

## Safety and Airspace Regulation Group

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Airspace Change Proposal - Operational Assessment

Version: 1.1/ 2019

<b>Title of Airspace Change Proposal</b>	<b>London Oxford Airport Proposal for Revised Airspace and Instrument Flight Procedures</b>
<b>Change Sponsor</b>	<b>London Oxford Airport</b>
<b>SARG Project Leader</b>	<b>[REDACTED]</b>
<b>Case Study commencement date</b>	<b>13 August 2020</b>
<b>Case Study report as at</b>	<b>17 November 2020</b>
<b>File Reference</b>	<b>ACP-2014-03</b>

### 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 Project Leader's efficient Project Management it may be useful that each question is also highlighted accordingly to illustrate what is:

resolved  **not resolved**  **not compliant**  as part of the AR Project Leader's efficient project management.

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1.	Justification for change and “Option Analysis”	Status
1.1	<p><b>Is the explanation of the proposed change clear and understood?</b></p> <p>The explanation was acceptable. It is clear that London Oxford Airport (LOA) is seeking to introduce airspace to contain their new RNAV (derived from aRea NAVigation) Global Navigation Satellite System (GNSS) arrival and departure procedures that will satisfactorily deconflict from both RAF Brize Norton (BZN) and other airspace users in the Oxford Area of Intense Air Activity (AIAA).</p> <p>The proposal is to implement a Transponder Mandatory Zone (TMZ) to contain the new RNAV (GNSS) procedures. The proposal is seeking to achieve the following aims:</p> <ul style="list-style-type: none"> <li>• Create a 'known traffic environment' to enhance the safety of Instrument Flight Rules (IFR) aircraft arriving at LOA from the north to Runway 19 and minimise the number of instances where avoiding action or break-off instructions have an adverse effect on cockpit and controller workload.</li> <li>• Improve the interactions between BZN and LOA flight procedures. The existing procedures are complex, and this creates a more intensive workload for aircrews and Air Traffic Controllers (ATCOs) at both airfields.</li> <li>• A requirement to future-proof the existing Instrument Flight Procedures in accordance with CAA AMS.</li> </ul> <p>This will be achieved through the following objectives:</p> <ul style="list-style-type: none"> <li>• The introduction of RNAV (GNSS) approach procedures.</li> <li>• The introduction of a new airspace structure to protect the new procedures.</li> <li>• A revised Concept of Operations (CONOPs) Letter of Agreement (LoA) to define the procedures used between LOA and BZN within their common area of interest.</li> </ul>	Yes
1.2	<p><b>Are the reasons for the change stated and acceptable?</b></p> <p>LOA IFR operation is inefficient due to unpredictability associated with Class G operations. LOA is located in an area of busy general aviation activity and this activity has an impact on the existing arrival and departure IFR procedures. These IFR flights are regularly affected by the presence of unknown or uncoordinated conflicting traffic, which contributes to an inefficiency through breaking-off approaches and re-routing of aircraft. LOA controllers providing a safe but inefficient extended routeing resulting from actions taken to avoid unknown traffic.</p>	Partially

The reasons for the changes are clearly stated but the evidence to justify the change does not appear conclusive. There appears to be some significant issues with the safety argument that has been put forward with many of the incidents listed not being associated with the reasons for the change and certainly wouldn't be solved by the approval of the intended solution.

For example; one of the main safety related incidents highlighted on pages 8-10 of the submission is regarding an unknown ac (squawking 7000 with mode C indicating 1400ft) operating on the LOA ATZ and head-to-head with LOA visual circuit traffic at the same altitude. LOA state that controller workload was such that there was little capacity for the controller to monitor other aircraft under their control. While this is accepted as an increased workload the situation is not solved by the introduction of a TMZ as proposed. Ac that are TMZ compliant can still fly freely with in the TMZ as it remains Class G airspace and as such there is no obligation for them to speak to LOA or comply with instructions from LOA etc.

LOA provide safety related information aimed at justifying the need for the additional protection of its IFR operation. Annex 3 presents a record of 37 safety events recorded from August 2009 to January 2017; the majority of these incidents are not related to the reasons why LOA seek to implement a TMZ and are either a result of controller or pilot error, poor coordination/liaison between controllers and are outside of the proposed airspace.

LOA state that one of the reasons for the proposed change was due to aircraft being broken off due to unknown aircraft operating in the vicinity of the approach and that aircraft often transit the ILS centreline below the cloud base without making contact with LOA. There is little evidence to substantiate this statement. Annex 3 highlights 23 occasions when LOA aircraft on an approach to Runway 19 have been subject to a break-off over 22 months (May 2015 to February 2017). Arguably only 9 of these would have potentially be resolved by the introduction of additional airspace restrictions such as a TMZ. There is no data or movement statistics provided to show how many IFR approaches were made to Runway 19 over the same period to allow for a percentage of break-offs vs. moves to be calculated.

The ACP also aims to improve the interaction and effective coordination between LOA and BZN. Interactions with BZN are in part being addressed through the BZN ACP (ACP-2014-12) which is being formally assessed by the CAA alongside this proposal. The reasons for addressing this interaction are clear in that due to the relative positions of each runway, the LOA and BZN published procedures cannot ensure that standard separation is maintained between aircraft without extensive controller intervention. Aircraft that execute a Missed Approach Procedure (MAP) on Runway 19 at LOA, potentially fly close to the area where aircraft position for a final approach at BZN. Only continuous monitoring and intervention by ATCOs at each unit currently guarantees adequate separation is maintained. ATCOs routinely resolve conflicts between aircraft operating on the approach to Runway 25 at BZN and aircraft going around or departing from Runway 19 at LOA. There is no statistical data provided in the proposal that quantifies the number of interventions made by controllers or any safety related issues as a result of this interaction between units.



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	<p>The justification for implementing new RNAV (GNSS) Flight Procedures is clear and acceptable in that they are conforming to ICAO Policy and EU legislation. Which will result in safer and more efficient ATC services, more accurate routes being flown and greater operational efficiency.</p>		
<p><b>1.3</b></p>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 85%; padding: 5px;"> <p><b>Have all appropriate alternative options been considered, including the 'do nothing' option?</b></p> </td> <td style="width: 15%; text-align: center; background-color: #008000; color: white; padding: 5px;"> <p><b>Yes</b></p> </td> </tr> </table> <p>Prior to consultation LOA considered the following options and provided their reasons for discounting several of the options and reaching their preferred option of establishing Class D Controlled Airspace.</p> <ul style="list-style-type: none"> <li>• Do Nothing: Discounted as it does not address the fact that risks of operating within this location may no longer be ALARP.</li> <li>• Do Minimal: Discounted as it does not capture non-local aircraft and fails to address the safety concerns.</li> <li>• Establish a Radio Mandatory Zone (RMZ): Discounted as it does not address concerns regarding VFR traffic that chooses to operate along the final approach. Also, too complex and a larger volume of airspace would need to be reassigned.</li> <li>• Establish Class E Controlled Airspace: Discounted as no clearance is required to enter the airspace under VFR rules. Separation only provided between IFR traffic.</li> <li>• Establish Class D Controlled Airspace: Preferred option which was taken forward for consultation.</li> </ul> <p>LOA undertook formal consultation commencing on 15<sup>th</sup> December 2017 for a period of 16 weeks, which included 14 extra days due to the release of several amendments to the independent but simultaneous BZN ACP. The formal consultation ended on 5<sup>th</sup> April 2018.</p> <p>Following the conclusion of the formal consultation, LOA undertook analysis of the consultation responses and published its feedback report on 26<sup>h</sup> October 2018. A redesign process was considered necessary and LOA started a series of feedback sessions further refining their solution. Following the post-consultation review and based on the feedback received LOA made some minor changes to their procedures and significant changes to the airspace design. Significant objections to the classification and volume of airspace in their initial solution led them to reduce the volume and propose a design based on a Class E + TMZ (2000-4000ft) and Class D (SFC-2000ft) mix. This proposal received significant objections from the General Aviation (GA) community.</p> <p>Subsequent stakeholder engagement on 13<sup>th</sup> November 2019 resulted in this option being refined again as it met neither the requirements of other airspace users nor enabled LOA to meet the objectives of the ACP. Following this feedback and discussions LOA revised the design, resulting in a TMZ (SFC-3500ft) solution. The TMZ solution forms LOAs final proposed option and is the option that the ACP is seeking to implement. Changes to the BZN ACP also led to further minor changes to the modify their coordination requirements for Runway 01 approaches and Runway 19 missed approaches. No formal consultation has been conducted on the new revised TMZ solution.</p>	<p><b>Have all appropriate alternative options been considered, including the 'do nothing' option?</b></p>	<p><b>Yes</b></p>
<p><b>Have all appropriate alternative options been considered, including the 'do nothing' option?</b></p>	<p><b>Yes</b></p>		

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<b>1.4</b>	<b>Is the justification for the selection of the proposed option sound and acceptable?</b>	<b>Yes</b>
	<p>The initial consultation identified that the volume and classification of the proposed airspace had a significant impact on other airspace users and would create potential critical choke points for GA operations. LOA therefore, undertook further work to seek more acceptable solutions. As indicated in 1.3, the series of options since the completion of the Consultation stage, has resulted in a revised airspace structure and reduced the volume and classification of the airspace design.</p> <p>However, there continues to be a significant amount of negative feedback on the preferred option and the CAA is receiving numerous pieces of correspondence voicing strong objections to the process the at LOA has followed to get to this stage of the process. Many of those objections are centred on several key themes:</p> <ul style="list-style-type: none"> <li>• Poor justification for the airspace with a weak safety argument from LOA.</li> <li>• The disproportionate size of the TMZ requested based on the relatively small predicted volumes of aircraft traffic.</li> <li>• The reduced ability for pilots of non-transponder equipped aircraft (predominately gliders) to conduct cross country flying and soaring.</li> <li>• The incorrect or cynical use of CAP 725 ACP.</li> <li>• A lack of appropriate consultation and engagement carried out by LOA.</li> <li>• The perceived unfair benefit for aircraft operated by LOA at the expense of the local GA community.</li> <li>• The restriction on free flying as a result of the reduction of available Class G airspace for non-transponder equipped aircraft.</li> </ul>	

<b>2.</b>	<b>Airspace Description and Operational Arrangements</b>	<b>Status</b>
<b>2.1</b>	<b>Is the type of proposed airspace clearly stated and understood?</b>	<b>Partially</b>
	<p>LOA is seeking to introduce new RNAV (GNSS) approaches and new missed approach procedures, enhanced coordination with BZN and a TMZ to offer protection to IFR aircraft operating in and out of LOA. These new procedures are to be contained within in a new TMZ structure. This is clearly articulated in the proposal however, there seems to be a misunderstanding of what a TMZ will provide in terms of achieving the objectives set out by LOA.</p> <p>LOA state that one of their key drivers for the change is to create a 'known traffic environment' within which appropriate separation can be more appropriately maintained. The creation of a TMZ although creating an environment where all aircraft can be 'seen' on radar does not necessarily create a 'known traffic environment' as such. This misunderstanding of the proposed airspace is further highlighted within the Safety Case by numerous references to rules and regulations with regards TMZs. The Safety Case identifies numerous hazards that are not</p>	

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	<p>resolved with the implementation of a TMZ. For example: Hazard 08 – Unauthorized infringement of the LOA TMZ (An aircraft enters the LOA TMZ without notification or acts contrary to its stated intentions). There is no obligation for aircraft to request permission to enter a TMZ, no obligation for aircraft to state intentions or comply with any instructions provided by LOA. The TMZ remains Class G airspace and as such an aircraft with a serviceable transponder displaying mode A (with mode S) can operate freely with in the airspace structure.</p> <p>This is one of many examples that can be found in both proposal and Safety Case, which shows a lack of understanding of how the implementation of a TMZ will enhance safety for LOA IFR operations.</p> <p><b>NOTE:</b> The CAA has spoken to the Consultant acting on behalf of the Sponsor and they have reassured the CAA that LOA are aware of the limitations of a TMZ, when trying to achieve their stated aims and objectives. There is an acknowledgement that some of the language used within the documents could have been clearer and more consistent. This is particularly relevant when considering what LOA mean by trying to create a ‘known traffic’ environment.</p>	
<p><b>2.2</b></p>	<p><b>Are the hours of operation of the airspace and any seasonal variations stated and acceptable?</b></p> <p>The operational hours of the LOA are 0630-2230L, 7 days a week (although a radar service is only available 0800-1800L). It is therefore assumed the TMZ will be activate during these times only, as there is nothing to suggest the TMZ is H24. The airspace will remain as Class G airspace.</p>	<p align="center"><b>Partially</b></p>
<p><b>2.3</b></p>	<p><b>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?</b></p> <p>The proposed airspace design is within the lateral dimensions of Oxford AIAA which is Class G airspace and has no interaction with either international airspace structures or High Seas airspace.</p> <p>The LOA airspace and procedures have complex interactions with BZN due to the close proximity of the aerodromes and the relative positions of each runway. Introduction of new procedures and airspace is aimed at simplifying these interactions and several iterations of the MAP have been developed and refined to ensure interactions are safe and efficient for both LOA and BZN aircraft. Detail on how this interaction will be achieved <u>will need</u> to be contained in a revised LoA between the 2 units. The LOA ACP has been developed alongside the BZN ACP and although they are linked in many ways, they remain independent applications and as such are not dependent on each other. The TMZ does lie adjacent to the proposed BZN CTR1 Class D (SFC-6500ft) section of airspace and the new proposed BZN RMZ/TMZ Class G (SFC-6000ft) section of airspace to the south of LOA.</p>	<p align="center"><b>Yes</b></p>



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<b>2.4</b>	<b>Is the supporting statistical evidence relevant and acceptable?</b>	<b>Partially</b>
<p>There is limited statistical data provided to support the implementation of this ACP. Included in the submission is a table highlighting the number of aircraft moves at LOA from 2012 to 2018. However, there is no further breakdown of these figures to present data on the number of IFR approaches to Runway 19 over any given period.</p> <p>Annex A2 presents 2 tables highlighting the number of aircraft operating in the approach area of Runway 19 in June/July 2014 and August 2015. Although this table shows the number of aircraft operating in the area with specific times, it does not serve to evidence their safety argument. The data is not bounded in such a way as to make it meaningful, i.e. a picture of the area being observed and which, if any, of the aircraft observed conflicted with LOA IFR inbound traffic. The ACP simply converts these numbers into how many ac per year operate in the observed area which is 3800 aircraft per year (although is it is accepted that this may be lower once weather is factored in).</p> <p>The submission includes 2 tables (at Annex 3) providing data on safety events over a given period. However, many these events do not serve to support or justify the requirement for this ACP.</p> <ul style="list-style-type: none"> <li>• Some of the airprox data pre-dates 2012 (pre-Oxford radar installation) and are therefore not relevant to the proposal.</li> <li>• As indicated in 1.2, most of these incidents are not related to the reasons why LOA seek to implement a TMZ and are either a result of controller or pilot error, poor coordination/liaison between controllers and are outside of the proposed airspace.</li> </ul>		
<b>2.5</b>	<b>Is the analysis of the impact of the traffic mix on complexity and workload of operations complete and satisfactory?</b>	<b>Partially</b>
<p>LOA has a broad range of operations and aircraft using the aerodrome. These range from local flying clubs to commercial pilot training organisations. However, there is no breakdown of movements – times, IFR and VFR, MAP numbers transiting ac etc provided in the submission and as the ACP is not aimed at changing the LOA traffic mix there is no analysis of the impact of the ACP.</p> <p>The ACP may result in the local area traffic mix being altered as non-transponder aircraft may not receive authorisation to fly within the TMZ as this would be subject to LOA approval. As there is no analysis of this traffic it is not possible to assess the impact of this change in traffic mix that may occur as a result of a TMZ being approved.</p>		
<b>2.6</b>	<b>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?</b>	<b>Partially</b>

The submission contains a draft Letter of Agreement (LoA) between LOA and BZN which contains commitments to resolve ATS procedures and airspace management requirements. The LoAs will be finalised before planned implementation in AIRAC14/20 in December 2020. Although generic access to the proposed new airspace structure will be in accordance with the conditions associated with the TMZ policy, additional access arrangements will be required to be included in bilateral LoAs to accommodate airspace users with limited equipage. Aircraft that are not equipped with transponders will need to be accommodated through access arrangements based on radio equipage.

LOA has LoAs with a range of neighbouring aerodromes some of which will remain extant following implementation of the proposed procedures and airspace, other LoAs have not been included and are in draft for update to reflect new or changed methodology, these have not been included in the submission.

#### Weston-on-the-Green

Since consultation, an LoA was developed between LOA and Weston-on-the-Green. It covers parachuting, danger area crossing services and gliding at Weston. The LoA will need to be reviewed as the conflict point against drop aircraft and the Runway 19 approach is currently within the proposed TMZ airspace – draft not included in the submission.

#### D129

LOA has an LoA with the operators of D129, a 2nm radius danger area, active up to Flight Level (FL)120, in close proximity to LOA in which parachuting regularly takes place. The LoA defines the coordination methods between the two units when D129 is active and details the procedures, such as a LOA provided danger area crossing service, to be employed once the danger area is deactivated. Furthermore, the LoA states the procedures employed when Oxford Gliding Club (OGC) operate from the Weston-On-The-Green airfield. This has not been included in the submission.

#### Oaklands Aerodrome

Oakland's aerodrome operates non-radio, vintage aircraft within the area of the proposed TMZ. An LoA has been established to allow aircraft to operate within the Oakland's visual circuit and easily transit the LOA TMZ. Non-radio/ non-SSR equipped aircraft will also be able to do so under specified conditions in the LoA and by prior agreement as detailed in the AIP. This has not been included in the submission.

#### LoA between LOA and NATS (En-Route) PLC

LOA has an LoA with NATS (En-Route) PLC which defines the coordination procedures between them. The LoA details how LOA traffic will depart for Sector 23 (S23) and arrive from S23. It also defines who will be responsible for coordinating with BZN and when they are to do so. In addition, the LoA states the methods to be employed when LOA are operating procedurally. This LoA is unlikely to change as a result of this ACP but may require revision as a result of any airspace changes in the BZN ACP; LOA are aware of this potential future requirement. This has not been included in the submission.



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2.7	<p><b>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 sponsor carried out to resolve any conflicting interests?</b></p>	<b>Yes</b>
	<p>LOA has liaised with several airspace user groups to identify how to manage their requirements. The establishment of a TMZ will impact on other airspace users, particularly glider activity and non-transponder equipped aircraft operations. The introduction of the TMZ will mandate carriage of transponders in aircraft wishing to operate within the TMZ. Aircraft not equipped with transponders will not be expected to retrofit but will be expected to adhere to the conditions of access through operation of radio and the introduction procedures to allow access to the TMZ. However, this will be subject to approval from LOA.</p> <p>The introduction of LoAs to accommodate some activities has been considered and will need to be introduced to manage the requirements of activities in the surrounding area. Additionally, as indicated in 2.6 above, other gliders and aircraft not transponder equipped will be provided access and clearance via radio telephony (RT) and detailed in relevant LoAs.</p>	
2.8	<p><b>Is the evidence that the Airspace Design is compliant with ICAO SARPs, Airspace Design &amp; FUA regulations, and Eurocontrol Guidance satisfactory?</b></p>	<b>N/A</b>
	<p>Full IFP Assessment not completed.</p>	
2.9	<p><b>Is the proposed airspace classification stated and justification for that classification acceptable?</b></p>	<b>Yes</b>
	<p>The proposed airspace classification for the TMZ remains as Class G. Class G is not mandatory transponder airspace or radio mandatory airspace but the proposed design does provide options from the controlling authority's perspective regarding access arrangements for other airspace users with limited compliance capabilities.</p>	
2.10	<p><b>Within the constraints of safety and efficiency, does the airspace classification permit access to as many classes of user as practicable?</b></p>	<b>Yes</b>
	<p>Class G TMZ airspace is accessible to all aircraft that are suitably equipped, and access arrangements will be made to allow non-transponder equipped users to access the airspace, although this will be subject to approval from LOA. LOA have gone to great lengths to permit this access and have changed the airspace design several times to facilitate the needs of as many users as practicable.</p>	

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2.11	<p><b>Is there assurance, as far as practicable, against unauthorised incursions? (This is usually done through the classification and promulgation)</b></p> <p>Unauthorised incursions should be mitigated through both the rules for a TMZ and the additional access arrangements to be introduced to accommodate other airspace users. The anticipated introduction of a TMZ at LOA and extended airspace at BZN has become a focal point in GA forums and as such, the promulgation of the airspace structural dimensions is probably familiar to most user groups. As LOA will become the controlling authority for the new TMZ, it will need to continue work with local aviation groups to ensure positive dialogue is generated and maintained to achieve mutually acceptable activities are maintained.</p>	Yes
2.12	<p><b>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?</b></p> <p>There is a commitment to provide access to other airspace users through the provision of either a procedural clearance or a radar service, both from LOA ATC. Aircraft transits without transponder capabilities will be provided access and clearance via RT or by prior arrangement with LOA ATC.</p>	Yes
2.13	<p><b>Are appropriate arrangements for transiting aircraft in place in accordance with stated commitments?</b></p> <p>LOA stated from the beginning that in accordance with the proposed airspace classification to be introduced, it would meet the demand imposed on controller resource by the anticipated increased traffic levels. Procedures are in place to allow non-transponding aircraft to transit the TMZ.</p>	Yes
2.14	<p><b>Are any airspace user group's requirements not met?</b></p> <p>This ACP has generated much debate, it is quite clear that for some stakeholders a decision to approve elements will never be seen to satisfy their needs. i.e., those that vehemently oppose it. It is considered that most airspace user groups' needs can be accommodated either through adherence to conditions associated with TMZ airspace or through specific requirements collaborated on and included in any LoAs.</p>	Yes
2.15	<p><b>Is any delegation of ATS justified and acceptable? (If yes, refer to Delegated ATS Procedure).</b></p> <p>Not applicable. There are no delegated ATS procedures or airspace structures associated with this airspace change.</p>	N/A

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2.16	<p><b>Is the airspace structure 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?</b></p> <p>The structure design and dimensions look to offer sufficient airspace to allow safe navigation within the volumes specified.</p>	Yes
2.17	<p><b>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).</b></p> <p>Not applicable.</p>	N/A
2.18	<p><b>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?</b></p> <p>The TMZ retains the classification of the airspace in which it lies therefore, the classification remains as Class G and there is no change to the prescribed separation between aircraft inside the TMZ and traffic within adjacent airspace.</p>	Yes
2.19	<p><b>Is the airspace structure designed to ensure that adequate and appropriate terrain clearance can be readily applied within and adjacent to the proposed airspace?</b></p> <p>The TMZ is from SFC-3500ft and has no bearing on terrain clearance as this remains pilot responsibility under Class G airspace rules. New RNAV GNSS procedures are compliant with terrain clearance rules which has been checked by the IFP regulator.</p>	Yes
2.20	<p><b>If the new structure lies close to another airspace structure or overlaps an associated airspace structure, have appropriate operating arrangements been agreed?</b></p> <p>The TMZ lies adjacent to BZN existing Class D CTA and there are operating arrangements (covered by an LoA) already in place between LOA and BZN. BZN have a simultaneous ACP in Stage 5 which is being assessed independently and the arrangements if approved have been drafted. These new arrangements form part of the LOA submission and will be revisited once both decisions have been made.</p>	Yes
2.21	<p><b>Where terminal and en-route structures adjoin, is the effective integration of departure and arrival routes achieved?</b></p>	N/A



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Not applicable. Terminal and en-route structures do not adjoin.

3.	Supporting Resources and CNS Infrastructure	Status
3.1	<p><b>Is the evidence of supporting CNS infrastructure together with availability and contingency procedures complete and acceptable? The following are to be satisfied:</b></p> <ul style="list-style-type: none"> <li>▪ <b>Communication:</b> 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?</li> </ul> <p>The extant communications infrastructure will enable LOA to provide ATS to aircraft utilising the current and proposed procedures and airspace design. The VHF capacity will enable aircraft transiting the TMZ to operate on a separate frequency (125.090) to IFR traffic (119.980) if workload necessitates. Contingency procedures are in the LOA MATS Pt2.</p>	Yes
	<ul style="list-style-type: none"> <li>▪ <b>Navigation:</b> 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? E.g. Nav aids – has coverage assessment been made e.g. a DEMETER report, and if so, is it satisfactory?</li> </ul> <p>Full IFP assessment not completed.</p>	N/A
3.2	<p><b>Where appropriate, are there any indications of the resources to be applied, or a commitment to provide them, in line with current forecast traffic growths acceptable?</b></p> <p>LOA have committed to an increase in controller resource to manage the anticipated increased R/T workload. LOA will therefore need to increase the controller resource to meet the demand. LOA have committed to introducing an additional Director frequency and manned position during busy periods. Watch supervisors will be introduced with effect 1<sup>st</sup> September 2020 and extra controllers have been</p>	Yes

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employed by LOA to ensure full controller manning. LOA will be required to record and report on instances of refusals of crossing clearance to requesting VFR transit aircraft.

**NOTE:** ATS Inspector has confirmed that LOA have increased their controller numbers and have additional resource to accommodate a Director frequency and that Watch Supervisors have been introduced despite the COVID-19 impacts.

4.	Maps/Charts/Diagrams	Status
4.1	<p><b>Is a diagram of the proposed airspace included in the proposal, clearly showing the dimensions and WGS84 co-ordinates?</b>                      (We would expect sponsors to include clear maps and diagrams of the proposed airspace structure(s) – they do not have to accord with AC&amp;D aeronautical cartographical standards (see CAP725), rather they should be clear and unambiguous and reflect precisely the narrative descriptions of the proposals. AC&amp;D work would relate to regulatory consultation charts only).</p> <p>The public consultation material clearly identified to all stakeholders the exact airspace structures proposed by LOA. As the airspace design has evolved and been modified, the detail provided to both the CAA and other stakeholders has been clear and unambiguous.</p> <p>The supporting WGS84 evidence to support the airspace design will be forwarded to the CAA for approval in Stage 6 as per CAP725.</p>	Yes
4.2	<p><b>Do the charts clearly indicate the proposed airspace change?</b></p> <p>The charts submitted for each of the airspace change versions throughout the process have been comprehensible.</p>	Yes
4.3	<p><b>Has the Change Sponsor identified AIP pages affected by the Change Proposal and provided a draft amendment?</b></p> <p>No. Although this is required under CAP 725 has not been included. However, an email from the Osprey Consultant has been received informing the CAA, that they are aware of the requirement to produce the AIP amendments and it will be forwarded for approval before implementation.</p> <p><u>Note:</u> there is a contradiction within CAP725 on when the AIP changes should be submitted.</p>	No

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5.	Operational Impact	Status
5.1	<p><b>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?</b>  <b>Consideration should be given to:</b>  <b>a) Impact on IFR GAT, on OAT or on VFR general aviation traffic flow in or through the area.</b></p> <p>The volume of IFR GAT is not expected to increase as a result of the introduction of RNAV (GNSS) approaches. The increased traffic levels predicted at LOA are based on historical traffic levels and the prediction that training flights are to increase more slowly over the next 5 years.</p> <p>LOA received significant numbers of objections to the original Class D CTR but has taken steps following the formal consultation which has resulted in the TMZ solution. However, in the submission the impact on VFR and GA operations is again misinterpreted and assumes that aircraft wishing to operate within the TMZ will have been given access by LOA. LOA state that they believe that the solution has minimal impact on GA operations and that this impact will be more than balanced by the additional level of safety provided by a TMZ around IFR traffic on final approach to Runway 19. Due to the misunderstanding of the rules regarding TMZs the impact has not been assessed satisfactorily.</p> <p>The TMZ does not prevent transponder equipped aircraft from transiting the airspace without a clearance as the airspace retains its Class G status and VFR GA will be free to operate without restriction and do not require permission from LOA to do so. GA aircraft that comply with the TMZ rules will not need to be in radio contact with LOA and route as instructed.</p> <p><b>NOTE:</b> The footnote on page 50 of the Formal Submission states: <i>‘In addition to those VFR aircraft operating in accordance with the rules of the TMZ, GA can, in addition gain access to the TMZ by use of their radio. Procedures on how to do this will be clearly explained in the AIP. This will further assist in creating a better-known traffic environment enhancing safety for all participants. Non-radio equipped aircraft will also be able to gain access to the TMZ by prior arrangement as explained in the AIP’.</i></p> <p>Impact should have been assessed based on the correct understanding of the TMZ rules and more analysis on the impact on non-transponder equipped GA aircraft should have been conducted.</p> <p><b>b) Impact on VFR Routes.</b></p> <p>There are no specific VFR routes affected by the proposed new TMZ. LOA ATC will however be required to continue to maintain constructive dialogue with local airspace users with regards to preferred VFR routeings close to and through the proposed TMZ.</p>	<p align="center"><b>No</b></p> <p align="center"><b>N/A</b></p>



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	<p>Specific access arrangements for local airspace users that are not transponder equipped will be afforded by means of an ATC clearance issued by LOA ATC. Although access to the TMZ will be afforded by means of clearance for these aircraft, LOA remain committed to providing equitable access to all airspace users and remain open to continued discussions on how to reasonably accommodate these GA user groups.</p>	
	<p><b>c) Consequential effects on procedures and capacity, i.e. on SIDS, STARS, holds. Details of existing or planned routes and holds.</b></p>	<p><b>Yes</b></p>
	<p>There is no specific capacity issue associated with this proposed change. New RNAV (GNSS) procedures contained within the TMZ will replace conventional radar vectoring procedure used today in the uncontrolled airspace environment. The new procedures will be more efficient and provide better climb and descent profiles.</p>	
	<p><b>d) Impact on Airfields and other specific activities within or adjacent to the proposed airspace.</b></p>	<p><b>Partially</b></p>
	<p>LOA identified numerous airfields in the local vicinity which are impacted by the ACP and have adapted their original airspace design several times following their consultation and based on the feedback received. As indicated in 2.6, this has generated the need for several LoAs (BZN, Weston-On-The-Green, D129 and Oaklands Aerodrome) to be developed to minimise the impact of the change on their operations. Other airfields impacted include Enstone, Abingdon, Bicester, Edgehill, Hinton-In-The-Hedges, RAF Benson and Turweston.</p> <p>However, there is little in the submission about the impact on these airfields and due to the design changing post consultation and no re-consultation, there seems to be a lack of detail on how the new design will impact these airfields. The CAA continues to receive correspondence from aviation stakeholders that highlights the impact on them and more worryingly a lack of understanding as to which solution is being requested. Hinton and Turweston have written to the CAA post submission raising concerns over the design and the apparent lack of consultation on the final solution. Other organisations such as the GA Alliance and British Gliding Association have also provided similar feedback regarding the impact to local airfields and the GA community.</p>	
	<p><b>e) Any flight planning restrictions and/ or route requirements.</b></p>	<p><b>N/A</b></p>
	<p>LOA does not anticipate any flight planning restrictions as a result of the introduction of the proposed procedures and airspace. LOA is not seeking to connect the Airport with the airways structure, nor does it intend to increase airspace to the south since most arrivals come from the north.</p>	

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<b>5.2</b>	<b>Does the Change Sponsor Consultation letter reflect the likely operational impact of the change?</b>	<b>Partially</b>
	<p>Following completion of the post-Consultation analysis, LOA produced an Airspace Consultation Feedback Report. The report provided detailed analysis of all the responses received during the consultation and was published on 30<sup>th</sup> October 2018. The report identified numerous objections to the proposed Class D CTR and following analysis and review the design was amended to a Class E + TMZ/RMZ design. Following further engagement activity and more objections the final TMZ design proposal was developed.</p> <p>However, there has been no <u>formal consultation</u> on the final TMZ design and therefore much of the information provided on the operational impact is incomplete or inaccurate.</p>	

<b>6.</b>	<b>Economic Impact</b>	<b>Status</b>
<b>6.1</b>	<b>Is a provisional economic impact assessment to all categories of operations and users likely to be affected by the change included and acceptable? (This may include any forecast capacity gains and the cost of any resultant additional track mileage).</b>	<b>Yes</b>
	<p>The sponsor stated in the LOA Proposal that the change is not driven by an intent to increase the number of aircraft movements at LOA but PBN approaches will enable safer airspace and hence it is expected to be attractive to commercial operators which should safeguard the future usage of LOA. It is also stated in the LOA Proposal that the replacement of the conventional procedures by the proposed PBN approaches is not expected to bring any economic benefits to LOA as these IFPs do not increase runway or airport capacity although there would be a reduction in wasteful additional miles flown whilst avoiding unknown traffic.</p>	

<b>7.</b>	<b>Recommendations / Conditions / PIR Data Requirements</b>	
<b>7.1</b>	<b>Are there any Recommendations which the change sponsor <u>should try</u> to address either before or after implementation (if approved)? If yes, please list them below.</b>	<b>No</b>
	<p><b><i>GUIDANCE NOTE:</i></b> Recommendations are something that the change sponsor <u>should try</u> 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.</p>	
<b>7.2</b>	<b>Are there any Condition(s) which the change sponsor <u>must fulfil</u> either before or after implementation (if approved)? If yes, please list them below.</b>	<b>Yes</b>

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**GUIDANCE NOTE:** Conditions are something that the change sponsor **must fulfil** either before or after implementation, if indeed the airspace change proposal is approved. If their proposal is approved, change sponsors **must** observe any condition(s) contained within the regulatory decision; failure to do so **will usually** result in the approval being revoked. Conditions should specify the consequence of failing to meet that condition, whether that be revoking the ACP or some alternative.

- Submission of airspace data bound for the UK AIP which is subject to ADQ-IR must be approved by the CAA.
- All draft LoAs need to be finalised and signed, prior to implementation (normal practice).

7.3

**Are there any specific requirements in terms of the data to be collected by the change sponsor for the Post Implementation Review (if approved)? If yes, please list them below.**

**Yes**

**GUIDANCE NOTE:** PIR data requirements concerns any specific data which the change sponsor should be instructed to collate post-implementation, if indeed the airspace change proposal is approved. Please use this section to list any such requirements so that they can be captured in the regulatory decision accordingly.

The following specific sections of CAP1616 Table H1 should apply to this ACP for PIR data collection:

- Safety data.
- Service provision/resource issues.
- Infringement statistics.
- Traffic figures.
- Operational feedback.
- Denied access statistics. NOTE: This should account for denial of access to the IAPs as well as entry to the TMZ.
- Utilisation of SIDs/STARs/instrument flight procedures. NOTE: To include as far as reasonably practical use of MAP and any inability to maintain compliance with the published IAP.
- Letters of Agreement.
- Impact on environmental factors. NOTE: To be based upon any observed or reported matters.
- Impact on Ministry of Defence operations.
- Stakeholder feedback. NOTE: To include comments/complaints relating to the use or impact of the IAPs. Examples of sources include MORs, DASORs, routine and ad-hoc meetings, emails, social media. Provided in machine readable format wherever possible.



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<b>Case Study Conclusions – To be completed by SARG Project Leader</b>	<b>Yes/No</b>
<b>Has the Change Sponsor met the SARG Airspace Change Proposal requirements and Airspace Regulatory requirements above?</b>	<b>Yes</b>
The Change Sponsor has adhered to the CAP 725 process and despite the long, drawn-out nature of the ACP have complied with the regulatory requirements (subject to IFP review). They have also endeavoured to follow the spirit of CAP 1616 in so much as they have completed some additional stakeholder consultation. On balance, the proposal has been developed through an appropriate and proportionate approach given the impact of the change.	

<b>Third Party Approval</b>	<b>Yes/No</b>
<b>Is the approval of the SoS for Transport required in respect of the Environmental Impact of the airspace change?</b>	<b>No</b>
No	
<b>Is the approval of the MoD required in respect of National Security issues surrounding the airspace change?</b>	<b>No</b>
No	

<b>General Summary</b>
<p>The LOA airspace change proposal set out the proposals for airspace and IFR approach route changes at the airport. The objective was to introduce a new operating environment with updated RNAV (GNSS) procedures contained within protected airspace, in the form of a CTR and improve interactions between LOA and BZN operations. The aim was to improve the efficiency and safety of the LOA IFR operation by creating a 'known traffic' environment, which would help address some of the Unit's safety concerns associated with operating commercial aircraft in Class G uncontrolled airspace.</p> <p>The final ACP submitted was a compromise on the original intention following several reviews, which would indicate there were several versions of design options that were considered either unsuitable for the local environment, excessively constrained other airspace user's activities, or were operationally inefficient from a LOA commercial perspective.</p>

**Comments & Observations**

The original LOA ACP Framework Briefing took place in June 2015. Over 5 years down the line, the airspace change has raised significant comment from all levels both aviation and non-aviation stakeholders. The sensitivity surrounding the proposal has been evident throughout, with numerous stakeholders engaging with a wide variety of organisations to elevate their concerns.

The modification of the original consulted upon option was required, as the design and volume of airspace was in excess of the requirements which in this case was to contain the new RNAV (GNSS) procedures. The sponsor has been willing to engage with stakeholders throughout the process and willingly participated in numerous feedback sessions with other aviation stakeholders to try and seek workable and safe solutions for the implementation of the proposed airspace. Although the result of the meetings was not altogether satisfactory, it is now incumbent on LOA and GA user groups to find a workable solution to the issues presented by both LOA and the GA users.

There has been and continues to be objections to the way in which this ACP has been conducted. The ACP has been completed under CAP 725, due to the stage the ACP was at when CAP 1616 was introduced. This has been seen as a cynical use of the process by many stakeholders but was agreed by both the CAA and DfT as an appropriate way to proceed.

No formal consultation on the proposed solution – this has presented many of the issues with the evidence presented not supporting the solution.

Although the CAA has spoken to the Consultant acting on behalf of the Sponsor, for clarification on the technical understanding of TMZ airspace the submission contains conflicting statements throughout. The consultant has offered reassurance to the CAA, that LOA are aware of the limitations of a TMZ, when trying to achieve their stated aims and objectives. There is an acknowledgement that some of the language used within the documents could have been clearer and more consistent. This is particularly relevant when considering what LOA mean by trying to create a 'known traffic' environment.

Overall, the final submission lacks the relevant evidence to support some of the safety related arguments that LOA are using to justify the implementation of additional airspace. This lack of evidence can be seen in the lack safety related statistics and relevant examples but also a lack movement data to show the impact of not having additional protection.

Despite the issues presented above, the implementation of a TMZ would provide a clearer air traffic picture to LOA and provide controllers with enhanced situational awareness. Although not the solution they were initially after, the TMZ solution does improve on what is currently in place and should help to improve safety for aircraft conducting IFR approaches to LOA. New RNAV (GNSS) procedures are required to comply with legislation and subject to IFP approval should be approved as part of this ACP. Improved interaction between LOA and BZN was a stated aim of this ACP and although this can't be improved satisfactorily through procedural design, the new procedures do go some way to improving the current situation.

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Continuing improvement can only be achieved by the 2 units continuing to maintain a good working relationship and ensuring they have robust and timely communication links between controllers.

Operational Assessment Sign-off/ Approvals	Name	Signature	Date
Operational Assessment completed by:	<div style="background-color: black; width: 100px; height: 15px; margin-bottom: 5px;"></div> AR Case Officer	<div style="background-color: black; width: 150px; height: 40px;"></div>	15/12/2020
Operational Assessment approved:	<div style="background-color: black; width: 100px; height: 15px; margin-bottom: 5px;"></div>	<div style="background-color: black; width: 150px; height: 40px;"></div>	15/12/2020

Mgr AR Comments: It is very good to see London Oxford Airport (LOA) be open to stakeholder feedback and allowing that to influence their final proposal to the CAA, e.g., the change from a Class D CTR/CTA proposal, to a Class D/E blend, and ultimately a TMZ. I accept the articulated justification for new RNAV IFP, it would improve traffic management. However, LOA safety justification for a supporting TMZ is not robust and in fact majors far more on reducing service provision impacts on LOA traffic. Notwithstanding the consultant's reassurances, LOA have demonstrated a poor understanding of what a TMZ does, or more importantly, does not do, e.g., it does not create a completely 'known environment' because the intentions of autonomous, itinerant IFR/VFR traffic would not be known and their Mode S/A/C would not be validated and verified - a TMZ gives a better-known environment, in which TCAS also now becomes a credible mitigation. The potential impacts on other airspace users/airfields do not appear to be well assessed by LOA, linked to this, proposed alternative access arrangements to the TMZ have not been confirmed to CAA. A lack of consultation on the final TMZ proposal exasperates these latter points. The sponsor could consider a future use of ADS-B, as well as Transponders, as a way of softening the impacts of a TMZ on autonomous VFR GA. I am unable to recommended approval, primarily as the safety argument is not compelling, and I don't think minimising service provision impacts on LOA IFR traffic outweighs the impacts on other users, and I am not convinced that the use of a TMZ was well understood by the sponsor. I cannot recommend that the RNAV IFP are split out for standalone implementation they are bound up with the TMZ in the safety argument.



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Hd AAA Comment/ Decision	Name	Signature	Date
Hd AAA Decision			21/01/2021
<p>Hd AAA Comments/Decision: This application is not approved for the reasons laid out by Mgr AR which in summary are:</p> <ol style="list-style-type: none"><li>1. No demonstrable understanding of what a TMZ is and how it will be operated.</li><li>2. No demonstrable understanding of the impact of this change on other airspace users.</li><li>3. This second point could possibly have been understood and mitigated if a further consultation had been undertaken post the significant shift in proposal to TMZ with no airspace classification change. This lack of additional consultation is also a significant reason why it is not reasonable to consider approval of this ACP.</li><li>4. Without the above, it has not been possible to define or even estimate how this solves the problem that this change was seeking to mitigate, and no attempt has been made to do so.</li></ol>			