UK Civil Aviation Authority

Daventry CTA 6 – A review of the proposed amendment and its conclusion *(CRA-2020-001)*

CAP 2577

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Introduction

1. In July 2022 the UK Civil Aviation Authority (CAA) published its findings following its review of airspace in the Cotswold Region.
2. In this review our analysis found that the lower levels of Daventry Control Area 6 (CTA 6) appeared to be rarely utilised by air traffic, and, as a result, its class A status at the lower 2000ft was difficult to justify. We therefore decided to take this volume of airspace through to the Amend stage of the airspace classification review process (CAP 1991) which allows for a more thorough review of the airspace and the development of options to address any issues. The objective of this in-depth analysis was to determine whether the existing classification of the airspace is fit for purpose, or whether an amendment to its classification should be made, with safety and equitable access as primary considerations.
3. This document presents detail on our proposed amendment, the possible safety, operational and environmental impacts of making an amendment, and the rationale behind our ultimate decision not to proceed with the proposed amendment.
4. In order to make this information accessible to all, this document has been written in plain English. To assist with understanding some technical aviation terms have been included in a glossary in the annex of this document.

Context

History of Daventry CTA6

5. Daventry Control Area (CTA) 6 is a three-dimensional block of class A controlled airspace (CAS) in the east of the Cotswold region that exists between flight level (FL)65 and FL195. Its location is shown in the images below.

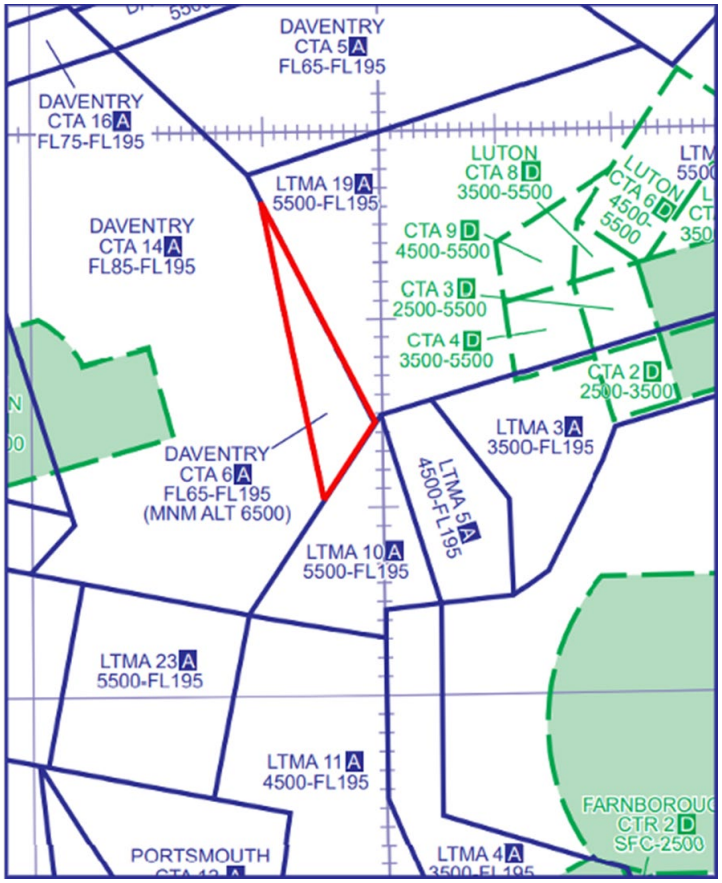

Figure 1 - CTA 6 highlighted red (Airspace map)

What is Fight Level (FL)?

Flight level (FL) is a unit of measurement for a vertical level (be it airspace definition or an aircraft's position) used by pilots and air traffic controllers. In simple terms it is translatable to an approximate altitude by adding two zeros.

For example, FL65 is approximately 6,500 feet. Airspace charts in the UK usually show either altitude or FL depending upon the airspace in question and the level being referred to. Typically, when referring to levels above 5-6000ft, FL is used, therefore most of the references in this document will refer to FL rather than altitude.

6. Figure 2 below shows the geographical location of the airspace.

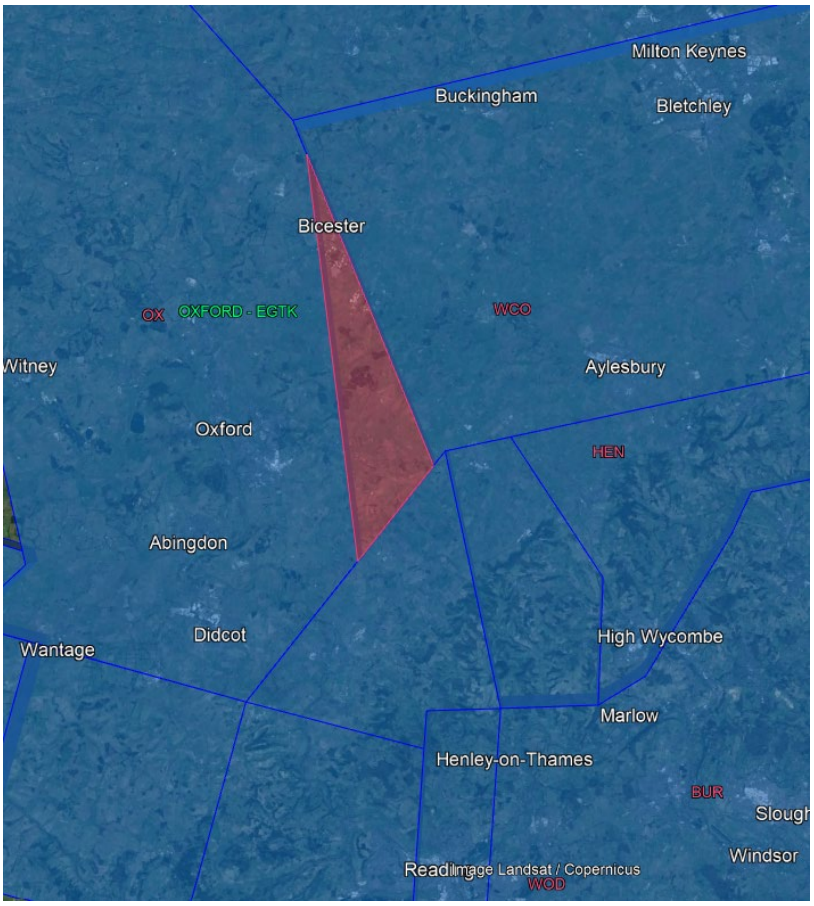

Figure 2 - CTA 6 highlighted red (Google Earth Map)

7. CAS provides protection to aircraft flying within through the provision of an air traffic control service. It is divided into different classifications which have varying rules, restrictions, and levels of air traffic control service. In the UK class A is the most restrictive down to class E being the least. Class G is uncontrolled airspace meaning any airspace user can fly in it at any time. Daventry CTA 6 is class A airspace meaning all aircraft within the airspace are required to have an ATC clearance to be in it and are then separated from all other aircraft by air traffic control. This ensures aircraft are provided a safe, and known, environment in which to fly.

8. The airspace of Daventry CTA 6 was originally part of an airway identified as M605. An airway is a ten nautical mile wide corridor of airspace covering five nautical miles either side of the centreline of an Air Traffic Service (ATS) route contained within it. Following the UK's adoption of Performance Based Navigation (PBN) ATS Routes, the CAS previously covered by airways was converted into Control Area (CTA) blocks. CTA 6 is one such block and provides protection to only one specific part of route M605 (shown below). The rest of the route is protected by other surrounding CTA blocks (not displayed in the image).

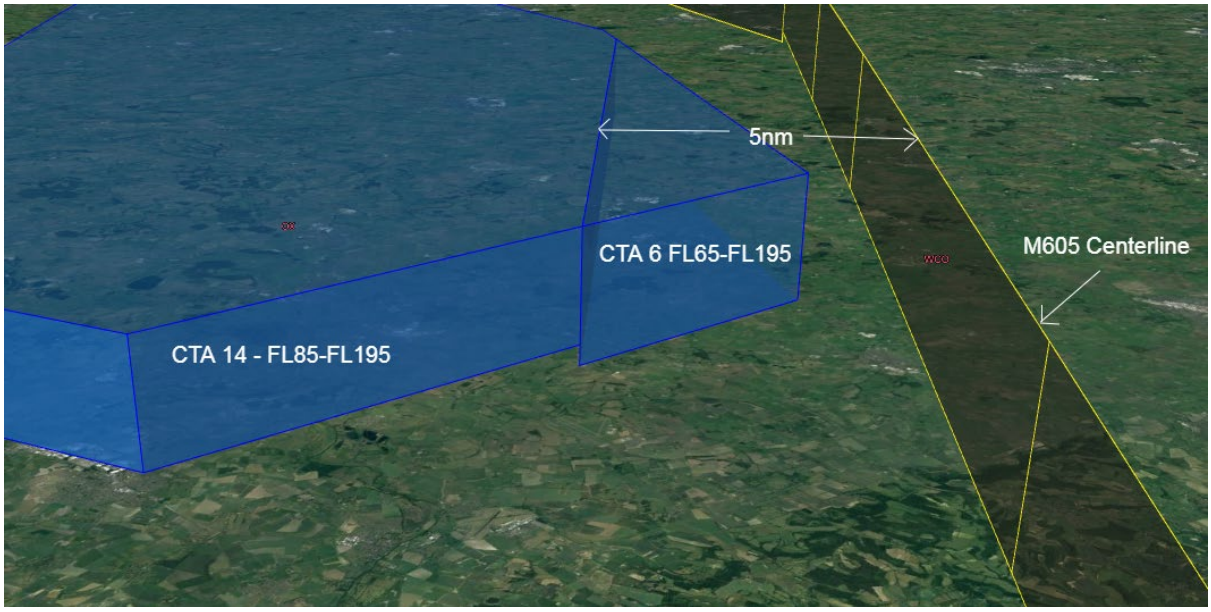

Figure 3 - CTA 6 shown in 3D to demonstrate the 5nm parallel edge to M605

9. The former airway containing route M605 originally had a lower limit of FL65 meaning aircraft could file a flight plan to fly this route at a minimum FL70 or higher. This is the lower airspace limit plus 500ft to provide a safety buffer against aircraft operating in the uncontrolled airspace beneath.

Current use of CTA 6

10. In 2015 a project was undertaken to decongest the complicated London Terminal Control Area (LTMA) airspace. To achieve this, it reduced the number of aircraft flying at lower levels within it by raising the minimum level for flying through the LTMA to FL90. No changes were made to actual airspace boundaries and the airspace structures already in place remained identical. Instead, the lower levels of routes were disestablished meaning aircraft could no longer file a flight plan through the airspace any lower than FL90.

11. M605 was one of the routes affected by this project and the lowest flyable level was raised to FL90. Therefore, it was our opinion that the rationale for retaining the airspace between FL65 and FL85 (and hence the requirement to protect aircraft routeing on M605) no longer existed. The existing vertical boundaries of the airspace are demonstrated in Figure 4.

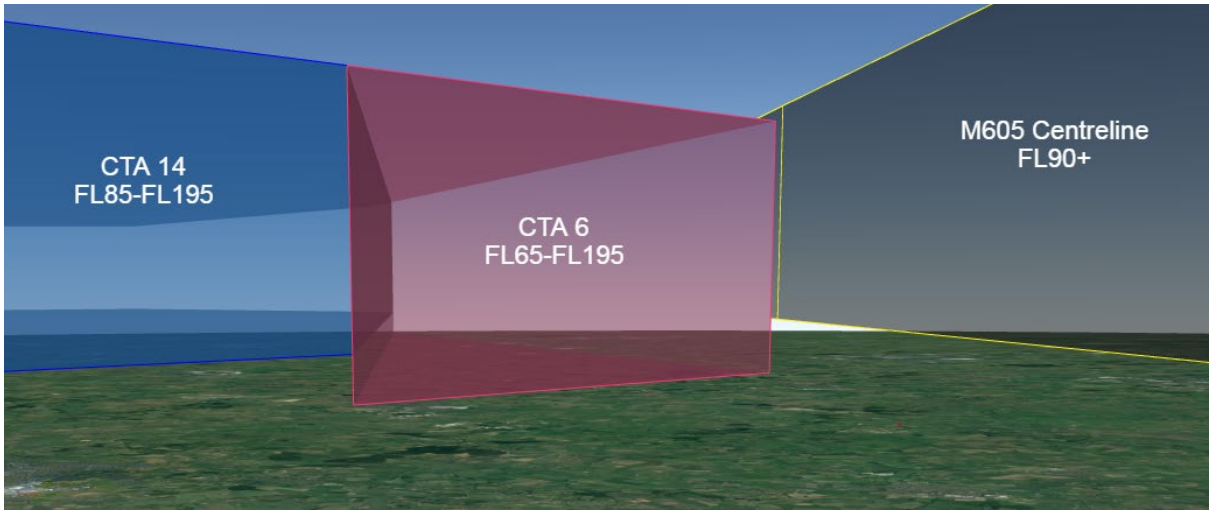

Figure 4 - Demonstrating the lower limit of CTA 6, which is 2500ft beneath the minimum cruising level of M605 (right of image) at FL90.

12. Today, our analysis has found that the class A airspace in CTA 6 between FL65 and FL85 (FL85 being the lower limit of the adjacent CTA 14 shown above) is only occasionally used. We understand that the airspace is only used tactically by air traffic controllers as no defined routes exist in this airspace at these levels.

13. Such tactical use can typically be to offer route shortcuts to aircraft and alternate climb and descent profiles to those planned for aircraft using London Luton Airport. Other use is by aircraft leaving or joining CAS to or from airfields located in class G airspace beneath the airspace structures displayed above.

14. CTA 6 does not provide any specific and intended ATC protection to aircraft using London Luton Airport as neither the departure or arrival routes and procedures pass through it.

Airspace Analyser Tool Data

Overall Use

15. The CAA has developed a tool to look at how airspace is used within the UK. It uses positional data transmitted by the aircraft and received by ground-based receivers. It is then processed in one of two ways;

    - Directly from devices with ADS-B out (i.e. emits an ADS-B signal); or
    - A method known as multilateration which triangulates an aircraft's location based upon multiple receipts of its "Mode S transponder" transmissions. –

The source data for the AAT dates back to 1 January 2018 and is used by the Airspace Classification Review team to give a visual representation of how a particular volume of airspace is used, or not used at a particular point in time, or across a given time range. Images from this tool are used within this report to display the usage of CTA 6 between FL65 and FL85.

16. Through analysing the airspace of Daventry CTA 6 within the AAT, we created the images below showing aircraft usage between FL65 and FL85 in both whole-of-year 2022, and for a typical summer "busy" week (7th – 13th August 2022).

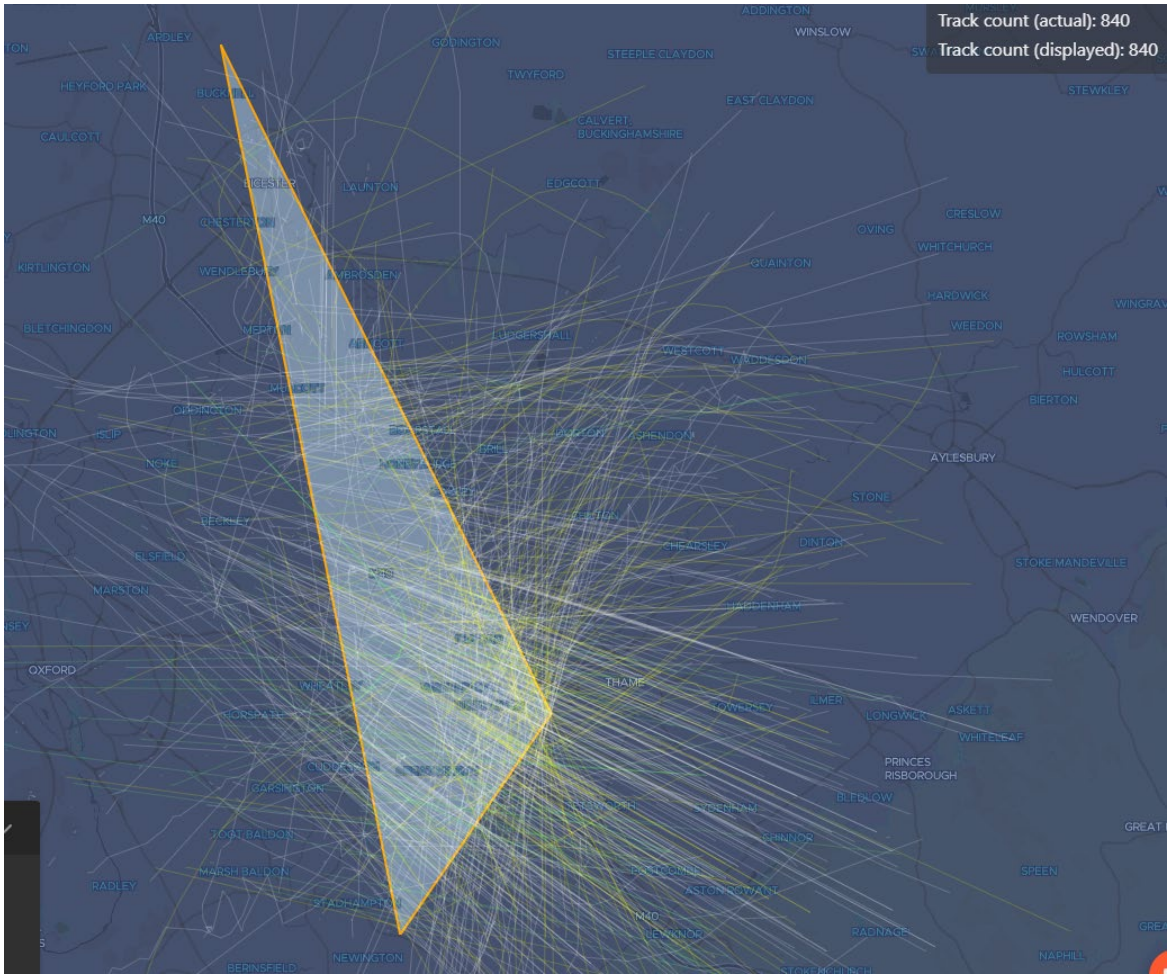

Figure 5 - Daventry CTA 6 usage for 2022

17. Figure 5 shows an annual total of 840 flights passed through the airspace during 2022, equating to, on average, 2.3 per 24hr period. Of these total flights, 471 are operating into or out of airfields beneath CAS around Daventry CTA 6 - these flights would continue to operate as they do so today and would be unaffected by this proposal. Therefore, removing these flights from the total count leaves the number of flights affected by the proposed change to be 369 per year –around one flight per day (UK average flights per day is 5000-6000 dependent upon season).

18. Figure 6 below shows 19 movements in seven days in a typically busier (by terms of number of movements per day), week within the summer period. This equates to 2.7 movements per 24hrs. By contrast, in the next 2000ft of airspace, FL85-FL105, usage was found to be almost three times higher at 58 movements within the same period (not shown).

Figure 6 One week of CTA 6 usage during August 2022

Luton Specific Analysis

19. When using the AAT to analyse the usage of Daventry CTA 6 for Luton inbound and outbound traffic the following images were created. They display arriving and departing traffic in separate images for clarity of which tracks are arrivals or departures.

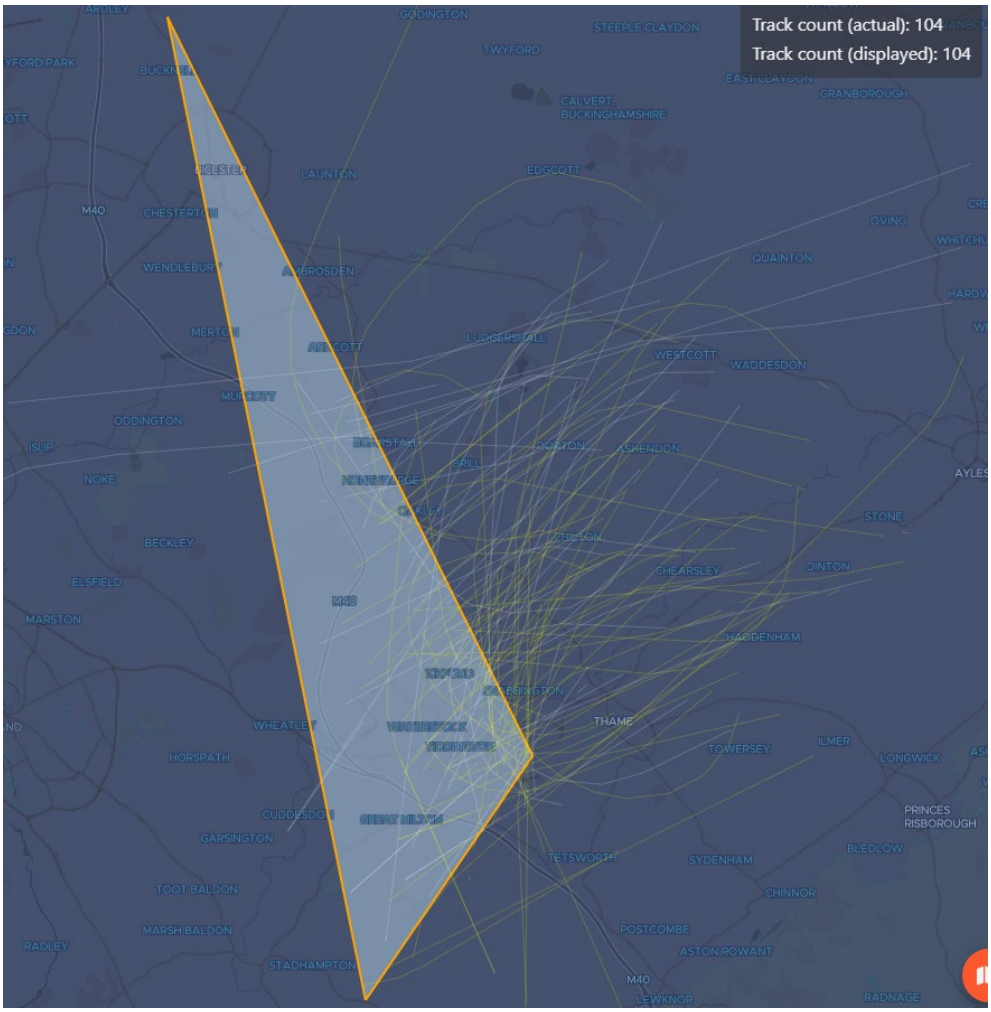

Figure 7 Luton arriving traffic using CTA 6 in 2022

20. Figure 7 shows that most flights inbound to Luton use only the eastern areas of Daventry CTA 6. Our analysis within the AAT showed that most are descending through a small portion of Daventry CTA 6 using just a few hundred feet of the 2000ft of airspace available. Further analysis of each individual flight's ADS-B timestamped data within the tool allows us to calculate that Luton arriving traffic used Daventry CTA 6 for an average time span of less than 21 seconds per flight.

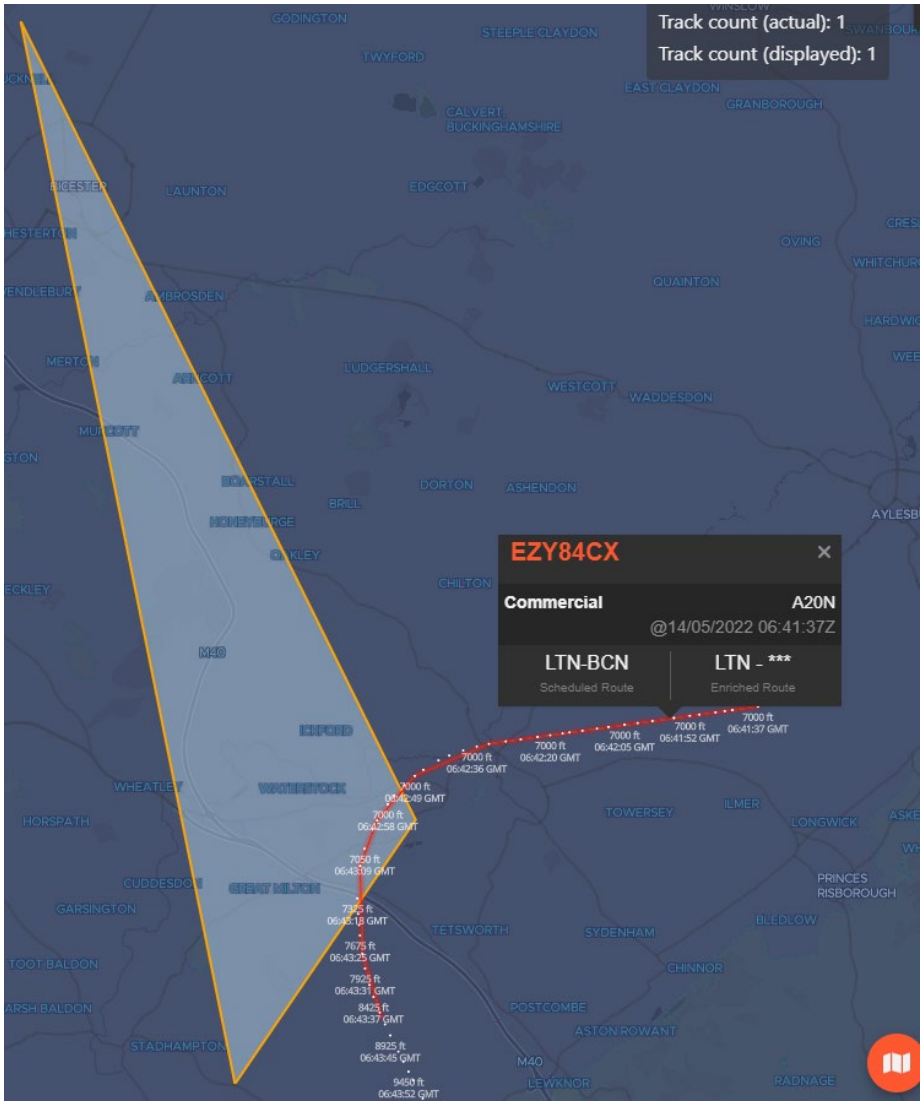

Figure 8 Luton departing aircraft using CTA 6 in 2022 (filtered to remove flights operating between Luton and both Oxford and Brize Norton which would remain using this airspace so be unaffected)

21. Luton Airport's standard departure routes do not pass through Daventry CTA 6. Departing aircraft, therefore, only come into proximity with this volume when air traffic controllers choose to vector them towards it. Of the multiple Luton departure routes, only aircraft flying one route, a "Compton 4B (CPT 4B)" departure are likely to be vectored in this area at these levels.

22. In 2022 around 16,500 aircraft departed using a CPT 4B departure. Figure 8 above shows that of these 16,500, only one aircraft entered Daventry CTA 6 in 2022. On this occasion the AAT showed the aircraft had been level at FL70 for 12 miles prior to entering the airspace. It is believed to have been vectored into this position to provide separation against an aircraft holding at the Bovingdon hold for an arrival into Heathrow Airport.

23. In summary, from detailed analysis of the airspace, it was our opinion that the classification of Daventry CTA 6 between FL65 and FL85 as class A airspace was not warranted. We had observed low usage of this airspace through analysis of the data in our AAT. We also recognised that aircraft operators are

unable to file a flight plan through this volume. Additionally, there are no formal arrival or departure routes that pass through this airspace.

24. Therefore, we concluded that the class A status of Daventry CTA 6 between FL65 and FL85 did not appear to be justified and that this volume should be taken through to the amend phase of our airspace classification review process. In reaching this conclusion, we were mindful of the CAA's Airspace Modernisation Strategy which aims to ensure that controlled airspace is kept to the minimum volume necessary for a safe and efficient air traffic operation.

Our amend proposal and design objectives

25. We proposed to raise the lower limit of Daventry CTA 6 by 2000 feet vertically from FL65 to FL85, in line with our findings that the base levels of Daventry CTA 6 appear to be used infrequently.

26. Our proposal did not include any changes to the amount of CAS above FL85. By raising the lower limit of CTA 6 the base of this volume of airspace would then be aligned to the lower limit of the adjacent airspace volume: Daventry CTA 14. It was, therefore, further proposed that for simplification both areas be combined into a single block of airspace as the defining limits would have been identical for both CTAs (FL85 to FL195).

27. The following images show the current design of airspace and the proposed solution.

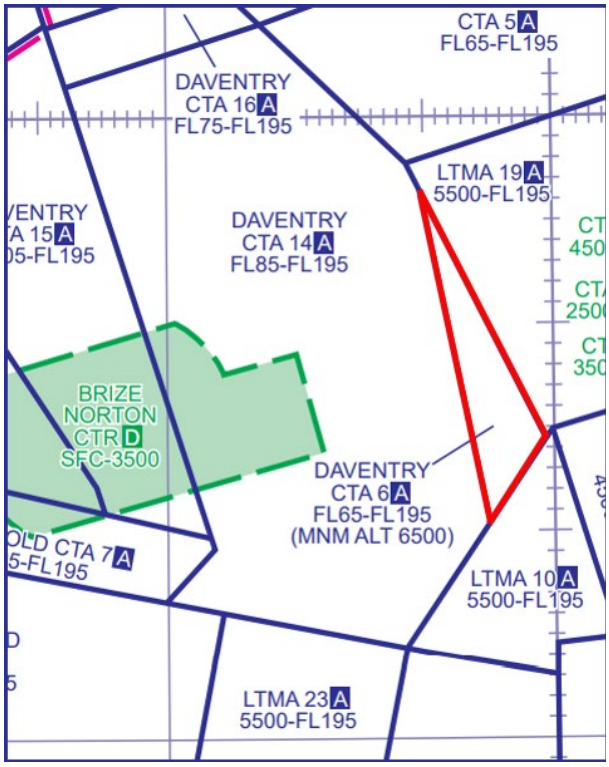

Figure 9 - Current Design - CTA 6 highlighted red

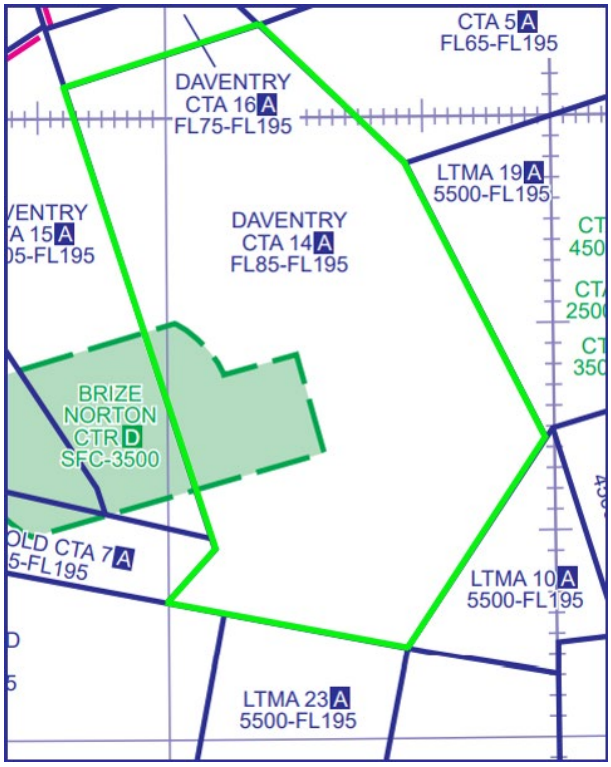

Figure 10 - Proposed Design - New dimensions of CTA 14 highlighted green

28. This change was designed to satisfy our following design objectives:

Objective 1 – Ensuring high levels of safety

29. Our proposal simplified airspace design in the area by combining the lateral areas of CTA 6 and CTA 14 into a single airspace block with a common lower limit. By simplifying airspace boundaries, the proposal would have helped to ensure high safety standards and avoid potential infringements into controlled airspace.

Objective 2 – Meet the objectives of the CAA's Airspace Modernisation Strategy (AMS)

30. The proposal to reclassify the lower 2000 feet of the Daventry CTA 6 airspace - previously class A airspace - into class G airspace was designed to align with the AMS. In particular, the AMS strives to ensure that airspace design meets the needs of all airspace users equitably. By releasing this underutilised controlled airspace, we hoped to make it accessible to a broader range of aviation stakeholders. The AMS also aims to simplify airspace for users.

Please note, the CAA understands 'equitable' to mean that needs are fairly accounted for, not that each user has the same and equal amount of airspace.

Objective 3 – Reduce funnelling and congestion of GA traffic

31. The increase in class G airspace in the Cotswold region could have helped to alleviate any congestion caused by a high number of general aviation (GA) airfields in the area.

Objective 4 – Adherence to the Air Navigation Directions

32. The Air Navigation Directions make specific reference to ensuring controlled airspace is the minimum required to maintain a high standard of air safety and equitable access. This change would have removed perceived underutilised controlled airspace and as such, had the safety case been proved, would be in line with the CAA's Directions.

Why we only proposed one option

33. Our analysis of Daventry CTA 6 showed that it is rarely used between FL65 and FL85 across the entire area and that the class A status was therefore not warranted. Due to the small dimensions of airspace both laterally and vertically, there was little scope to design any alternative solutions. There was also no reason to investigate the possibility of implementing an alternate classification for airspace used around once per day (not including flights to local airfields beneath CAS). Additionally, creating a suboptimal alternate design option, such as proposing an alternate class of controlled airspace, would not have simplified airspace, but rather increased its complexity. This would then not meet the UK and CAA's policy of keeping controlled airspace to the minimum required as well as the design objectives listed above.

34. As part of our amend process we examined a 'do-nothing', or ‘baseline’, scenario, whereby we looked at the impact of continued usage of this airspace by commercial air traffic as is, without any enhanced accessibility for General Aviation (GA) traffic. During the design phase of our proposed amendment, where we had not yet had the opportunity to undertake a more thorough safety impact assessment, considering the data available, it was our belief that ‘doing nothing’ would not have been in line with the aims of;

    - The CAA's airspace classification review process, as detailed in CAP1991;
    - The objectives of the UK Government and CAA's Airspace Modernisation Strategy; and
    - The CAA Air Navigation Directions.

    These all underscore the importance of promoting equitable access and ensuring that controlled airspace remains minimal, primarily to safeguard air traffic operations. Hence, from our initial analysis we originally believed that ‘doing nothing’ would have been inconsistent with the objectives of this proposal.

Engagement

35. Stakeholder engagement has been an integral aspect of our efforts in formulating and refining our proposal to amend Daventry CTA 6. Drawing on the knowledge of, and feedback from, stakeholders during the review stage of CAP 1991, we were able to shape a draft proposal to begin the amend stage of the process. This inclusive approach ensured that we considered a multitude of viewpoints, providing a more comprehensive and rounded understanding of the potential impacts and benefits of our proposed amendment.

NATS En Route Plc (NERL)

36. As the Airspace Controlling Authority (ACA), NATS En Route plc (NERL) is a key stakeholder and our engagement with them has been a cornerstone of this project. Given their crucial role and significant influence in airspace management, a comprehensive collaboration with NERL was undertaken to ensure that any amendment proposal was robust, viable and well-aligned with their operational needs.

37. NERL have been involved in the amend phase of this airspace since the inception of the design, offering insight into any potential airspace conflicts. No conflicts were identified at the initial stages of investigating feasibility of the proposal and NERL agreed with the CAA decision to progress the design further in the amend process.

38. This collaborative engagement took several forms, including a series of meetings, discussions, and at the later stages of feasibility investigation, several hazard identification (HAZID) and mitigation sessions. These interactions fostered a reciprocal exchange of expertise and perspectives, enabling us to address key concerns, and look at how we might mitigate potential risks and explore innovative solutions. We maintained an ongoing dialogue with NERL throughout the proposal's development, ensuring that their feedback was incorporated at every stage of the process.

Other stakeholders

39. Our engagement efforts were not limited to NERL. We also engaged actively with a variety of other key stakeholders. This engagement provided us with a broader understanding of the region's aviation ecosystem, the needs of different users, and the potential impacts of our proposed amendment.

40. We held discussions with representatives from London Oxford Airport, London Luton Airport's Air Traffic Control, and also attendees of the Oxfordshire LAIT (Local Airspace Infringement Team) meetings. These dialogues offered us valuable insights into other users' operational aspects, alternate perspectives on the

proposed amendment, and their suggestions on how to optimise the region's airspace usage.

41. In addition to this individual engagement on our amendment proposal, we were also informed by the feedback we had received during our initial review of the Cotswold Region. These responses, contributed by a diverse range of stakeholders, enriched our understanding, and played a significant role in shaping the proposal.

Planned Future Engagement

42. Our original amendment plan included a wider public consultation stage, following the proposal's full and thorough development. This would have provided an opportunity for a more diverse range of stakeholders, including the wider public and other airspace users, to voice their views and any support or concerns regarding the proposed amendment. Unfortunately, we have been unable to proceed to this stage of engagement due to the reasons explained later in this document.

43. Despite this, we remain committed to transparent and inclusive stakeholder engagement in our future endeavours. We believe that this comprehensive approach is essential in ensuring that our decisions are informed, balanced and consider the broadest possible range of perspectives in the interest of equitable airspace use.

Anticipated Effects of Proposal

44. The following analysis contained within this section of the report was completed prior to any HAZID work taking place, and as such has since been superseded with additional information providing a more detailed and specific view of the safety impact of the proposal.

45. The section is included here to detail the prior expectations which led to this project's creation and pursuance, as well as the work that went into preparing this amendment for a potential public consultation.

Summary table of impacts and benefits

46. The table below summarises the results of our impact analysis. The impact of the proposal to amend CTA 6 is compared to the "do nothing" scenario under a number of headings to inform the ultimate decision on the suitability of the change prior to any implementation.

Negative impact	**Neutral impact**	**Positive benefits**
Our appraisal has identified significant impacts or costs	Our appraisal has identified minor benefits or impacts which overall are considered neutral	Our appraisal has identified significant benefits

Group	**Impact**	**No change to Daventry CTA6**	**Our proposed change to Daventry CTA 6**
All	Safety	Airspace structure and VFR charts remain complicated resulting in increased potential for controlled airspace infringements.	Simplification of VFR charts used for navigation. Simplification of airspace structure reduces potential for controlled airspace infringements.
	Government policy	CTA 6's use shows it is a volume of controlled airspace that is infrequently used. This is contrary to UK Government policy and the CAA's airspace modernisation strategy, of keeping controlled airspace to the minimum necessary	Airspace adheres to Government policy for controlled airspace to be kept to the minimum volume necessary for a safe and efficient air traffic operation. Also in line with the Airspace Modernisation Strategy.

Group	Impact	No change to Daventry CTA6	Our proposed change to Daventry CTA 6
		for a safe and efficient air traffic operation.	
Communities	Noise impact	Expected to stay the same with no change to this airspace.	Some traffic arriving into London Luton Airport would have been at a higher level in the area meaning less noise as a minor benefit. GA traffic would remain the same but with higher altitudes available for flight potentially lowering noise further.
	Air Quality	N/A as the change is above 1,000ft.	N/A as the change is above 1,000ft.
Wider society	Greenhouse gas impact	The infrequent and inconsistent use of this airspace means is not possible to predict.	The infrequent and inconsistent use of this airspace means is not possible to predict.
	Capacity / resilience	Retaining the status quo results in GA airspace users continuing to operate in potentially unnecessarily congested areas.	More class G airspace available results in less congestion in other areas. (See safety comments below regarding concentration of some flight training manoeuvres.)
	Tranquillity	N/A – No sites of concern in the area and only affects airspace above FL65.	N/A – No sites of concern in the area and only affects airspace above FL65.
	Biodiversity	N/A – No sites of concern in the area and only affects airspace above FL65.	N/A – No sites of concern in the area and only affects airspace above FL65.
General Aviation	Access	Sporting and recreational GA unable to access CTA 6.	Increased access to sporting and recreational GA.
General Aviation / Commercial Airlines	Economic impact	Expected to stay the same with no change to this airspace.	N/A – Change does not affect aircraft tracks over the ground
	Fuel burn	Expected to stay the same with no change to this airspace.	N/A – Change does not affect aircraft tracks over the ground

Group	Impact	No change to Daventry CTA6	Our proposed change to Daventry CTA 6
Commercial airlines	Training costs	No Change to commercial airlines' procedures	No Change to commercial airlines' procedures
	Other costs	No Change to commercial airlines' procedures	No Change to commercial airlines' procedures
Airport / Air Navigation Service Providers (ANSP)	Infrastructure costs	No additional costs	Low cost – falls under the responsibility of an ANSP to ensure controlled airspace is the minimum required for a safe air traffic provision
	Operation costs	No additional costs	Low cost – falls under the responsibility of an ANSP to ensure controlled airspace is the minimum required for a safe air traffic provision
	Deployment costs	No additional costs	Low cost – falls under the responsibility of an ANSP to ensure controlled airspace is the minimum required for a safe air traffic provision

Methodology

47. To evaluate the potential impacts of the proposed amendment to our airspace, we analysed current usage patterns of this volume of airspace and made projections about how these may change in the future. We considered both traffic forecasts of the types of aircraft that operate in and around this volume as well as comparing current usage of this airspace with similar-sized airspace volumes elsewhere in the UK. This approach allows us to assess the expected effects of the amendment and inform our decision-making process.

Impact on Safety

48. Initial discussions with stakeholders familiar with the area revealed that the airspace adjacent to this area (CTA 14) is frequently used by GA pilots for practicing stalling and spinning manoeuvres due to the higher altitude available there. When practicing these manoeuvres, pilots typically try to avoid flying over built-up areas like Oxford and higher ground like the Cotswolds which could lead to a concentration of this activity toward the east of CTA 14 near the boundary with CTA 6. Our analysis suggested that, by increasing the airspace available for these manoeuvres, the potential concentration of such traffic could be alleviated, and therefore safety would be increased by a small margin.

49. Further feedback received indicated that the differing altitudes available in the area, coupled with the small size of CTA 6 on flying charts can make it difficult for pilots to read, especially whilst balanced with cockpit workload in the air. This could lead to the potential for an unintentional infringement of controlled airspace. Airspace infringements by unknown aircraft are an enabler for more serious safety risks such as mid-air collisions and as such it is a priority of the CAA, UK wide, to minimise the chances of such occurrences. By simplifying this airspace and the associated charts, we aimed to reduce the risk of infringements occurring, improving safety for all airspace users, both inside and outside controlled airspace.

50. The safety of all airspace users is our top priority at the CAA. As such, to ensure that the proposed amendment to our airspace would not have any unintended negative impacts on safety, we conducted a Hazard Identification (HAZID) process with NERL once our initial research detailed here had been completed. The HAZID process and its results are detailed in the “Safety Analysis" section beginning on paragraph 65 of this report.

Impact on the aviation community

51. In today’s operation, access to the controlled airspace of Daventry CTA 6 is restricted only to flights that have filed a flight plan with air traffic control and are flown with reference to their instruments, known as IFR (Instrument flight rules – meaning pilots follow ATC instruction and fly through clouds if required). Sporting and recreational GA are excluded from entering this controlled airspace to maintain the safety and protection of aircraft inside it receiving an ATC service. This proposal would have removed this restriction of the lower 2000 feet of this airspace by re-classifying it as class G uncontrolled airspace. This would therefore allow other airspace users to operate here.

52. It is not expected that this change would have had any significant negative impacts on the aviation community. Many flights that use this lower 2000 feet of airspace are either leaving CAS to land at airfields beneath it or are departing these airfields and wanting to enter CAS. Since these flights already operate outside CAS, it was not anticipated there would have been any changes in route or altitude for these aircraft due to this change. These aircraft were expected to fly the same route as today and continue to leave CAS in the descent, however the point at which they do so would have been 2000ft higher than today.

53. Data from the AAT shows that flights given early descent by air traffic control inbound to London Luton Airport also occasionally use this airspace. With the proposed change, these aircraft would have no longer been able to descend to FL70 in this area and would instead have been limited to a lowest level of FL90. However, our discussions with the ACA suggested that this would not negatively impact its operations.

Impact on local communities

54. The proposed amendment to Daventry CTA 6 would not have had an anticipated significant impact on local communities. While it is difficult to predict the net effect of the proposed changes with certainty, it was expected that any potential negative impacts would have been minimal.

55. Currently uncontrolled aircraft are permitted to fly outside controlled airspace in this region up to FL65. The proposed change would have allowed aircraft to fly at a higher level up to FL85. While we did not expect this change to result in significant changes to traffic levels, it is possible that the amendment may have resulted in a negligible change in the number of aircraft operating in the area. While any aircraft could be visible from the ground, given the vertical levels concerned it was not expected to affect overall aviation noise.

56. It was anticipated that this amendment may lead to some reduction in aircraft noise on the ground as the aircraft mentioned above in paragraph 53 (some Luton arrivals) would now be restricted to a higher level. This traffic is typically louder 'jet' traffic, and so a small noise benefit may have been realised by this change.

57. It is worth noting that it is difficult to predict whether there will be more GA traffic outside CAS, as these flights do not require flight plans and can be influenced by various factors such as weather, cost, and the preferences of the pilot. GA traffic "typically" operates at lower altitudes of 5000ft and below for most flying, which is already permissible in this area. Following engagement with internal and external stakeholders it was expected that this change would result in broadly the same number of aircraft operating in the area but with the potential to operate at higher levels.

58. As Government policy requires controlled airspace to be returned to class G when it is no longer needed at a higher classification, we did not believe it was right for this proposal to be affected by a lack of modellable data. However, we intended to invite feedback through consultation and engagement on any anticipated increase in pilot activity resulting from this proposal. This would have provided us with valuable additional information to help us draw up our final proposal.

Impact on the environment

59. It was our opinion that the proposed amendment would not have had a significant impact, whether that be positive or negative, on environmental considerations such as tranquillity, biodiversity, air quality, noise, and CO_2 emissions.

60. With regards to tranquillity and local air quality, the Chiltern Hills Area of Outstanding Natural Beauty and the Cuttle Brook Local Nature Reserve are located outside the boundaries of Daventry CTA 6 and were unlikely to be overflown as a result of the proposed airspace change. Within the boundaries of Daventry CTA 6, there are several Sites of Special Scientific Interest and a Local Nature Reserve that are protected for their local plant variety. However, these were not expected to

be affected by overflights at 6,500ft or above. The proposed reclassification would have also not affected operations below 1,000ft and would have had no impact on local air quality emissions.

61. It is difficult to quantify noise from general aviation because of the unpredictable nature of this type of flying. However, this traffic can currently operate up to FL65 in the area, and the proposal would have only allowed them to fly higher, which had the potential to further reduce noise.

62. London Luton Airport inbound traffic would have been restricted to a minimum level of FL90 over this area because of the proposed amendment, instead of the current FL70, meaning commercial air traffic would have been required to fly at a higher level within this airspace. It is important to note that only a small proportion of London Luton inbound aircraft currently descend to FL70 in this airspace, which is why it is was felt it was not suitable to remain class A. However, overall noise at ground level was expected to decrease because of this new higher restriction for some aircraft.

63. We did not expect our proposed amendment to give rise to a significant increase or decrease in carbon emissions because these aircraft do not currently plan to use this airspace and only do so at the instruction of air traffic control. Traffic leaving controlled airspace to land at airfields outside controlled airspace was expected to remain the same with no impact on noise or carbon emissions.

64. Air traffic control would have still been able to tactically issue routeing shortcuts for aircraft. These routes offer reduced track mileage and therefore fuel burn and emissions. Our new design would however have restricted descent to FL85 whilst within the airspace formerly defined as Daventry CTA 6 (proposed to be redefined as a larger CTA 14). Many of the flights observed to use this airspace do so for only a short portion of their flight, typically 1-2 nautical miles (NM) on the eastern edge of this area. This distance equates to around 20 seconds of flying time and a few hundred feet of vertical descent. By delaying descent for 1-2NM it was anticipated that an adjustment of vertical descent speed would be able to compensate for the change in descent profile and therefore no extra track miles would require to be flown down route in compensation.

Safety analysis of proposed change

65. In January and February of 2023 Hazard Identification (HAZID) sessions were conducted and were attended by the CAA AC Team, representatives from NERL's Airspace Delivery team, and a selection of air traffic controllers responsible for operating the ATC sector containing CTA 6, surrounding ATC sectors, and Luton approach.

66. The purpose of these HAZID sessions was to use Subject Matter Expert (SME) input to systematically identify and analyse potential hazards associated with the proposed change to airspace design. These hazards were then risk assessed for

likelihood and impact before preventions and mitigations were explored to minimise the effects of the change.

67. HAZID sessions are an essential part of the airspace amendment process as they ensure that any hazards associated with the proposed change can be identified, and appropriate mitigations put in place. This valuable information is key in supporting the decision-making process as part of the amend process and the Safety Management System (SMS) of any ATS provider. By understanding the potential risks and associated consequences, stakeholders can then make informed decisions with regards to whether to progress with the change proposed.

68. Unfortunately, during the HAZID sessions a potential issue was identified by controllers in relation to Luton departing traffic and the availability of CTA 6 for planning and fallback availability. It was felt by controllers, that, despite the current low usage of the airspace for this traffic, should the airspace be amended, it may result in a substantial change to air traffic controller behaviour and subsequent ability to execute plans which they currently operate today. This, they argued, would result in the traffic being presented to subsequent sectors in a different manner to that which it currently is (i.e. a different level and position).

69. It was identified that should this change in presentation occur it would impact a previously identified, existing hazard in an adjacent volume of airspace. When this existing hazard was further explored, and the causes examined, it was felt that the potential change in traffic presentation would aggravate four current contributory factors and potentially increase the likelihood of the of the overarching risk.

70. NERL works to ensure risk is minimised at all times, operating an “As Low As is Reasonably Practical” (ALARP) policy. As a result, NERL are unable to support our proposed change to Daventry CTA 6 due to the increased risk to the existing operation of the already complex and constrained London TMA (Terminal Manoeuvring Area) airspace.

Conclusions and next steps

71. Safety, and maximising it, is the overarching priority within the CAA. NERL is the ACA for this volume of airspace and, as per the CAP 1991 process, is responsible for producing the safety case for the proposed amendment to CTA 6.

72. Whilst the safety benefits set out in the table below paragraph 46 appeared to be tangible and beneficial, the new data received as a result of the joint NERL and CAA HAZID analysis showed a previously unidentified (by both CAA and NERL) risk that had the potential to reduce safety in this area.

73. In line with our Section 70[1] duties to maintain a high standard of safety in the provision of air traffic services, the CAA is in full support of NERL's principle to minimise risk to the lowest possible level. The safety processes of a CAP1991 airspace amendment identified a safety risk and, in line with our statutory duties, we will not progress an airspace change which has the potential to reduce safety levels. Therefore, we are withdrawing this amendment proposal to amend FL65-FL85 of Daventry CTA 6 to class G airspace from the CAP1991 Amend process.

74. NERL will be re-evaluating the existing risk affected by this proposal in the second half of 2023 when it plans to conduct a thorough review of risks and mitigations in this region. Through this further safety analysis and mitigation identification we will await any further feedback as to whether this proposed amendment may be possible in future, either as a standalone project or by its incorporation into any future airspace redesigns in this area of the country.

[1] Transport Act 2000 (legislation.gov.uk)

Glossary

Term	Definition
ADS-B	Automatic Dependent Surveillance – Broadcast; an airborne system whereby the aircraft regularly transmits its location data from the aircrafts navigation system, enabling it to be tracked by ground equipment. This data is included within the **CAA**'s **AAT**.
Airspace Analyser Tool (AAT)	Software used by the **CAA** to assess the usage and classification of airspace in the UK, which provides a view of current and historic airspace usage by user type. The tool collects and displays data on aircraft using specific areas of airspace, such as the frequency and altitude of flights.
Airspace Modernisation Strategy	The **CAA** and the Department for Transport's program aimed at updating the UK's airspace infrastructure to accommodate increasing air travel demands. The strategy's objectives include increasing airspace efficiency, improving flight punctuality, reducing CO2 emissions, minimizing noise pollution, and ensuring adequate future capacity.
Airway	A corridor of **controlled airspace** surrounding a specific route that aircraft use to navigate between locations. It is typically 10nm wide (5nm on either side of the route's centreline) and exists vertically at various levels which are often based on distance from airfields to allow for climb and descent into them.
CAA	A government body responsible for regulating civil aviation in the UK and the proposer of this amendment to airspace.
CAP	Civil Aviation Publication - Publications produced by the **CAA**
CTA – Control Area	A block of **controlled airspace** that provides protection to a specific part of an airway.
CAS – Controlled airspace	Airspace in which air traffic control services are provided to ensure the safe and orderly flow of aircraft.
Electronic Conspicuity	Technology that helps pilots, unmanned aircraft operators, and air traffic services be aware of other

Term	Definition
	aircraft in their vicinity. EC includes devices on aircraft and unmanned systems that transmit information, as well as the supporting infrastructure to make the system work. The goal of EC is to improve the "see and avoid" principle by adding the ability to "detect and be detected."
FLARM	A device that determines position, altitude and intended track. This information is transmitted to other aircraft with FLARM for collision avoidance but is also received by ground receivers and is therefore included in **AAT** data
Flight plan	A document filed by a pilot or airline that outlines the planned route and details of a specific flight.
General Aviation (GA)	All non-commercial, non-military aviation activities, including private and business flying, flight training, and various other aviation services. It encompasses a wide range of aircraft and operates from a variety of airports and airstrips.
HAZID	A meeting conducted using ATC safety specialists and air traffic controllers who work the airspace involved in the proposal to identify any safety risk(s) which potentially may be introduced with any change.
IAP (Instrument Approach Procedure)	These are predetermined flight paths and procedures that planes follow when approaching an airport to land.
Mode S Transponder	A device onboard an aircraft which is interrogated by a radar signal and in response to this emits a response containing flight data such as an aircraft's radio callsign, level and speed. This response is then received by ground based systems.
TMA – Terminal Manoeuvring Area, or Terminal Control Area	A block of / blocks of **controlled airspace** demarcated to handle high volumes of commercial traffic into and out of one or more busy international airports.