



Airspace Inquiry
All-Party Parliamentary Group on General Aviation
c/o The Rt Hon Grant Shapps MP
House of Commons
London, SW1A 0AA

29th October 2018

Dear Grant,

APPG GA - AIRSPACE INQUIRY – AIRSPACE4ALL INITIAL EVIDENCE STATEMENT

Airspace4All Ltd, formerly FASVIG Ltd, seeks to improve airspace and procedures as they relate to General Aviation (GA) and particularly VFR flight operations. It does this by focussing on airspace integration rather than the extant process of airspace segregation which is inefficient, damaging and costly for all airspace users including Commercial Air Transport (CAT) operators, Air Navigation Service Providers (ANSPs), Government and ultimately the public. It seeks to change the way that GA operates for the benefit of all airspace users.

Airspace4All Ltd would offer the attached areas for consideration by the inquiry. They include current matters, issues that will arise alongside airspace modernisation and those that may emanate from the proposed introduction of Part ATS policies and procedures, to align with EU requirements.

Yours Sincerely

A handwritten signature in black ink that reads 'John Brady'. The signature is fluid and cursive, with the first name 'John' and the last name 'Brady' clearly legible.

John Brady

Director: for Airspace4All Ltd

Attachment: APPG GA Evidence



Registered Office and Company Address:
31 Walker Avenue, Wolverton Mill East Milton Keynes MK12 5TW

✉ Email: a4a@airspace4all.org Web: www.airspace4all.org

Airspace4All Ltd. Reg No 9621361 ENGLAND. VAT No. 224 6275 16

APPG GA - AIRSPACE INQUIRY – AIRSPACE4ALL INITIAL EVIDENCE STATEMENT

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CONTEXT

1. Following on from its Future Airspace Strategy, Government is embarking on a period of airspace modernisation which is overlaid with the introduction of Part ATS, which proposes to change the structure and utilisation of our airspace to align with ICAO procedures and those measures used in some other European states. This would see the wholesale expansion of controlled airspace for the benefit of commercial air transport operations; and whilst this works well for GA in other states, which have an integrated airspace policy, it would seriously affect GA in the UK because it has a segregated airspace policy. A move from segregation to integration has been heralded and is oft repeated but current work is focussed on integrating commercial operations into areas used by GA and not vice-versa. The current direction of travel would see GA significantly disadvantaged and its interaction with CAT sector would add costs and risks, such as increased airspace infringements. But the balance of modernisation could be changed to include the needs of GA on an equitable basis, given the right government policies and leadership.

2. The UK segregation model is driven by the funding mechanism for airspace and services which allows ANSPs to provide access and services to their own customers and deny those to GA. The CAA does not challenge this and does not implement its own policy that services should be provided to all airspace users, and that airspace should be reviewed regularly and given up when no longer required.

Airspace4All champion the view that only integration and not segregation can deliver modernisation of UK airspace benefits for all users and that GA must be considered as an equal partner in that.

ISSUES

Use of Class A Airspace

3. Although its licence requires NATS (En Route) plc (NERL) to manage all classes of controlled airspace the CAA largely allocates Class A airspace to its control. This excludes the use of this airspace, in its entirety, by GA aircraft flying under Visual Flight Rules (VFR). Recently, some NERL controlled airways were established as Class C, which theoretically allows access by VFR aircraft, but the Air Navigation Order (CAP 393 page 13) prohibits flight by VFR aircraft along such airways. Some other states (eg Germany) do not use Class A

airspace at all and Class C airspace is available to aircraft flying VFR. The UK policy perpetuates segregation.

Size of Control Zones (CTRs) and Control Areas (CTAs)

4. All CTRs in the UK have a minimum width of 10nm which is significantly larger than that in other states. Germany, for example applies the ICAO standards for CTRs of ± 3 nm wide and 5nm long at each runway end at most airfields outside the major hubs. Despite repeated requests for clarification by Airspace4All Ltd the CAA has been unable to identify any UK regulation or policy that justifies a width of 10nm for CTRs; however, this measure seems to have become the accepted standard for UK airspace design.

5. Some UK CTRs are much larger, possibly for historic reasons. Figure 1 lays out the approximate areas of certain CTRs and calculates the efficiency in use of airspace related to the number of public air transport movements (the more efficient being the lower the CTR efficiency number).

Airport	CTR size (nm²)	CTR size (km²)	ATMs (1000) (2016)	CTR Efficiency (km² used /1000ATM)
Heathrow	336	1154	500	2.31
Gatwick	135	463	275	1.68
Southampton	152	522	38	13.7
Manchester	298	1024	183	5.6
Liverpool	262	900	39	23.0
Glasgow	460	1581	90	17.6
Edinburgh	314	1079	116	9.3

Figure 1

6. In Germany, a CTR allocated to low volume airports equivalent to Southampton or Liverpool would be designed to the ICAO minima of 6nm wide and 10nm long utilising only 60 nm² of airspace. It is common for parts or the whole of such airspace to be switched off when not required. Glasgow with its single runway has the largest CTR in the UK, 37% larger than Heathrow with only 17% of the movements. See Figure 2. Were the principle of the German policy to be applied to UK CTRs the volume of lower-level controlled airspace in the UK would fall by some 40%, reducing the workload of controllers at a time of shortage and (potentially) reducing airspace infringements. It would provide greater flexibility for GA operations and reduce interactions with commercial operations, improving efficiency and reducing costs for all users.

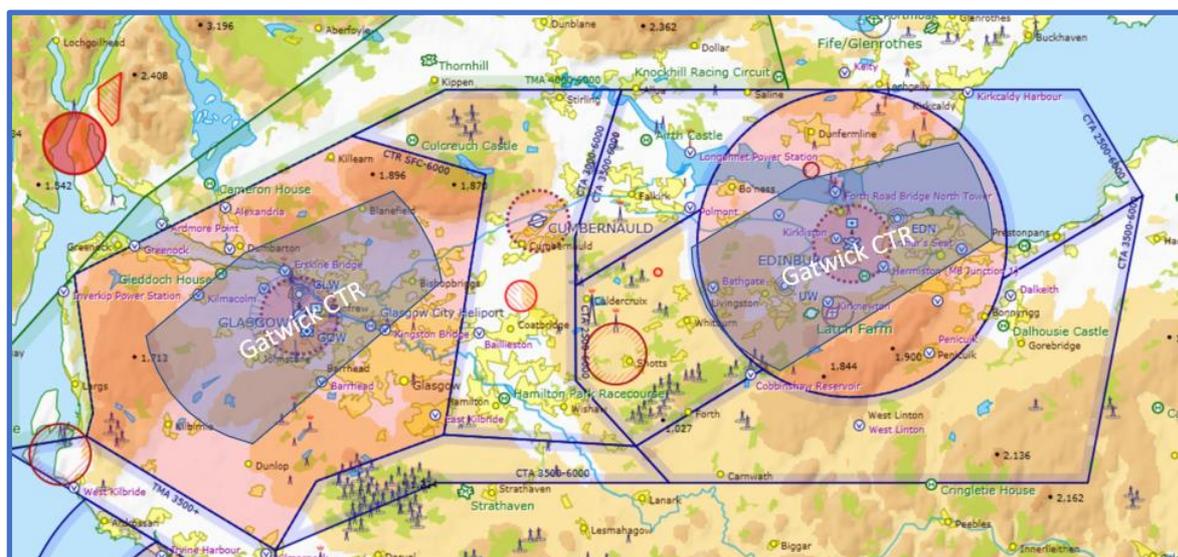


Figure 2

7. In figure 2 it can be seen that Glasgow and Edinburgh occupy much larger swathes of controlled airspace than their traffic needs. Both airports once had second, cross runways but although they are now permanently closed no airspace has been returned to Class G as airspace policy would require. Gatwick's CTR fits well inside those of the two Scottish Airports. For direct comparisons, a table of the airspace efficiency is reproduced below. Liverpool is another airport with a similarly large, unused and underutilised CTR.

CTR Area and Traffic Movements Comparison		
Edinburgh	314 nm ²	Glasgow 460 nm ²
	116k ATM	85k ATM
		Gatwick 135 nm ²
		277k ATM

8. Of note, Heathrow with 2 runways and 500,000 movements has a CTR of 336 nm² whereas Frankfurt with 4 runways and the same number of movements has a CTR of only 130 nm². Both of Heathrow's existing runways and the proposed third runway are parallel; Frankfurt has two parallel runways 07/25, a new offset runway parallel but not aligned to the other two as well as a North/South runway so the air traffic management task is considerably more complex

9. Both airports seem to operate efficiently and safely but with a large disparity in resource allocation. This suggests that Runway 3 should not justify any increase in regulated airspace at LHR and indeed could operate with less airspace than today – again reducing the infringement risk posed by GA airfields that sit within the footprint of the Heathrow CTR and providing a significant public mitigation for expansion. Figure 3 provides a comparison.

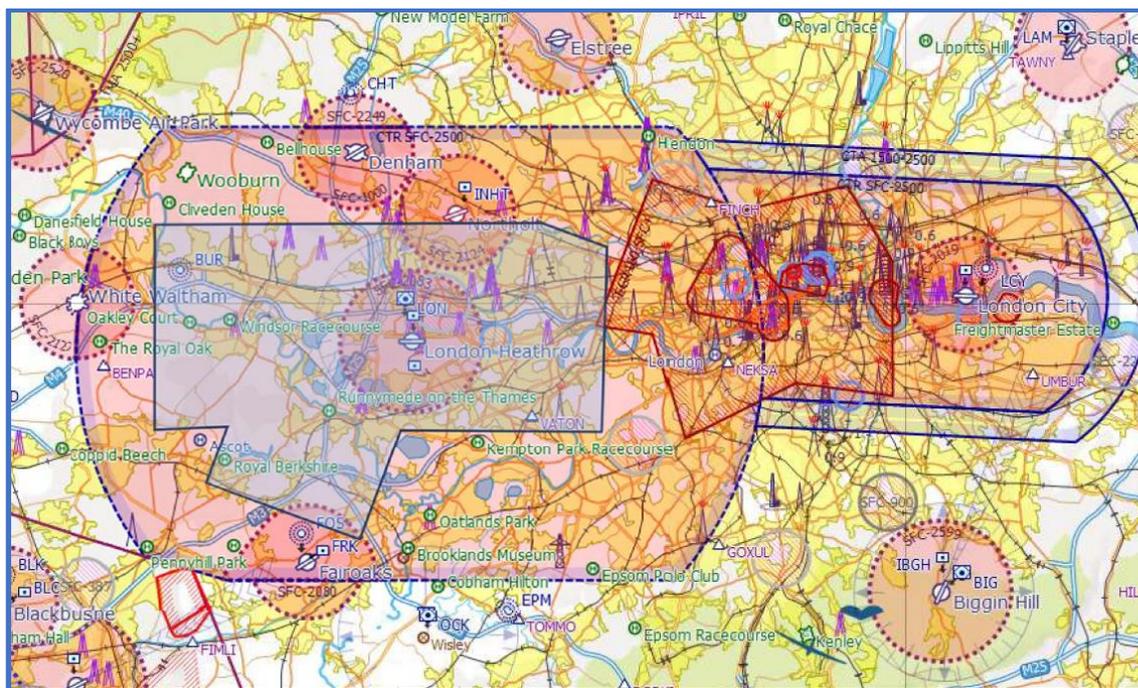


Figure 3

Heathrow CTR Class D
 $24 \times 16 = 336 \text{ nm}^2$

Frankfurt CTR Class D
 $16 \text{ nm} \times 7 \text{ nm} = 130 \text{ nm}^2$

The construction of the third runway does not justify an increase in the size of the Heathrow CTR

Power to Review and Change Controlled Airspace.

10. The CAA has said that it has no power to change existing controlled airspace, and current policies provide no incentive for ANSPs to release unused or underused controlled airspace. This has given rise to a view that, once awarded, CAS cannot be removed by the regulator who approved it in the first instance. Airports which have been allocated CAS are required to conduct a post implementation review and regular ongoing reviews and where appropriate give up airspace. But the CAA does not enforce that policy nor does it seek to review such airspace itself although its inspectors should be well aware of the local issues.

11. There is a significant disincentive for airports or Air Navigation Service Providers to give up controlled airspace as there is a significant cost in satisfying the CAP 1616 airspace change process, even though it can be foreshortened for these purposes. Why would an airport spend money to give up a resource which has no cost to them? Moreover, CAA

resource for airspace change has resulted in a waiting list of many years and proposals to give up airspace would be afforded a lower priority than applications for new airspace and procedures. As a result, unused or underused airspace is left derelict; it generates airspace infringements as GA aircraft try to avoid it and increases workload for ATC controllers as GA flights try to gain access; all adding unnecessary inefficiency.

12. It is fundamental for the airspace modernisation that the CAA has the legal power to direct and enforce airspace change to better deliver the modernisation programme. It is a view that if the allocation of CAS incurred a proportionate opportunity cost charge to the users, then managers of allocated CAS would be encouraged to minimise its extent as part of a normal business process and return or reduce underutilised airspace.

Flexible Use Airspace (FUA) Policy.

13. For many years the airspace change process has required airspace sponsors to consider FUA in any airspace change. This is actively being pursued by the MOD and commercial operators/ANSPs in the upper airspace but no FUA policy exists between CAT and GA for use in the lower airspace - so the requirement has been ignored. Up until now, the concept of FUA related to high level airspace but Airspace4All believes that there is great opportunity at lower levels for airspace sharing. As part of its programme, Airspace4All Ltd is drafting a FUA(Lower) policy in conjunction with key stakeholders. Such a policy is needed to allow the changes required for modernisation without disenfranchising GA.

Introduction of Higher Climb Rate Departures.

14. The introduction of RNAV procedures was said to presage higher climb rates and raised level-off altitudes, which would result in raised CAS bases. Following the completion of the LAMP1A project the then Head of Airspace at the CAA interviewed on television news announced that as a result of this work, aircraft would be flying higher more quickly reducing environmental impact. Apart from some minor adjustments at London City this has not occurred because departure procedures have not been amended and this has maintained the existing controlled airspace boundaries, disadvantaging GA.

15. There is no incentive for airports to implement such changes, which are discouraged by the airspace change policy, and Government does not demand such change. The twin concepts of Continuous Climb Departures and Continuous Descent Arrivals are one of many building blocks for the European Air Traffic Management modernisation programme to which the UK DfT and the UK CAA signed up. These projects, along with many others, have been largely ignored, despite demonstrably meeting the challenges of additional capacity, improved predictability and resilience of commercial air transport as well as significantly

reduced environmental impact. In ignoring these European initiatives, UK Commercial Aviation has been denied the opportunity to receive EU funding, up to 50%, for airspace modernisation initiatives.

16. Raised departures at main airports are also enablers for access by minor airports, which in turn reduces the demand for additional CAS. Finally, higher and continuous climbs improve local air quality and appear to mitigate noise. This would be a valuable mechanism to provide a clear environmental benefit from modernising the aviation industry, but it is not being pursued.

Farnborough Airspace

17. At the request of the CAA, FASVIG (now Airspace4All), carried out a study into airspace sharing around Farnborough Airport¹. Following a series of meetings with key stakeholders the report found that there were options available with the potential to balance the needs of all airspace users in that area. It considered its recommendations to be critical to the success of any new proposed controlled airspace that the CAA might decide to delegate to Farnborough airport. Airspace4All is of the view that these recommendations have wider utility in balancing airspace utilisation and efficiency as part of the airspace modernisation programme so reproduces them here. We are not aware of any decision to act on the recommendations.

18. The recommendations were ordered in terms of short and medium/long term and are reproduced in Annex A.

Airspace4All

29 Oct 2018

Annex A: Airspace Sharing Around Farnborough Airport – Report Recommendations

¹ <http://docs.fasvig.info/ACP/20160513-FASVIG-Farnborough-Airspace-Report.pdf>

Annex A to
Airspace4All Evidence to APPG GA
Dated 29 October 2018

Airspace Sharing Around Farnborough Airport – Report Recommendations

Short term recommendations

7.1 TAG Farnborough should write formally to the Secretary of State for Transport, withdrawing Paragraph 53 of its appeal for an increase in permitted movements, specifically the words....’ the exclusion of extraneous aircraft ‘ and include a new paragraph which outlines the commitment to the provisions enabling full access to all general aviation airspace users subject to current and future CAA equipage requirements for operations within Class ‘D’ airspace. Furthermore, the FASVIG team recommend that the CAA do not countenance this airspace change proposal, nor that of any other proposer with the same or similar restrictive intent.

7.2 The General Aviation users impacted by any new controlled airspace in the vicinity of Farnborough should find the means to collaborate together and form an effective consultative forum with whom TAG Farnborough could negotiate. FASVIG would be prepared to facilitate such a forum, agreeing terms of reference within a timebound design programme.

7.3 TAG Farnborough, in conjunction with NATS, should withdraw the current ACP and airspace design and organise minuted meetings with the GA consultative forum with a view to agreeing the way forward for a revised ACP on which compromise and agreement could be founded.

7.4 The CAA should delay any decision on any newly proposed controlled airspace until after a decision is made on new runway capacity in the South East of England and in any case should recognise in any ACP approval the evolution of the raising of transition altitude, forecast in the near term.

7.5 The FAS Deployment Steering Group should approve a project for the design and roll out of communications to GA pilots regarding operations within Class ‘D’ airspace and to mitigate against zone infringements.

7.6 The General Aviation community, including gliders, should plan for the equipage of radios in all aircraft, recognising that the airspace between the LTMA and Solent is amongst the busiest in the South East of England to improve situational awareness and mitigate against the possibility of airspace infringements.

Medium/Long Term Recommendations

7.7 TAG Farnborough should revise the proposal for new controlled airspace to eliminate, through ATM modernisation, coordination and collaboration, any CTA where opportunity exists to raise the base of the LTMA to take full advantage of the PBN mandate and a more realistic assessment of aircraft performance capability of the fleets operating out of the airport, Heathrow and Gatwick. Where controlled airspace is inevitable, NATS should expedite the deployment of ADS-B, long recognised as the future for conspicuity.

7.8 TAG Farnborough should therefore sponsor the development of a CONOPS document (Concept of Operations) by NATS with an explicit requirement to ensure that only modern ATM practices are utilised and, where necessary, apply for European Commission funding to deploy them. The CONOPS itself would provide a clear, unambiguous plan against which all of the stakeholders could come to an agreement.

7.9 TAG Farnborough should therefore consider a staged approach to their ACP as the currently proposed CAS is designed to handle double the present Farnborough traffic but that growth is in the order of 1%. We think this may provide an opportunity to develop the TAG Farnborough requirement such that mitigations and options which are not available today, can be developed and deployed when mature

7.10 TAG Farnborough should review the requirement of CTA -2,-3,-4,-5,-6, and -7 to offer better mitigation for the users identified in FASVIG's assessment in paragraph 4.5. Of particular value would be the raising of the base of controlled airspace generally and the elimination of CTA-2, CTA-3 (up to 4000' altitude) in particular. TAG Farnborough should review the need for CTA-8 in its entirety with a view to removing it altogether from any future ACP.

In addition, any revised proposals for new controlled airspace should ensure that boundaries, wherever possible, should follow obvious landscape features such as major roads, railways and bodies of water to further avoid zone infringements.

7.11 TAG Farnborough should consider the classification of any proposed controlled airspace other than Class 'D' to ease the operability of the gliding community.

7.12 The CAA should consider a policy on the flexible use of airspace by gliders who need access without the need for a detailed clearance and who need the rules of Class G airspace to maximise the benefit of delegated CAS.

7.13 The CAA, in conjunction with others, should expedite the development of emerging technology such as ADS-B to enable safe and coordinated airspace sharing arrangements highlighted by this review. It is clear that effective and flexible airspace sharing cannot be implemented efficiently without a means of conspicuity. This is straightforward for most powered aircraft but gliders are unable to utilise Mode S transponders because of the power requirement. The emerging ADSB devices and technology are suitable and are, in any case, the future. NATS already operates an ADSB-in system in the south-east UK FIR although the resulting data is not presented or used operationally. ADSB and FLARM systems are already deployed and widely used by sports and recreational aviation and have the potential to increase airspace safety and utilisation.