Airspace Classification Review - Cotswold Region Draft Findings Report 2021

CAP 2315

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Executive Summary

Background

As part of the UK Civil Aviation Authority's (CAA) airspace classification review procedure[1] a detailed investigation of airspace usage and classification within the Cotswold Region has been conducted.

Engagement

Our engagement generated numerous comments and valuable feedback. It was conducted via dedicated workshops, attendance at ongoing meetings, a regionally focused survey, and meetings with Airspace Control Authorities (ACAs), including NATS En-Route Plc (NERL), the Ministry of Defence (MOD) and airports. We also incorporated relevant responses from the CAA's consultation on airspace volumes, held between December 2019 and March 2020.

Airspace Analyser Tool

Our Airspace Analyser Tool provides us with a platform to enable relevant flight data to be filtered and interrogated, to gain evidence-based insight into how airspace is being used.

The traffic data has been overlaid with safety data including internal airspace infringement locations, as well as airprox data supplied by the UK Airprox Board. This has enabled us to form a robust picture of how the airspace in the Cotswold Region is currently being used, by whom, when, and at what altitude, and has helped to influence and shape our discussions with ACAs and airspace users.

Filters

Our procedure contains filters that are designed to remove volumes of airspace from our review that are not viable for an airspace classification change. The filters we apply are:

- An ongoing change in airspace design
- An adverse effect on military operations
- A significant operational/environmental impact
- Airspace considered in the preceding review cycle (not applicable in this first review)

Much of the airspace within the Cotswold Region is subject to an ongoing change in airspace design through the airspace change proposal (ACP) process. We will continue to provide any feedback and insight relating to ongoing ACPs to the relevant change

[1] Procedure for the CAA to review the classification of airspace CAP 1991, November 2020

sponsors highlighting the requirement to ensure that this insight is captured and considered as part of their ACP engagement process.

The potential application of the non-ACP filters will become more apparent once a proposed airspace classification change in a given volume is known, as the potential operational or environmental impact will be more certain.

Our Findings

Our task has identified a number of airspace volumes which have the potential to be reclassified under this process or amended in other ways using the appropriate policy. These are entitled our “Initial plan of volumes where a change could be made” (or our “Initial Plan”). We have also identified volumes of airspace where there are issues that may be better addressed through an alternative policy, a more flexible use of air traffic management or other potential solutions such as education or increased awareness.

Our Initial Plan

Volumes to Amend under the CAP 1991 Process:

The following volumes were identified as warranting further investigation and having potential to be taken forward to amend phase of our process:

Cotswold CTA 8. Our analysis showed that the lower levels of this CTA are rarely utilised. Discussions are still ongoing with Cardiff and NERL as to what can be done to ensure that the classification of this airspace is fit for purpose.

Daventry CTA 6. Our investigations identified this CTA as being infrequently utilised at its lower levels. Discussions are still ongoing with NERL regarding this volume of airspace.

Volumes where positive changes can be made via another mechanism:

South Cerney. We received a considerable number of comments citing concerns about GA being unnecessarily funnelled around South Cerney paradropping site and despite the para dropping site being activated by NOTAM, it was apparent that many respondees indicated that they understood that this airspace was permanently active up to FL150.

RAF Lyneham ATZ. Lyneham, whilst closed, maintains its aerodrome traffic zone (ATZ) on the charts, activated by NOTAM. Historical NOTAMs were checked, and MOD was asked to justify retention of the ATZ, when it has not been activated by NOTAM since the closure of the airfield. They have agreed to it being removed from the AIP.

Danger Area: D147 (Pontrilas). Our initial findings suggest that the current use of this airspace by MOD does not appear to warrant 24 hour / day segregation, nor at such a high-upper level. Our findings have been put to MOD who are currently considering whether the airspace volume and timings associated with it are fit for purpose.

Restricted Areas: R154 / R155 / R322. These three decommissioned nuclear power plants, operated by Magnox, have associated restricted airspace which is no longer required. R154 and R155 are both located within the vicinity of the Severn Estuary and within the Cotswold Region. R322 is in Anglesey and outside the Cotswold Region, however, in liaising with Magnox regarding sign off on the safety data, it makes sense to tackle all three restricted areas at once under the CAP1616 Level 0.

Areas of Intense Air Activity (AIAAs): This region of focus has part of the Shawbury AIAA and the entirety of the Oxford AIAA within it. We would like to garner stakeholder opinion on whether these constructs add value for aviators in terms of enabling better airmanship or whether they simply clutter up a busy VFR chart.

Our other findings and recommendations

Other findings from our investigation, not being taken forward in our Initial Plan are:

i. **RAF Brize Norton.** A significant number of comments were received in both the legacy consultation and the recent survey, referring to Brize Norton CTR.

The complexity and current usage of the Brize CTR and usage means it is effectively excluded via the "significant impact on military operations" filter. However, we chose to conduct our own analysis of Brize activity given the scale of responses referencing this volume and will share our findings with MOD in a bid to help inform and shape their decision making.

We have also requested that MOD consider the feasibility of visual flight rules (VFR) corridors for aircraft wearing a listening watch squawk, as well as the introduction of flexible use of airspace. MOD agreed to consider these and will report back through our routine meetings and engagement.

ii. **Education.** It was apparent from many of the consultation and survey responses, that respondents were calling for changes that are already in place. This suggests that there needs to be some consideration of how this information could be better presented to pilots as well as how to ensure better planning and preparation by pilots prior to flying. Where a refusal of service has been made, for whatever reason, we continue to urge pilots to file a form FSC 1522 Refusal of Service[2] so that we can collate this information.

iii. **Little Rissington.** Our investigations show that, since the implementation of the ATZ in August 2022, pilots have amended their routing, even when the ATZ has not been activated by NOTAM. This has resulted in pilots, on occasion, flying closer to the Brize CTR than is required. The CAA's Airspace Infringement Lead is aware and will be taking appropriate action to highlight this issue and educate users accordingly.

Ongoing Related Work

There is much related ongoing work, both internally and externally which will address some of the findings in this report and will also feed in to improving airspace use and equitable access. Of note:

- **AIP Review Working Group.** The aim of this working group is to analyse airspace information in the AIP to ascertain whether there are any publication issues e.g. compliance, harmonisation, status, function, clarity, dimensions, or service provision.
- **Defence Airspace Suitability Review.** The Defence Airspace and Air Traffic Management cell (DAATM) is reviewing extant defence airspace structures against current and future requirements.

[2] FCS 1522 - UK Airspace Access or Refusal of ATS Report (caa.co.uk)

- **Danger Area Review.** This joint CAA / MOD project is reviewing whether existing Danger Areas, and associated airspace, are fit for purpose and appropriately utilised.

Collaboration

Airspace is a shared asset and a willingness to talk and engage with other stakeholders, in a bid to understand each other's wants and needs, is essential. There are a number of established forums or mechanisms to bring stakeholders together; these include:

- Local Airspace Infringement Team meetings.
- Regional User Airspace Working Groups.
- Letters of Agreement.
- Locally established routine meetings.

Improved communication and good relations between neighbouring airspace users and ANSPs is conducive to optimised airspace use. Our investigation into this region highlights the necessity for all stakeholders to communicate effectively, regularly, openly and honestly to ensure safe operations and in such a way that wherever possible, equitable access is achieved.

Summary and next steps

We have undertaken a detailed and thorough review of airspace usage within the Cotswold Region, drawing on insight and data from internal and external sources.

We are now seeking feedback on our findings and recommendations.

Once this feedback has been considered, we will announce our Final Plan of volumes to take through to the amend stage of our process, at which point we will launch, in collaboration with the relevant ACAs, targeted activity on each volume.

Introduction

Purpose of this report

1. This is our Draft Report into the Cotswold Region undertaken as part of the process to review Airspace Classification in the UK[3]. It summarises the activity we have undertaken since the publication of our initial factual report[4] in August 2021 (CAP 2235), to further scrutinise airspace activity within the region.
2. It sets out the engagement we have held with relevant stakeholders on airspace use in the Cotswold Region and our scrutiny of the issues raised. It then sets out how we have used this analysis and engagement to inform our findings on the region.
3. The report includes our initial plan of volumes where a case could be made for a proposed amendment to airspace (our “Initial Plan”). It also includes our findings and recommendations where alternative airspace management arrangements, or another response might be a more appropriate and proportionate solution.
4. We have not produced an updated safety overview of the region; however we continue to monitor this data and use it to inform our thinking. We have liaised with the CAA’s infringement lead and the UK Airprox Board in developing our findings and recommendations. We will look to produce an updated safety section when we publish our final report later in the year.
5. This report has been prepared on the basis that the reader has knowledge of both the airspace classification review procedure (CAP 1991) as well as the related airspace change proposal (ACP) process[5] (CAP 1616).

Background

6. The UK Civil Aviation Authority's (CAA) procedure to review the classification of airspace requires us regularly to consider whether to carry out a review of airspace classification; to carry out a review (including consulting airspace users) where we consider a change might be made; and to amend the classification as we consider appropriate. This report forms part of the review phase of this procedure.

[3] Procedure for the CAA to review the classification of airspace CAP 1991, November 2020

[4] Airspace Classification Review – Cotswold Report 2021: Cotswold Report V2.0 - CAP 2235.pdf (caa.co.uk)

[5] CAP1616, Airspace Change Guidance, Mar 2021 (updated)

Our work aligns with the broader Airspace Modernisation Strategy

7. Our work sits alongside a broader piece of work to modernise UK airspace. We regularly liaise with the team leading this work to ensure that we're aligned, and it is essential that our work does not impede theirs, and over time starts to complement or even implement it.

8. Their work aligning the UK directly to the ICAO Global Air Navigation Plan and its associated Aviation System Block upgrades will see multiple changes to enable work to achieve future aviation objectives such as trajectory-based operations. This will likely see significant changes to how commercial aircraft operate in arrival and departure and will require airspace changes to enable that work.

9. That coupled with the growing number of new types of aviation platforms, such as beyond visual line of sight (BVLOS) drones, means a new approach to airspace will be required. Wider and increased airspace integration of all users in all airspace will be key. Efforts to enable this will include alignment with ICAO standards and regulated practices (SARPS) and procedures for air navigation services (PANS) and the necessary airspace changes needed to incorporate those changes.

10. Dynamic airspace management will be key, such as enabling flexible airspace where the classification/status will change, based on the actual activity occurring at the time, as opposed to what is forecast.

What happens next?

11. We are now asking stakeholders to provide a response to this document answering the following questions:

- **Do you believe we have missed, misunderstood, or misinterpreted anything in our report into the Cotswold Region?**
- **Should Areas of Intense Air Activity (AIAAs) remain? Please give supporting reasons for your answer.**

12. We will take responses up to **23:59 on 27 March 2022**. We cannot guarantee that responses received after this date will be considered as part of our review.

13. Your feedback will inform our final report on our findings in the Cotswold Region, containing our Final Plan of volumes to take forward to the amend phase. It will also set out any recommendations where reclassification is not the appropriate mechanism for addressing the issues identified.

14. We expect to move to the amend phase of our process in Spring 2022.

Cotswold Region

Airspace Delineation

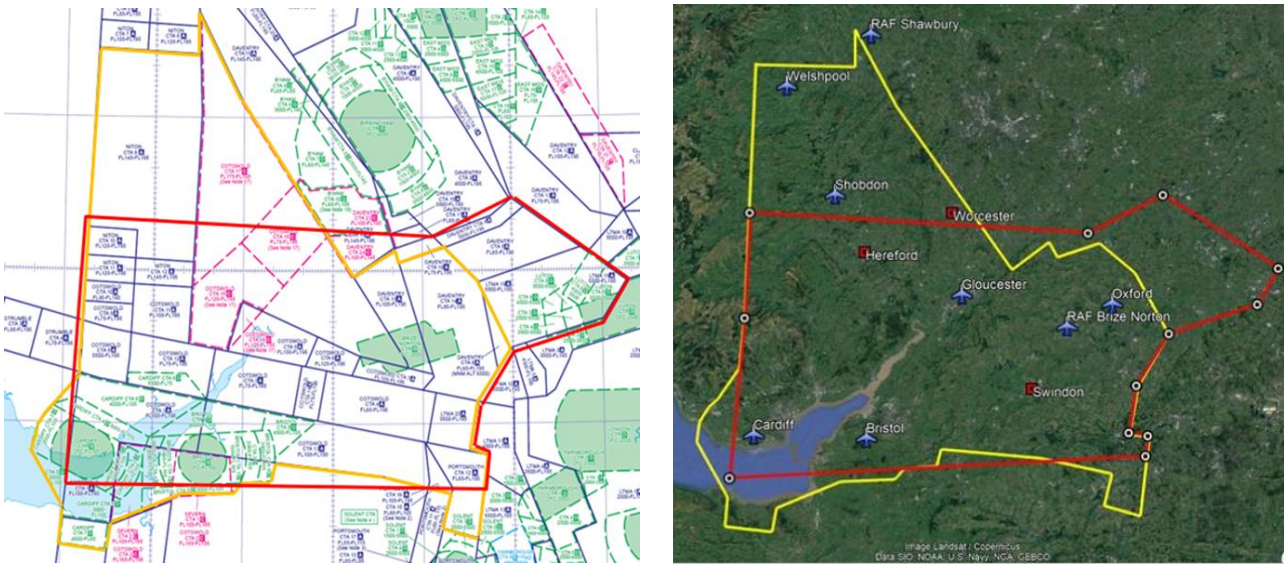
15. The volume of airspace referred to within this report is based upon the boundaries delineated by the Cotswold Altimeter Setting Region (ASR), (also referred to as “the Cotswold Region”), with some slight amendments. **Note we are not proposing to change the official boundaries of ASRs as part of this exercise.**

16. The red line in Figure 1 details the ASR as per the aeronautical Information publication (AIP) (ENR 6-1-7-1), the yellow line reflects the altered boundary for the airspace being reviewed within this report and will be referenced throughout as the Cotswold Region.

17. Alterations to the published ASR boundary were required in order to apply logic to our analysis and align with airspace boundaries:

- Extended north in to the Shawbury Triangle to incorporate the Cotswold Control Areas (CTA) CTA 15, CTA 16, CTA 17 & CTA 18.
- Eastern edge reduced. Includes Daventry CTA 6 and omits Luton airspace.
- Southern edge slightly extended to incorporate Cardiff CTA 7 and Bristol CTA 5.
- Extended to south east to include Portsmouth CTA 12.

Figure 1: Cotswold ASR (red line) vs altered boundary (yellow line)



Regional Summary

18. This region is composed of a mix of regional and local airports, numerous minor aerodromes, and glider sites. Several flying training organisations operate within the airspace and there are multiple para-dropping sites. Cardiff and Bristol airports are in the south west of the region, Gloucester Airport is in the middle and London Oxford Airport is in the north east.

19. It also contains RAF Brize Norton, the RAF's largest aerodrome, operating a range of multi-engine transport and air-to-air refuelling aircraft. Whilst RAF Benson and RAF Shawbury are out of the area boundary, their aerodrome traffic zone (ATZ) and / or military aerodrome traffic zone (MATZ) does impinge and much of their rotary operations are conducted within this airspace.

20. The Oxford Area of Intense Air Activity (AIAA) is sited in the east of the region and the Shawbury AIAA is in the north. It is a busy area for general aviation and glider activity is particularly prevalent. Airspace restrictions include several Danger Areas and Restricted Areas, gas venting sites, High Intensity Radio Transmission Areas (HIRTAs) and a bird sanctuary.

21. The region contains several areas of outstanding natural beauty (AONBs): the Shropshire Hills in the north, the Wye Valley and Malvern Hills in the centre of the region and the UK's largest, the Cotswolds AONB, in the south. Along the west side of the Cotswolds AONB is the Cotswold Edge, an 84-kilometre escarpment that rises to elevations of 300m.

Our engagement in the Cotswold Region

Overview of our engagement requirements

22. Engagement is central to our review of UK airspace. Our airspace classification review procedure emphasises the importance of transparency and engagement with interested stakeholders throughout the process, including formal consultation. Our aim is to ensure that we undertake our review in a manner which provides equal opportunities for stakeholders to contribute to our thinking throughout the process. We do this in a way which allows stakeholders to have the opportunity to influence the outcome of the review and which demonstrates that we are participating in effective two-way engagement.

23. At the review stage, our process requires us to gather insight on airspace usage, seeking feedback both from airspace users and airspace controlling authorities as well as drawing on our own data sources. This detailed intelligence gathering is then used to identify an initial plan of volumes to take forward to the amend phase and to discuss these findings with the relevant controlling authorities to seek their early feedback.

24. Having developed an initial plan of volumes, we are then required to consult aviation stakeholders on that plan before developing a final plan of airspace volumes to amend.

25. We have engaged extensively through the review process, as set out below. Given the scale of that engagement, the involvement of key stakeholder representative groups throughout the process to date, and the fact that we have previously conducted a survey on our initial investigative report, which also requested airspace volumes to take forward to the amend phase, it is not proportionate to undertake a formal consultation process at this stage and are instead seeking feedback on our findings to test whether we have misinterpreted anything. Once we launch our amend process on our Final Plan of airspace volumes, we will consult formally on each volume and any proposed changes to its airspace classification.

How we have engaged within in the Cotswold Region

Ongoing engagement activity

26. We have purposely targeted pre-existing engagement channels for the bulk of our stakeholder engagement activity, especially where the aim is to provide generic updates on our work. We regularly attend such sessions to help promote the work of the team, update stakeholders on the progress of the work and brief on the airspace classification review task more broadly.

27. Such groups include, but aren't limited to:

- **Airspace Infringement Working Group (AIWG)**: A CAA sponsored cross-industry working group aimed at monitoring airspace infringement data to identify, propose and instigate corrective actions and, ultimately, to significantly reduce the incidence of, and risks associated with, airspace infringements for the benefit of all users.
- **General Aviation Partnership (GAP):** A CAA chaired partnership with general aviation (GA) representatives which aims to keep the GA community up to date on relevant CAA activity, facilitate discussion on areas of concern, provide a forum for the GA sectors to share news on strategic achievements and challenges.
- **Local Airspace Infringement Teams (LAITs):** Cross industry teams set up in eight UK infringement hotspots to focus on reducing airspace infringements through local initiatives and targeted actions.
- **National Air Traffic Management and Advisory Committee (NATMAC)**: assists the CAA in the development of airspace policies, configurations and procedures in order that due attention is given to the diverse requirements of all users of United Kingdom airspace, civil and military
- **Industry Coordination on the Airspace Modernisation Strategy (ICAMS):** Co- chaired by representatives from the ICAMS Steering Committee, this group represents a broad mix of UK aviation industry stakeholders and aims to increase the capacity, efficiency, and integration of the UK airspace system, enhance the UK's global connectivity, enable economic growth and improve aviation's environmental performance.
- **Flexible Use of Airspace State Programme Steering Group (FSPSG):** A State-level initiative co-sponsored by the CAA, NATS and MOD and recognised within the Airspace Modernisation Strategy (CAP 1711) governance structure. It provides cross-organisational input, assurance and oversight for modernisation initiatives relating to the FUA State Programme and the management of airspace.

28. We have also engaged with the CAA's Mid-Air Collision Challenge Group and Infringement Coordination Group to share and review safety related data and discuss potential causal factors and mitigating actions.

29. We have been guided on our engagement activity through active discussion with our Airspace Engagement Group (AEG); made up of representatives from a number of GA stakeholder groups: Airspace4All, AOPA, BGA and PPL / IR Europe. This group was set up to provide a forum which helps advise on ensuring effective engagement on airspace matters when developing, reviewing and modifying policies and to gain input and proposals from the GA community.

30. We have used the AEG to advise and provide feedback on an ongoing basis on our proposed engagement approach and messaging at key points in our process. The aim being to ensure that we can reach as broad a group of stakeholders as possible.

31. When we needed to engage with our stakeholders, given the number and variety of airspace users and operators in the region and the relatively small size of the team, we chose to engage directly with the representative groups for the GA stakeholders operating within the region. We requested that they then use their own channels to promote the classification review work and seek feedback direct from their members and to provide this to us. We will review the effectiveness of this approach as we move through the process.

32. The airspace classification review process also has its own dedicated page on the CAA's external website which we use to keep stakeholders informed of the status of our activity. We have also published our initial factual report, supporting frequently asked questions, and the link to our survey on the Cotswold Region.

Targeted stakeholder engagement

33. As part of our information gathering exercise, we chose to invite stakeholders with knowledge and experience of operating within this airspace to propose volumes of airspace for review, accompanied by a rationale for their inclusion. We published a factual investigative report into the Cotswold Region, bringing together information on airspace composition, existing airspace change proposals (ACPs) and safety data. We requested feedback via the use of an online survey.

34. We held two engagement workshops which targeted all users with experience of operating in and around the Cotswold Region. We presented the findings of our report and invited stakeholders to discuss their experiences of operating within the region. We also used the sessions to encourage high quality responses to our survey by outlining the type of information which could demonstrate the case for a review of a particular airspace volume. The core aim of the workshops was to facilitate the submission of high-quality responses to our survey.

35. We also held separate targeted conversations with the relevant airspace control authorities (ACAs), including NERL, London Oxford Airport, Bristol International Airport, Cardiff Airport, RAF Brize Norton, and the MOD. We discussed the key issues raised in the survey, our analysis of those responses and the ACA's own experiences and issues with providing a service. We also attended the Light Aircraft Association (LAA) Rally fly-in at Sywell to speak directly to users about our review, as well as to raise awareness of the work of the team.

36. Further information on our approach to stakeholder engagement can be found in our initial Cotswold Region Report[6] (CAP 2235).

[6] Airspace Classification Review – Cotswold Report 2021: Cotswold Report V2.0 - CAP 2235.pdf (caa.co.uk)

The results of our engagement survey

37. We received 42 responses to our survey covering 29 volumes of airspace from a range of stakeholders covering fixed wing aircraft, gliders, paragliders, hang gliders, helicopters and 'other' users, including manufacturers, trainers, and service providers. The survey asked respondents to comment on the quality of the information provided in the report. The majority of the respondents found it accurate (or said they had no way to verify) but some minor suggestions were made.

38. Respondents were asked to identify volumes of airspace within the region, for review under this procedure and for potential amendment with an explanation as to the reasoning behind this. The majority of responses mentioned either MOD aerodromes – Brize Norton in particular, Bristol airspace volumes and Restricted or Danger Areas. They also expressed safety concerns such as "choke points" created by narrow gaps between controlled airspace volumes in certain areas. The most common suggestions were to increase base levels of control areas (CTAs) in the area to reduce an impact on cross-country gliding operations, to reduce the size or change the shape of certain airspace volumes, or to establish flexible use of airspace procedures instead of volumes remaining permanently controlled.

39. Survey respondents were also asked if they could suggest any other improvements to enhance the safe and equitable use of airspace in the region other than an amendment of airspace classification. Several ideas focused on simplifying the airspace structure, learning from other countries' airspace design solutions, introducing more flexible use of airspace, changes to existing air traffic control procedures or levels of service in certain areas.

40. The survey results provided us with better insight into the concerns of the sporting and recreational general aviation community in the region, and in particular, their needs in terms of airspace design and procedures. All survey responses have been considered on equal basis regardless of how many responses have been received about a single issue or airspace volume.

41. The map below provides a high-level view of where survey respondents have proposed a raise in the base level, or a reduction or change to the classification of an airspace volume.

Figure 2: Cotswold Region Map with Engagement Survey Areas of Interest*

*Note some airspace volumes mentioned in the survey responses are not highlighted in this map, as no changes were suggested by respondents, or the suggestion related to something other than removing/reducing the airspace volume or raising its base level.

When will you next engage with stakeholders?

42. Co-operation between the CAA and the relevant control authorities on any amendment is a key feature of the amend stage. We will identify the most appropriate channel to action proposed changes, working closely with the designated ACAs of the volumes we are taking forward and will develop a more targeted stakeholder engagement approach.

43. This will ensure that we are able to identify relevant, local stakeholders and ensure that our engagement approach targets the right audience, communicates in a way that suits that audience, and gives the tools to make informative, valuable contributions to the proposal development of any amendment.

Our Analysis using our Airspace Analyser Tool

44. We collated the views expressed during the engagement sessions and within the survey responses, to use as the starting point for our analysis. We also referred to the consultation conducted by the CAA in December 2019 – March 2020 (the 'legacy consultation') to determine whether there were any pertinent points which could contribute to our analysis of the Cotswold Region. Much of the intelligence gathered was investigated via our Airspace Analyser tool.

45. The Airspace Analyser tool has been developed on behalf of the CAA by a third party. It utilises both historical and "live" data supplied by Plane Finder, providing a platform to enable this data to be filtered and interrogated to gain evidence-based insight into how airspace is being utilised. Historical data and a live feed are available, giving the ability to collate aircraft track samples and examine individual flights. This functionality allows the CAA to carry out its own investigations as well as validate insight that we receive through other mechanisms such as mandatory occurrence reports, ACP or airspace review feedback. The traffic data has been overlaid with safety data including internal airspace infringement locations as well as airprox data supplied by the UK Airprox Board (UKAB).

46. It is important to understand the limitations of the data that is within the tool and of the tool itself. The data is supplied by Plane Finder which records aircraft that are visible to their detection systems. It is the case that not all aircraft that operate in the airspace are visible on the tool. Aircraft are detected and recorded using the systems below, they are:

    - ADS-B (Automatic Dependant Surveillance-Broadcast)
    - FLARM: A system that calculates and broadcasts aircraft position and future flight path
    - MLAT (Multilateration, using multiple radar heads and Mode-S transponders).

47. These electronic devices transmit information that, when within the coverage area of the appropriate receiver, mean they will appear on the tool. Aircraft that do not carry these devices will not be visible to our tool, these aircraft would appear as "primary only" on a "traditional" radar system.

48. The majority of commercial air transport services carry equipment to make the aircraft 'detectable', hence a very high percentage of these are visible on the tool. Similarly, most gliders and some light aircraft carry FLARM, so many are displayed. There is however a significant number of light aircraft and older military aircraft that are not equipped in this way and will not be detected or recorded. Therefore, the number of aircraft displayed on the tool will be the minimum meeting the selected search criteria.

49. This analysis has enabled us to form a good picture of how the airspace in the Cotswold Region is currently used, by whom, when and at what altitude, and has helped to influence and shape our discussions with ACAs and airspace users.

Filters applied to the volumes

50. Our procedure contains filters that are designed to remove volumes of airspace from our review that are not viable for an airspace classification change. The filters we apply are:
    i. Airspace that is the subject of a change in airspace design
    ii. Changes with an adverse effect on military operations
    iii. Changes that would have a significant operational/environmental impact
    iv. Airspace considered in the preceding review cycle (not applicable in this review)
51. While gathering data and intelligence on the Cotswold Region, we identified that much of the airspace is subject to an ongoing Airspace Change Proposal (ACP). Because of this it is clear the ACP filter has the biggest impact on our ability to make changes in this region.
52. The airspace volumes below have been filtered out of our review as per the “airspace that is subject to a change in airspace design” filter. The list of ACPs below is not exhaustive, but does mention the ACPs that are most predominant in our region:

Cardiff & Bristol

- Bristol FASI South ACP-2018-55
- Cardiff FASI South ACP-2019-41
- LAMP Deployment 1.1 ACP-2017-70
- Rename/Remove En-Route dependencies ACP-2020-101
- Removal of En-Route dependencies from Brecon DVOR ACP-2019-069

En-Route Airspace

- (NITON CTAs 9-12, Berry Head CTA 1, LTMA 23, Portsmouth CTA 12 & 16, Severn CTAs 1-2, Cotswold CTAs 1,2,4,6,7,9-18)
- LAMP Deployment 1.1 ACP-2017-70
- Removal of En-Route dependencies from Brecon DVOR ACP-2019-069
- SAIP Deployment 5 ACP-2017-77
- SAIP Deployment 6 ACP-2018-65
- Rename/Remove En-Route dependencies ACP-2020-101
- Manchester & East Midlands FASI North ACP-2019-77

MOD Airspace

- Change in notification of Colerne ATZ ACP-2019-52
- RAF Little Rissington airspace structure ACP-2019-45
- RAF Fairford ATZ Operational Hours ACP-2021-041

Restricted Airspace (R106, R153, D119)

- Cardiff FASI South ACP-2019-41
- Statutory Instrument 703/2021 (Not an ACP)

St Athan

- Cardiff FASI South ACP-2019-41
- St Athan ILS ACP-2018-35

53. It is worth noting that any airspace volume not mentioned above, could still be subject to any of the other filters listed, particularly the ‘adverse effect on military operations’ and ‘significant operational/environmental impact’ filters. The potential application of these filters will become more apparent once a proposed airspace classification change in a given volume is known, as the likely impact will be more certain.

54. We have gathered information and intelligence across the Cotswold Region regardless of the filters that exist. Where the above airspace volumes have been filtered out of our current review due to active/ongoing ACPs, we will be passing all intelligence and comments we have received to the change sponsors of those ACPs.

55. It also might become clear that a more appropriate solution is required other than an airspace classification change, and these will be set out in this report.

CAA Legacy Consultation Comments Handover

56. In December 2019 the CAA launched a consultation exercise to identify volumes of controlled airspace where the classification could be amended to better reflect the needs of all airspace users on an equitable basis. This consultation provided over 600 responses, identifying c1100 airspace volumes across the UK flight information regions (FIRs).

57. At the beginning of 2021, after the CAA's Airspace Classification Review Team announced a refreshed approach to the task. It collated the consultation comments and passed these on to the associated Change Sponsors of existing ACPs.

58. We grouped together all the responses according to the relevant airspace volume and provided a summary of the comments along with a visual representation to illustrate the areas concerned. We also created a pack which outlined the CAA expectations for each change sponsor where they had an ACP between stages 1-2 of the CAP1616 process. We stated in that pack, and publicly, that we expect to see evidence that a change sponsor has considered and responded to the insight provided to them from this consultation at the appropriate stage of their CAP 1616 process.

Legacy consultation comments relating to the Cotswold Region

59. The comments received that were relevant to the Cotswold Region have been included within the review. As we investigate other regions, the comments pertinent to those areas will, in turn, be incorporated.

Our Findings

60. In order to arrive at the findings below, we sought input from Stakeholders via the surveys and workshops detailed above. We also held internal meetings to understand any supporting and related work taking place elsewhere within the CAA, in particular Airspace Regulation, Safety, Policy, the GA Unit and AMS teams. We met with MOD, ACAs, airports, ANSPs etc. in a bid to understand any airspace usage concerns they had, and to explore what worked well. We discussed our findings with UKAB and it became very clear that many of our findings, particularly those around education, were supported by theirs. We then used our Analyser Tool extensively to corroborate or contradict what we were being told.

61. Whilst significant analysis has been conducted to arrive at the findings below, for brevity, we have opted not to include it all within this report. We have, however, made it clear to those we've spoken to throughout this investigation, that we are able to provide our detailed analysis, should they wish to view it.

Findings relating to Ministry of Defence (MOD)

Overview

62. The UK operates a Joint & Integrated approach to airspace policy, planning and management, and the provision of air traffic services. Close cooperation is required between the CAA and the MOD in order to ensure that the UK's airspace is managed in a safe, orderly and efficient manner.

63. A guiding principle of this approach is the fact that airspace is a shared resource. As mentioned earlier in this report, one of the filters that would render airspace unsuitable for a change via the CAP 1991 process, is where a change would have "an adverse effect upon MOD operations". Despite this, MOD has demonstrated willingness to work closely with our team in assessing whether the airspace volumes it has control authority for are fit for purpose and encourage equitable access wherever operations allow.

64. Since the Airspace Classification Review Team commenced its review of the Cotswold region, MOD has independently launched its Defence Airspace Suitability Review (DASR), with one of its stated aims being to review extant Defence airspace structures against current Platforms'/Units' requirements. We will continue to engage regularly and to monitor the progress of the DASR.

RAF Brize Norton

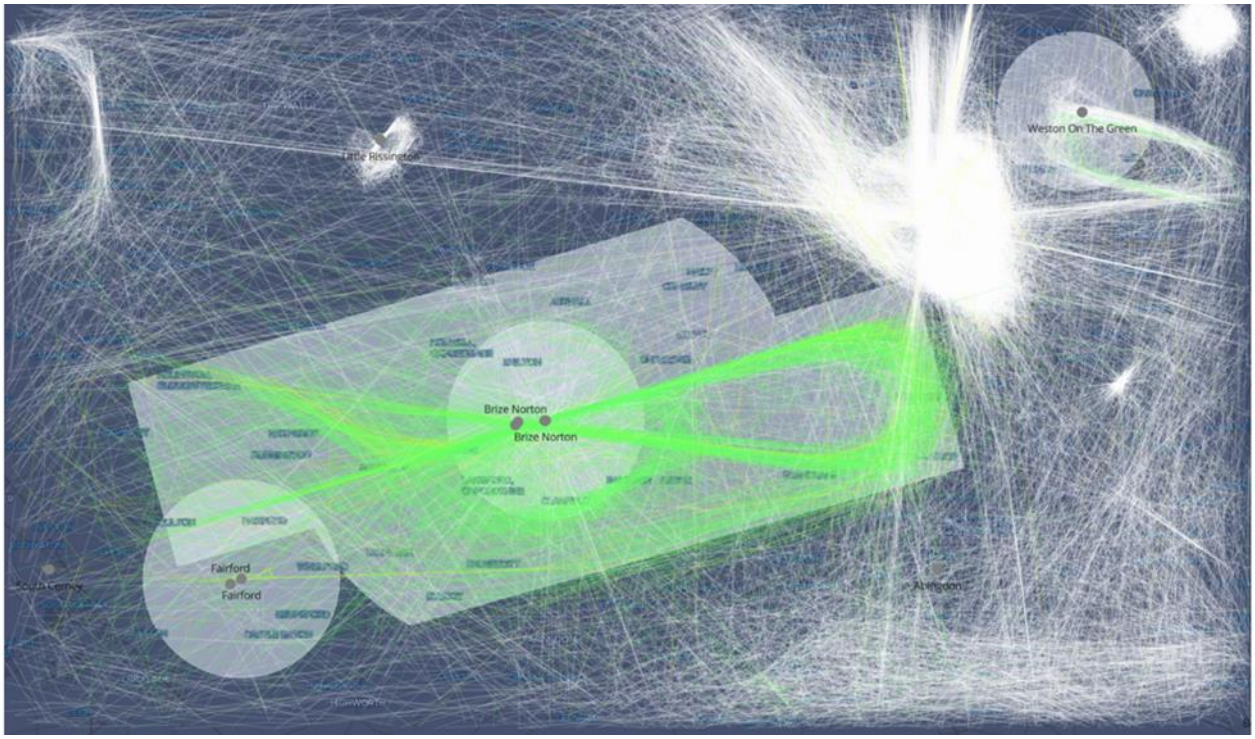
65. A significant number of comments were received in both the legacy consultation and the recent survey with reference to Brize Norton control zone (CTR), with remarks ranging from an inability to get a crossing clearance, difficulty in obtaining a Lower

Airspace Radar Service, suggestions that the volume of airspace is too large for the perceived low number of aircraft movements and questions relating to the requirement for it to maintain H24 status.

66. The complexity and current usage of the Brize CTR means that this volume of Class D airspace is out of scope for the CAP 1991 process, via the "adverse effect upon military operations" filter. Nonetheless, we chose to conduct our own analysis of Brize activity, given the importance and scale of responses referencing this volume. We also liaised with MOD on a frequent basis, through the MOD's Defence Airspace and Air Traffic Management cell (DAATM) and also via a visit to Brize Norton Air Traffic Control Squadron.

67. The Brize Norton CTR sits within an extremely congested and contested region of airspace. Figure 3 below shows 5000 (the maximum the system can display) of the 41643 tracks picked up by our analyser tool, operating within the year 2019 and at or below FL50.

Figure 3: Brize Norton CTR / Fairford MATZ / D129 with Military (Green) & Non-Commercial (White) traffic movements, from the CAA's Airspace Analyser Tool.



68. Whilst it was not possible for us to validate the claims received via the legacy consultation and the survey, regarding pilots' inability to obtain zone crossing clearances, we did raise this when we visited Brize. The controllers there stated that a refusal of crossing was extremely rare but did acknowledge that crossing clearances were sometimes issued with a different level or routing to that requested. They also conveyed the difficulty of facilitating crossing clearances at requested levels, whilst factoring in directives surrounding defensive controlling and TCAS-RA.

69. This scenario was discussed with the CAA's ATS Inspectors who confirmed that this is not specific to Brize Norton and that the same issue is encountered by other

airports. Of note, it is incumbent upon air traffic service providers to manage airspace using a risk-based approach to safety. They must establish the acceptable level of safety for airspace access, capturing the assessment and mitigation of internal and external threats to the operation.

70. In order to be in a position to investigate refusals of access, pilots are encouraged to complete and submit the FCS 1522 - UK Airspace Access or Refusal of ATS Report (caa.co.uk). The revised CAA internal process will then ensure that the circumstances of the refusal of access or service are investigated and captured accordingly.

71. MOD has indicated that Brize Norton will submit a Statement of Need for a new ACP in the summer, the specific details of the new proposed airspace change were not discussed during the visit. The previous ACP was not approved by the CAA. The Airspace Classification Review Team conducted considerable analysis of aircraft movements in and around the CTR and has offered this insight to MOD going forward. This would likely take the form of sharing the analysis and findings from our work and forwarding all relevant feedback from the Cotswold Region engagement, in a bid to inform any re-launch of the ACP and assist with their decision making. In the interests of transparency, the team intends to provide this insight at the appropriate point in their ACP process, most likely via a response to their CAP 1616 consultation.

72. Through engagement with stakeholders who operate in this airspace, we are aware of the willingness of organisations to collaborate with RAF Brize Norton as they develop their next ACP and have actively encouraged MOD to welcome and support such collaboration.

73. Notwithstanding the fact that the Brize CTR is currently out of scope for our process, we have recommended that MOD consider the feasibility of VFR corridors for aircraft wearing a listening watch squawk and suggested that flexible use of airspace wherever possible should be considered. MOD agreed to consider the above and will report back through our routine meetings with them.

RAF Benson

74. The survey also generated comments relating to RAF Benson, with questions regarding the requirement for it to retain a Military Aerodrome Traffic Zone (MATZ), citing concerns about its presence generating a choke point for VFR traffic, particularly those operating around Reading and for those transiting to / from the Oxford Brize area.

75. These concerns were put to MOD and they responded that for operational reasons, Benson does require its MATZ, they stressed the willingness of Benson air traffic control (ATC) to provide a zone transit service and also highlighted the fact that, as per AIP 2.1.1 ‘In the airspace outside the Aerodrome Traffic Zone (ATZ), observation of MATZ procedures is not compulsory for civil pilots’.

RAF Shawbury, RAF Lyneham and Colerne Air Traffic Zones (ATZs)

76. We received comments questioning the requirement for government aerodromes to maintain their ATZ 24 hours / day (H24), particularly in cases such as Shawbury where it was believed that very little station-based flying took place over weekends.

77. Our analysis indicated that there was very little flying during weekends at RAF Shawbury and this was put to MOD. They advised us that the requirements and operating hours for Shawbury's ATZ will be reviewed as part of the ongoing work within Airspace Regulation, reviewing ATZ Policy (as outlined later in the report).

78. We also received comments incorrectly stating that RAF Lyneham's ATZ was still in place, despite the station having ceased flying some time ago, with concerns raised that pilots were unnecessarily having to avoid it. The ATZ does still feature on the charts, however, it is activated by NOTAM. Our analyser tool indicated that the majority of transits below 2000' were not avoiding the ATZ. Historic NOTAM activation of this volume of airspace was requested via the European Database and it seemed that it had never been activated, therefore we raised the perceived need to maintain it on the charts with MOD. They agreed to remove it and this will be actioned as part of the CAA's wider ATZ Review, which will also capture the review of Shawbury's ATZ, see below.

79. Colerne is in a similar situation to Lyneham in that its ATZ is activated by NOTAM. We discussed this with MOD but, owing to the fact that the recent change to the status of Colerne has not been subject to a post implementation review as yet, it is out with the scope of this work. We have, however, requested that MOD consider whether this ATZ is likely to be activated by NOTAM on a regular occurrence and if not, to consider removing it from the AIP.

Danger Areas (DAs)

80. The MOD operates several DAs within the Cotswold Region and the requirements for the management of these is stated in CAP 7407, "*The strategic aim for Defence Airspace Management (ASM) is to enable all arms of Defence to 'train as they would fight' by safeguarding long term access to appropriately sized and sited airspace, which can be reserved for hazardous activities, while minimising the impact on other airspace users. This aim is underpinned by the UK joint and integrated approach to ASM and the MOD's adherence to national ASM Policy set out in this document. Within this policy, the application of the Flexible Use of Airspace (FUA) concept is a key aim of military ASM Policy, to ensure that through the daily allocation of flexible airspace structures any segregation of airspace for military activities is based on a 'need-to-operate' basis within a specific time period and airspace volume*".

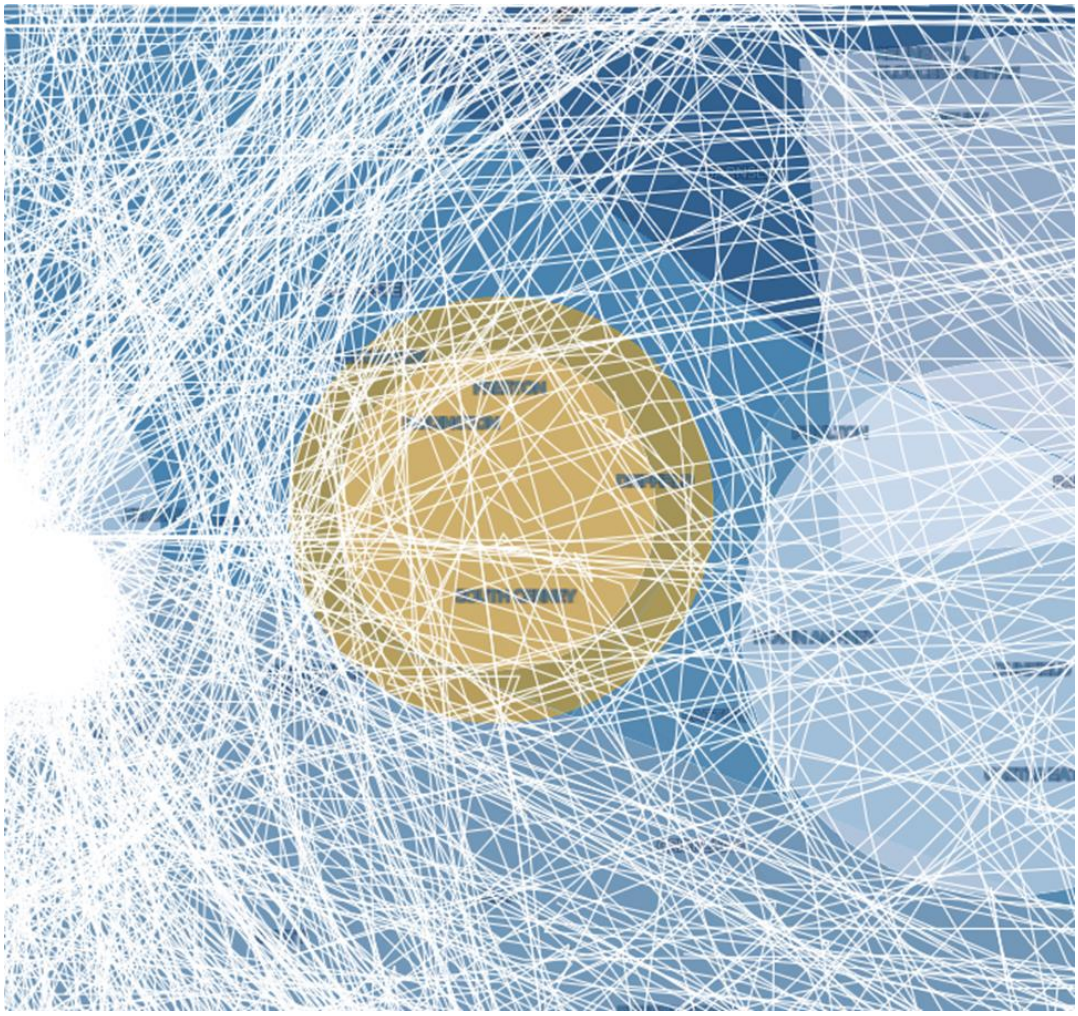
81. **D129, Weston-on-the-Green (WOTG)** paradropping area generated a lot of comments, mostly focusing on the fact that its usage doesn't warrant 24 hour / day

[7] CAP 740 UK Airspace Management Policy (caa.co.uk) Pg 41

(H24) status. Upon investigating the comments received re this volume of airspace, it was apparent that many respondents incorrectly believed that the airspace was active H24. As per the AIP entry, the DA is active Monday – Friday, sunrise to sunset. Our analysis showed that the DA is frequently utilised during its promulgated hours of operation. The DA Airspace Manager also maintains an appropriate management structure to oversee all aspects of the DA use in line with CAP 740 requirements.

82. **South Cerney,** whilst not a Danger Area, is a paradropping site listed in AIP 5.5. A considerable number of responses cited concerns about GA being unnecessarily funnelled around South Cerney. Our analysis of airspace usage in the vicinity of South Cerney supported this. See Figure 4 below.

Figure 4: Non-Commercial Transits around South Cerney, operating at or below FL50 (1st January – 31st December 2019), from the CAA's Airspace Analyser Tool.



83. Many survey respondees also indicated that they understood that this airspace was permanently active up to FL150. Upon investigation, the AIP entry is ambiguous and could be made clearer (see below). MOD has agreed to address this, and it will also be included as part of the ongoing internal CAA 'AIP Review Working Group' in a bid to identify and correct other such ambiguous entries.

Figure 5: Current UK AIP entry (ENR 5.5)

SOUTH CERNEY, GLOS A circle, 1.5 NM radius, centred at 514114N 0015519W	Upper limit: FL150 Lower limit: SFC	Phone: 01285-868259. Brize Norton ATC: 01993-897878.	Activity notified on the day to Brize Norton ATC. (All drops subject to permission from Brize Norton NATC prior to take-off). Alternative contact: 129.905 MHz. Hours: Normally during daylight hours.

84. Questions were also posed regarding how often paradropping takes place at South Cerney. In order to assess this, we requested historic NOTAM activation data, via aeronautical information service (AIS) data, from the European Database. This identified only 5 occasions in the past 3 years, all during 2019, when the airspace was activated by NOTAM at a level higher than 3500 ft AMSL, with FL65 as the highest. The majority of NOTAM activations of the airspace have been up to 3500ft AMSL, with varying radius of 1NM / 2NM / 3NM / 5NM. Our Airspace Analyser Tool interrogation supported the NOTAM information, with commensurate activity showing on those dates.

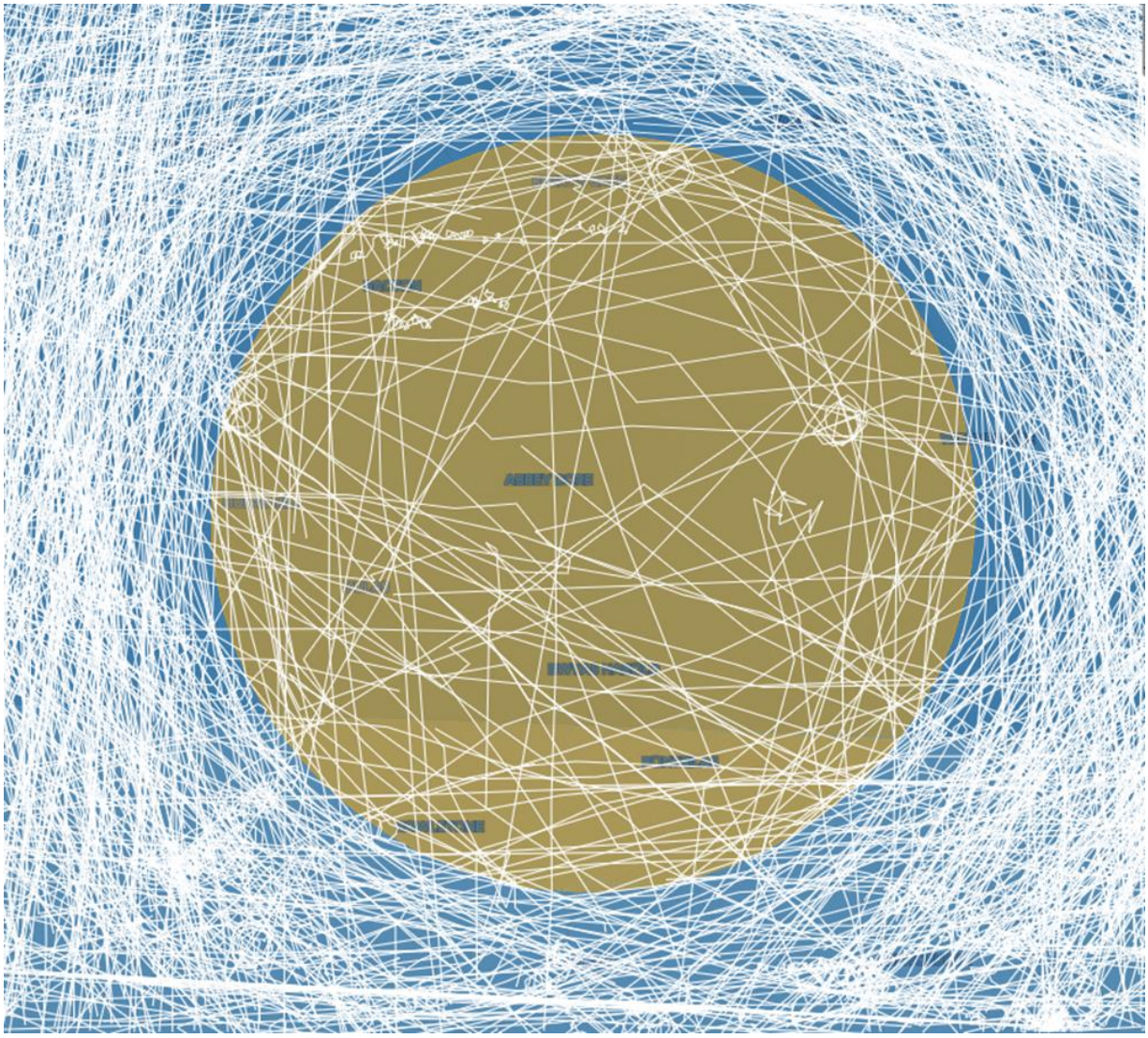
85. This data has been presented to MOD who are investigating the airspace requirements for activity at South Cerney.

86. **D147 Pontrilas** has an upper altitude limit of 10,000ft and a radius of 2NM, it is established H24 for 'Para-dropping, Ordnance, Munitions and Explosives (OME)' and the Danger Area Authority is HQ Land. Our initial investigation suggests that the current use of this airspace by the military does not appear to warrant H24 segregation, nor at such a high-upper level. It is acknowledged that our Analyser Tool would not show OME activity. Our analysis of military registered aircraft operating within the DA between 1 January 2019 and 31 December 2021, showed only 33 aircraft during this time, of these 33 aircraft we identified that only 17 utilised the top half of this airspace, i.e. operated above an altitude of 5000ft. It is acknowledged that there will likely be civilian registered aircraft supporting military activity within this DA also and the figures stated above do not include these.

87. Our findings have been put to MOD who are currently considering whether the airspace volume, as well as the H24 status are fit for purpose. Usage statistics have also been requested.

88. Figure 6 shows the significant number of GA tracks routing around D147 (along with those that didn't), below an altitude of 10,000ft, between 1 Jan 19 and 31 Dec 21.

Figure 6: D147 and Non-Commercial tracks below 10,000ft (1 January – 31 December 2021), from the CAA's Airspace Analyser Tool.



89. **Little Rissington.** Our investigations show that, since the implementation of the ATZ in August 2021, pilots have amended their routing, even when the ATZ has not been activated by NOTAM. This has resulted in pilots, on occasion, flying closer to the Brize CTR than is required. The CAA Airspace Infringement Lead is aware and will be taking appropriate action to highlight this issue and educate users accordingly.

Findings relating to Oxford

90. London Oxford Airport is one of the busiest General Aviation airports in the UK, used by business jets, light aircraft, and helicopters. A significant amount of flying training takes place in this area, both military and civilian. Despite the significant amount of flying training that takes place throughout this area, both military and civilian, we received very few comments relating to this airport, other than comments mentioning the funnelling that takes place in the airspace around the ATZ. With its proximity to Brize Norton, Enstone, Hinton and other busy aerodromes, it renders the local airspace amongst the busiest in the country outside of the London Terminal Manoeuvring Area.

91. A small portion of the ATZ overlaps with Brize Norton Class D Control Zone. The traffic patterns around Oxford Airport are designed to avoid the adjacent CTR, with the exception of the instrument approach for Runway 01, which penetrates the CTR. There is a well adhered to Letter of Agreement in place between London Oxford Airport and Brize and the two aerodromes are required to liaise and co-ordinate with each other frequently.

92. London Oxford Airport sits between Brize and Weston on the Green. Our analysis showed that significant numbers of transiting aircraft route to the north and south of London Oxford Airport often in very close proximity to their climb out and departure lanes. Many of these transits cross London Oxford Airport's lateral and vertical Instrument Flight Procedure profiles, although there are occasions when they route overhead. It was noted in our investigation of this airspace that on occasion, Brize Norton traffic extends beyond the Eastern boundary of the CTR which could impact London Oxford Airport operations (The missed approach for Runway 19 utilises this airspace).

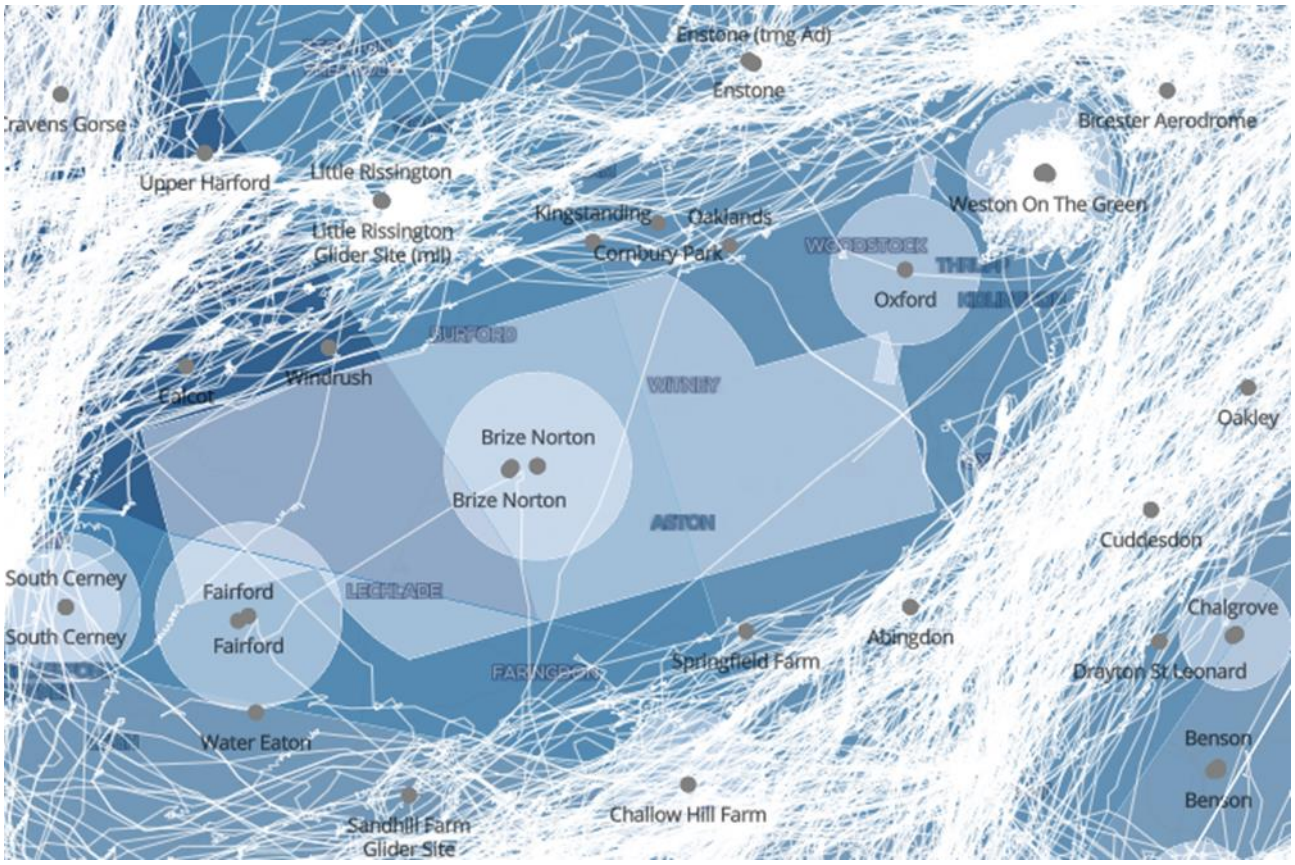
93. Looking at the altitudes used by traffic transiting in the vicinity of Oxford Airport, it was observed that the majority operate between FL10 and FL30, with levels reducing steadily above that to FL50.

94. We visited London Oxford Airport and spent time with the controllers, in a bid to understand how airspace usage might be improved, or safety enhanced from their perspective. They expressed concerns about the proximity of Danger Area D129 and the regular instances of transiting aircraft 'shooting the gap' without contacting Oxford. This causes them issues for fast moving business jet aircraft departures and arrivals, with the Oxford controllers having to vector them away from the unknown aircraft. This in turn creates increased safety and environmental issues.

95. The benefits of transiting aircraft wearing a listening squawk or establishing radio contact with the unit were highlighted in terms of good airmanship and improved situational awareness. The difficulty in operating during occasions when major gliding competitions take place within the vicinity of the airport was also discussed. The image below is taken from our Analyser Tool, within the date range 21 – 29 August 2021, during a busy gliding competition, with gliders operating below 5000ft selected.

It shows the density of glider traffic operating around London Oxford Airport, adding a significant level of complexity to their routine operations. Whilst the controllers acknowledged that other airspace users are clearly entitled to operate within and enjoy the surrounding airspace, it was suggested that better communication about the intent and the plan would help them greatly. This was raised by the Airspace Classification Review Team with BGA, who stressed the difficulty in knowing the exact competition plan and routing in advance, due to the reliance upon the prevailing meteorological conditions on the day.

Figure 7: Oxford ATZ and surrounding area with glider tracks selected under 5000ft (21 - 29 August 2021) from the CAA's Airspace Analyser Tool.

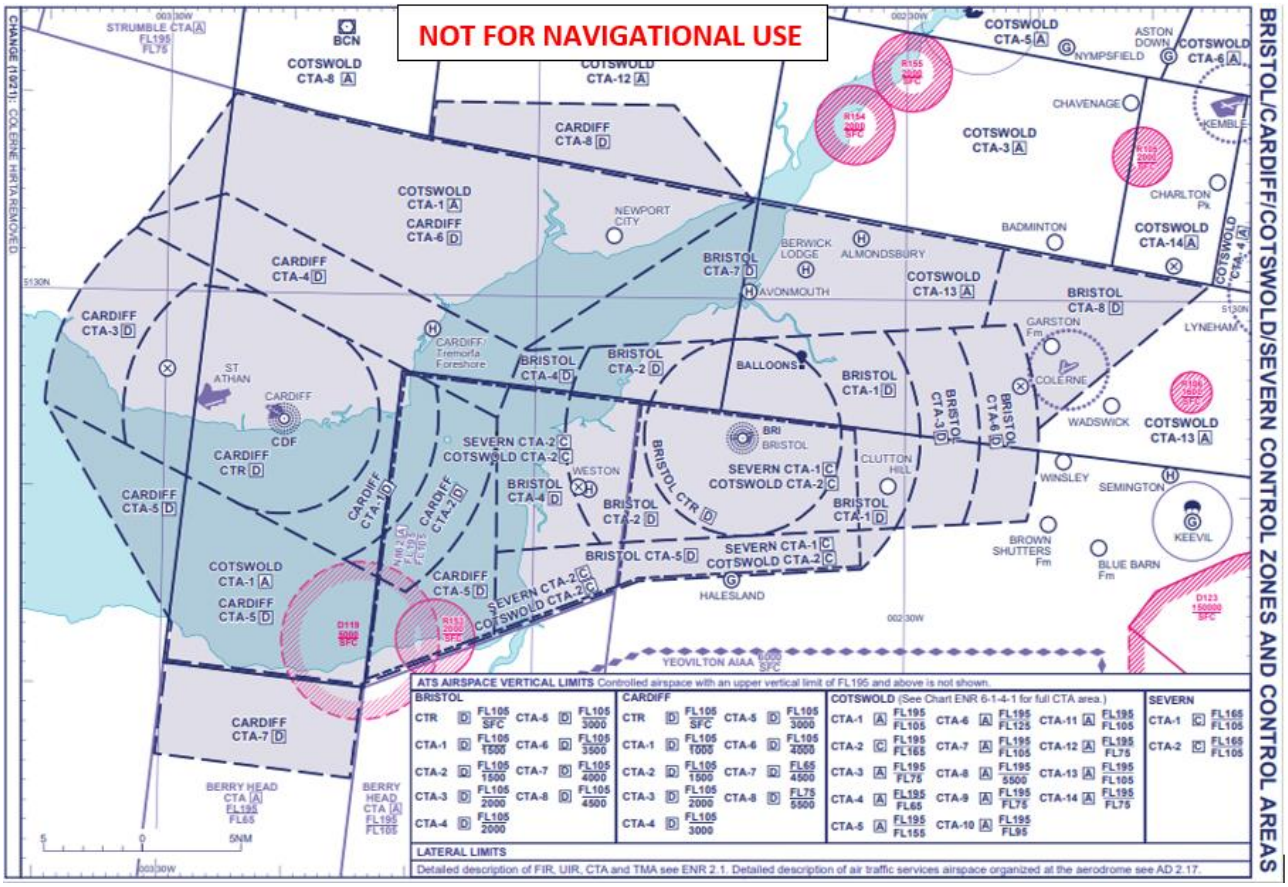


96. Ultimately, and particularly when operating in such congested airspace as is the case here, good airmanship is critical in helping all airspace users to fulfil their respective wants and needs and to foster safe and expeditious operations.

Findings related to Bristol and Cardiff

97. Survey and legacy consultation responses referenced many airspace volumes within Bristol and Cardiff CTZ and CTAs, as being inadequately utilised and, as such, being potential volumes for classification review. Since Bristol and Cardiff traffic is very much interlinked, we have analysed the whole area as pictured below.

Figure 8: Bristol / Cardiff Control Zone Chart (UK AIP ENR 6-41) Reproduced with permission from the CAA and NATS.



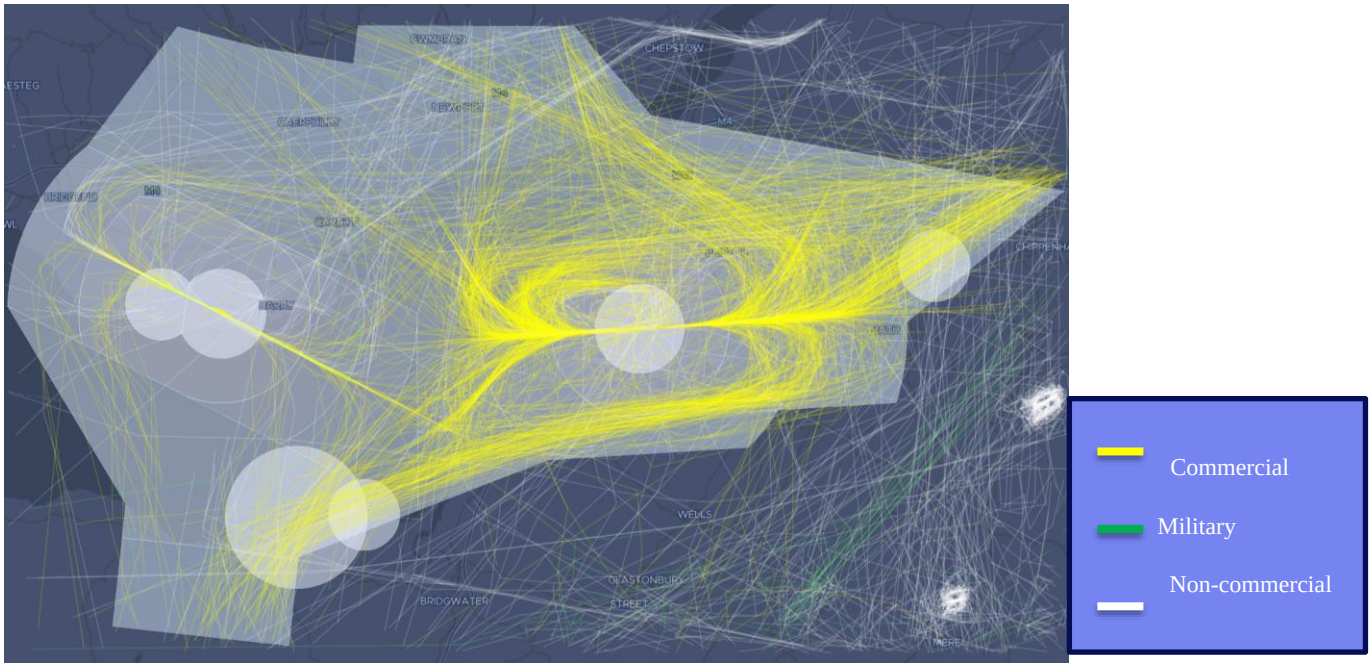
Traffic

98. Bristol airport is the ninth busiest UK airport (2019 data). Its passenger numbers had been growing steadily over the years despite of aircraft movements reducing in 2018 and 2019, partially due to Thomas Cook and BMI going into administration. 13 airlines are currently operating from Bristol. Bristol had almost nine million passengers before the pandemic and has submitted a planning application to North Somerset Council to expand its capacity from the current limit of 10 million, to 12 million passengers per annum. The application has been rejected and appealed and the airport is currently awaiting the decision.

99. Cardiff had just over 1.6 million passengers in 2019. Its traffic had been increasing slowly over the years. Currently eight airlines operate from Cardiff.

100. Figure 9 below shows traffic operating surface to FL105, between 1 January – 31 December 2019. 116,629 tracks from surface up to FL105. 70% of which were commercial traffic, 28% non-commercial and 2% military.

Figure 9: Bristol / Cardiff Control Zones with Commercial, Non-Commercial & Military Traffic from the CAA's Airspace Analyser Tool.



101. The largest share of commercial traffic was Bristol arrivals (42%) and Bristol departures (34%).

Concerns Raised

102. Almost all of the Bristol CTAs received comments questioning the utilisation of airspace and whether the volume of controlled airspace (CAS) could be reduced. Bristol CTA 8, due to its proximity to several gliding clubs and popular gliding routes was the most frequently cited volume. Cardiff had far fewer responses. A higher base level was suggested for Cardiff CTA 7 and a flexible use of airspace for Cardiff CTA 8 when the westerly runway is in use.

103. Legacy consultation responses expressed similar concerns that current base levels for Bristol airspace volumes are restricting routing options, especially for gliders and that airspace at lower levels is not well utilised. Bristol CTA 8, CTA 7 and CTA 6 were mentioned most often as well as Cardiff CTA 6 which respondents claimed was underutilised.

ACP activity in the region

104. Bristol FASI South (ACP-2018-55) and Cardiff FASI South (ACP-2019-41) as well as LAMP Deployment 1.1 (ACP-2017-70) are part of the Future Airspace Strategy Implementation South programme (FASI-S) and accord with the UK's Airspace Modernisation Strategy (AMS). These ACPs are in the earlier stages of the CAP 1616 process and so the scope of change is yet to be confirmed. We encourage any

comments or feedback about these volumes and the proposed changes to be submitted via the CAP 1616 consultation procedures. During our discussions with these airports regarding their airspace, they stressed that any feedback or comments on the ACPs would be welcomed.

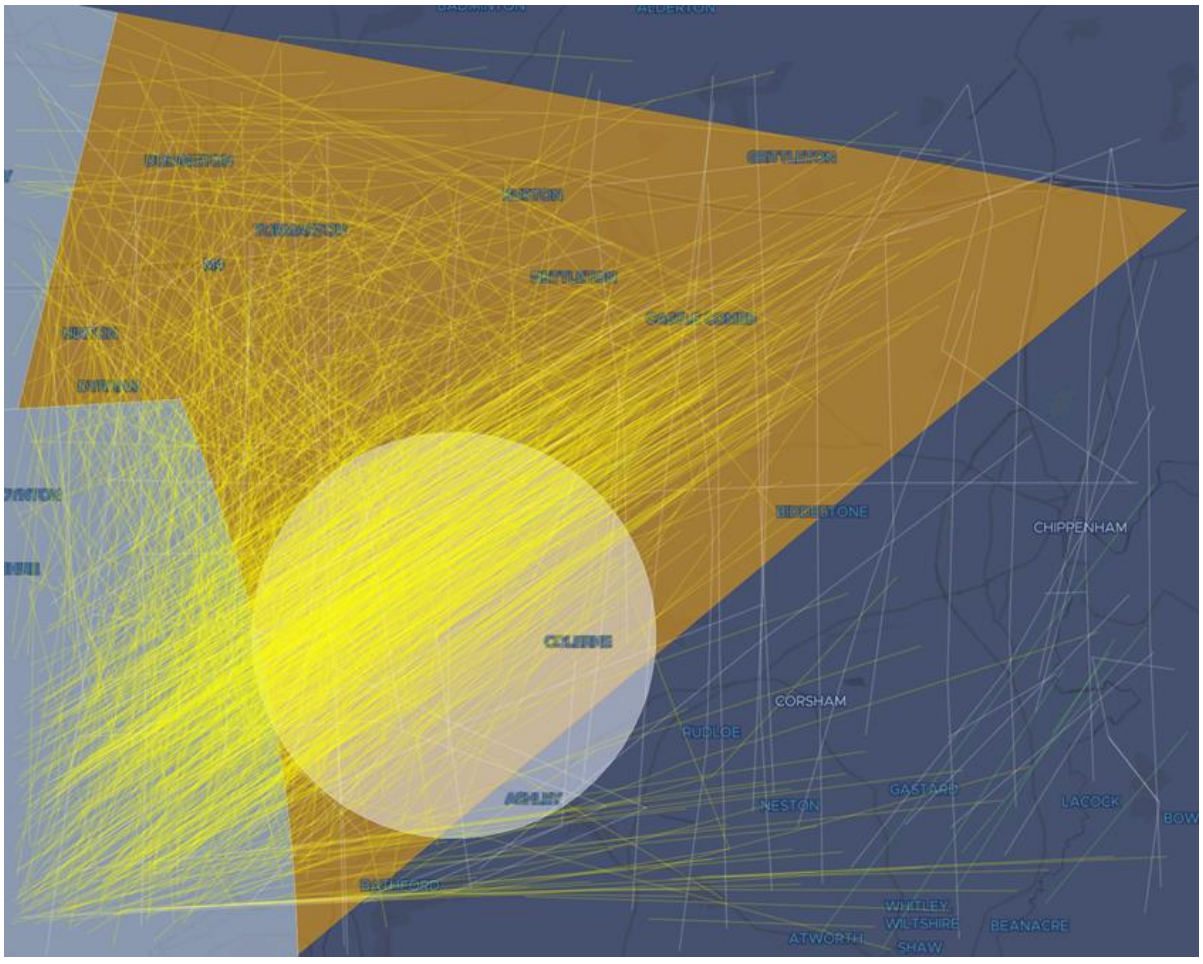
105. Notwithstanding the fact that the ongoing ACPs in this CTZ and CTAs cause the airspace to be out of scope for our process, we conducted significant investigation of the airspace utilisation.

Our Analysis

106. Our analysis showed that the majority of the Bristol CTAs were generally well utilised at all levels. However, two CTAs with a lower number of tracks operating at the lower levels (of the particular volume) were Bristol CTA 8 (see Figure 10 below) and Bristol CTA 5.

107. Figure 10 below shows commercial traffic within Bristol CTA 8, operating between 4500-6500ft (7797 tracks), 1 January 2019 to 31 December 2019.

Figure 10: Commercial Traffic Movements - Bristol CTA 8 from the CAA's Airspace Analyser Tool.



108. The figure above shows that most part of Bristol CTA 8 is utilised at the lowest 2000ft however, its most eastern part, (the tip of the triangle) is utilised lightly at those altitudes. We discussed this with Bristol who confirmed that Bristol CTA 8 is currently

under review as part of their ongoing ACP. Bristol explained that raising the base level of CTA 8 has the potential to disrupt continuous descent approaches and may adversely affect their attempts to reduce their environmental impact and optimise the use of airspace.

109. Similar analysis of Bristol CTA 5 found that no changes could be suggested to that volume either, due to the impact upon Bristol SID EXMOR 1X 1Z and the associated Containment Policy.

Cardiff airspace volumes

110. Any of the Cardiff CTAs that we found to be less utilised at lower levels, were either crossed by standard instrument departure (SIDs) and standard terminal arrival routes (STARs) or were essential in ensuring that commercial air transport transiting from Bristol or Cardiff airspace to join ATS Routes, would remain inside controlled airspace.

Letters of Agreement (LoAs) and Stakeholder Engagement

111. We looked into both Bristol and Cardiff's LoAs and the manner in which the airports engage with local airfields and sporting and recreational GA. Both airports stressed their willingness to maintain good productive engagement with local stakeholders. Bristol has an External Liaison Manager and Cardiff has a General Aviation Liaison role; both are aimed at engaging with GA stakeholders as well as informing them about any changes in the area.

Summary

112. Airspace volumes in Bristol and Cardiff area are well utilised by commercial air transport as well as by general aviation, with numerous gliding clubs based in the area; the airspace is congested and contested.

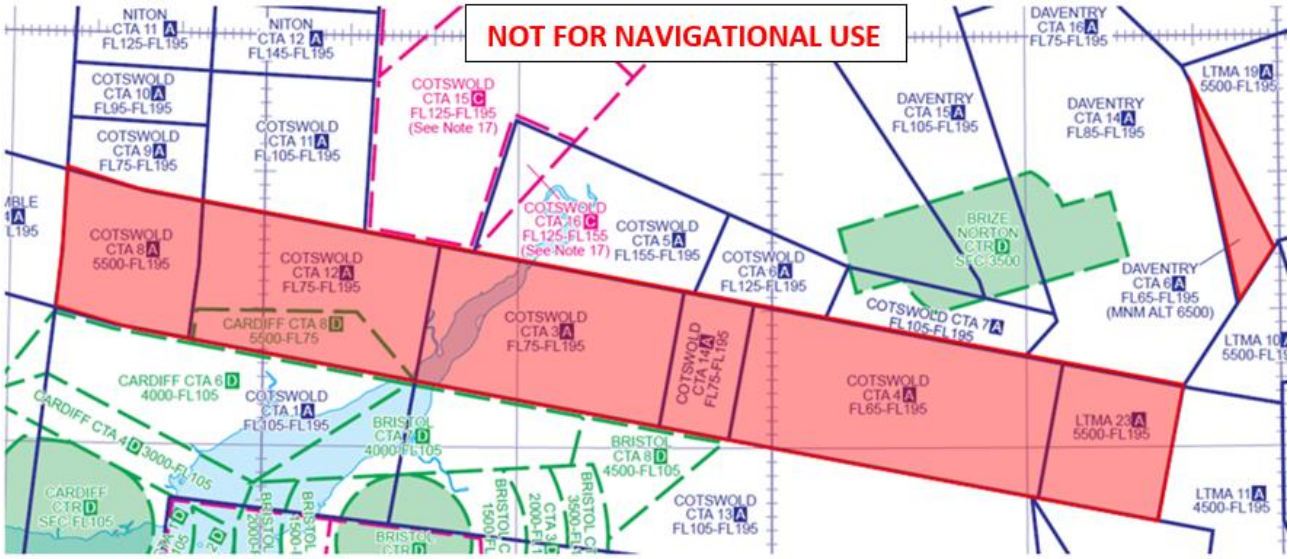
113. Most of the airspace volumes around Bristol and Cardiff Airports are currently under review through the FASI South and LAMP ACPs, with major airspace design overhaul planned, starting with changes to navigational aids (NavAids) and STARs. Due to these the application of our CAP 1991 ACP filter, as well as the high level of existing utilisation of the airspace and hence a potential adverse effect on arrival and departure operating procedures, it is not currently possible to amend existing volumes of airspace in this area before implementation of FASI South and LAMP ACPs. Nonetheless, we will pass on our findings and our analysis to the airports for consideration as they proceed with their ACPs.

Findings related to NERL Controlled Airspace

114. Our engagement survey generated responses referencing some of the Cotswold CTAs and LTMA 23. The location of these airspace volumes in our region led us to undertake a more detailed analysis of the corridor of airspace shown in Figure 11 below, from Cotswold CTA 8 in the west of our region, to LTMA 23 in the east. We also highlighted Daventry CTA 6 as a volume for further analysis because of its similar low base level and proximity to congested and contested airspace.

115. While these have been examined under the head of “Findings relating to NERL Controlled Airspace”, we understand that the control for these volumes of airspace is currently shared between London Area Control Centre (NERL) and Bristol and Cardiff Radar as per AIP ENR 2.1 and so any recommendations taken forward relating to these volumes would need to be coordinated with each of the relevant control authorities.

Figure 11: Corridor of NERL airspace investigated by the Team. Chart reproduced with permission from the CAA and NATS



Airspace Infrastructure

116. The Brecon VOR/DME occupies a central location in Cotswold CTA 8, and is where the Brecon Standard Instrument Departures (BCN SIDs) for Bristol and Cardiff currently terminate. The Bristol & Cardiff UMOLO/FIFAH Standard Terminal Arrivals ‘STARS’ transit through the Brecon VOR/DME down towards Bristol and Cardiff airspace. The other navigational aid along this corridor of airspace is the Compton VOR/DME which sits on the border of LTMA 23 and LTMA 11. The Compton VOR/DME is a gateway for multiple flight procedures to/from various airports including Birmingham, Bournemouth, Bristol, Cardiff, Farnborough, London City, London Heathrow, Luton, Northolt, and Southampton.

117. There are various ATS routes which transit through this region of airspace, the main ones being Q63 which runs through the middle of the highlighted area above from east-west, and N864 which runs north-south through Cotswold CTA 8.

Class G Airspace (Below the controlled airspace corridor in Figure 11)

118. Beneath the controlled airspace volumes there are several glider sites and small airfields including the ATZ for Kemble. There are also several restricted areas, a temporary ATZ at Lyneham, part of the Fairford MATZ and a stub of the Benson MATZ.

119. Our analysis showed that Class G airspace in the vicinity of the CTAs we are looking at is extremely busy. Significant numbers of military tracks are observed, particularly concentrated around the Brize Norton / Fairford and Compton VOR/DME areas, and considerable non-commercial activity, with gliding particularly prevalent. There is also the occasional commercial flight transiting through Class G airspace.

Survey and Consultation Responses

120. Our engagement generated responses on some areas of NERL controlled airspace, with particular attention on Cotswold CTAs 3, 4, 8 & 14, and a couple of responses on LTMA 23.

121. The responses in the survey all observe that the lower levels of the airspace volumes are not used by commercial traffic, with one response questioning whether controlled airspace is being used below FL100 across Cotswold CTAs 3, 4 and 14. The survey response for Cotswold CTA 8 stated that the base level either forces gliders to descend lower, or to divert from their route. A couple of the responses on the Cotswold CTAs and LTMA 23 also noted that modern aircraft have improved climb rates over older aircraft and negate the need for the lower levels of controlled airspace.

122. All responses were aligned in their suggestion for raising base levels of controlled airspace in this corridor, with either routing issues or under-utilisation as the core reasons. One response for LTMA 23 mentioned re-classifying the bottom 2000ft to a classification which would enable a VFR crossing.

Our analysis

123. We analysed the use of these CTAs at various levels. Our results showed Cotswold CTA 8 contained fewer tracks between its base level and FL120 when compared with the other airspace volumes along this corridor of airspace. We paid particular attention to the bottom 2000ft of Cotswold CTA 8 as this contained the fewest tracks compared to the other airspace volumes at this level. We also found that the first 1000ft of Cotswold CTA 4 and the first 500ft of LTMA 23 displayed lower track counts.

Figure 12: Cotswold CTA 8 - Commercial Aircraft Tracks between 5500ft-FL65 (clipped to altitude) (1 January – 31 December 2019), from the CAA's Airspace Analyser Tool.

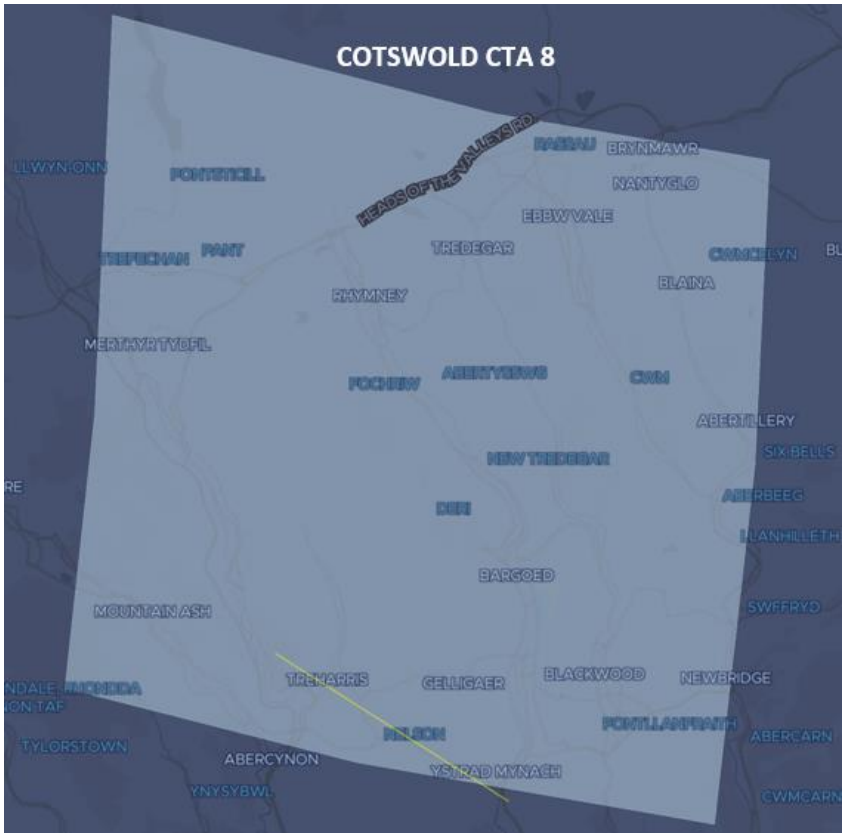
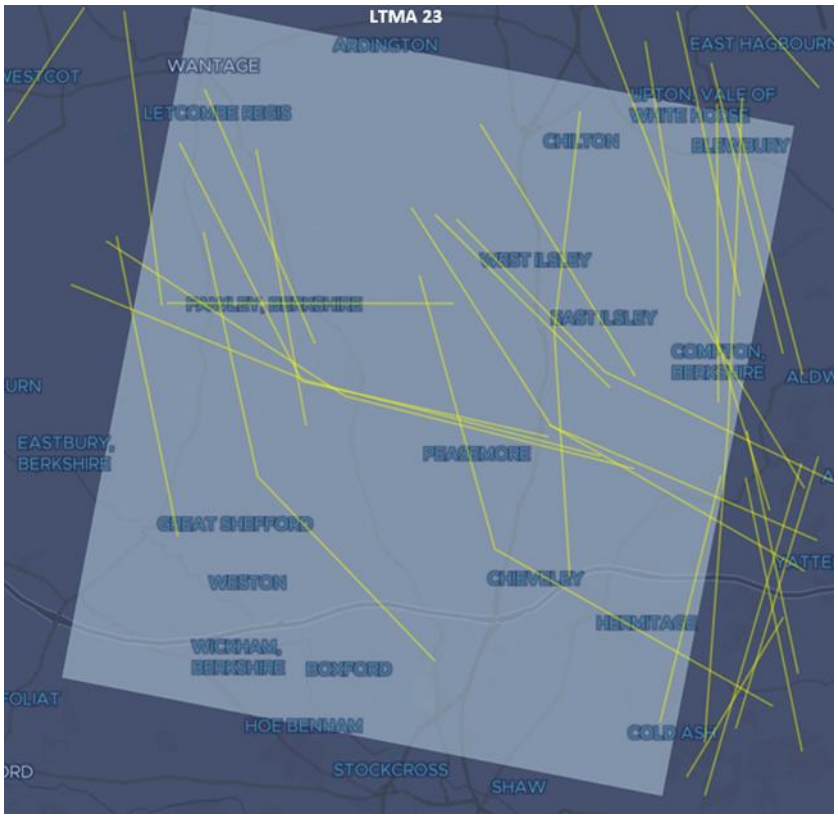


Figure 13: LTMA 23 – Commercial Aircraft Tracks between 5500ft – FL65 (clipped to altitude) (1 January – 31 December 2019), from the CAA's Airspace Analyser Tool.



124. Figure 12 above suggests that Cotswold CTA 8 contains very few tracks at the bottom 1000ft. Figure 13 for LTMA 23 shows more tracks within the bottom 1000ft, and a lot of the tracks are oriented to/from the Compton VOR/DME area, but we can see the southern portion of this airspace is underutilised. Our findings also showed that the bottom 1000ft of Cotswold CTAs 3 and 12 were fairly busy with a complex web of tracks across most of the airspace, with only the very northern areas of these volumes not as well utilised.

125. In response to one of the survey comments regarding the limited utilisation of certain volumes below FL100, we observed that the controlled airspace volumes are being utilised by commercial traffic below FL100. The airspace volumes are not only there to protect commercial traffic on the ATS routes which transit through them, but also at the lower levels to help protect instrument flight procedures into/out of nearby airports such as Bristol and Cardiff. However, the results do indicate some of these volumes, or portions of those volumes, have a disproportionate concentration of traffic across a certain altitude band.

126. The results tell us that the bottom 2000ft of Cotswold CTA 8 and the bottom 1000ft of Cotswold CTA 4 are the least used areas along this corridor of airspace. The smaller Cotswold CTA 14 volume displayed a high number of tracks; however, these were heavily concentrated in the south bordering Bristol CTA 8. This ties up with our findings that Cotswold CTA 14 was the busiest volume of airspace for arrivals into Bristol Airport along the corridor of airspace investigated. The northern area of Cotswold CTA 14 is little used at the bottom 1000ft.

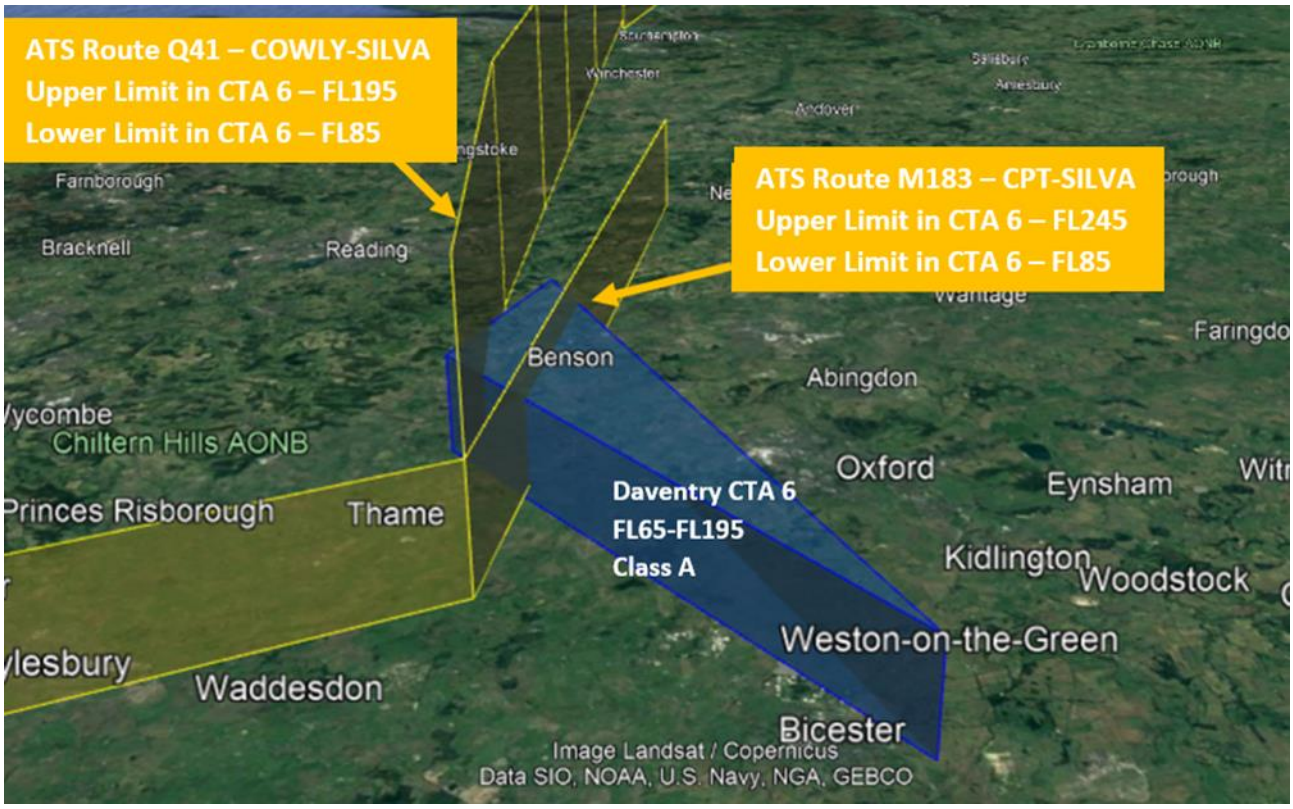
127. To respond to the recent survey comments on LTMA 23. The results do show a low number of tracks in the first 500ft of the airspace volume. However, we know that this volume of airspace is situated at a critical junction point, with its proximity to the Compton VOR/DME, the wider London TMA. Several ATS routes and a high concentration of instrument flight procedures pass through this area, and this requires sufficient containment.

128. Because of this, it is possible that any base level increase or change to controlled airspace boundaries within LTMA 23 could have a significant operational impact, one of the filters in CAP 1991 which places it out of scope for amendment.

Daventry CTA 6 Analysis

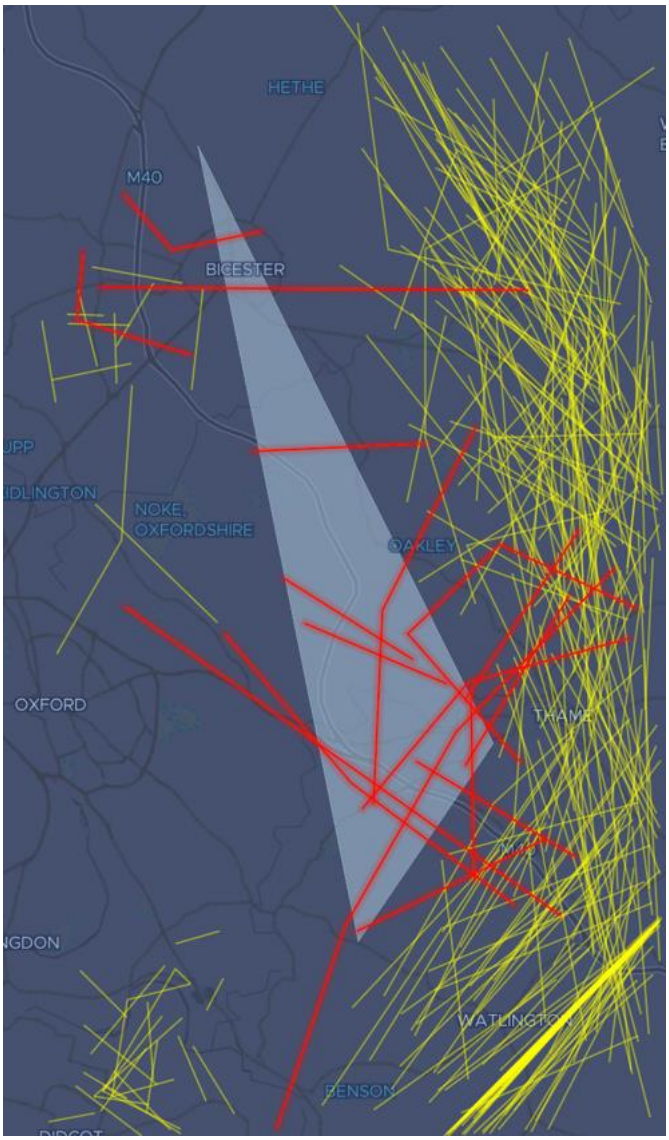
129. We identified Daventry CTA 6 as an airspace volume for further analysis under our procedure, for several reasons: the proximity to a lot of contested and congested airspace (Brize Norton CTR, D129 Weston-on-the-Green Danger Area etc); its relatively low base level; and the absence of flight plannable instrument flight procedures that transit through the lower levels of this volume. Figure 14 below shows Daventry CTA 6 and the two ATS routes which transit through.

Figure 14: Daventry CTA 6 with Two Intersecting ATS Routes



130. Using our analyser tool, we investigated use of this volume of airspace at the lower levels. We found that from 1 January 2019 to 31 December 2019, between FL65 and FL80, 30-40 commercial tracks were identified. When we broke this down, 15 of those tracks were identified as operating between FL65-FL75, as shown highlighted in red in Figure 15 below. The remainder of the aforementioned 30 - 40 tracks were identified as operating between FL75-FL80.

Figure 15: Daventry CTA 6 - Commercial Aircraft Tracks between FL65-FL75 (clipped to altitude) (1 January – 31 December 2019), from the CAA's Airspace Analyser Tool.



NERL Airspace Conclusions

131. From our analysis we have found that some pieces of airspace, such as Cotswold CTA 8, Cotswold CTA 4, LTMA 23 & Daventry CTA 6, are not particularly well utilised - especially at the lower levels. Aside from the ACPs in the region which filter out a lot of airspace for our CAP 1991 process, the existing instrument flight procedures within this region make it difficult for us to make base level changes to some of the remaining airspace volumes due to the "changes that would have a significant operation impact" filter. This is because many existing instrument flight procedures need to be contained within controlled airspace.

132. Nonetheless, we explored these particular volumes further, discussing the current and planned usage with NERL and, for Cotswold CTA 8, Cardiff Airport.

133. A major ACP in this region which prevents us from taking proposed changes through the CAP 1991 process is the London Airspace Management Plan Deployment 1.1 (LD1.1) ACP-2017-70. This ACP focusses on modernising the air traffic service (ATS) route network across Wales and South-West England above 7000ft. NERL's stated intent for the ACP, is to recognise that the use of performance-based navigation (PBN) technology will enable a new network of ATS routes to be established. The proposed route structure aims to provide improved environmental performance and optimised capacity for flights transiting the airspace. Connectivity is provided between the proposed ATS route network and all the region's airports. It is also intended to provide an efficient en-route network that can be utilised to interface with future designs.

134. As part of the ACP, a comprehensive redesign of the ATS route structure and review of existing controlled airspace is taking place. This includes minor amendments to the Standard Terminal Arrivals (STARS) and Standard Instrument Departures (SIDs) for some airports[8] above 7000ft.

135. In our discussions with NERL on LD1.1, they recognised that Cotswold CTA 8 has the potential to be reviewed under this process given its limited use at the lower levels. They have not taken this forward in their ACP as this would have the potential to impact flights below 7,000ft and is therefore outside its intended scope. They suggested to us that it may potentially be a volume we could progress under our CAP 1991 process.

136. We have analysed Cotswold CTA 8 at great depth. We have asked ourselves the question, if the lower levels of the airspace are required for procedure containment, why are we not picking up much in the way of commercial traffic movements at the lower levels? It is logical to conclude that with improved aircraft performance, the majority of commercial traffic movements often fly well above the altitude minimums depicted on the navigational charts. This is potentially why there are pockets of airspace that are not fully utilised, as gaps form in the airspace between minimum altitude restrictions, and actual aircraft behaviour.

137. We have shared our findings with Cardiff Airport regarding the presence of the Brecon SID. Cardiff have mentioned to us that they intend to review Cotswold CTA 8 as part of their FASI-S ACP. However, while the FASI-S ACP activity has recently restarted following funding from the government, the implementation date for this ACP, along with the other FASI-S ACPs, has been delayed.

138. It is frustrating to us that due to the presence of an old conventional SID, we're unable to identify a clear plan for this volume of airspace in the nearer term, as raising the base level of this volume would be caught by our CAP 1991 filters. While

[8] Airports with minor changes to SIDs or STARs are: Bristol, Cardiff, Heathrow, Gatwick, Luton, London City, Biggin Hill, Stansted, Farnborough, These are mainly changing the point where the SID/STAR connects to the proposed ATC routes.

we seek your feedback on our findings, we will continue to investigate and explore all potential avenues to enable a better use of this airspace for all users.

139. If it is found that we are unable to make any changes to airspace classification through the CAP 1991 process, due to ongoing ACP activity in this airspace (or due to the operational impact CAP 1991 filter), we will ensure that our findings and all survey responses, are fed in to the ongoing ACPs either via the sponsor, or via the CAP 1616 consultation process. Our colleagues in Airspace Regulation will then require evidence that these points have been factored in to future ACPs.

Findings related to Restricted Areas

140. **Restricted Areas: R154 / R155 / R322.** These three decommissioned nuclear power plants, operated by Magnox, have associated restricted airspace which is no longer required. R154 and R155 are both located within the vicinity of the Severn Estuary and within the Cotswold Region. R322 is in Anglesey and outside the Cotswold Region.

141. Through our liaison with Magnox regarding sign off on the safety data, it makes sense for us to take forward all three restricted areas at once under the appropriate CAA airspace process (CAP 1616 Level 0).

Findings related to Aerodrome Traffic Zones (ATZs)

142. We received many comments relating to ATZs, both in general, and with reference to specific zones. As detailed in earlier sections, questions were posed by respondents to our survey and during our workshops about the requirement for Government Aerodromes to maintain ATZs on an H24 basis, and the specifics of RAF Shawbury and RAF Lyneham were discussed within the MOD section of this report. It was very apparent from our engagement that the Rules of the Air Rule 11[9] causes confusion, as does the ambiguity and lack of clarity around some AIP ATZ entries e.g., Kemble has a H24 ATZ despite not providing an H24 Aerodrome Flight Information Service.

143. Anomalies in how ATZ areas are described in the AIP are being addressed by the CAA currently. Airspace Regulation, within the CAA, is conducting an ATZ AIP Review, looking at ATZ structures, classifications, justifications and how the information is recorded. The aim is to ensure consistency and clarity to enable airspace users to readily understand when an aerodrome is operating and therefore clarify when Rule 11 is applicable.

The Future of Aerodrome Traffic Zones (ATZs)

144. The above position highlights ambiguity in the use of ATZ at air traffic service units. The long-term difficult aim, as described in the Airspace Modernisation Strategy

[9] The Rules of the Air Regulations 2015 (legislation.gov.uk)

refresh of 2022, is the provision of relevant controlled airspace structures where air traffic services provide instructions for the safe conduct of the flight. The growing number of new types of aviation platforms, such as beyond visual line of sight (BVLOS) drones, means that continued use of long-term static airspace based on segregation will no longer be tenable.

145. Wider and increased airspace integration of all airspace users in all airspace will be key. Efforts to enable this will include alignment with ICAO standards and regulated practices (SARPS) and procedures for air navigation services (PANS) and the necessary airspace changes needed to incorporate those changes. Dynamic airspace management will also be key, such as enabling flexible airspace where the classification/status will change, based on the actual activity occurring at the time, as opposed to what is forecast.

Recommendations including our Initial Plan

Our initial plan of volumes where a change could be made

Our Initial Plan

Volumes to amend under the CAP 1991 Process:

The following volumes were identified as warranting further investigation and having potential to be taken forward to the amend phase of our process:

Cotswold CTA 8. Our analysis showed that the lower levels of this CTA are rarely utilised. Discussions are still ongoing with Cardiff and NERL as to what can be done to ensure that the classification of this airspace is fit for purpose.

Daventry CTA 6. Our investigations identified this CTA as being infrequently utilised at its lower levels. Discussions are still ongoing with NERL regarding this volume of airspace.

Volumes where positive changes can be made via another mechanism:

South Cerney. We received a considerable number of comments citing concerns about GA being unnecessarily funnelled around South Cerney paradropping site and despite the para dropping site being activated by NOTAM, it was apparent that many respondees indicated that they understood that this airspace was permanently active up to FL150.

RAF Lyneham ATZ. Lyneham, whilst closed, maintains its aerodrome traffic zone (ATZ) on the charts, activated by NOTAM. Historical NOTAMs were checked, and MOD was asked to justify retention of the ATZ, when it has not been activated by NOTAM since the closure of the airfield. They have agreed to it being removed from the AIP.

Danger Area: D147 (Pontrilas). Our initial investigation suggests that the current use of this airspace by MOD does not appear to warrant 24 hour / day segregation, nor at such a high-upper level. Our findings have been put to MOD who are currently considering whether the airspace volume and timings associated with it are fit for purpose.

Restricted Areas: R154 / R155 / R322. These three decommissioned nuclear power plants, operated by Magnox, have associated restricted airspace which is no longer required. R154 and R155 are both located within the vicinity of the Severn Estuary and within the Cotswold Region. R322 is in Anglesey and outside the Cotswold Region, however, in liaising with Magnox regarding sign off on the safety data, it makes sense to tackle all three restricted areas at once under the CAP1616 Level 0.

Areas of Intense Air Activity (AIAAs): This region of focus has part of the Shawbury AIAA and the entirety of the Oxford AIAA within it. We would like to garner stakeholder opinion on whether these constructs add value for aviators in terms of enabling better airmanship or whether they simply clutter up a busy VFR chart.

Education

146. It is apparent from many of our legacy consultation and survey responses that there is a requirement to re-iterate a few key education points. This is also backed up through our engagement with various stakeholders and further supported by observations of the UKAB in their Summary Report, an independent body identifying some of the same concerns that we have uncovered throughout the review of the Cotswold Region.

147. The following points are not limited to the region of focus and will likely be applicable to all regions across the UK FIR.

Flight Planning

148. It transpired from many of the consultation and survey responses, that respondents were calling for changes that were already in place i.e., requesting that the H24 status of D129 Weston-On-The-Green be reviewed, South Cerney and Lyneham being activated by NOTAM, the relevance of MATZ to civilian pilots.

149. The safe and effective use of the airspace is reliant on pilots carrying out adequate and appropriate pre-flight planning and preparation. In relation to airspace design, it is essential that pilots have access to, and are provided with, clear and accurate aeronautical information that is easy to understand whether that be aeronautical data, charting or NOTAM. Airspace may be complex by design with multiple CTA surrounding a CTR to balance the need for controlled airspace against retaining as much Class G airspace as possible.

150. Every route should be planned thoroughly to incorporate threats and possible errors using regulated aeronautical information and incorporate the lateral volumes of notified airspace, the identification of airspace controlling authorities and correct frequencies, the use of Frequency Monitoring Codes, altimeter settings and transition altitudes.

151. NATS Aeronautical Information Services (AIS) is the authorised source of UK aeronautical information provided on behalf of, and regulated by, the CAA. In addition to formulating a primary plan, pilots should incorporate a series of contingency plans (a Plan B) for each sector of their planned flight, based on identified threats to ensure that a timely response to any threat is available without causing distraction or mental overload, both of which can erode safety. Further guidance on good planning techniques can be found at https://airspacesafety.com/pre-flight-planning/

Visual Flight Rules (VFR) Moving Maps

152. In recent causal factor analysis of airspace infringements, the correct use of VFR moving map technology could have helped prevent 85% of analysed airspace

infringements from occurring[10]. Based on these statistics the CAA actively encourages pilots to use VFR moving maps as part of their planning methodology, as well as when in flight. This is because they can enhance a pilot's positional situational awareness and can also offer timely alerts to airspace and aviation hazards. However, moving map technology should not be the sole means of planning or navigation as highlighted in the European General Aviation Safety Team, Safety Promotion Leaflet, Using Advanced Navigation Technology Safely[11].

153. It is also important for pilots to note that moving map Apps are not regulated by the CAA, and users should note that the depiction of aeronautical information on VFR moving maps may be different to the UK Aeronautical Information products accessed via the NATS AIS website, such as VFR charts, the UK AIP and NOTAM information.

154. Further information of the use of VFR moving maps can be found in CAA Safety Sense leaflet number 29 at https://publicapps.caa.co.uk/docs/33/SafetySense%20VFR-Moving-Map-Devices.pdf.

Form FCS 1522

155. To enable the CAA to ensure that access to airspace and the provision of air traffic services is maintained for all, the CAA has introduced a mechanism whereby pilots can report situations where they have been denied access to airspace of have been refused the provision of an ATS. This is to be reported through the submission on a Form FCS1522. The data captured from submissions will be examined by the CAA when considering airspace change proposals and their subsequent Post Implementation Review. It is also used to support intervention if an area of controlled airspace is not being serviced in accordance with its ICAO classification.

156. In addition, it will be used as part of our airspace classification review process and in reviewing airspace infringing trends. Correct use of the form will provide continuous data and feedback to enable the CAA to identify volumes of airspace that may require review under the classification review process. In considering its use, pilots are asked to provide as detailed a submission as possible. Consideration should be given as to whether an instruction to remain outside controlled airspace was a denial of access or a temporary instruction/delay whilst air traffic controllers formulate a plan or coordinate a route due to the prevailing traffic situation.

Summary and Next Steps

157. Airspace is a State asset that must be shared and effectively managed. The Airspace Classification Review Team has undertaken a detailed and thorough review of

[10] https://airspacesafety.com/wp-content/uploads/2019/01/CausalFactorAnalysisofAirspaceIInfringements.pdf

[11] EGAST Leaflet GA 7 Using Advanced Navigation Technology Safely | EASA (europa.eu)

airspace usage within the Cotswold Region, drawing on insight and data from internal and external sources. As a small team, we are highly reliant upon stakeholder engagement and input, to enable us to identify areas where we can make a positive change.

158. Whilst the CAP 1991 filters cause a significant amount of airspace to be out of scope, we will, nonetheless, draw on many sources of intelligence, backed by our Airspace Analyser Tool, to continue to conduct thorough and detailed reviews of airspace usage, capturing our findings and encouraging equitable access.
159. Our draft report has set out our findings in the Cotswold Region, along with an Initial Plan of volumes where a change can be made. This includes those volumes which may be taken forward to the amend phase of the process, as well as other non-classification changes required to address the challenges we have uncovered.
160. We will analyse all responses to this report and use them to inform our final report into the Cotswold Region, which will contain our Final Plan of volumes to take through to the amend phase as well as our other recommendations.
161. We are now asking stakeholders to provide a response to this document answering the following questions:

1. **Do you believe we have missed, misunderstood, or misinterpreted anything in our report into the Cotswold Region?**
2. **Should Areas of Intense Air Activity (AIAAs) remain? Please give supporting reasons for your answer.**

162. We will take responses up to **23:59 on 27 March 2022**. We cannot guarantee that responses received after this date will be considered as part of our review.
163. We will review the responses we receive and use them to inform our final report which will contain the final plan of volumes to take forward to the amend phase and our final recommendations for airspace in the Cotswold Region.
164. We will then work together with the relevant Airspace Control Authorities to analyse each volume in the final plan in more detail and develop an amendment to the classification. We expect the amend phase to begin by Spring 2022.