

# ACP-2020-042 Trial Proposal

## MoD Future Combat Airspace

Submitted 31 Jul 20

### Executive Summary

The Ministry of Defence (MoD) has identified a requirement for the generation of new, suitable and safe airspace in the UK to run large scale live exercises, allowing modern military aircraft and systems to integrate with each other and train to their full capabilities. The current existing airspace structures do not provide the MoD viable airspace to facilitate this essential training. An airspace sharing agreement with NATS has been used in the past to facilitate this MoD activity, however feedback from recent iterations has demonstrated that this airspace sharing agreement is untenable for all parties.

The previous agreement also did not incorporate other airspace users and as such, an Airspace Change Process (ACP) – ACP-2020-026 - has been submitted, under CAP1616, to deliver a permanent airspace solution. In order to identify, investigate and test concepts to support ACP-2020-026, the MoD also launched this Future Combat Airspace (FCA) trial – ACP-2020-042. The trial will run in 2 stages – the first coincident with Ex CRIMSON WARRIOR in Oct-Nov 20 (**Annex A**) and the second coincident with Ex COBRA WARRIOR in Mar 21 (**Annex B**). The concurrence of the Trial with the large exercises is not a coincidence; MoD needs airspace to deliver its collective training and large scale exercises provide the ideal opportunity to test the design while the airspace and its management is 'loaded' with a high number of participants.

The airspace trial will allow for real time testing of Airspace Management (ASM) concepts as well as finessing the design of the physical airspace structures and air traffic management (ATM) procedures required to deliver and support this change. The data gathered and the resulting analysis will then feed into ACP-2020-026 to support the establishment of a permanent, lasting airspace solution.

The Trial Airspace has a base of FL85 and most of it is over the North Sea. The dimensions differ between Stages 1 and 2. Impact to other airspace users will mostly be for commercial en-route traffic, commercial traffic going to and from Newcastle and General Aviation (GA) traffic in the Northumberland area. Engagement has taken place with a wide range of stakeholders (**Annex D**) and we have minimised impact where possible. Full details of how we will do this can be found throughout this Trial Proposal.

The Trial ACP sponsor is Officer Commanding 92 Sqn, Air and Space Warfare Centre, RAF Waddington.

### MoD Statement of Need

The MoD has submitted Statement of Need for the Future Combat Airspace:

'Air Command, on behalf of the Ministry of Defence, has an obligation to provide relevant tactical collective training to its combat and combat support forces to ensure UK Forces are correctly prepared to defend UK interests in line with the UK Defence Strategy. An appropriate airspace that can safely facilitate exercising large forces of modern and future aircraft, in a representative combat environment is required to meet this need.'

These are the **Core Military Requirements** for the airspace:

Minimising the risk of MAC to the maximum extent whilst enabling:

Full tactical employment of aircraft and weapons capabilities

Supersonic flight and rapid height changes

Overflight and loiter of rural overland (target) areas

Concurrent high and low altitude activity

Representative employment ranges of simulated air-air and air-surface weapons

Representative operational numbers of aircraft

Ability to oppose from ground and air simultaneously

Contested in electromagnetic environment

These are the **Key Principles** for the Trial:

The FCA will be within practical reach of RAF/USAFE Main Operating Bases (ie. not unduly extending sortie lengths to get there and back.)

The FCA design will provide a suitable training area to meet core requirements now and in the near future, which cannot be achieved in the current airspace structure.

The FCA will provide a sufficient overland portion for running tactical scenarios, siting targets and simulated threats that facilitate representative collective training.

The FCA design must be safe, with any hazards identified and risks mitigated such that they are tolerable and as low as reasonably practicable.

Management of the FCA will use Flexible Use of Airspace (FUA) principles wherever possible.

The FCA will minimise impact upon the network and other airspace users, where possible.

The FCA will use existing structures and procedures where possible to maximise simplicity and conformity.

## **Current Managed Danger Area (MDA) Structure**

The MoD already has assured access to large volumes of airspace in the North Sea (principally the EG D323, D513 and D613 complexes). Although suitable for squadron or Force level training, including concurrent occupancy by a number of smaller training missions, these areas are not suitable for large-scale collective training; they are the wrong shape to allow full use of modern 4<sup>th</sup> and 5<sup>th</sup> generation fighter tactics and simulated weapons in a collective training environment. Neither do they offer access for large 'packages' of fast-jet aircraft into large rural overland areas housing simulated targets and threat systems. The Northumberland area has long been the favoured location for MoD air tactical training; it is rural, relatively free from controlled airspace structures and experiences lower levels of civil traffic than much of the UK. Hence this is the area around which our proposal hinges.

## Previous Airspace Arrangement

The previous collective training airspace construct is called the Cobra Advanced Combat Airspace (CACA). This emerged as a MoU between NATS and Air and Space Warfare Centre (ASWC) in 2017 and was moderately successful at meeting the MoD's requirements. However the agreement only pertained to airspace above FL245 and the ASM was non-standard, labour intensive to manage and ultimately not fit for purpose. Among the key issues were:

**Lack of notification** – airspace users were not aware that the CACA was active (or even what it was). As a result, traffic was being tactically re-routed around the CACA during activation, requiring a labour intensive effort, incurring fuel penalties and risking fuel shortages.

**Lack of segregated status for military users**– the air routes running through it were still available to be flight planned and there was no segregation or protection afforded to military traffic during large-scale training missions, including high-energy manoeuvres.

**Lack of access to Newcastle** – because the route structure was still available, inbound traffic to Newcastle was given a considerable, unplanned re-route with no option to transit through the CACA during activation. This led to a fuel shortage on one occasion.

Because of these shortcomings, the FCA Trial and the permanent ACP it supports will concentrate on correct notification, activation and management procedures to maximise safety and minimise impact to all airspace users.

## COVID-19

The MoD notes that the impact of COVID-19 has significantly affected the volume of commercial and private civil air traffic in UK airspace whether originating from, or arriving in, the UK or transiting UK airspace. Where possible, we want to make the trial COVID-agnostic; we want to test our airspace design with a representative volume of traffic around it. However it is unlikely that this will be possible for either Stages 1 or 2 of the trial. Therefore any trial findings will have to be considered in this context and we would welcome any assistance NATS can provide with access to historic modelling or traffic data from outside the COVID-19 period and forecast recovery and growth of traffic levels. It is imperative to MoD that the design is future-proofed as far as is practicable.

## Trial Detail

More detail on this trial proposal is at the following Annexes:

Annex A – Trial Stage 1 Detail

Annex B – Trial Stage 2 Detail

Annex C – Trial Aims, Methodology and Objectives

- Appendix 1 – Trial Methodology and Objectives

Annex D – Engagement Strategy

- Enclosures – Engagement material sent and received by Trial Sponsor

Annex E – Safety

## Measurements of Success

This trial aims to provide a live test of airspace design and management of a volume of airspace suitable to support MoD air collective training requirements for large scale

exercises. The results of this trial will provide valuable input into ACP 2020-026 which will deliver a permanent airspace change. Full details of the Trial specification are at **Annex C**.

## **Trial Reversion**

If for any reason it is deemed necessary to suspend or delay the trial the MoD will contact all affected stakeholders as soon as possible. Possible scenarios that may result in trial reversion would be cancellation/postponement of the military activity or unforeseen safety incidents or concerns that arise during the trial that cannot be sufficiently addressed or mitigated to allow the trial to continue.

## **Next Steps**

The timeline to have the Trial Airspace proposal approved and ready for use for Ex CRIMSON WARRIOR in Oct-Nov 20 is relatively tight, and thus the relevant milestones are worth noting below.

31 Jul            Submission of the ACP-2020-042 Trial Proposal

11 Aug           Ex CRIMSON WARRIOR Final Planning Conference (FPC - internal to MoD).

13 Aug           AIRAC Cycle submission deadline

Ideally the decision to proceed with the Trial would be received from the CAA in time to meet both the Exercise FPC and the AIRAC deadline. This will allow the Trial Sponsor to brief the airspace to all participants at the FPC and to submit the AIC in good time ahead of the Exercise.

Aug-Sep 20    Tasks (and owners) identified to ensure necessary actions required to enable the trial are completed. (e.g. AIC completion)

Fri 16 Oct      NOTAM submitted by MABCC to activate the Trial Airspace.

Early Nov 20   Engagement to request feedback from affected stakeholders on Trial Stage 1.

Nov 20           Trial Stage 1 wash-up and analysis against Trial Objectives, including addressing complaints.

Nov 20           Confirmation of final airspace design and ASM protocols for Trial Stage 2. CAA Submission to include feedback, complaints and LIs from Stage 1.

31 Dec 20      AIRAC Cycle submission deadline for Trial Stage 2

Mar 21           Trial Stage 2 during Ex COBRA WARRIOR.

Mar 21           Wash-up and analysis of Trial Stages 1 and 2 against Trial Objectives. Data gathered during Trial fed into ACP-2020-026.

## **Summary**

The aim of this trial is to design, test and gather data for a volume of airspace which will allow the MoD to deliver large scale collective training for its 4<sup>th</sup> and 5<sup>th</sup> generation combat and combat support forces in a representative operational environment. The MoD is very conscious of the high demand on UK airspace; hence we have actively sought to engage with other stakeholders to standardise the management of this airspace as much as possible while minimising the impact to other airspace users.

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## **References**

CAP 740: UK Airspace Management Policy

Letter of Agreement between NATS and MoD and BAe Systems, dated 1 Mar 2018

CAA: SARG Danger Areas, dated 21 Jul 20

Letter of Agreement between NATS and MoD – P18 Airway, 15 Aug 19