Safety and Airspace Regulation Group

UK Civil Aviation Authority

London Oxford Airport ACP - Proposal for Revised Airspace and Instrument Flight Procedures

CAP 2087

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Executive summary

Objective of the Proposal

1. London Oxford Airport (LOA) is seeking to introduce new RNAV (derived from aRea NAVigation) Global Navigation Satellite System (GNSS) arrival and missed approach procedures, while introducing new airspace (a Transponder Mandatory Zone (TMZ)) to contain and protect those procedures. The airspace and procedures also aim to satisfactorily deconflict these procedures from both Royal Air Force (RAF) Brize Norton (BZN) and other airspace users in the Oxford Area of Intense Air Activity (AIAA). The Airspace Change Proposal (ACP) was submitted on 23 July 2020.

Summary of the decision made

2. The CAA has considered the submitted material and **has decided not to approve the ACP**, for reasons including that the proposal does not make a compelling case for the creation of a TMZ, the proposal shows a misinterpretation of the TMZ rules and that the proposal does not adequately resolve the integration issues with BZN. Furthermore, the CAA has concluded that the final proposal is significantly different from the option presented as the preferred option during consultation, and that further consultation should have been undertaken with stakeholders to better assess the impacts of this final proposal.

Chapter 2

Decision Process and Analysis

CAA's Role

The CAA's role in airspace change decisions, the legal framework, the policy background and relevant UK international obligations

3. It is necessary to understand the CAA's role in airspace change decisions, the legal framework, the policy background and relevant UK international obligations in order to understand the decision the CAA has taken.

4. This information is set out in [Annex C].

Aims and Objectives of the proposed change – CAA decision on objective

5. The proposed change, its justifications and objectives are set out in full in the Sponsor's documents submitted to the CAA and are published on the CAA's website. The proposal is to implement a TMZ to contain new RNAV (GNSS) procedures. The proposal is seeking to achieve the following aims:

   a. 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.

   b. 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.

   c. A requirement to future-proof the existing Instrument Flight Procedures (IFPs) in accordance with CAA Airspace Modernisation Strategy (AMS).

6. It is proposed that this will be achieved through the following objectives:

   a. The introduction of RNAV (GNSS) approach procedures.

   b. The introduction of a new airspace structure (TMZ) to protect the new procedures.

   c. 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.

Chronology of Proposal Process

Framework Briefing

7. A Framework Briefing took place at CAA House, London on 23 June 2015. During this, LOA outlined its proposal, the options considered and preferred option to introduce a Radio Mandatory Zone (RMZ) around LOA and new RNAV procedures.

8. The CAA emphasised the need for a collaborative approach, in particular with BZN, aviation stakeholders, and that a 'holistic' approach to any airspace design should be adopted. It added that any potential 'restriction' to local flight operations was likely to be strongly contested by the General Aviation Alliance (GAA), Light Aircraft Association (LAA) and British Gliding Association (BGA) communities, albeit there was support from on-airport General Aviation (GA) operators. It was also made clear that any justification of additional airspace would require robust statistical evidence.

9. It was stated that revised or new Letters of Agreement (LoAs) or Memorandums of Understanding (MoUs) with neighbouring aerodromes and regional aviation organisations would be required to mitigate any possible effects of new airspace design.

10. The CAA pointed out that it would need to be clearly stated that there are 2 ACPs running in parallel with each other and that transparency of the project to

the public was required and the scale of any impacts might mean that non-aviation stakeholders would need to be consulted in greater depth.

11. LOA outlined the environmental impacts of their proposal and the CAA highlighted that the impact would be dependent on any new IFPs and the size and nature of the airspace required. The CAA indicated that the impact to the environment and any noise related changes would need to be clearly articulated within the Consultation documentation.

12. It was agreed that to meet target timelines for Formal Consultation, LOA was required to decide as soon as possible on its airspace requirements, and that the design work should include input from local aviation stakeholders.

13. The sponsor provided an ACP timeline which indicated a target decision date of the end of October 2016. Due to a number of factors, not least the difficulty associated with coordinating airspace design development for the two neighbouring airfields, the initial proposed ACP timeline was re-evaluated and extended.

Process

14. Notwithstanding that the CAA introduced a new airspace change process on 2 January 2018 (known as CAP 1616) this ACP has been developed and is assessed in accordance with the CAA's airspace change process known as CAP 725. This is in accordance with a transition policy developed with the Department for Transport and consulted on in 2016 and 2017[1].

Consultation

15. A public consultation commenced on 15 December 2017 and closed on 5 April 2018. The consultation document[2] was emailed to 758 organisations and individuals including the Ministry of Defence (MoD), local airport operators, local aerodromes, aviation organisations, local authorities, and town and parish councils. National bodies such as the GAA, British Microlight Aircraft Association (BMAA) and National Air Traffic Services (NATS) were represented

[1] Letter from Acting Head of Aviation Policy Division, Aviation Directorate, DfT to Chief Executive, CAA entitled Military Environmental Impacts in Airspace Changes dated 21 December 2016.
[2] Available on the CAA website London Oxford Airport consultation document

through the National Air Traffic Management Advisory Committee (NATMAC). The consultation document was made available for general distribution online through LOA's website and two stakeholder drop-in events were facilitated. Pre-consultation engagement was conducted with some aviation stakeholders including the MoD, the BGA and some local airfields.

16. A total of 66 responses from the original 758 stakeholders targeted, and an additional 1641 responses from individual members of the GA community and other parties were received[3].

Submission of Airspace Change Proposal and supporting documents.

17. On 23 July 2020 the CAA received the formal ACP submission. This included the ACP Safety Case Parts 1 and 2, the Consultation Data, consolidated Stakeholder Engagement Log, a consolidated BZN/LOA Consultation Responses Log and Draft LoA between BZN and LOA. Additionally, copies of all correspondence sent to consultees by the Sponsor and responses received by the Sponsor from consultees were provided.

Documents considered by the CAA

18. In assessing the proposal and making this decision, the CAA has taken account of:

    a. London Oxford Airport ACP Formal Submission; 23 July 2020; Issue 1.

    b. Safety Case Part 1, dated 23 July 2020; Issue 1.

    c. Safety Case Part 2, dated 23 July 2020; Issue 1.

    d. Proposal for Revised Airspace and Instrument Flight Procedures; dated 23 July 2020.

    e. Consultation Feedback Report; dated 26 October 2018.

    f. Consultation document; 15 December 2017.

[3] Available on the CAA website London Oxford Airport consultation feedback report

g. Consultation responses.

h. Consolidated Stakeholder Engagement Log and consultation responses log.

i. Oxford RAUWG Minutes for meeting held 14 November 2018.

j. Stakeholder engagement event presentation; 13 November 2019.

k. Meeting notes from Stakeholder event held 13 November 2019.

l. Raw data submitted by LOA including stakeholder consultation responses received by email/letter, LOA outgoing and incoming email correspondence and website pages.

m. Stakeholder correspondence received by the CAA direct.

n. London Oxford Airport Operational Assessment.

o. London Oxford Airport Consultation Assessment.

p. London Oxford Airport Environmental Assessment.

CAA Analysis of the Material provided

19. As a record of our analysis of this material the CAA has produced:

a. An **Operational Assessment** which is designed to brief the decision maker whether the proposal is fit for purpose. This assessment contains:

b. The CAA's assessment of the airspace change proposal justification and options considered.

c. The CAA's assessment of the proposed airspace design and its associated operational arrangements. An assessment of the design proposal is produced to illustrate whether it meets CAA regulatory requirements regarding international and national airspace and procedure design requirements and whether any mitigations were required to overcome design issues.

d. The CAA's assessment of whether adequate resource exists to deliver the change and whether adequate communications, navigation and surveillance infrastructure exists to enable the change to take place.

e. The CAA's assessment of whether maps and diagrams explain clearly the nature of the proposal.

f. The CAA's assessment of the operational impacts to all airspace users, airfields and on traffic levels and whether potential impacts have been mitigated appropriately.

g. The CAA's conclusions are arrived at after a CAA Case Study. An Operational Assessment is completed for all airspace change proposals and forms a key part in the CAA's decision-making process as to whether a proposal is approved or rejected. The Operational Assessment will also include any recommendations for implementation such as conditions that should be attached to an approval, if given.

h. An **Environmental Assessment** which reviews the Environmental Assessment provided by the sponsor requesting the change. The review assesses whether the sponsor has provided the data and information that had been agreed at the Framework Briefing or in subsequent correspondence and must be provided as part of the proposal. The requirements are based on the guidance in CAP 725. Those requirements have been designed to facilitate the assessments that the CAA must make when considering the environmental impact of the change. The CAA reviews the assessments made by the sponsor as part of the proposal to determine if they have been undertaken properly and the conclusions are reasonable. The CAA will check a sample of the sponsor's results and may, in some cases, undertake its own analysis. The CAA then prepares a report summarising the environmental impacts of the proposal outlining the anticipated impacts of the change if it were to be implemented, for consideration along with all the other material by the CAA decision maker.

i. A **Consultation Assessment** designed to brief the CAA decision maker on whether the proposal has been adequately consulted upon in accordance with the CAA's regulatory requirements, the Government's guidance principles for consultation and the Secretary of State for Transport's Air Navigation Guidance. The assessment will confirm whether the change sponsor has correctly identified the issues arising from the consultation and has responded to those issues appropriately. The assessment will rely, in part, on a comparison of the sponsor's consultation feedback report against the actual responses provided by consultees.

CAA assessment and decision in respect of Consultation

20. LOA planned to conduct their consultation between 15 December 2017 and 22 March 2018. The consultation commenced on 15 December 2017, but the length of the consultation was extended by two weeks to align with the timing of the separate but related BZN consultation which was itself being extended. The consultation closed on 5 April 2018. The time extension provided a total continuous consultation length of sixteen weeks.

21. The raw response data has been checked against the conclusions outlined in the sponsor’s consultation feedback report. The sponsor has adequately identified the key themes from their consultee feedback, and these have been accurately outlined in the consultation feedback report. Ninety-seven percent of stakeholders who responded to the consultation objected to the proposals and the highest proportion of objections were received from individuals within the general aviation community. Seventeen stakeholders (1.0%) supported the proposals.

22. The CAA has made the following assessment of the consultation:

a. The consultation took place when the proposal was at a formative stage. The consultation document stated that wherever possible the sponsor would strive to minimise any adverse impacts by design before submitting

their final proposal. The sponsor significantly modified the proposal in the light of the consultation feedback received.

b. The consultation material was presented clearly, written in a suitable manner for both aviation and non-aviation stakeholders and outlined the potential impacts that needed to be considered. The sponsor facilitated two sessions open to all stakeholders to provide information on the airspace change proposals and responded to requests for information and clarification throughout the consultation.

c. The sponsor provided enough time, namely sixteen weeks from 15 December 2017 to 5 April 2018, to allow considered responses. This timeline included a two-week extension to align with the BZN consultation which was itself being extended.

d. The product of the consultation has been taken into account by the sponsor. Objections and alternative proposed solutions received from stakeholders were considered by the sponsor which led to modifications being made to the proposal consulted on.

23. The CAA's full assessment of the consultation is contained in the CAA's Consultation Assessment referred to above and published on the CAA's website.[4] In summary the CAA has concluded that the quality of LOA's consultation and response to consultation feedback was sufficient for the CAA to proceed to consider whether to approve the change requested.

24. The significant number of objections received during the consultation led to a phase of airspace re-design to mitigate the concerns raised. In re-designing the airspace proposal, the sponsor demonstrated that they were prepared to be influenced and, where appropriate, modify their design in response to stakeholder feedback. As a result, their consultation can be deemed to have been "meaningful".

[4] Available on the CAA website London Oxford Airport Airspace Change Proposal | UK Civil Aviation Authority (caa.co.uk)

25. In November 2019 the sponsor met with some aviation stakeholders at a Stakeholder Engagement Event, presented a revised airspace design to them and received informal feedback.

26. However, the final design submitted to the CAA presented a solution that was significantly different to that originally consulted on. The final proposal was not the subject of a second consultation. We consider that given the difference in the final design from that originally consulted upon and the degree of stakeholder interest in, and opposition to, the proposed change, an additional consultation would have assisted LOA in understanding and accurately assessing the impacts of the modified design on stakeholders as well as considering any appropriate mitigation.

CAA Consideration of Factors material to our decision whether to approve the change

Explanation of statutory duties

27. Pursuant to the Civil Aviation Authority (Air Navigation Directions) 2017, as amended in 2018 and 2019, ("the Directions"), it is one of the CAA's air navigation functions to decide whether to approve a proposal for a permanent change to airspace design. The CAA's statutory duties when carrying out its functions under the Directions are contained in section 70 of the Transport Act 2000 (the Transport Act). Those duties include taking account of Guidance to the CAA on Environmental Objectives relating to the exercise of its air navigation functions. In accordance with guidance given to the CAA by the Secretary of State, the version of Guidance on Environmental Objectives relevant to consideration of this proposal is the 2014 Guidance[5].

28. These functions, the law and policy framework in which they are carried out are set out in more detail in [Annex C]. In summary, the CAA's primary duty under section 70(1) of the Transport Act requires that the CAA exercises its air navigation functions so as to maintain a high standard of safety in the provision

[5] Revised in 2014 by the Department for Transport https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/269527/air-navigation-guidance.pdf

of air traffic services. This duty takes priority over the application of section 70(2) and section 70(3).

29. Where an airspace change proposal satisfies all of the material considerations identified in section 70(2) and where there is no conflict between those material considerations, the CAA will, subject to exceptional circumstances, approve the airspace change proposal.

30. Where an airspace change proposal satisfies some of the factors in section 70(2) but not others, this is referred to as a conflict within the meaning of section 70(3).

31. In the event of a conflict, the CAA will apply the factors in the manner it thinks is reasonable having regard to them as a whole. The CAA should give greater weight to duties that require it to "secure" something than to those that require it to "satisfy" or "facilitate".

32. The CAA regards the term to "take account of" as meaning that the duty in question may or may not be applicable in a particular case and the weight the CAA will place on such factors will depend heavily on the circumstances of the individual case, giving the CAA discretion to apply the appropriate expert judgment when balancing all factors. The analysis of the application of the CAA's statutory duties in this airspace change proposal is set out below.

Conclusions in respect of safety

33. The CAA's primary duty is to maintain a high standard of safety in the provision of air traffic services and this takes priority over all other duties.[6]

34. In this respect, with due regard to safety in the provision of air traffic services, the CAA is satisfied that the proposals maintain a high standard of safety.

35. However, the objective of the proposal was to create a safer environment by creating a 'known traffic environment' and offer greater protection to IFR aircraft inbound to LOA and other users. It also aimed to improve the operational

[6] Transport Act 2000, Section 70(1).

interaction between BZN and LOA procedures and reduce the number of conflictions and interactions.

36. In respect to these aims the proposal fails to satisfy these safety related aims for the following reasons:

    a. LOA safety justification for a supporting TMZ is not robust and in fact majors far more on reducing service provision impacts on LOA traffic.

    b. LOA's proposal demonstrates a misunderstanding of what a TMZ does and does not do. It does not, contrary to what is stated in LOA's proposal, 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[7]. A TMZ gives a better-known environment, in which TCAS (Traffic Collision Avoidance Systems) also becomes a creditable mitigation.

    c. The proposed airspace construct, in itself, and consequent interaction of instrument procedures for LOA and BZN does not deliver the desired reduction in potentially complex and time-consuming coordination between the respective ATC staffs. LOA has not conducted modelling of the feasibility of operating under the proposed structure and the submission does not contain an estimate of increased levels of Radio Telephony (R/T) that may result from the proposal.

Conclusions in respect of securing the most efficient use of airspace

37. The CAA is required to secure the most efficient use of the airspace consistent with the safe operation of aircraft and the expeditious flow of air traffic.[8]

38. The CAA considers that the most efficient use of airspace means the use of airspace that secures the greatest number of movements of aircraft through a

[7] Transponders allow accurate information with regards an aircrafts' height/altitude to be displayed on radar via the operation of Mode S/A/C. However, this information can only be used by controllers for separation and coordination, if the information has been checked for accuracy by confirmation between the controller and the pilot (verified and validated).
[8] Transport Act 2000, Section 70(2)(a).

specific volume of airspace over a period of time so that the best use is made of the limited resource of UK airspace. It is therefore concerned with the operation of the airspace system as a whole.

39. The CAA considers the expeditious flow of air traffic to involve each aircraft taking the shortest amount of time for its flight. It is concerned with individual flights.

40. In this respect, whilst users flying IFR approaches to LOA and flying VFR profiles in the Air Traffic Zone (ATZ) would have the benefit of efficient flight profiles by being contained within a TMZ and flying the proposed IFR approaches, there is significant impact on other airspace operators. The size and classification of the proposed airspace is proportionate when considering the potential efficiency benefits of IFR aircraft operating at LOA. However, the proposal does not adequately facilitate access for many other types of aircraft movements. The final design is not predicated on a safety argument, it is based on the containment of existing and proposed instrument flight procedures, which is not mandatory requirement.

41. The rules of a TMZ have not been fully understood and there are numerous references within the proposal that highlight this misunderstanding, such as: intimating that aircraft would need permission to enter a TMZ and implying that LOA would be in contact with aircraft within the TMZ. Therefore, knowing the aircrafts intentions and being able to deconflict the activity with the IFR aircraft using the LOA procedures. The misapplication of the TMZ rules has led to a design which does not meet the aims of the proposal as identified by LOA and it fails to secure the most efficient use of airspace.

42. It is the CAA's view that the introduction of RNAV procedures and technology is necessary in order to ensure the most efficient use of UK airspace. This is reflected in more detail in the CAA's Airspace Modernisation Strategy[9] (the

[9] CAA's Airspace Modernisation Strategy

AMS), which replaced the Future Airspace Strategy.[10] The AMS reflects the UK's relevant international obligations in this area.

43. The proposed RNAV procedures, submitted as part of this ACP, have not been subject to Instrument Flight Procedure (IFP) design review. The formal review of the submitted procedures was not conducted due to their intrinsic linkage to other elements within the proposal that the CAA did not approve. The CAA were not able to consider the proposed IFP as standalone.

Conclusions in respect of taking into account the Secretary of State's guidance to the CAA on environmental objectives

44. As set out in more detail in [Annex C], the CAA has a duty to consider a number of material considerations when deciding whether or not to approve a change to the structure of UK airspace including the anticipated impact of the change proposed on the environment.

45. The overall exposure of any individual or community to noise on the ground is not anticipated to increase to a level that exceeds 57dB $LA_{eq16\ hour}$, where the increase in the level of exposure to noise in itself exceeds 3dB as a result of the proposed change. As set out in the CAA's ERCD's Environmental Assessment this is because it is anticipated that the proposed changes to departure routes will have no impact upon the airport's L_{EQ} noise contours.[11]

46. The CAA has made the following assessment with respect to the anticipated environmental impact of the proposal:

47. With regard to CO_2, LOA has assessed the impact on emissions in a manner that is acceptable to the CAA; they recognise the Department for Transport objectives in relation to climate change and acknowledge that the proposed change sought to enable traffic departing and arriving at LOA to get more direct routes and more efficient vertical flight paths; both of which would be expected by LOA to contribute to the achievement of the Government's climate change

[10] http://www.caa.co.uk/Commercial-industry/Airspace/Future-airspace-strategy/Future-airspace-strategy/.
[11] Noise contours are used to represent on a map the location of places affected by different average noise levels.

objective in a positive way. However, LOA acknowledges that these benefits must be weighed against the number of aircraft that are predicted to choose not to route through the new airspace and will therefore fly a longer route as a result of the change. In LOAs' estimation, only a minimal impact is expected.

48. The expected impact on CO_2 emissions is presented by LOA qualitatively, based on the assessment of the fact that the new proposed routes are more direct and on the reasonable expectation that there may be fewer broken off approaches. On balance only a minimal effect is expected, which appears to be reasonable.

49. With regard to, Local air Quality, CAP725 emphasises that aircraft operations below 3,000ft impact local air quality, with the portion of aircraft operations below 1,000ft having the potential to have the most impact on local air quality. LOA has qualitatively assessed the expected impact on local air quality, on the basis that the proposal "does not include any increase in traffic, combined with the more efficient use of the airspace and reduced failed approaches all indicate that if anything, there will be a negligible or net improvement in local air quality." The CAA considers this to be an adequate and acceptable assessment.

50. With regard to AONBs and National Parks and AONB's, LOA concludes that; the proposal is unlikely to impact on any National Parks as there are none located close to the proposal. The closest site to the change proposal that holds a nature designation is that of the Surrey Hills Area of Outstanding Natural Beauty (or AONB). The border of this designated site lies approximately 16 miles to the South West of the airport.

51. The CAA's ERCD has assessed the anticipated impact of aircraft noise that results from the changes proposed and in so doing had regard to the altitude-based priorities as given to the CAA by the Secretary of State in the 2014 Air Navigation Guidance to CAA on Environmental Objectives and also the guidance in respect of the environmental impact of new technology of the type that is the subject of this proposal.

52. The FAA's Environmental Design Tool (or AEDT) was used to carry out noise modelling for the change proposal submission, based on LOA Traffic Data for a 92-day summer period (16 June–15 September 2016) as is the standard. This information was gathered for Runway 19/01 (the longest runway available at the airport). Aircraft details including available aircraft types were input into AEDT and differentiation was made between departure and arrival profiles. Where specific aircraft types were not available, within the model, comparative aircraft models were used. The Modelling utilised traffic data for traffic experienced at the airport over three separate weeks using the summer period of 2016 which allowed for the production of contours on the basis of an "average" summer day to be input into the model (on the basis of a 75/25% runway split).

53. LOA does not host any night flights so in accordance with the requirements set out in CAP 725, no SEL footprints were required to be produced, a fact acknowledged by LOA.

54. The resulting L_{Aeq16h} noise contours were illustrated within the Consultation document, with levels between 54dB and 72dB L_{Aeq16h} plotted. These contours are for the current situation and show that noise at or above 54dB L_{Aeq16h} extends out to 2.5nm from the runway ends. This is in the area where aircraft are stabilised on the approach path and therefore the proposed ACP will not alter noise exposure at or above 54dB. LOA stated in response to concerns raised by parish councils and local communities with regard to environmental concerns that; if correctly flown, the Missed Approach Procedure (MAP) would not fly directly over the Otmoor Bird Sanctuary (that was of particular concern to stakeholders) and that in any event an aircraft will have passed 2000 ft by the time that they are abeam the Bird Sanctuary so the noise level would be low.

55. In line with the Air Navigation Guidance 2014, the CAA has considered the potential for 'respite' options[12]. However, due to the nature and objectives of this Change Proposal in seeking an airspace volume, consideration of respite

[12] Respite is planned and predictable alleviation from aircraft noise. One example of respite is having SIDs taking different routes to the same UK exit point which are used at different times. Respite can be designed into airspace structures more easily once aircraft tracks are predictably concentrated on to safely separated routings, enabling the use of them to be alternated or varied. There is currently no agreed minimum distance between routes such that alternating their use would result in acceptable respite.

options is not deemed to be appropriate. In addition, the 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, leading to LOA undertaking further work to seek more acceptable solutions, the outcome of which being the current proposal.

56. For the reasons set out in this decision, the CAA acknowledges the anticipated environmental impact of the proposed change and has taken this into account when weighing the factors that the CAA is required by statute to consider when making its decision whether to agree to the change proposed.

Conclusions in respect of aircraft operators and owners

57. The CAA is required to satisfy the requirements of operators and owners of all classes of aircraft.[13]

58. In this respect only owners and operators of aircraft based at or operating to/from LOA supported the proposal. The requirements of the gliding community, the MoD and operators at surrounding airfields have not been satisfied or suitably mitigated.

59. The proposal can restrict access for some operators (those without a transponder) and fails to provide adequate evidence of alternative access arrangements for them. The requirement to be transponder equipped to access the TMZ potentially increases costs for non-equipped aircraft operators for access to the airspace, and a change sponsor should make reasonable endeavours to mitigate this.

60. The proposal fails to demonstrate that LOA fully understands the impact of the change to a TMZ on other airspace users. As highlighted earlier in this document, this is due to an apparent misunderstanding of what a TMZ is and how it will be operated. This in turn means it has not been possible for LOA to define or even estimate the impact on other users.

61. The implementation of new IFR approaches would have resulted in reduced CO_2 for operators using the procedures to fly into LOA due to more direct

[13] Transport Act 2000, Section 70(2)(b).

routeing and potentially less aircraft being broken-off. However, as acknowledged in the proposal, the benefit will be minimal when offset against the extended routes that other operators might fly if they chose to avoid the TMZ.

Conclusions in respect of the interests of any other person

62. The CAA considers the words “any person (other than an operator or owner of an aircraft)” to include airport operators, air navigation service providers, members of the public on the ground, owners of cargo being transported by air, and anyone else potentially affected by an airspace change proposal.

63. The CAA is required to take account of the interests of any person (other than an owner or operator of an aircraft) in relation to the use of any particular airspace or the use of airspace generally. The CAA examined a number of anticipated impacts, some of which attracted feedback during the consultation process outlined above.

64. This decision document deals above with consideration of the anticipated environmental impact on the public on the ground in the paragraphs relating to the environmental impact of the proposed change.

65. The proposed TMZ retains the same airspace classification (Class G) as is currently in operation and the proposed IFR procedures replicate the existing procedures. Therefore, the impact on any other person is limited.

Integrated operation of ATS

66. The CAA is required to facilitate the integrated operation of air traffic services provided by or on behalf of the armed forces of the Crown and other air traffic services.[14]

67. In this respect, the proposal has failed to provide evidence of resolving integrated operational issues of the proposed airspace with the MoD. The proposal does not resolve integration issues with the inbound and outbound IFR procedures and associated MAPs of both LOA and BZN. The draft LoA is

[14] Transport Act 2000, Section 70(2)(e).

included in the proposal which encompasses the tactical operation of the conflicting procedures of BZN and LOA but is not sufficient to solve the integration issues without significant controller intervention.

Interests of national security

68. The CAA is required to take into account the impact any airspace change may have upon matters of national security.[15] There are no impacts for national security.

69. In this respect, the proposal satisfies this requirement.

International obligations

70. The CAA is required to take into account any international obligations entered into by the UK and notified by the Secretary of State.[16] The UK's international obligations that relate to the introduction of RNAV-1 or performance-based navigation are set out in [Annex D]. With regard to replication procedures, all foreign operators will be able to fly the proposed procedures providing the crews and aircraft are certified and approved to fly RNAV-1 procedures in accordance with their own States' national regulations. The CAA has taken these international obligations into account.

71. The proposed RNAV procedures, submitted as part of this ACP, have not been subject to Instrument Flight Procedure (IFP) design review. The formal review of the submitted procedures was not conducted due to their intrinsic linkage to other elements within the proposal that the CAA did not approve. The CAA were not able to consider the proposed IFP as standalone.

15 Transport Act 2000, Section 70(2)(f).
16 Transport Act 2000, Section 70(2)(g).

Chapter 3

CAA's Regulatory Decision

72. Noting the anticipated impacts on the factors we are bound to take into account, as detailed above and in the Operational Assessment, **we have decided to not approve the proposal** to introduce new RNAV (GNSS) procedures and TMZ Airspace in the area surrounding LOA for reasons including that:

73. LOA's proposal demonstrates a misunderstanding of what a TMZ does and does not do. It does not, contrary to what is stated in LOA's proposal, 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 (Traffic Collision Avoidance Systems) also becomes a creditable mitigation.

74. There is no demonstrable understanding of the impact of this change on other airspace users. This is due in part to a misunderstanding of what a TMZ is and how it will be operated. This in turn means it has not been possible for LOA to define or even estimate the impact on other users.

75. The impact of this change on other airspace users could have been better understood and mitigated if a further consultation had been undertaken after the significant shift in proposal to a TMZ with no airspace classification change. LOA's decision not to undertake an additional consultation has resulted in a proposal which does not adequately take into account the impacts on stakeholders, particularly other airspace users.

76. Without an additional consultation on the TMZ solution, it has not been possible to define or even estimate how the proposal achieves a known traffic environment, in accordance with its stated aim, and no attempt has been made to do so by the sponsor.

77. The proposal has failed to provide evidence of resolving integrated operational issues of the proposed airspace with the MoD. The proposal does not adequately resolve integration issues with the inbound and outbound IFR procedures and associated MAPs. The draft LoA is included in the proposal which encompasses the tactical operation of the conflicting procedures of BZN and LOA but is not sufficient to solve the integration without continued and significant controller intervention.

78. Overall, the ACP fails to satisfactorily address the objectives and aims of the ACP as set out by LOA in the SoN. Those being: to create a 'known-traffic environment to offer better protection to IFR aircraft inbound to LOA, improve the interactions between LOA and BZN and modernise the IFP approaches in line with CAA Policy.

Civil Aviation Authority

February 2021

Annex A

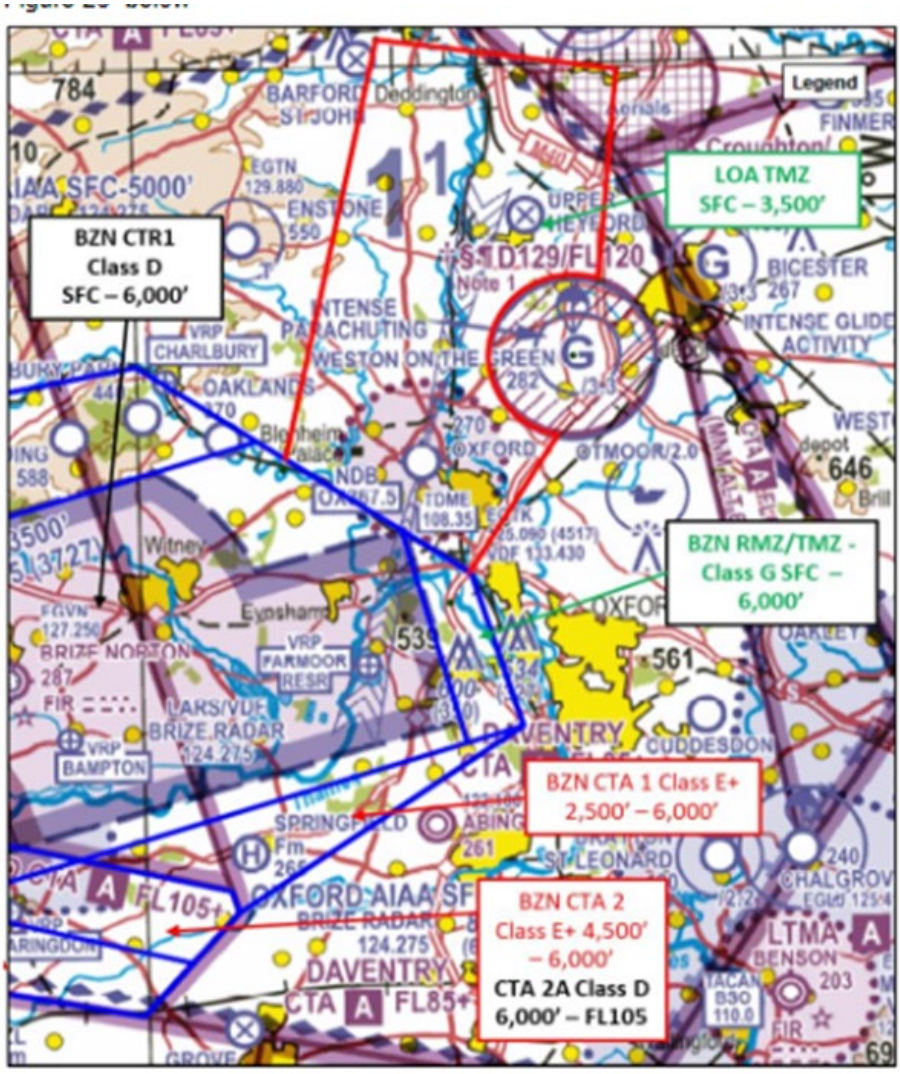
Conditions

There are no conditions associated with this Regulatory Decision.

Annex B

Diagrams relating to change

Extract from London Oxford Final Submission – showing the area of the proposed TMZ.



Annex C

The CAA's role in airspace change decisions, the legal framework, the policy background and relevant UK international obligations

C1. The Secretary of State has, in the Directions[17], given the CAA the function to decide whether to approve proposals to change the design of airspace. The CAA via its statutory air navigation functions is required to consider proposals to permanently change the structure of UK airspace design in accordance with its published strategy[18], procedures and policy for the design and classification of UK airspace.

C2. By Section 70 of the Transport Act 2000 (the Transport Act), the CAA is under a general duty in relation to air navigation to exercise its functions so as to maintain a high standard of safety in the provision of air traffic services. That duty is to have priority over the CAA's other duties in this area of work.

C3. Noting that priority, the CAA's duties in relation to air navigation is to exercise its functions in the manner it thinks best so that:

a. It secures the most efficient use of airspace consistent with the safe operation of aircraft and the expeditious flow of air traffic.

b. It satisfies the requirements of operators and owners of all classes of aircraft.

c. It takes account of the interests of any person (other than an operator or owner) in relation to the use of any particular airspace or airspace generally.

[17] https://www.caa.co.uk/uploadedFiles/CAA/Content/Standard_Content/Commercial_industry/Airspace/Airspace_change/2017%20Directions%20as%20amended%20by%202018%20and%202019%20Directions.pdf

[18] CAP 1711 Airspace Modernisation Strategy.pdf (caa.co.uk)

d. It takes account of any guidance on environmental objectives given to the CAA by the Secretary of State.

e. It facilitates the integrated operation of air traffic services provided by or on behalf of the armed forces and other air traffic services.

f. It takes account of the interests of national security.

g. It takes account of any international obligations of the UK notified to the CAA by the Secretary of State.

C4. Where there is a conflict of these material considerations (other than safety, which must always take priority), the CAA must apply them as it thinks reasonable having regard to them as a whole.

C5. The CAA must exercise its functions in this area so as to impose on providers of air traffic services the minimum restrictions consistent with the exercise of those functions.

C6. The CAA will approve an airspace change proposal that best satisfies all of the material considerations (where safety is not in issue), or all the material considerations that are engaged. Where a change would satisfy some of the material considerations, but would be contrary to the fulfilment of others, then there is a conflict within the meaning of Section 70 of the Transport Act. In reaching a decision in such circumstances, the CAA will apply its expertise to all the relevant information before it and use its judgement to strike a fair balance between the material considerations.

C7. In striking that balance the CAA relies on the wording of Section 70 which indicates the relative importance of any given factor.

C8. In the instance of conflict, the CAA will usually offer suggestions to the sponsor of a proposal as to how the conflict might be mitigated or resolved, including encouraging the sponsor to engage with affected stakeholders in determining how the desired outcome might be achieved.

C9. The CAA considers the most efficient use of airspace to be that use of airspace that secures the greatest number of movements of aircraft through a specific

volume of airspace over a period of time so that the best use is made of the limited resource of UK airspace. It is therefore concerned with the operation of the airspace system as a whole.

C10. The CAA considers the expeditious flow of air traffic to involve each aircraft taking the shortest amount of time for its flight. It is concerned with individual flights.

C11. The CAA considers the words "any person (other than an operator or owner of an aircraft)" to include airport operators, air navigation service providers, members of the public on the ground, owners of cargo being transported by air, and anyone else potentially affected by an airspace proposal.

C12. The Secretary of State has given the CAA specific guidance on environmental objectives within the meaning of Section 70 of the Transport Act.[19]

C13. The 2014 Guidance includes the following:

The CAA's primary objective is to develop a "safe, efficient airspace that has the capacity to meet reasonable demand, balances the needs of all users and mitigates the impact of aviation on the environment".

In December 2012, the industry-led FAS Industry Implementation Group launched its plan for delivering Phase 1 of the FAS up to c2025. A considerable component of the plan is the need to redesign UK's terminal airspace to make it more efficient by using new procedures such as Performance-Based Navigation (PBN)[20] and better queue management techniques.

C14. The 2014 Guidance states the need to balance environmental factors against other factors:

The purpose of the Guidance is to provide the CAA and the aviation community with additional clarity on the Government's environmental objectives relating to air navigation in the UK. However, when considering airspace changes, there may be other legitimate operational objectives, such as the overriding need to

[19] https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/269527/air-navigation-guidance.pdf
[20] Of which RNAV-1 is a type.

maintain an acceptable level of air safety, the desire for sustainable development, or to enhance the overall efficiency of the UK airspace network, which need to be considered alongside these environmental objectives. We look to the CAA to determine the most appropriate balance between these competing characteristics.

C15. The need to strike a balance specifically in relation to noise is stated as follows:

The Government has made it clear therefore that it wants to strike a fair balance between the negative impacts of noise and the economic benefits derived from the aviation industry.

C16. The 2014 Guidance also states the Government's overall policy to limit the number of people significantly affected by aircraft noise.

C17. The 2014 Guidance states that the CAA should keep in mind the following altitude-based priorities:

a. In the airspace from the ground to 4000ft AMSL the Government's environmental priority is to minimise the noise impact of aircraft and the number of people on the ground significantly affected by it;

b. where options for route design below 4000ft AMSL are similar in terms of impact on densely populated areas the value of maintaining legacy arrangements should be taken into consideration;

c. In the airspace from 4000ft AMSL to 7000ft AMSL, the focus should continue to be minimising the impact of aviation noise on densely populated areas, but the CAA may also balance this requirement by taking into account the need for an efficient and expeditious flow of traffic that minimises emissions;

d. In the airspace above 7000ft AMSL, the CAA should promote the most efficient use of airspace with a view to minimising aircraft emissions and mitigating the impact of noise is no longer a priority;

e. where practicable, and without a significant detrimental impact on efficient aircraft operations or noise impact on populated areas, airspace routes

below 7000ft AMSL should, where possible, be avoided over Areas of Outstanding Natural Beauty and National Parks as per Chapter 8.1 of the 2014 Guidance; and

f. All changes below 7000ft AMSL should take into account local circumstances in the development of airspace structures:

The concept of altitude-based priorities reflects the Government's desire that only significant environmental impacts should be taken into account when considering the overall environmental impact of airspace changes. Any environmental impacts that are not priorities based on the above altitude-based criteria do not need to be assessed since the assumption is that they would not be significant.

C18. Any airspace change that a sponsor asks the CAA to approve follows a seven-stage process known as the CAA's airspace change process.[21] A summary of that process is available on the CAA's website[22] and is also shown here.

The seven-stage process of an airspace change

Stage 1 – framework briefing

We meet with the organisation that is considering proposing an airspace change to discuss their plans, the operational, environmental and consultation requirements for proposing a change and set out the how the CAA process will run.

Stage 2 – proposal development

The organisation that is considering proposing the airspace change begins to develop design options and researches who needs to be consulted. They will also conduct an initial environmental assessment of the proposals which will need to be more detailed if, and by the time, the organisation proceeds with its proposal and prepares for consultation. It is recommended that the organisation invites a cross-section of parties who may be affected by the change to form a Focus Group to help with the development of the design options.

[21] Published in CAP 724 https://www.caa.co.uk/CAP724 and CAP 725 https://www.caa.co.uk/CAP725
[22] http://www.caa.co.uk/Commercial-industry/Airspace/Airspace-change/Airspace-Change/.

Stage 3 – preparing for consultation

The organisation that is considering proposing the airspace change decides on the most appropriate consultation method needed to reach all consultees. This could include a written consultation, questionnaires or surveys, using representative groups and open/public meetings. We will provide advice to the organisation on the scope and conduct of the consultation, but it remains their responsibility to ensure that the appropriate level of consultation is undertaken. Consultations should normally last for at least 12 weeks with consideration given to longer timescales where feasible and sensible. Consultation documents should be clear about the objectives of the proposal, what is being proposed, how the change would affect various stakeholders, the expected advantages and disadvantages of the proposals to all stakeholders, the consultation process and the scope to influence. If a single design option is being consulted upon, the document should state what other options were considered and why these were discarded.

Stage 4 – consultation and formal proposal submission

When the consultation is launched the organisation that is considering proposing the airspace change should make every effort to bring it to the attention of all interested parties. The organisation must ensure that accurate and complete records of all responses are kept. Following the consultation, the organisation collates and analyses all responses to identify the key issues and themes. There may be airspace design modifications in light of the consultation responses which results in the need for further consultation. The organisation is required to publish feedback to consultees. If the organisation decides it will submit a formal airspace change proposal to us to then its feedback document must include information on how the final decision on the option selected was reached. In addition to publishing the feedback report the organisation sends all the consultation responses to the CAA within its formal proposal submission.

Stage 5 – our decision

We undertake a detailed assessment of the proposal and may ask for clarification or supplementary information from the organisation requesting the change. Our assessment covers:

a. The operational need for, objectives and feasibility of the changes proposed;

b. Our analysis of the anticipated environmental benefits and impacts if the change were made; and

c. An assessment of the consultation carried out by the organisation proposing the change and of the responses received to that consultation.

Our conclusions in these three areas inform our decision whether to approve or reject the proposal. When making our decision the law requires us to give priority to safety but then to balance the need for the most efficient use of airspace with the needs of operators of aircraft and the environmental effect of aviation (including noise and CO_2 emissions). The means by which we assess and balance the environmental impact within our decision-making process is set out in government policy which we implement. We normally aim to make our decision within 16 weeks of having all the information we need.

Stage 6 – implementation

If a change is approved then changes to airspace procedures and structures are timed to start on internationally specified dates which occur every 28 days on so called AIRAC-dates.[23] This ensures that the aviation community, as a whole, is aware of the changes and can prepare. In addition, the organisation that proposed the change should publicise the airspace change to members of the local community and other stakeholder groups who were consulted earlier in the process.

Stage 7 – operational review

Around 12 months after a change is implemented we will start a review of the change to assess whether the anticipated impacts and benefits, set out in the original airspace change proposal and decision, have been delivered and if not to ascertain why and to determine the most appropriate course of action. Once complete we will publish the review on our website.

[23] An internationally agreed system for the regulated co-ordination of aeronautical information updates and publication that occurs every 28-days on specified dates which apply globally.

Annex D

UK's International Obligations relating to Performance-Based Navigation

The UK's International Obligations relating to Performance-Based Navigation are subject to frequent amendments and updating. The latest Policies and Regulations can be found on the CAA website at the link below.

Policies and regulations for Performance-Based Navigation | UK Civil Aviation Authority (caa.co.uk)

Annex E

Glossary

A	ACP	Airspace change process
	AIAA	Area of Intense Aerial Activity
	AIP	Aeronautical Information Publication
	AMS	Airspace Modernisation Strategy
	AMSL	Above mean sea level
	ANO	Air Navigation Order
	ANSP	Air Navigation Service Provider
	AONB	Area of Outstanding Beauty
	APD	Approved Procedure Designer
	ATC	Air Traffic Control
	ATCOs	Air Traffic Control Officers
	ATM	Air Traffic Management
	ATS	Air Traffic Service
	ATZ	Aerodrome Traffic Zone
B	BGA	British Gliding Association
	BZN	Brize Norton
C	CAA	Civil Aviation Authority
	CAS	Controlled airspace
	Class D Airspace	Class D airspace is for IFR and VFR use. An ATC clearance is needed and compliance with ATC instructions is mandatory. Control areas around aerodromes are typically class D and a speed limit of

		250 knots applies if the aircraft is below FL 100 (10,000 feet).
	Class E Airspace	Class E airspace is for IFR and VFR use. IFR aircraft require ATC clearance and compliance with ATC instructions is mandatory for separation purposes. VFR traffic does not require clearance to enter class E airspace but must comply with ATC instructions.
	Class G Airspace	Class G airspace is for IFR and VFR use. No ATC clearance is required to fly and pilots can fly aircraft where and when they choose, providing they follow aviation legislation and there are no other restrictions.
	CONOPS	Concept of Operations
	CTA	Control Area
	CTR	Control Zone
D	dB	Decibel units
	dBA	Decibel units measured on an A-weighted scale
	DfT	Department for Transport
	DER	Departure end of runway
E	EASA	European Aviation Safety Agency
	ERCD	Environmental Research and Consultancy Department
G	GA	General Aviation
	GNSS	Global Navigation Satellite System
I	ICAO	International Civil Aviation Organisation
	IFP	Instrument flight procedure
	IFR	Instrument flight rules
	ILS	Instrument landing system
L	LAA	Light Aircraft Association
	Leq	Equivalent continuous sound level
	LOA	London Oxford Airport

	LoA	Letter of Agreement
	LTMA	London Terminal Control Area
N	NADP	Noise abatement departure procedures
	NATMAC	National Air Traffic Management Advisory Committee
	NPR	Noise preferential route
	NMS or nms	Nautical miles
P	PANS OPS	Procedures for air navigation services operations
	PBN	Performance-based navigation
	PIR	Post implementation review
R	RAF	Royal Air Force
	RMZ	Radio Mandatory Zone
	RNAV	Area Navigation
	RNP	Required navigation performance
	R/T	Radio telephony
S	SARG	Safety and Airspace Regulation Group (CAA)
	SEL	Sound exposure level
	SID	Standard instrument departure
	STAR	Standard terminal arrival route
T	TC	Terminal Control - NATS ATC Unit
	TMZ	Transponder Mandatory Zone
V	VFR	Visual Flight Rules