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Future Combat Airspace, ACP-2020-026:

STAGE 4B, Final Submission – Supplementary/Clarification Information

Notes

This publication provides notification of a Ministry of Defence sponsored proposal for the creation of a new portion of segregated *Special Use Airspace in the form of a Danger Area* in which military exercises involving large numbers of different aircraft types can train for operations. The Change Sponsor for this proposal resides within 11 Group, A7.

Roles

Action	Role	Date
Produce	11Gp, A7	25 Sep 23
Review	DAATM	

Drafting and Publication History

Version	Date	Change Summary
Initial Issue		

Contents

References

Ref no.	Description	Hyperlink
1	Stage 1 Statement of Need	Link to document
2	Stage 1 Assessment Meeting Minutes	Link to document
3	Stage 1 Design Principles	Link to document
4	Stage 2 Design Options	Link to document
5	Stage 2 Design Principle Evaluation	Link to document
6	Stage 2 Initial Options Appraisal and Safety Assessment	Link to document
7	Stage 3 Consultation Strategy	Link to document
8	Stage 3 Consultation Document	Link to document
9	Stage 3 Full Options Appraisal	Link to document
10	Airspace change: Guidance on the regulatory progress CAP 1616	Link to document
11	UK Government Department for Transport's 2017 Guidance to the CAA on its environmental (abbreviated to ANG2017)	Link to document
12	ACP-2021-048 Future Combat Airspace - Interim Solution	Link to document
13	ACP-2020-042 Future Combat Airspace Trial	Link to document
14	ACP-2021-007 Future Combat Airspace Interim Solution	Link to document
15	Citizen Space Portal	Published Responses

1. Number of Activations

The Sponsor provided the below extract as part of the Stage 3C Consultation Document – during Consultation period 6 Feb 2023 to 8 May 2023 to all Primary/NATMAC/MOD Stakeholders for ACP-2020-026.

5.4 *Danger Area Activations. The aim of this ACP is not to move all training away from existing Danger Areas. As a guide it is proposed that the preferred airspace design would be used for certain Large Force Exercises. The quantitative Environmental Assessment has been based on a defined number of activations – driven largely by the frequency of exercises in 2023 (ACP-2021-048 refers). Committing to an exact number of Future Combat Airspace activations is not possible.*

It is however envisaged that exercises will be infrequent, planned well in advance, will occur over the minimum possible duration, and will be scheduled as far as possible in advance and in consultation with key Stakeholders.

Exercises of this scale are likely to follow a similar annual pattern to that of the most recent activations (note these windows could be day/night or fall over the weekend period): The below table is taken from the Air Exercise Programme

	Season	***Activations (total)***	***Duration (hours)***
Exercise A	*Spring/Summer*	*25*	*4 hours*
Exercise B	*Spring/Summer*	*12*	*4 hours*
Exercise C	*Throughout the year*	*18*	*4 hours*

It must be noted that Exercise C has not occurred over the last 2 years (due to COVID), however there is an aspiration for this exercise to return – any change to this schedule will be subject to appropriate Stakeholder engagement. The total number of activations is not always reached due to factors such as poor weather, short notice operational requirements and insufficient military air traffic controller availability.

Page 92, Line 23 of the Stage 4A Consultation Review identifies an exchange between the Sponsor and NATS.

NATS stated:

'The analysis does not show the impact of preferred design option on the network when D323 & D613s are not active. The analysis assumes that they will always be active, but this is not always the case. It would be useful to include a scenario where no SUA is active to more accurately reflect the impact of this proposal. This is likely to be relevant if LFE are conducted during periods when the MDAs are unavailable for booking, most notably during weekends. If the intent is not to activate TDA597 on the weekends this should be stated in the document.'

The confirmed Sponsor position (provided during consultation):

'Given the scale and complexity associated with Large Force Exercises the preferred design option will only be activated during the working week (outside of Bank Holidays and other notified holiday periods). Data obtained from the AMC indicates that either D323 or D613 were active every weekday (outside the above caveats). Therefore the environmental analysis conducted for ACP-2020-026 on the network is accurate.'

It is acknowledged that the Environmental Analysis for ACP-2020-026 was conducted using the following assumptions:

- **32 activations per year** (based on planned activations for 2023)
- EGD323 and EGD613 are simultaneously active
- Fuel impact of this change would occur at cruise
- 124 flights per activation period
- 0900 – 1300 UTC identified as most common activation time.

Civil Flights within UK FIR/UIR			
Year	Traffic	Fuel Impact (tonnes)	CO2e Impact (tonnes)
2023	4230	-332	-1,055
2024	4412	-346	-1,100
2025	4474	-351	-1,115
2026	4541	-356	-1,132
2027	4609	-361	-1,149
2028	4678	-367	-1,166
2029	4748	-372	-1,184
2030	4819	-378	-1,202
2031	4892	-384	-1,220
2032	4965	-389	-1,238
2033	5039	-395	-1,256

Estimated impact of change within airspace (over 10 years). Positive fuel numbers indicate additional contribution (penalty), negative numbers indicate lower contribution (benefit).

Based on the proposed **55 activations** taken from the Consultation Document the Environmental Analysis has been recalculated accordingly:

Civil Flights within UK FIR/UIR			
Year	Traffic	Fuel Impact (tonnes)	CO2e Impact (tonnes)
2023	6820	-332	-1,700
2024	7002	-346	-1,745
2025	7064	-351	-1,761
2026	7131	-356	-1,777
2027	7199	-361	-1,794
2028	7268	-367	-1,811
2029	7338	-372	1,829
2030	7409	-378	-1,847
2031	7480	-384	-1,864
2032	7553	-389	-1,882
2033	7626	-395	-1,901

Estimated impact of change within airspace (over 10 years). Positive fuel numbers indicate additional contribution (penalty), negative numbers indicate lower contribution (benefit).

From an Environmental Analysis perspective – increasing the number of activations from that of 32 to 55 (per calendar year) will see a significant increase in the net environmental benefit with a projected saving of 1,700 tonnes of CO2 (if 55 activations occurred in 2023).

The impact of the preferred design option has also been reassessed against Newcastle International Airport. *The maximum number of impacted flights per annum was recalculated based on the assumption of 55 activations per year (as described within the Stage 3C Consultation Document).*

Year	Max Impacted Newcastle Traffic per Annum
2023	171
2024	178
2025	180
2026	183
2027	186
2028	189
2029	191
2030	194
2031	197
2032	200
2033	203

Max impacted Newcastle Traffic based on 32 activations

Year	Max Impacted Newcastle Traffic per Annum
2023	293
2024	304
2025	307
2026	312
2027	318
2028	323
2029	326
2030	331
2031	336
2032	342
2033	347

Max impact Newcastle Traffic based on 55 activations

Maximum Number of Impacted Flights per Activation	5

The Maximum Number of Newcastle Impacted Flights per Activation remains unchanged (irrespective of the increase in Danger Area Activations).

2. Concept of Operations

Scottish Control (Prestwick) will manage the safe and efficient flow of General Air Traffic around the Danger Area by use of existing route structures, Free Route Airspace or available Flight Plan Direct Routings established to route around the Danger Area.

ENR 6 – 70, Upper Airspace Control Area, Free Route Airspace (FRA) and Upper ATS Routes (with approximate area of interest)

The Danger Area straddles a location that is subject to both Free Route Airspace and existing route structures/Flight Plan Direct Routings (as depicted by the approximate read oval).

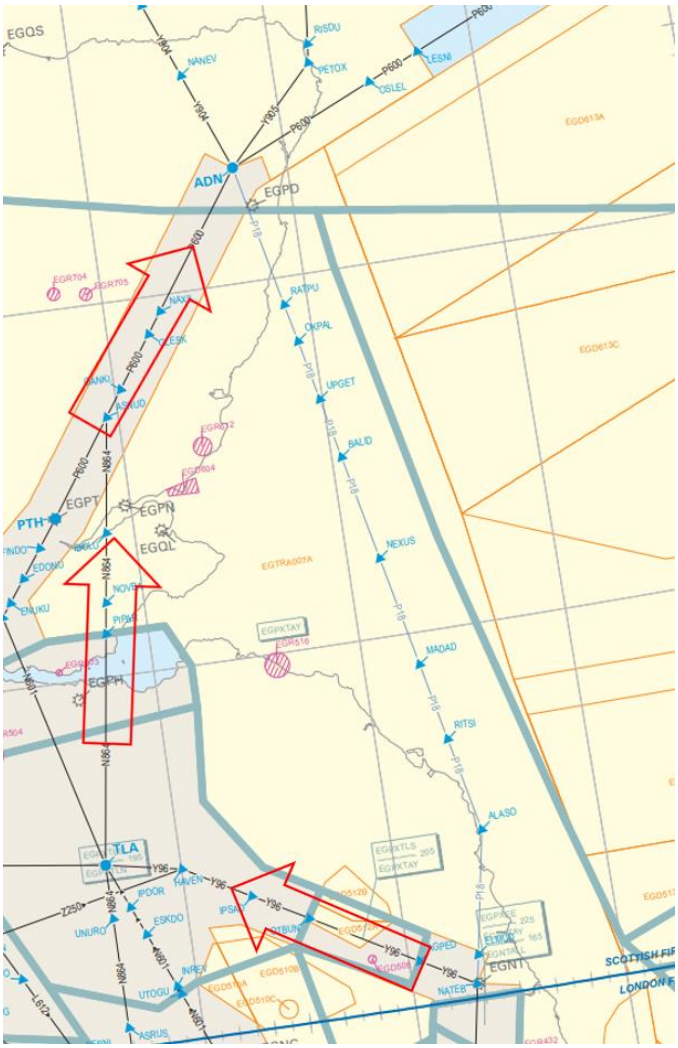
Free route airspace (FRA)(above green line in ENR 6 – 70 diagram) is a concept of providing air traffic services in which an operator can choose their route subject to only a few limitations (e.g. fixed entry and exit points and the need to avoid danger areas as opposed to the situation where standard airways should be used. In most cases the straight line between an entry point and an exit point will be chosen. If for some reason this is not appropriate (e.g. the proposed danger area needs to be avoided) additional turning points can be specified. These can be navigational aids, published navigational points or points with specified coordinates.

Flight Plan Direct Routings enable air traffic controllers to clear aircraft in a way that skips some of the filed flight plan waypoints, saving both time and fuel. Guidance states '*subject to airspace constraints, ATC workload and traffic density and*

provided co-ordination can be effected in a timely manner, aircraft should whenever possible be offered the most direct routing.'

The danger area has been designed as to not impact the use of Standard Instrument Departure (SIDs) and Standard Arrival Routes (STARs) for those immediate stakeholders, more locally specific procedures will be applied in accordance with the below direction.

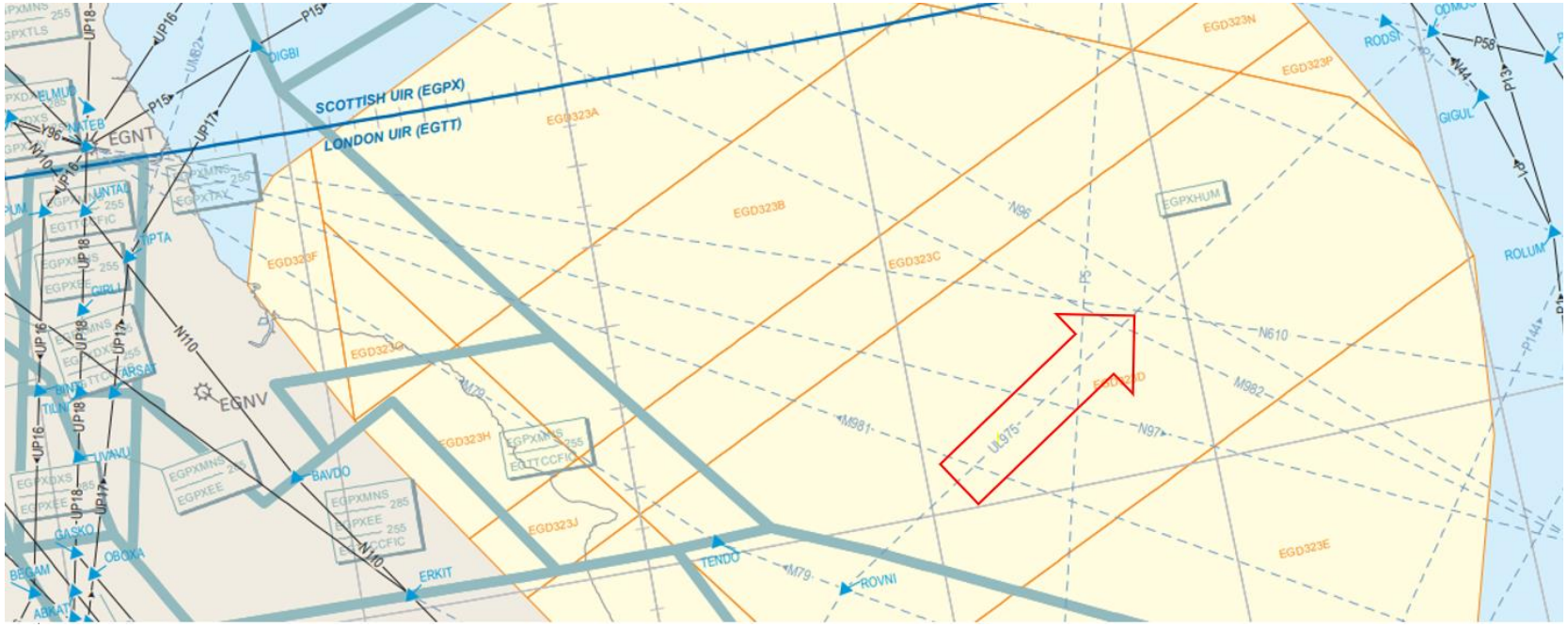
When the Danger Area is active, all flights operating between Newcastle/Teesside Airports and Aberdeen will be specifically routed by airways P600 – N601 – Y96



Eurocontrol Lower Chart (United Kingdom – Ireland), red arrows indicate routing from Newcastle to Aberdeen (reverse also available)

As a condition of acceptance of activation of the Danger Area and to ensure continued air traffic provision for aircraft operating to/from Newcastle and Teesside via the Copenhagen boundary, Swanwick Military controllers will provide an air traffic service. If Swanwick Military do not have sufficient workforce to complete this task the Danger Area will not be activated – this cancellation of the requested Danger Area activation should occur with at 24 hours' notice.

Specific air traffic service procedures shall be applied to aircraft both inbound to and outbound from Newcastle and Teesside Airports routing via airway UL975 for the Copenhagen boundary. These procedures include the provision of transponder codes, routing instructions, descent instructions, estimated arrival times and silent transfers between air traffic control agencies if the aircraft is not subject to conflict or coordination.



3. Development of Flight Plan Buffer Zone and Waypoints

Application for dispensation from CAA Safety Buffer Policy

The Sponsor has considered the proposed Danger Area with regards to the CAA Special Use Airspace – Safety Buffer Policy for Airspace Design Purposes (dated 17 July 2023) and seeks dispensation from the following criteria.

a. Lateral Buffer Requirement. A lateral safety buffer shall be established and promulgated in order that the minimum separation between structures will be:

   10nm from ATS Routes above FL195

b. Vertical Buffer Requirement. *SUA shall be established and promulgated in order that a minimum separation of 2000ft above or below structures will be maintained.*

The following mitigations are offered by the Sponsor and have been described within the Stage 3C - Consultation Document and Stage 4B - Final Submission

Stage 3C, Consultation Document

Section 5 – Operating Principles. Which details the following:

a) Positive ATC management of potentially hazardous activities, all exercise participants attend a mandated safety brief prior to any activity/detailed entry and exit points with associated transit routes are made available to all stakeholders/detailed tactical planning and briefing is mandated prior to each sortie.

b) Positive ATC management of potentially hazardous activities (Swanwick Military Air Traffic Controllers and RAF Boulmer Battlespace Managers)

c) Dynamic ATM procedures: including positive ATC management of aircraft outside the Danger Area (both military and civil traffic)(Swanwick Military Air Traffic Controllers and RAF Boulmer Battlespace Managers)

d) Use of internal Danger Area deconfliction patterns and holding areas for certain traffic (Exercise Planners, RAF Boulmer Battlespace Managers)

e) Airspace sharing arrangements through proposed Annex C Draft Letter of Agreement for EGDXXX

Stage 4B, Final Submission

4.4 - Safety Issues: no safety concerns highlighted regarding FBZ, waypoints or prescribed separation between traffic either inside or outside of the Danger Area.

10. Safety Assessment: discusses the introduction of a FBZ and temporal buffer – with NATS indicating '*that the Flexible Use of Airspace processes, flight plan management and FBZ have been a success during both trials and temporary activations of the Danger Area associated to this proposal and, although this is a new proposal for a permanent danger area, the benefits to safety from using familiar airspace with existing structures and protocols cannot be understated.'*

11. Operational Impact: details evidence of compliance and proposed mitigations for Danger Area activation.

Analysis of the Defence Air Safety Occurrence Report System did not indicate any safety concerns regarding the FBZ or waypoints.

Supporting Historical Evidence

The Flight Plan Buffer Zone (FBZ) and Waypoints associated with ACP-2020-026 remain unchanged from those employed within previous submissions: ACP-2021-007 and ACP-2021-048.

The MOD would like to reassure Stakeholders that no amendments to the FBZ or Waypoints are proposed as part of ACP-2020-026 and that both the FBZ and Waypoints have been designed in close consultation with NATS who have applied the same principles regarding FBZ development to their Free Route Airspace, Deployment 1 (ACP-2018-11) proposal.

Operational Assessment ACP-2021-007 within the Executive Summary captures the employment of a Flight Plan Buffer Zone and additional waypoints – with publication and notification in line with UK and Eurocontrol Procedures to ensure appropriate flight planning behaviours.

Section 2 of this Operational Assessment – *Airspace description and Operational Arrangements* provides the below detail:

2.11 - Is there assurance, as far as practicable, against unauthorised incursions? (This is usually done through the classification and promulgation)

Standard airspace structures promulgated through appropriate means, much of which is over the high seas and all above Flight Level 85. FBZ in place to correctly handle flight plans.

2.17 - Have all safety buffer requirements (or mitigation of these) been identified and described satisfactorily (to be in accordance with the agreed parameters or show acceptable mitigation)?

The FBZ already developed for EGDXXX is again proposed to ensure correct handling of flight plans around the area.

2.18 - Do ATC procedures ensure the maintenance of prescribed separation between traffic inside a new airspace structure and traffic within existing adjacent or other new airspace structures?

Existing procedures, plus the application of an FBZ and off-route status declared for General Air Traffic.

Operational_Assessment ACP-2021-048 within the Executive Summary refers to a bespoke Flight Plan Buffer Zone and additional waypoints, where publication and notification were in line with UK and Eurocontrol procedures to ensure appropriate flight planning behaviours.

Section 2 of this Operational Assessment – *Airspace description and Operational Arrangements* provides the below detail:

2.11 - Is there assurance, as far as practicable, against unauthorised incursions? (This is usually done through the classification and promulgation)

Standard airspace structures promulgated through appropriate means, much of which is over the high seas and all above Flight Level 85. FBZ in place to correctly account for GAT flight plans.

2.16 - Is the airspace design of sufficient dimensions with regard to expected aircraft navigation performance and manoeuvrability to contain horizontal and vertical flight activity (including holding patterns) and associated protected areas in both radar and non-radar environments?

Special Use Airspace established to be the minimum required to contain the hazardous activity and an FBZ established to correctly handle ATS network traffic.

2.17 - Have all safety buffer requirements (or mitigation of these) been identified and described satisfactorily (to be in accordance with the agree parameters or show acceptable mitigation)?

The FBZ already developed for EGDXXX is again proposed to ensure correct handling of flight plans around the area.

4.1 - Is a diagram of the proposed airspace included in the proposal, clearly showing the dimensions and WGS84 co-ordinates?

Charts provided within the submission. No proposed changes to EGDXXX, FBZ or associated waypoints, which are contained within the AIP SUP for the previous activations.