Glasgow Consultation Coordinator
Control Tower Building
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Glasgow Airport
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19 March2009

Dear Sirs,

PROPOSED CHANGES TO AIRSPACE CLASSIFICATION OVER CENTRAL SCOTLAND

Thank you for consulting the Light Aircraft Association (LAA) on proposals to change the classification of the Glasgow CTA from Class E to Class D.

The LAA has some 8000 members and regulates over 4000 recreational and amateur-built aircraft on behalf of the CAA. Our aircraft fleet ranges from historic examples to modern high performance aircraft with sophisticated navigation systems. Our members experience and qualification covers the full spectrum of professional and amateur but they fly mainly in day VFR conditions. Because of the structure of controlled airspace between the Forth and Clyde, access through the airspace is very important to non-commercial aviation. The LAA has a high regard for air safety matters generally and supports the establishment of controlled airspace where circumstances require it. However, we expect the extent of controlled airspace to be limited to that necessary for public transport flights and we expect to see mitigation of the impact on other airspace users.

In our view, public transport aircraft using Glasgow Airport should have protection equivalent to that afforded by Class D airspace to provide an appropriate level of safety. We agree with the proposal in principle but oppose the way you intend to achieve it. We set out our position in the attached paper where you will note our particularly concern about the use of false data to justify the proposal and the lack of any consideration of the impact on other airspace users.

On behalf of our members we oppose the proposed change.

Yours Sincerely

John Brady
Vice Chairman

Attachment: Detailed consultation response

Glasgow Airspace Reclassification

Detailed Consultation Response from the Light Aircraft Association

Introduction

1. This paper sets out the LAA response to the proposal to reclassify the Glasgow CTA from Class E to Class D. The LAA recognises the importance of safety in public transport aircraft operation. Where there are substantial public transport movements at an aerodrome we support the establishment of Class D airspace but we expect the needs and safety of all airspace users to be taken into account and appropriate airspace design and mitigation applied. The LAA has reviewed the proposal and looked particularly at public safety, airspace efficiency, risk, the environment and the effect of the proposal on non-commercial operations.

2. We agree that Glasgow, with 108,000 commercial movements per year, should be able to operate its public transport flights within Class D airspace. We therefore examined the proposal to see if it provided that efficiently and addressed the needs of all other airspace users as required by CAP 724 and 725.

Errors And Misleading Data In The Proposal

3. We found a number of significant errors and misleading statements in data presented in the proposal which we list at the outset as they affect our response. We discuss errors in analysis and logic later; this section covers only data.

a. The executive summary states that "there will be no change to the way aircraft fly through the airspace" this is not true. Many aircraft which can currently fly through the airspace VFR will be excluded and will have to fly elsewhere or at much lower altitudes bringing environmental and safety impacts. This also contradicts para 3.3 where you say there will be no detriment to the environment.

b. The introduction sets out passenger numbers growth and projections (para 1.2) but the case you present is rightly argued on the number of aircraft movements which has not grown (para 8.11). Headlining passenger numbers in the introduction but using movements as the metric in the justification is very misleading.

c. Para 8.11 cites 108,000 commercial movements in 2007 but that is actually the total number of all movements. We consider that the most appropriate metric for this purpose is the number of flights for the public transport of passengers and we use that throughout this paper. CAA statistics list the number of such public transport flights as 93,084 in 2007 a significantly smaller number. The proposal repeats the misleading data for all other years and it omits data for 2008 with only 86,109 such movements; a significant decline in traffic. Table 1 should actually read:

Year	ACP data	CAA data	% error
1998	101000	85210	18.5
1999	102000	87661	16.4
2000	105000	87571	19.9
2001	110000	91122	20.7
2002	104000	87150	19.3
2003	106000	87463	21.2
2004	108000	91477	18.1
2005	110000	95890	14.7
2006	110000	96138	14.4
2007	108000	93084	16.0
2008		86109	

This shows that movements were at a 10-year low in 2008 and we understand they continue to fall. The figures presented are not what the paper says they are.

d. Para 5.1 then uses these erroneous figures in the statement that "commercial flights must fly through Class E airspace" but that is not the case. Most go nowhere near Class E airspace and using Table 2 in Para 8.12 to extract and adjust 23 arrivals data, we find that only 37% (32,059) route near Class E airspace although none of these appear to need to actually enter it when following published procedures. They only enter Class E airspace when so directed by NATS. Our calculations on this are at para 5 in this paper.

e. Para 7.1 develops this falsehood further saying "the majority of flights which operate in and out of Glasgow airport fly through the (Class E) CTA". This is clearly not true; see para d above.

f. We then find 2 examples of grossly misleading traffic data: table 3 in para 8.13 is represented as a typically busy day but it was the Friday of the autumn half term in Glasgow which sees a huge surge in traffic and figure 3 in para 8.10 is also represented as typical when it was the first day of the Glasgow school summer holiday which sees another surge in movements. Moreover figure 3 (and the other figures) shows traffic at all levels not just within the CTA volume of 2500ft to 6000ft altitude. Therefore the statement in para 8.10 that this "illustrates the airspace (i.e. the class E CTA) is well used" is seriously misleading.

g. In para 8.10, figure 2 depicts the airspace in a different geographic location to figure 1 and 3. We do not know which frame of reference the traffic plots relate to but there is clearly an error here which prevents proper analysis of the data.

h. Para 6.3 records the position of various organisations and para 8.14 reports unanimous support for the proposal from pilots. Our own survey showed that there is indeed support for public transport flights remaining in class D airspace but we could not find support for the proposal as presented. Moreover because of the significant false statements listed

above, we consider that such declarations of support must be revisited. Meanwhile they should be discounted.

j. Para 7.4 describes the avoidance problem with fast moving commercial aircraft. However, commercial aircraft must maintain 250kts or less below FL100 and the paper has already explained that when passing through the CTA airspace they are being configured for landing. Generally these aircraft would be at 210 kts or less in the intermediate approach. This is not fast moving. If encounters between public transport aircraft and military aircraft are an issue we would expect this to be dealt with through direct negotiation with the MOD.

4. In summary, the proposal sets out false and seriously misleading data in support of the change. The great majority of respondents will not have carried out this detailed analysis and will have relied on the material set out by the sponsor as being correct. We return to this in our conclusion. The remainder of our response is based on corrected data where we are able to obtain it. Some data, such as tracks actually using CTA airspace, can only be provided by NATS but we have estimated where practicable.

Justification

5. In justifying the change you cite the volume of public transport flights and the problem in ensuring separation in class E airspace requiring it to be upgraded to class D. You say that "commercial flights using the airport must fly through Class E airspace" (5.1) and "the majority of flights …fly through the CTA" (7.1) so we analysed the routing taken by the 86,109 relevant movements recorded by the CAA for 2008:

a. Arrivals on 05 and departures on 23 following standard routings do not fly anywhere near Class E airspace unless directed by ATC. We have reviewed the SIDs for 05 and conclude that with the exception of Perth SIDs (where a 05 departure would enter Class E at 5272 ft amsl using 5.75% climb) no departure need enter Class E airspace unless directed by ATC. We note that the Perth SID could be amended to avoid the minor incursion into Class E airspace. By reference to the helpful Table 2 in para 8.12 we calculate that 62% of flights patently do not need to enter Class E airspace amounting to 53,387 relevant movements per year. This leaves some 32,721 relevant arrivals on 23 for further consideration.

b. A proportion of those 32,721 arrive from the north and west and might only just enter class E airspace on its north-west tip. Most such IFR approaches and all visual approaches do or could easily remain in class D airspace. NATS can give us a correct figure for this but we estimate at 20% of 23 arrivals from the north and west leaving 25,177 arrivals for consideration.

c. Figure 2 shows that most arrivals from the south-west do not enter or fly over CTA airspace. Again we look to NATS for the correct figure but we estimate 25% of the remaining arrivals leaving 19,633 arrivals, mainly from the south-east for further consideration.

d. Of those 19,633, some will carry out a visual approach and have no need to be below 6000ft altitude over the CTA unless NATS vectors them into it. Again we estimate 10% visual approaches leaving 17,670 arrivals remaining.

e. A proportion of those arrivals would be during the hours of darkness when the rules in class E airspace are the same as class D and there is no uncontrolled traffic in the CTA. We estimate 40% are such arrivals leaving 10,601 or 29 per day average which equates to an average of 2 arrivals per daylight hour which might fly through the class E CTA.

6. Thus the figures are significantly lower than presented and we look to NATS to review these estimates and provide us with correct and auditable figures. If these 2 aircraft per hour which approach from the south-east were vectored on a CDA towards the GOW and turned onto a downwind/left base within class D airspace, they could avoid class E airspace altogether. Such an arrangement might need minor boundary changes at the upper altitude of the CTR which would probably not be an issue. We look at the environmental consequences of this in a later section. Of course we note that published approaches for 23 are drawn to the north of the centreline so traffic following the procedure need not enter class E airspace at all. It has only done so where NATS has vectored it so this practice could be changed immediately if it is judged a safety risk. To do otherwise would be reckless.

7. With such a small number of public transport aircraft affected and given the range of options available today to avoid class E airspace, the justification for the change is not convincing. As NATS has continued to vector aircraft through the airspace it must consider it safe. We have demonstrated that there is a range of options that could be considered to achieve the policy aim of the consultation. We will offer some detail on these later.

8. Changes in vectoring are routine and "critical stages of flight" (7.3) should not be overstated. For the purposes of changes of vector, we would regard a critical stage of flight as beginning once an aircraft was established on an intercept heading for final or equivalent. As far as we can determine that phase of flight should not occur until an aircraft is inside class D airspace. We therefore consider that your regular use of the phrase "critical stage of flight" is designed to make this more dramatic than it actually is and we think it inappropriate. You mention the lack of time available when encountering high speed aircraft (7.4). Although military aircraft may be moving at high speed, the law restricts commercial aircraft to 250 kts in the Glasgow CTA unless NATS allows otherwise. Therefore it is misleading to refer to these as fast moving.

Safety Rationale

9. The discussion at para 8.3 talks of avoiding action during critical stages of flight and complex coordination giving the impression of a fraught situation. However, turns during vectoring are normal for pilots and are not critical to safety and we have shown that only some 2 aircraft per hour have a need to fly in the CTA class E airspace and only then when directed by NATS. Coordination is the normal business of ATC and the airspace and procedures in this area are very simple compared to say the London TMA. Moreover para 8.8 tells us that

this only affects 1 in 50 flights and we have shown that on average there are only some 28 relevant arrivals per day. This suggests that the issue of avoidance only arises about once every other day or thereabouts so we do not find this at all compelling.

10. We agree that reducing the dimensions of controlled airspace would give ATC less flexibility (8.4). To determine if this is an issue we looked at airspace volumes and traffic levels:

a. The present Glasgow CTR covers about 1605 km^2 and with a total of some 86,109 relevant movements this gives airspace efficiency for the current CTR of 18.5 km^2 per 1000 ATM. To provide a guide to how well utilised this airspace is we compare it with 2 other single runway airports, Birmingham and Gatwick. As you can see, Glasgow has over 3 times the CTR airspace of Gatwick with less than a third of the movements. Lest you think this is an unreasonable comparison, Birmingham seems to be the closest in scale to Glasgow which has about 2½ times the CTR of Birmingham with only 80% of the movements.

Airport	CTR Size km^2	ATMs 1000	Airspace Efficiency km^2 per 1000 ATM
Glasgow	1605	86.7	18.6
Birmingham	628	105.1	5.9
Gatwick	463	260.4	1.8

With the addition of the class E CTA, Glasgow would increase class D airspace below 6000ft by another 50% to some 2445 km^2 in total. This is an astonishing amount of airspace for a single runway airport with quite modest and reducing traffic levels.

b. Para 8.4 is correct in saying that if "the boundaries of CAS were reduced, ATC would have less flexibility for vectoring" but that is not to say the result would be inadequate or unworkable. For example, if Glasgow currently has three times the airspace it needs (compared to Birmingham in the table above: 18.6/5.9) and if it was reduced by 25% it would still have 137% more than Birmingham needs for the same proportionate task. So this argument fails a logic test.

c. Whilst it is conceivable that avoiding action could lead to holding, you do not detail a frequency of occurrence suggesting this is rare or even hypothetical. Telephone coordination between adjacent sectors should be a normal part of business for ATC and the airspace in question is, in comparison with other terminal airspace in the UK, simple, uncrowded and extremely large. Consequently, the unquantified suggestion of additional holding and longer routing that would result if CAS boundaries were changed also fails.

11. The proposal goes on to argue that changing the base level of the CTA would impact NATS ability to use vertical separation from the holding fix (8.4 & 8.5). This is a surprising claim that is difficult to justify. Aircraft inbound to Glasgow should be following a CDA to minimise noise and fuel consumption in accordance with NATS corporate policy on best practice and therefore should

pass the same point at the same altitude. Vertical separation is not applicable. Moreover, aircraft should be streamed prior to the holding fix to achieve this. As an example, a CDA drawn at 310 ft per nm from touchdown on 23 would cross the southern boundary of the CTA at about FL90. It is therefore ludicrous to suggest a base level change from 2500ft in this area would somehow disrupt operating practices and prevent NATS from offering CDAs. We are quite certain that NATS are not descending public transport aircraft to 3000 ft so far from touchdown so we conclude that this claim is bogus.

12. We recognise that ATC are not always aware of small aircraft flying in the CTA in daylight and VMC conditions (they cannot fly in the CTA in IMC without clearance)(8.4) and we applaud the proactive way in which Glasgow controllers have maintained safety in this airspace. We note that notwithstanding the arguments in the proposal, there have been no loss of separation incidents in this airspace (8.8) and again we applaud Glasgow ATC for their diligence in maintaining safety for all airspace users but suggest that this demonstrates the good level of safety within the airspace.

13. We note your concern that crews are not advised they are "leaving class A or D airspace and entering class E" (8.6). We are aware that class E airspace is in common use throughout the World and is widespread in Europe, especially around regional airports. In many countries, public transport aircraft operate in class G airspace and no particular indication is given by ATC. Crews operating international flights will be well aware of the issues involved in class E airspace.

14. You refer again to the projected growth in passenger numbers by 2015 set out in the Master Plan (8.9). But as we know, these are just business projections by the airport owner and it is numbers of aircraft not passengers that drives airspace issues. We have shown that the number of public transport movements is now at a 10-year low and all the indicators are that it will continue to fall for some time yet. We do not accept that BAA passenger projections will put pressure on your airspace which we have already shown, in terms of movements per unit area, is probably the least utilised controlled airspace in the UK.

15. We have already discredited the data you present (8.10) in figures 2, 3 and 4 and tables 1, 2 and 3. These include tracks above 6000ft as being within the CTA, they are drawn for unusual days but presented as typical and the geographic position of the airspace and tracks has been shifted significantly in relation to the topographical chart. Finally total movements are presented as "commercial movements" and recent data, which is highly relevant, is omitted. We believe that it is quite inappropriate to derive any conclusions from this data and we propose it be discounted. The pilots with whom you consulted and found unanimous support will have been seriously misled by this data.

Impact On Other Airspace Users

16. It is quite astonishing that although this section is headed "Impact on Other Airspace Users" (9) it does not address this issue at all! The first 4 paragraphs do not mention impact or other airspace users. The final paragraph notes that "Glasgow ATC are committed to providing the best possible service". Nowhere is the impact of the change on other airspace users considered. This is not

acceptable practice. CAP 725 section 41 requires that all aspects of the proposal must have been consulted upon before you go forward to formal submission. As you have not addressed the impact on other airspace users or the environmental impact, we believe there is more work to be done before the next ACP stage.

17. It is clear to us that from the viewpoint of the non-commercial pilot, this proposal will cut the Highlands off from the south for many aircraft. You offer no improvement in service to permit crossing of controlled airspace and many aircraft will in any case be unable to obtain or accept a clearance. Weather, wind and terrain will make VFR flight under the CTA difficult and we cannot recommend the operation of light aircraft close to mountainous terrain in strong winds. Terrain below the CTA is significant and an engine failure at low level is unlikely to be survivable. A detour via the west or east coast is long and hazardous and flight over the sea is equally unattractive. This seems to be a significant impact on aeroplanes and should be addressed. In particular the safety of flight resulting from the proposed change must be addressed for all stakeholders.

18. Gliders, paragliders and other very light flying machines need to follow the energy and usually cannot comply with a clearance designed for powered aircraft. Because they cannot maintain altitude NATS are unlikely to allow them to enter class D airspace. The terrain north east of Glasgow is important to these pilots but will be denied if your proposal is accepted. Choke points will be created at Cumbernauld and Strathaven increasing risk to transit and local aircraft, crews and persons and property on the ground.

Design Options

19. We think that this is the point where we have a major divergence in opinion as to what is required in a consultation. You have set out a concern that public transport aircraft using Glasgow airport have an inadequate level of safety when flying in the class E part of the Glasgow CTA. It seems to us that this leads to a the need for a policy whereby public transport aircraft can have an equivalent level of safety to that provided by Class D airspace. There are a number of ways that could be achieved but you have listed only 2 and dismissed all but your chosen course without any analysis or discussion. This is unacceptable and is contrary to the Cabinet Office guidelines with which you are obliged to comply. We consider possible options as follows:

a. Do Nothing.

The object of the do nothing option is to form a baseline against which to assess the other options. It is not good enough to say that some other option brings benefit therefore do nothing is discounted. You must detail the consequences. Now as you have said there has never been a loss of separation in this airspace, you would need to bring forward some other mechanism to demonstrate the failure of the current arrangement. We have already discussed the inadequacies of paragraphs 7 and 8.

b. Change Boundaries of CAS.

Here you refer us to Paragraph 8.4 and 8.5 which we have already discussed. However, paragraph 8.5 does not deal with this subject at all and paragraph 8.4 is a list of weak issues of which at least 2 have already been shown to be false.

The LAA, having spent considerable time in analysing the issues you present and studying the airspace and traffic levels, conclude that you have a considerable volume of CAS that you do not use and still more that you do not need. It may be that part of the CTA is needed as class D but it is clear that parts of class D could be returned to class E or more likely class G. This suggests that the central Scottish terminal airspace should be subject to a top down review. The allocated CAS needs to be necessary and sufficient for the task and that is clearly not the case. Therefore this is a valid alternative which should be considered. Perhaps the outcome of your consultation should indeed conclude that such a review should be conducted.

c. Change Vectoring Procedures (an additional option)

We have shown that all Glasgow procedures are drawn within class D airspace and you must address the reason you do not follow them. If you cannot use the existing published procedures and must vector outside class D airspace you should say why. If you can use existing procedures then you should do so.

d. Change only part of the proposed airspace to class D (an additional option)

It is quite clear that, for example, the southernmost part of the Glasgow CTA is not needed down to 2500ft amsl for the protection of public transport flights. They have no business being at 3000ft amsl when some 30 track miles to touchdown. So this part of the CTA could be returned to class G airspace. Perhaps other parts of the CTA should be changed to class D and yet other parts retained as class E. This option might be taken in conjunction with the 2 options above. This needs proper analysis but you have dismissed it without due consideration.

e. Introduce CDAs for all arrivals (an additional option)

Glasgow is not known for its use of CDAs and the extent of existing low level controlled airspace demonstrates that its procedures do not comply with best practice. As it is NATS corporate policy to introduce CDAs, these should be introduced at Glasgow forthwith and the effect on controlled airspace boundaries included as a part solution to the issue.

Environmental

20. We have shown that it untrue to say this change will not change where aircraft fly. It will. Substantial numbers of aircraft which currently use the CTA will be forced to fly lower increasing noise and intrusion as well as the risk to persons and property on the ground. This change will arise across the CTA footprint from transit aircraft and produce significant hot spots at local airfields.

It is our view that DAP was wrong to agree that no environmental consultation was necessary. If you proceed as currently proposed we believe you may be subject to challenge.

Addendum

21. We understand that close to the end of the consultation period you offered some individuals changes to the base of existing and proposed CAS in the north and south extremities, noting that you could not raise the base of the centre portion of the CTA because aircraft which are currently vectored to 7 or 9 nm final would have to be vectored to 12nm which would be commercially unacceptable. We are grateful for your review but we plotted such tracks arriving from the south and north-west and found that an aircraft flying over the CTA on a CDA to 23 would cross its revised southern boundary at some 8700ft altitude inbound for a 7nm final and 9600ft for 9nm. Aircraft arriving from the north and west do not need to enter the central CTA at all. This confirmed our earlier assessment that the base level of the CTA is wholly unrealistic and unnecessary and the airspace should be subject to substantial revision.

Conclusion

22. We conclude that you have presented seriously misleading data related to traffic levels and routing of public transport aircraft using Glasgow airport. You have used this and overstatements about critical flight issues to propose a safety change where there has never been a loss of ATC separation let alone a risk bearing airprox. You have said that public transport aircraft using the airport must fly through the class E CTA when that is not the case. You have not considered or mitigated the effect of your proposal on other airspace users and you have failed to consider proper alternatives. You dismissed changes to possible airspace boundaries without consideration and using false logic but have then proposed a change which, though welcome, does not facilitate safe VFR transit and calls your consultation further into question. Although you have three times the CTR volume of Gatwick with only one third of the relevant movements you propose to increase your class D airspace by another third. Finally you have not considered the negative environmental and safety issues that would result from your proposal and you have not consulted environmental stakeholders:

a. We believe that if appropriate provision was made for all aircraft that currently use the central corridor VFR to continue to do so without having to fly very low or in very restricted routes, the proposal might be acceptable. Your late proposal, whilst helpful, does not resolve that. If you are not able to offer a solution that provides continued access to the central corridor we cannot see how you can proceed without an environmental consultation.

b. We believe that there is scope to make adjustments to airspace boundaries to facilitate access and we would be willing to work with you and the other representative bodies to achieve a balanced solution for all stakeholders.

c. We support the proposal to operate public transport flights within class D airspace but we do not support the proposal to change the Glasgow CTA to class D without changing the boundaries of controlled airspace where that area is under-utilised or unused. There are areas of class D airspace that you do not use which could be exchanged for areas you say you do need thereby retaining a revised airspace corridor through central Scotland

d. Having spent considerable time reviewing Glasgow/Edinburgh airspace it is clear that it is not being used efficiently so unless you intend to do so, we propose to ask DAP to conduct a review of Scottish terminal controlled airspace the with the aim of returning parts of it to class G.

23. Having exposed significant errors and incorrect data in this proposal, the LAA believes that the majority of stakeholders will have been misled. You have not consulted on the environmental impact or the impact on other airspace users as you are required to do. We therefore request that you withdraw the consultation, develop a proposal based on correct data and that deals with the issues in a proper way and re-consult. We stand ready to participate in any way we can to help such a process. Meanwhile, if public transport use of class E airspace is considered to be unsafe we suggest you vector within class D airspace as we have shown is possible.

Light Aircraft Association

19 March 2009