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ACP 2020-026

GATEWAY DOCUMENTATION:

STAGE 2 Develop and Assess

STEP 2b Options Appraisal

(Phase 1 initial)

Including safety considerations

Contents

References

1. CAP 1616 Airspace Change Process

2. All published documentation related to this airspace change proposal is available on the CAA Airspace Change portal:
https://airspacechange.caa.co.uk/PublicProposalArea?pID=257

3. CAP 1430 UK ATM Vocabulary

4. ACP-2020-042
https://airspacechange.caa.co.uk/PublicProposalArea?pID=253

5. ACP-2021-007
Airspace change proposal public view (caa.co.uk)

6. Department for Transport Air Navigation Guidance 2017
Air navigation guidance 2017 (publishing.service.gov.uk)

Introduction

The Ministry of Defence, and specifically 11 Group Training Enablers, is the change sponsor for this proposal. The proposal seeks to secure Future Combat Airspace (FCA) for the use by UK and multi-national partners during occasional large scale, highly complex, multi-domain collective training exercises that are used to prepare aircrews for operational service.

This document forms part of the Airspace Change Proposal document set required for the CAP 1616 airspace change process; stage 2 Develop and Assess, step 2b Options Appraisal (Phase 1 Initial) including safety considerations. Its purpose is to consider the shortlist of airspace design options which have progressed through step 2a(2) design principle evaluation via qualitative assessment. Under stage 2 the designs are not yet fully developed therefore the analysis may lack some granularity.

There is one design option in this document, in addition to the baseline do nothing option which is included for comparison. The other options were eliminated after stage 2a(2) as they do not meet the design principles. This document should be read in conjunction with step 2a(1) design options which gives maps and descriptions of each option.

Where are we in the airspace change process?

We have completed stage 1, define when we established a need for an airspace change and the design principles underpinning it. We are now in stage 2; develop and assess. This document is part of step 2b.

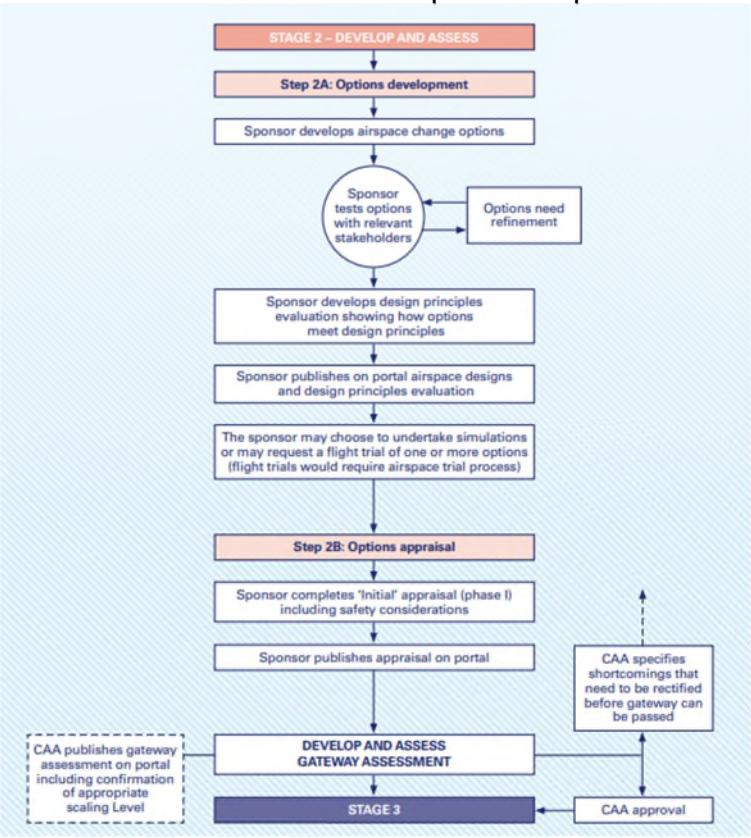

Figure 1 Airspace change process – Stage 2

How to read this document – illustrations of current and potential impacts

The following tables were based on CAP1616 4th edition, Table E2, pages 201-203. In this document we provide a table for the baseline do-nothing scenario, plus a table for the remaining design option. Note that the combined baseline do-nothing scenario (called Option Zero here) is included for comparison purposes only. It would not address the military requirement therefore failed to progress to the next step and has been ruled out of further consideration. Each table lists stakeholder groups alongside types of impact each design might have on that group. We describe broadly what we expect the scale of impact might be, for each type of impact. This is proportional and in line with the expectations of CAP1616 Stage 2.

Criteria against which the options have been assessed

Noise

The Department for Transport Air Navigation Guidance 2017 details the Government's altitude-based guidance as follows:

a. in the airspace from the ground to below 4,000 feet, the government's environmental priority is to limit and, where possible, reduce the total adverse effects on people;

b. where options for route design from the ground to below 4,000 feet are similar in terms of the number of people affected by total adverse noise effects, preference should be given to that option which is most consistent with existing published airspace arrangements;

c. in the airspace at or above 4,000 feet to below 7,000 feet, the environmental priority should continue to be minimising the impact of aviation noise in a manner consistent with the government's overall policy on aviation noise, unless the CAA is satisfied that the evidence presented by the sponsor demonstrates this would disproportionately increase CO2 emissions;

d. in the airspace at or above 7,000 feet, the CAA should prioritise the reduction of aircraft CO2 emissions and the minimising of noise is no longer the priority;

e. where practicable, it is desirable that airspace routes below 7,000 feet should seek to avoid flying over Areas of Outstanding Natural Beauty (AONB) and National Parks;

f. all changes below 7,000 feet should take into account local circumstances in the development of the airspace design, including the actual height of the ground level being overflown, and should not be agreed to by the CAA before appropriate community engagement has been conducted by the sponsor.

Given para e above, and the geographical area in this proposal, stakeholders were asked directly whether the proposals would change traffic patterns below 7000'.

How many activations?

The key concern for many stakeholders was the cadence of activations. It is anticipated that the pattern of 2 major multi-national exercises per year will take continue in March and September. These exercises usually require 9 activations per exercise of up to 3 hours each. In addition, it is anticipated that there will be 6 smaller exercises throughout the year in the months of February, June and November comprising 3 activations per exercise. These would amount to just over 100 hours per annum. However, it was stressed during engagement with stakeholders that these are not guaranteed figures; the Military Airspace Management Cell (MAMC) will be responsible for notifying activations in accordance with the airspace usage plan.

Environmental impact

The Air Navigation Directions 2017 enable the CAA to disregard the environmental impacts of military aircraft when the proposal has been submitted by, or on behalf of, the MoD. However, the Chief of the Air Staff's Astra directive states that the Royal Air Force should strive to meet its environmental obligations. With this in mind, the effects that the proposal has on CO2 emissions will be assessed through modelling of traffic routing around the MDA.

0 Do nothing – baseline option

This option is included for comparison purposes only.

Group	Impact	Level of analysis
Communities	Noise impact on health and quality of life	Qualitative
The current MDA construct used for large scale exercises features portions of airspace almost exclusively over sea. For the MDAs used predominantly by aircraft based in the East of England these are D323, D613, D513. Overland portions of these are not below FL150 therefore there is no affect to those communities.		
Communities	Air Quality	Qualitative
The current MDA construct is almost exclusively over the sea at FL150 and above, there is no direct detrimental impact on air quality to communities in the geographical area.		
Wider society	Greenhouse gas impact	Qualitative
D323 is within close reach of the airbases in the East of England thus reducing the airborne transit time of aircraft operating in this area. However, the other existing MDAs eg. D064, D712, D809, D613 all require a lengthy transit and therefore the additional requirement for refuelling aircraft, increasing greenhouse gas emissions.		
Wider society	Capacity/resilience	Qualitative
The current MDA construct is well established, with effective control measures and managed by the Military Airspace Management Cell in order to minimise disruption.		
General aviation	Access	Qualitative
The current MDA construct is well established, with effective control measures and managed by the Military Airspace Management Cell in order to minimise disruption.		
General aviation/ commercial airlines	Economic impact from increased effective capacity	
Outside the scope of this ACP		
General aviation/ commercial airlines	Fuel burn	Qualitative
Any MDA within the congested UK airspace will cause deviation from standard routes. The current D323 construct forces GA to take indirect routes therefore increasing fuel burn.		
Commercial airlines	Training and other costs	Qualitative
No additional trg costs to deal with segregated airspace.		
Airport/Air navigation service provider (ANSP)	Infrastructure and operational costs	Qualitative
None		
Airport/ANSP	Deployment costs	Qualitative
Existing airspace structures are included in trg packages, no additional costs.		

1 Create Special Use Airspace over the North Sea with overland portions in NE England and SE Scotland

Group	Impact	Level of analysis
Communities	Noise impact on health and quality of life	Qualitative
This proposal has the base of the MDA at FL85. Targeted engagement took place with those airports in the affected area with the direct question "will this proposal affect your traffic patterns below 7000'?" There were no responses indicating that there will be any change resulting from this proposal which will have an effect on health and quality of life. One airport questioned whether there would be increased traffic routing to the Air Weapons Ranges (AWRs) as a result of the change. The dimensions and capabilities of the AWRs are not part of this proposal and the creation of an MDA does not affect use of Class G airspace for aircraft using AWRs.		
Communities	Air Quality	Qualitative
There is expected to be no detrimental affect on air quality as either a direct or indirect result of this proposal.		
Wider society	Greenhouse gas impact	Qualitative
Although this proposal would create a portion of segregated airspace which would have to be avoided, the addition of a protocol prohibiting the activation of other MDAs concurrently would open up more direct routes. Early feedback from previous activations indicates that this reduces greenhouse gas emissions.		
Wider society	Capacity/resilience	Qualitative
There is not expected to be any impact on the UK infrastructure.		
General aviation	Access	Qualitative
Newcastle International Airport have justifiably raised the most concern over this proposal as it has the possibility to affect their traffic, particularly that routing to/from the East. Edinburgh Airport have their own ACP in progress, consultation will and must take place during Stage 3 in order to create workable solutions based upon temporal agreements. The Air and Space Warfare Centre have already been asked to create a procedure for notifying activations well in advance. This should satisfy the concerns raised by the Borders Gliding Club.		
General aviation/ commercial airlines	Economic impact from increased effective capacity	
Outside the scope of this ACP		
General aviation/ commercial airlines	Fuel burn	Qualitative
Feedback from the trial activation indicated that with the suppression of D323, many aircraft were able to take more direct routes to their destination and burned less fuel. Further modelling will be required to prove this as admittedly this was during a period of reduced traffic levels due to C-19 travel restrictions.		
Commercial airlines	Training and other costs	Qualitative
No additional trg was identified by airlines, indeed no feedback was received from the airlines for this ACP. Feedback from the March 2021 D597 activation was positive albeit with reduced traffic levels. Further feedback will be sought from the activation in September 2021.		

Group	Impact	Level of Analysis
Airport/Air navigation service provider (ANSP)	Infrastructure and operational costs	Qualitative
There is some monetary cost in the design of the airspace structure. In addition there are workforce hours spent in creating and promulgating the changes. This work has been completed for previous activations of D597 and this option would reduce any further costs. Procedures for departures/arrivals which would normally route through the affected airspace must be changed.		
Airport/ANSP	Deployment costs	Qualitative
Training will be required for ATCOs at regional airports and the Area Control Centres. SIDs and STARs are likely to be affected and an agreement between regional airports and the area control centres will need to be reached. Historically there has been some confusion over which tracks will be worked by which agency, the creation of a CTA would go some way to solving this and will be addressed during Stage 3.		

Safety Assessment

This section provides a brief, qualitative overview of the impact of the remaining option on aviation safety. Process Note: Following Step 2a (2) Design Principle Evaluation, only one option was progressed. Its progression was not on the basis that it was the only potential option on the grounds of safety. For the avoidance of doubt, this was not “the only safe option” within the meaning of CAP1616, however the other options did not meet the design principles.

The evidence feeding into this safety assessment has been obtained through stakeholder feedback and from the results of a previous activation of D597 in March 2021 which identified some lessons.

NATS recorded 2 safety observations during previous activations, both relating to military aircraft operating outside of the MDA. There was no record of any AIRPROX, but rather some untidy co-ordination. It will need to be stressed to exercise participants that they should remain inside the MDA unless they are departing/joining the MDA. Evidence will be obtained from the activation in September 2021 to assess the impact of increasing traffic levels.

High energy manoeuvres will take place within the MDA; to increase safety, a flightplan buffer zone (FBZ) will be implemented. NATS are of the opinion that the FUA processes, flight plan management and FBZ were a success during the trial activation and the benefits to safety from using familiar airspace with existing structures and protocols cannot be understated. The MDA, routings and FBZ are made known to Eurocontrol for network visibility reducing the risk of any late notice route changes to aircraft in flight.

There is potential for an increase in fast jet traffic taking up ATCO workload, infringing controlled airspace or recovering to civil airports in an emergency, but none of this transpired during the March 2021 activation. It is, however acknowledged by the sponsor that a robust procedure must be implemented so that traffic routing out of Newcastle is provided with an ATS; this will be a priority during stage 3.

Next steps

The next step is the stage 2 gateway on 24 September 2021. For the next stage where a full options appraisal is required, further evidence will be harvested from the temporary activation and NATS will be approached for modelling to assess the environmental and operational impact to civil aviation. Further consultation with airports and ANSPs will take place in order to create rigorous procedures.