponsor in this regard. | |

| **4.** | **Maps/charts/diagrams** | **Status** |
|---|---|---|
| 4.1 | Is a diagram of the proposed airspace included in the proposal, clearly showing the dimensions and WGS84 co-ordinates?<br>(We would expect sponsors to include clear maps and diagrams of the proposed airspace structure(s) – they do not have to accord with aeronautical cartographical standards (see airspace change guidance), rather they should be clear and unambiguous and precisely reflect the narrative descriptions of the proposals.) | **Yes** |
| | The sponsor has provided a number of clear charts and diagrams that describe and depict the proposed airspace structures in a clear manner, including the requisite WGS84 coordinates of the structures. | |
| 4.2 | Do the charts clearly indicate the proposed airspace change? | **Yes** |
| | The diagrams provided by the sponsor clearly indicate the proposed DAs. | |
| 4.3 | Has the change sponsor identified AIP pages affected by the change proposal and provided a draft amendment? | **Yes** |

| | | |
|---|---|---|
| | The sponsor has identified the required AIP changes and provided the draft AIP entries that will be required. In addition, the sponsor has provided an illustrative chart amendment that shows the proposed airspace. | |
| 4.4 | Has the change sponsor completed the WGS84 spreadsheet and submitted to the CAA for approval? | **Yes** |
| | The sponsor has completed the requirements of the ADQ compliance process in accordance with the CAA's policy statement. The final coordinates have been checked and verified. | |

| 5. | Operational impact | Status |
|---|---|---|
| 5.1 | Is the change sponsor's analysis of the impact of the change on all airspace users, airfields and traffic levels, and evidence of mitigation of the effects of the change on any of these, complete and satisfactory?<br>Consideration should be given to: | **Yes** |
| | a) Impact on IFR General Aviation traffic, on Operational air traffic or on VFR General Aviation traffic flow in or through the area. | **Yes** |
| | Stakeholder feedback suggested limited GA traffic numbers operate in the vicinity and would, therefore, be impacted. The sponsor indicates an expectation of negligible impact, due largely to the availability of DACS for both the low and medium airspace DAs. It is also stated that the impact of this ACP on military air traffic is being managed by the MoD as an internal matter and no information on this matter has been provided in the final submission.<br>The DA will limit flight planning through the airspace but the availability of a DACS through the DAs should allow airways leavers and joiners to transit through the airspace via tactical re-routing. Although this option is available it is not expected to be widely utilised for IFR traffic. Minimal to no impacts are expected to VFR traffic due to frequency, time and duration of activation. The availability of a DACS is expected to mitigate much or all of the potential impacts and is expected to be utilised by VFR traffic. | |
| | b) Impact on VFR Routes. | **Yes** |
| | There are no VFR routes impacted by the introduction of the proposed airspace structures. DACS provision during activation will provide airspace users with access to the airspace for the majority of the activation period. | |

| | | |
|---|---|---|
| | c) Consequential effects on procedures and capacity, i.e. on SIDs, STARs, holds. Details of existing or planned routes and holds. | **Yes** |
| | No impacts are anticipated to civil IFP procedures. Some impacts to capacity are expected due to the requirement to flight plan around the DAs while it is active. | |
| | d) Impact on airfields and other specific activities within or adjacent to the proposed airspace. | **Partially** |
| | There are minimal impacts expected to operations at adjacent airports due to the frequency, time and duration of activation. Where impacts have been identified LoAs have been drafted to coordinate the activity and to mitigate any potential impact; copies of these have been provided in the final submission.<br>**Recommended draft condition 2** at para 2.6 above applies. | |
| | e) Any flight planning restrictions and/ or route requirements. | **Yes** |
| | The DA complex has an impact on CAT wishing to utilise various CTAs and ATS Routes. Suitable mitigations have been agreed whereby, aircraft will plight plan around the structure or utilise the DACS which is being provided by either RAF Brize Norton ATC and/or 78 Sqn RAF (U) Swanwick. | |
| 5.2 | Does the change sponsor consultation material reflect the likely operational impact of the change? | **Yes** |
| | The consultation material contained detail that clearly reflected and explained the likely operational impact of the proposed airspace change. The sponsor has maintained an open and transparent dialogue in this regard throughout the ACP process. | |

| **Case study conclusions – to be completed by Airspace Regulator (Technical)** | **Yes/No** |
|---|---|
| Has the change sponsor met the SARG airspace change proposal requirements and airspace regulatory requirements above? | **Yes** |
| The sponsor has satisfied the airspace regulatory requirements of the CAP 1616 v4 process, as evidenced through successful transition through each Gateway stage of the application. It is noted that, at this stage, several LoAs, while considered to be mature draft versions, are yet to be finalised and signed off.<br>As a result, the final submission is considered appropriate, from a technical and operational perspective, to recommend this proposal for | |

implementation, under condition that the proposed airspace cannot be activated until such time as CAA Airspace Regulation has been presented with completed and signed copies of all applicable LoAs.

| RECOMMENDATIONS/CONDITIONS/PIR DATA REQUIREMENTS | Yes/No |
|---|---|
| Are there any Recommendations which the change sponsor should try to address either before or after implementation (if approved)? If yes, please list them below. | **No** |
| *GUIDANCE NOTE: Recommendations are something that the change sponsor should try to address either before or after implementation, if indeed the airspace change proposal is approved. They may relate to an area in which the change sponsor is reliant upon a third party to actually come to an agreement and consequently they do not carry the same 'weight' as a Condition.* | |
| Are there any Condition(s) which the change sponsor must fulfil either before or after implementation (if approved)? If yes, please list them below. | **Yes** |

**Recommended draft condition 1**

It is recommended that a condition is placed on the approval of this ACP such that the airspace may not be activated until suitable airspace arrangements are approved by the CAA to facilitate entry and exit routes into and out of the DAs contained within this ACP.

**Recommended draft condition 2**

It is recommended that a condition is placed on the approval of this ACP such that the airspace may not be activated until all LoAs have been completed and signed copies provided to CAA Airspace Regulation and NERL are in receipt of approval from SARG before utilising agreed procedures.

**Recommended draft condition 3**

It is recommended that a condition is placed on the approval of this ACP such that the airspace access arrangements for priority emergency aircraft, aircraft with an emergency and aircraft acting in support of an emergency and more detail with regards any lost-link procedures are detailed in all LoAs.

**Recommended draft condition 4**

It is recommended that a condition is placed on the approval of this ACP such that the sponsor is advised that operation of the UA HALE RPA requires segregation from other airspace users and, as such, any arrangements for the provision of a DACS must recognise this requirement. Therefore, at this stage, requests to cross active DAs, within which the US HALE RPA is being operated, are not to be

| | |
|---|---|
| approved and operating procedures and LoAs must reflect this position. | |
| Are there any specific requirements in terms of the data to be collected by the change sponsor for the Post Implementation Review (PIR) (if approved)? If yes, please list them below. | **Yes** |

If the ACP is approved for implementation and activation, it is recommended that the sponsor is provided with a copy of the Stage 7 PIR Data Request Form to use as a guide to the data that will be required to inform the PIR. It should also be emphasised that the following will be of particular interest and should be included within the Sponsor's PIR submission:

- Separate record of activation data for each DA, including publication details of NOTAM, time of activation, duration and intended activity.
- Record of occurrences of any airspace activation period that is subsequently unused, including duration of activation prior to cancellation and reasons for cancellation, i.e. weather, air system unserviceability, etc.
- Requests for DACS, supported and unsupported, with reasoning if unsupported.
- Separate detailed records of all inadvertent excursions from each DA.
- Separate detailed records of all unauthorised incursions of each DA.
- Noting the approval for dispensation from the SARG SUA Safety Buffer Policy, a report will be required to indicate compliance with the dispensation criteria, to include detailed records of all deviations from the dispensation to the Safety Buffer Policy.
- The CAA required the sponsor to note that requests to cross active DAs, within which the US HALE RPA would be operating, were not to be approved and that operating procedures were required to reflect this position.

## General summary

This ACP has evolved over time to focus on US HALE RPA operations only, the US MALE RPA operations element is a standalone ACP.

The 4 DAs have been shown to be sized efficiently to contain proposed US HALE RPA activities, with the designs amended in response to stakeholder feedback to minimise their impact on other airspace users. The MoD has provided assurance that the structures will only be activated when RAF Brize Norton ATC and 78 Sqn RAF (U) Swanwick are available to provide a robust DACS, further minimising the potential impact of the structures on other airspace users.

**Overall Recommendation:**

In order to approve this ACP the following recommendations are considered in addition to the draft conditions set out above:

**Recommendation 1**

It is recommended that a condition is placed on the approval of this ACP such that the airspace may not be activated until suitable airspace arrangements are approved by the CAA to facilitate entry and exit routes into and out of the DAs contained within this ACP.

**Recommendation 2**

It is recommended that the application for dispensation from the Safety Buffer Policy, as described in the document 20231208-ACP-2021-078 Enabling Remotely Piloted Aircraft Operations from RAF Fairford - HALE Stage 4 - Final Submission, is approved in full.

**Recommendation 3**

It is recommended that this airspace change application should be approved for notification-only at this stage. A further approval to activate the notified airspace structures by NOTAM should be conditional upon the sponsor providing evidence that the recommended draft conditions are met and all relevant evidence is submitted and assessed by CAA Airspace Regulation. In order to achieve approval to activate the airspace, a minimum of 30 days is required to assess if the conditions placed on the ACP have been fully met.

## Comments and observations

Nothing further to add.

**Level 2 ACP**

| Operational assessment sign-off | Name | Signature | Date |
|---|---|---|---|
| Operational assessment completed by Airspace Regulator (Technical) | [redacted] | [redacted] | 31 Jan 2024 |
| **Manager Airspace Regulation comment / Decision** | **Name** | **Signature** | **Date** |
| Operational assessment conclusions approved by Manager Airspace Regulation | [redacted] | [redacted] | 16 Feb 2024 |
| Manager Airspace Regulation Comments and Decision:<br>Comments contained within the decision log. | | | |