



Ministry
of Defence

Airspace Change Sponsor
John Collier Facility
RAF Waddington
Lincoln
Lincolnshire
LN5 9NB

21 March 25

Future Combat Airspace, ACP-2020-026: *Post Implementation Review*



References

Reference Material. The table below details all documents that will be referenced throughout this document. This includes previous material submitted as part of this ACP.

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	Stage 3 Consultation Review	Link to document
11	Stage 4 Final Options Appraisal	Link to document
12	Airspace change: Guidance on the regulatory progress CAP 1616	Link to document
13	UK Government Department for Transport's 2017 Guidance to the CAA on its environmental (abbreviated to ANG2017)	Link to document
14	ACP-2021-048 Future Combat Airspace - Interim Solution	Link to document
15	ACP-2020-042 Future Combat Airspace Trial	Link to document
16	ACP-2021-007 Future Combat Airspace Interim Solution	Link to document
17	Citizen Space Portal	Published Responses
18	ACP-2020-026 Decision Conditions & Recommendations	Link to document
19	Post Implementation Review Data Request	Appendix A – PIR Feedback Form EGD514
20	Operational Feedback	Appendix B – Osprey Consulting Services Berwick Bank (TMZ) Airspace Change Proposal
21	CAA, Airspace Change Process	Appendix C – CAA, ACP, Post Implementation Review Data Request

Contents

1. About this document

- 1.1 Introduction
- 1.2 Post-Implementation Review (PIR)
- 1.3 Timescales for the PIR process

2. The format of the PIR reports and annexes

- 2.1 Evidence Section Headings
 - Table 1: CAA data requirement heading and references

3. General Observations

- 3.1 PIR Item 16a: Intended Objectives
- 3.2 PIR Item 16b: CAA Conditions
- 3.3 PIR Item 16c: Implementation date
- 3.4 PIR Item 16d: Delay to implementation date
- 3.5 PIR Item 16e: Other significant issues
- 3.6 PIR Item 16f: Promulgation
 - Table 2: AIRAC 02/2024
- 3.7 General Observations Section: Conclusion

4. Safety Data

- 4.1 PIR Item 19a: Instrument Flight Procedures
- 4.2 PIR Item 19b: Mandatory Occurrence Reports
- 4.3 PIR Item 19c: AIRPROX reports
 - Figure 1: Dispersion of Airprox Locations
- 4.4 PIR Item 19d: Air Safety Reports
- 4.5 Safety data section: Conclusion

5. Service Provision and Resource Issues

- 5.1 PIR Item 22a: Refusals
 - Extract 1: Para A.3.2 – Condition of EGD514 Activation
- 5.2 PIR Item 22b: Delays
- 5.3 PIR Item 22c: Resource allocation
- 5.4 Service Provision Section: Conclusion

6. Infringement statistics

- 6.1 PIR Item 28a: % change in infringements
- 6.2 Infringements: Conclusion

7. Traffic figures (Air Transport Movements ATMs)

- 7.1 PIR Item 31a: Actual Vs. Forecast
 - Figure 2: Forecast Impacted Traffic Figures (Stage 4B Submission)
- 7.2 PIR Item 31b: Data on % change
- 7.3 PIR Item 31c: External factors
- 7.4 ATM Section: Conclusion

8. Traffic dispersion comparisons

- 8.1 PIR Item 34a: Density Plots
 - Figure 3: Traffic Dispersion during active and inactive periods
 - Figure 4: EGD514 activation Heat Map
- 8.2 PIR Item 34b: Lateral and Vertical Analysis
 - Annex B: Newcastle International Airport Traffic Dispersion
 - Annex C: Dundee Airport Limited Traffic Dispersion
- 8.3 PIR Item 34c: Weather/MET impacts

Extract 2: Exercise STORM WARRIOR 24-2 report
8.4 Traffic dispersion: Conclusion

9. Operational feedback

9.1 PIR Item 37a: Feedback from airlines/ATC

Table 2: List of Stakeholder Organisations

9.2 PIR Item 37b: Feedback from sub-committee

10. Denied Access

10.1 PIR Item 40b: Individual refusal of service

10.2 Denied Access: Conclusion

11. Letters of Agreement

11.1 PIR Item 46a: Operational agreements

11.2 PIR Item 46b: Activation/utilisation of procedures

Table 3: Letter of Agreement Holders

11.3 Letters of Agreement: Conclusion

12. Impact on Environmental Factors

12.1 PIR Item 49j: Operational diagrams

12.2 PIR Item 49o: Annual fuel and CO2 usage

Table 4: Flight Impact during activation period

12.3 PIR Item 49p: Per flight fuel and CO2 usage

Table 5: individual Flight Impact during activation period

12.4 PIR Item 49q: TAG Greenhouse Gases

Table 6: WebTag CO2 Emission Summary

12.5 PIR Item 49r: Supporting input data

12.6 PIR Item 49s: Description of prediction model

12.7 Impact on Environmental Factors: Conclusion

13. Impact on International Obligations

13.1 PIR Item 52a: Feedback from neighbouring states

13.2 Impact on International Obligations: Conclusion

14. Impact on Ministry of Defence Operations

14.1 PIR Item 55a: Feedback from Ministry of Defence

14.2 Impact on Ministry of Defence Operations: Conclusion

15. Stakeholder Feedback

15.1 PIR Item 58a: Feedback received during implementation period

15.2 PIR Item 58b: Locations of feedback

15.3 PIR Item 58c: Feedback via FCS 1522 Form

15.4 Stakeholder Feedback: Conclusion

16. Other Information of Relevance (if appropriate)

16.1 Number, Timings and Duration of Danger Area Activation

Table 7: Number, Timings and Duration of Danger Area Activation

16.2 Confirmation of nil impact below 7,000ft to civil operations

16.3 Other Information of Relevance: Conclusion

Appendix A – PIR Feedback Form EGD514

Appendix B – Osprey Consulting Services Berwick Bank (TMZ) ACP

Appendix C – CAA PIR Data Request (ACP-2020-026)

Annex A – ACP-2020-026 PIR Operational Feedback
Annex B – Newcastle International Airport Traffic Dispersion
Annex C – Dundee Airport Limited Traffic Dispersion

Enclosure A – DASOR-24-10541
Enclosure B – TAG Greenhouse Gases Workbook
Enclosure C – Operational Diagrams

Role

Action	Role	Date
<i>Produce</i>	<i>RAF 1 Group, Operational Training Infrastructure</i>	<i>21 March 25</i>

Drafting and Publication History

Version	Date	Change Summary
<i>Initial Issue</i>	<i>21 March 25</i>	

1. About this document

1.1 Introduction

- 1.1.1 This is the formal MOD response to the CAA request for Post Implementation Review (PIR) (Reference 21) Data Request for ACP-2020-026. On 27 Nov 23 the CAA approved ACP-2020-026 and the request for dispensation from *SARG Policy 131-SUA Buffer Policy for Airspace Design Purposes*.
- 1.1.2 The proposal sought new Segregated Airspace for occasional use by the UK and Coalition Partners during large scale, highly complex training exercises. This Airspace Change Proposal (ACP) was sponsored by the MOD and feedback has been gathered from all stakeholders that were engaged throughout both the ACP and Implementation processes.
- 1.1.3 This Post Implementation Review (PIR) material provides evidence of what has happened since the airspace change was implemented.
- 1.1.4 The Sponsor concludes that the objectives of ACP-2020-026 *have been successfully met*.

1.2 Post Implementation Review

- 1.2.1 The purpose of this PIR is for the Sponsor to carry out a full assessment of whether the anticipated impacts and benefits in the original proposal and published decision are as anticipated, and for the CAA to evaluate that assessment,
- 1.2.2 The PIR is not a review of the decision on the airspace change proposal and neither is it a re-run of the original decision process.

1.3 Timescales for Post Implementation Review Process

- 1.3.1 CAA Decision date: 27 November 2023, PIR Data Submission Requested: 12 December 2023. PIR Data Submission required: 22 March 2025 (1 year & 28 days post implementation of ACP-2020-026).

2. The Format of the PIR reports and annexes

2.1 Evidence Section Headings

- 2.1.1 Throughout this document the Sponsor will endeavour to satisfy the CAA's data requirements by referring to headings, paragraph numbers and table items. The Sponsor will usually write in bold or in a subsection heading, PIR Item (reference number) to indicate how the evidence applies to the CAA requirement.

Evidence Requirement (section heading)	Ref	Evidence Requirement (section heading)	Ref
General Observations	16a-f	Letter of Agreement	46a-b
Safety Data	19a-d	Environmental: Noise, Operational Diagrams	49j
Service Provision/resource issues	22a-c	Environmental: Fuel and CO2 Emissions	49o-s
Infringement Statistics	28a	Impact on International Obligations	52a
Traffic Figures (air transport movements)	31a-c	Impact on Ministry of Defence Operations	55a
Traffic Dispersion Comparisons	34a-d	Stakeholder Feedback	58a-c
Operational Feedback	37a-b	Other Information of Relevance	a-b
Denied Access	40b		

Table 1: CAA data requirement heading and references

- 2.1.2 The main document lists all evidence headings and directs the reader to a separate annex if more appropriate. The main PIR document and set of annexes contain evidence to satisfy the CAA requirements.

3. PIR Data Requirement – General Observations

3.1 Overview statement on whether, in the change Sponsor's view, the original proposal met the intended objectives as described on the CAA's decision to approve the change. PIR Item 16a

- 3.1.1 The original proposal, restated on the CAA's Decision Log (dated 8 Nov 23) sought 'Segregated Airspace, for use by the UK and coalition partners during large scale, highly complex training exercises that are used to prepare aircrews for operational service. *In the change Sponsor's view this original proposal has been fully met, with safe activations of EGD514 encompassing the implementation period of 23 July 2024 to 14 March 2025, consisting of both daytime and nighttime exercise executions, participation from a wide variety of nationalities, with up to a reported 80 simultaneous flying assets within Danger Area EGD514.*

3.2 Overview statement on whether, in the change Sponsor's view, the original proposal met any conditions described on the CAA's decision to approve the change. PIR Item 16b

- 3.2.1 There were 5 conditions [CAA Decision Log](#) associated with the CAA's decision to approve ACP-2020-026, the majority of which were satisfied before the first intended activation [CAA Conditions - Sponsor Update](#). *Conditions ranged from the finalisation of the Letter of Agreement, an acknowledgement from the Sponsor that any amendments to either the management or operational procedures associated with the new danger area must be discussed with the CAA in the first instance. Clarification was also required regarding the environmental analysis provided. Of greater challenge was the condition that sought to understand whether the airspace design facilitated a decrease in fuel burn and CO2 emissions over entire flight trajectories; in cases where the Oceanic Entry/Exit Points to the London/Scottish FIR/UIR were different from those in the original flight plan. It is hoped that this final condition will be satisfied following the resubmission of the supporting Environmental Analysis as part of this Post Implementation Review.*

3.3 Confirm that implementation occurred on the dates identified in the Decision Letter. PIR Item 16c

- 3.3.1 AIS cut-off: 24 November 23. Target AIRAC: 02/2024 (effective 22 February 24). Intended first activation: 26 February 24. Intended first activation was however not required due to the cancellation of Exercise COBRA WARRIOR 24-1, cited due to 'urgent operational requirements.' First activation of EGD514 occurred in support of Exercise STORM WARRIOR 24-1 on 23 July 24. A total of 44¹ activations of EGD514 were submitted in accordance with the Letter of Agreement; through the Military Airspace Management Cell (MAMC) during the implementation period (further detail at 16. Other Information of Relevance).

3.4 If there was a significant delay between the planned and actual implementation date. PIR Item 16d

¹ CAA decision allows for up to 55 activations of EGD514 per calendar year.

- 3.4.1 Whilst it may appear that there was a delay between the planned and actual implementation of the Airspace Change, the Sponsor highlights that this Danger Area is reserved for infrequent, large scale, highly complex exercises – these normally occur in the early spring and mid/late summer period, with the cancellation of Exercise COBRA WARRIOR 24-1 (March 2024), the next planned exercise associated with EGD514 usage was Exercise STORM WARRIOR 24-1 (first activation 23 July 24), this was the next planned opportunity to utilise EGD514.

3.5 Identify whether any other issues of significance have occurred during the period 12 months after date of implementation. PIR Item 16e

- 3.5.1 With reference to CAP 1616 Ed 4 Part 1 The Airspace Change Process: Paragraph 270 – the Sponsor has received *no general feedback* on the impact of the change from either stakeholders or the Regulator. Engagement with key stakeholders has occurred at intervals captured within the [4B - Final Submission](#)

3.6 Other than normal promulgation activity, identify what steps were undertaken to notify local aviation stakeholders that the airspace change was about to be implemented. PIR Item 16f

- 3.6.1 Upon learning that the CAA had approved the airspace change, the Sponsor wrote to all stakeholders: *email Sent: Wednesday, December 20, 2023, 2:22 PM* informing all parties of the decision outcome. All stakeholders were signposted to the CAA Airspace Change Portal and were provided with bespoke hyperlinks to the specific ACP reference. All stakeholders were presented with the opportunity to discuss any concerns or observations with the Sponsor. In addition, military stakeholders have been informed of the change through a number of fora – these range from local, to group level and also include meetings that are attended by coalition partners. The approval of EGD514 was further identified and briefed by the EUROCONTROL ‘Head of Stakeholder Support and Business Management’ as part of the North Sea Area Initiative in late 2023.
- 3.6.2 Routine aviation promulgation activity occurred relating to AIRAC 02/2024 (22 February 24)

AIRAC 02/2024	24/11/2023	11/01/204	22/02/2024
---------------	------------	-----------	------------

Table 2: AIRAC 02/2024

- 3.6.3 Notifying Aeronautical Information Circular (AIC) was published two weeks prior to planned implementation – Effective 11 January 2024 [AIC 001 2024 NEW DANGER AREA EGD514 AND ASSOCIATED FLIGHT PLAN BUFFER ZONE](#)

3.7 General Observations Section – Conclusion

- 3.7.1 The Sponsor concludes that the Airspace Change was successfully implemented; but acknowledges that the first intended activation of EGD514 *was later than initially planned*.

4. PIR Data Requirement – Safety Data

4.1 Data concerning any recurring instances of Instrument Flight Procedures not being flown correctly. PIR Item 19a

- 4.1.1 The Sponsor interprets that recurring instances, means regular and replicating cases as identified from operational data, safety reports and stakeholder feedback.
- 4.1.2 There have been *no instances* reported to the Sponsor regarding any inability for stakeholder airports to follow instrument flight procedures when the Danger Area is activated. EGD514 was conceived in order to create nil impact to Instrument Flight Procedures.
- 4.1.3 A condition for EGD514 activation relates to the requirement for guaranteed air traffic service provision (Letter of Agreement, Para A.3.2.1, 22 Feb 24) between aircraft operating from Newcastle and Teesside via the Copenhagen Flight Information Region – this requirement *has been fulfilled* throughout activation periods. At no stage during the Implementation period did the Sponsor receive any feedback from commercial operators advising that their activity had been negatively impacted. The Final Submission for ACP-2020-026 identified a request from Dundee to be provided with a Lower Airspace Radar Service from Leuchars Station when EGD514 is activated – this request has been met for all activations to date, however there is *no mandated* requirement or long term commitment from the military to provide this radar service to Dundee; this ATC service is being provided subject to spare capacity and availability.

4.2 Report concerning any known Mandatory Occurrence Reports. PIR Item 19b

- 4.2.1 To assess any safety issues with EGD514, the Sponsor has conducted a Defence Air Safety Occurrence Report (DASOR) search through the Air Safety Information Management System (ASIMS) for any safety incidents relating to the use of the Danger Area.
- 4.2.2 To ensure that all associated safety reports were identified – the search criteria within ASIMS was made intentionally broad and included individual searches with the following keywords. *permanent Danger Area designator (EGD514), shortened designator (D514), Exercise STORM WARRIOR, Exercise COBRA WARRIOR, Large Force Exercise, Air Collective Training, in the vicinity of EGD514.*
- 4.2.3 Summary of MOD responses over the following period 26 Feb 24 – 14 Mar 25:
 - a. *8 submitted reports in total (3 of which referred to the same incident)*
 - b. *Perceived severity range, High – Low*
 - c. *Half of the incidents occurred within the lateral/vertical limits of EGD514*
 - d. *All incidents which occurred within lateral/vertical limits of EGD514 related to application of procedures (either aircrew or ATC)*
 - e. *1 incident (and 1 linked report) reported Airprox – Mil vs Mil traffic, under the control of military ATC agencies.*
- 4.2.4 The following reports were identified with summary analysis provided for each:
 - i) 23 Sep 24 – Swanwick Mil. Outside lateral/vertical limits of EGD514 (involved aircraft participating in Large Force Exercise), Reported as Airprox (linked to Boulmer Safety Report). Perceived Severity – High. Summary, co-ordination

agreed between Swanwick & Boulmer – however co-ordinated aircraft turned unexpectedly towards opposing traffic and Loss of Safe Separation occurred. Subsequent investigation found that radio onboard aircraft was unserviceable, hence the unexpected turn. Investigation also highlighted controller planning could have commenced earlier, to provide a descent underneath conflicting traffic.

- ii) 23 Sep 24 – RAF Boulmer. Outside lateral/vertical limits of EGD514 (involved aircraft participating in Large Force Exercise), reported as Airprox (linked to Swanwick Safety Report). Perceived Severity – Medium. Summary: agreed lateral deconfliction – however aircraft subject to co-ordination did not turn as instructed by the controller. In addition, report highlighted issues with communication and outdated orders for control of multiple aircraft. The aircraft subject to co-ordination was found to have an unserviceable radio at the time of the incident.
- iii) 20 Sep 24 – RAF Brize Norton. Outside lateral/vertical limits of EGD514. Report details how ATC Agency provided repeated instructions for fast jet aircraft to join the Air-to-Air Refuelling Aircraft at the same level. The repeated confusion may have been created by a change to the level of the Air-to-Air Refuelling aircraft from that published on the co-ordination card.
- iv) 20 Sep 24 – RAF Boulmer. Linked to RAF Brize Norton report. Outside lateral/vertical limits of EGD514. Report remains under investigation; however detail is consistent with the information contained in the RAF Brize Norton report (iii).
- v) 18 Sep 24 – Swanwick Mil. Outside of lateral/vertical limits of EGD514 (aircraft departing EGD514 with an emergency), reported as Civil Avoid. Perceived Severity – Low. Summary: standard separation maintained throughout; co-ordination deemed achievable before avoiding action turn was issued. Incorrect application of procedures noted – military aircraft suffering from emergency was not provided with emergency squawk to help notify other controllers.
- vi) 17 Sep 24 – RAF Boulmer. Outside of lateral/vertical limits of EGD514 (involved aircraft departing EGD514), reported as Avoiding Action. Perceived Severity – Medium. Summary, attention of controller split over wide area (indicated as over 200nm) with controller focus towards North of tactical display. Supervisor focus was also predominately towards the North. Closest reported point of 9nm measured between aircraft. Avoiding action provided to civil transit traffic.
- vii) 20 Aug 24 – RAF Boulmer. Within lateral/vertical limits of EGD514. Reported as Air to Air Refuelling Receivers at same level as tanker. Perceived Severity – Medium. Summary: on 3 occasions it was noted that fuel receiver jets were instructed to fly at the same level as the tanker aircraft. There was also an occasion whereby a formation was cleared to descend to the tanker, whilst simultaneously a formation was climbing to depart the tanker.
- viii) 25 Jul 24 – RAF Marham. Entering segregated airspace (EGD514). Report titled as ‘confusion on deconfliction plan.’ Following the mass brief associated with Ex STORM WARRIOR, participating assets had misinterpreted the deconfliction plan and co-ordination card. This led to an aircraft climbing through an already assigned level. The narrative describes how visual contact was maintained throughout and the closest lateral point was 2.7nm.

4.3 Reports concerning any known AIRPROX reports. PIR Item 19c

- 4.3.1 Aircraft Proximity (AIRPROX) is a situation which, in the opinion of a pilot or air traffic services personnel, the distance between aircraft, as well as their relative positions and speed, was such that the safety of the aircraft involved may have been compromised.
- 4.3.2 The Sponsor refers to ASIMS report detailed above; but seeks to emphasise that this (related) event occurred outside the lateral and vertical limits of EGD514. The UK Airprox Board [Annual summary reports | UK Airprox Board](#) is yet to publish findings from calendar year 2024, no evidence of this event can be found within current Airprox Board publications.
- 4.3.3 The MAA report that the above incident is Airprox Number 2024241, this report can be found at Enclosure A to this Report – Titled, *NORTH-AIRPROX-FNF417-Tac Left*

4.3.4 The below diagram ([UK Airprox Board](#)) provides pictorial representation of all reported Airprox Locations over period 1 February 2022 to 31 October 2024 – this encompasses the period of ACP-2020-026 implementation, but also the proceeding period covered under TDA597 (ACP-2021-048) to ensure that the totality of the operational activity was captured. This extract highlights that there have been no reported Airproxes within the segregated airspace associated with EGD514.

Year or, Specific dates To:
☒ Risk A ☒ Risk B ☒ Risk C ☒ Risk D ☒ Risk E 538 Airprox shown

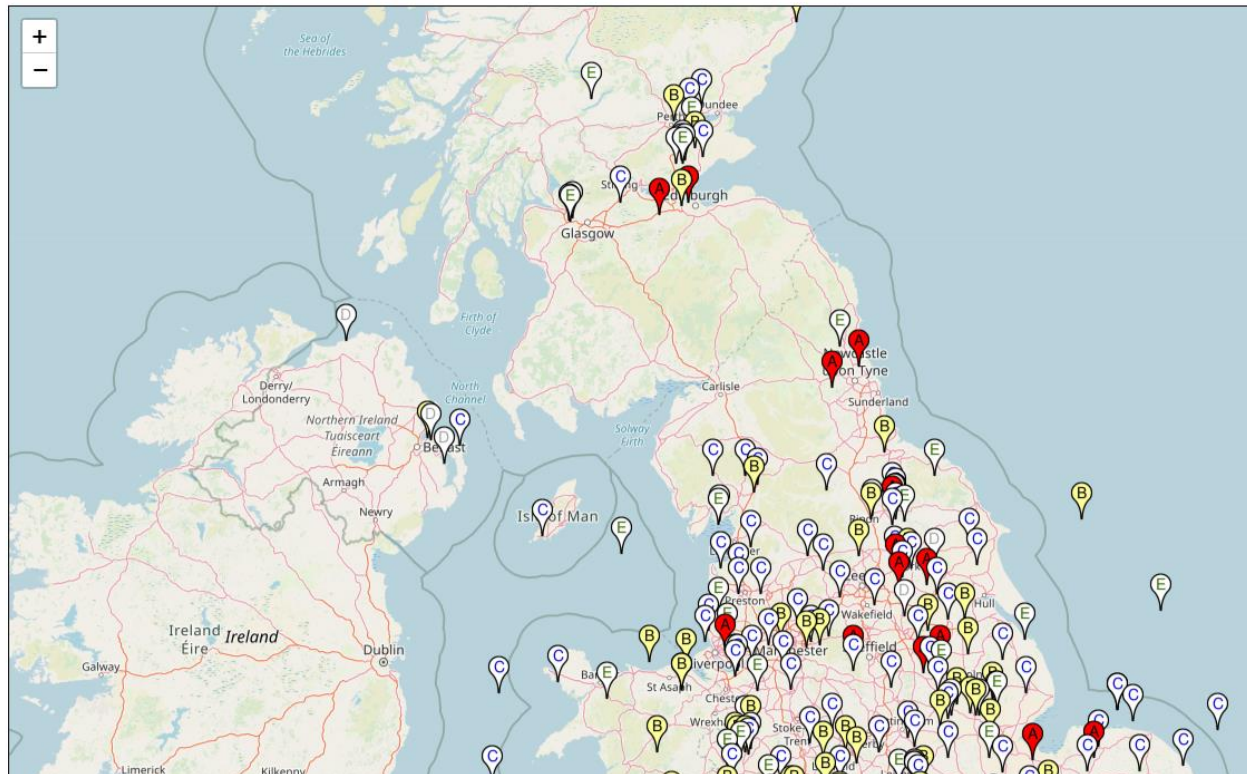


Figure 1: Dispersion of Airprox Locations

4.4 Air Safety Reports. PIR Item 19d

- 4.4.1 It should be noted that a safety report does not necessarily mean a serious incident has occurred; both MOD and NATS encourage reporting of non-mandatory incidents to enable lessons to be identified and trends analysed.
- 4.4.2 NATS (through the NATS Military Interface lead) undertook a review to identify all safety incidents that occurred in, or near to EGD514 within the Post implementation Review period.
- 4.4.3 NATS confirmed that they had received *nil safety reports/observations* related to the use of EGD514 during the Post Implementation Review Period.

4.5 Safety Data – Conclusion

- 4.5.1 The analysed Safety Data over the Implementation period 26 Feb 24 – 14 Mar 25 encompasses 8 ASIMS reports in total (3 of which referred to the same event). There was a broad range of perceived severity, half of the events occurring within the Danger Area, whilst the other half occurred outside the lateral and vertical limits of segregated airspace. The incident reported as an AIRPROX (23 Sep 24) occurred outside of EGD514 was reported to have occurred between military aircraft, with these military aircraft working military control agencies (RAF Boulmer and RAF Swanwick) respectively – this reported Airprox has not yet been read by the UK Airprox Board. NATS confirmed that *no safety related reports/observations* have been made regarding EGD514 during the Implementation Period and the Sponsor therefore infers that NATS are content from a safety perspective regarding the design and operational usage of the danger area.

5. PIR Data Requirement – Service Provision/Resource Issues

5.1 Data on refusals of Service. PIR Item 22a

- 5.1.1 There has been *no evidence* or informal feedback that indicates a requested air traffic service has been refused. EGD514: Letter of Agreement, Para A.3.2, 22 Feb 24 – ‘*Condition of Activation*’ the Sponsor confirms there has been no reported event that required cancellation of EGD514 activation due to an inability to provide an Air Traffic Service.

A.3.2 Condition of EGD514 Activation

- A.3.2.1 Confirmation of availability of ATS provision shall be provided by 78 Sqn, Swanwick (Military) to the Scottish Control (Prestwick) Operations Supervisor (OS) at D-1. Should 78 Sqn, Swanwick (Military) be unable to work affected traffic the Scottish Control (Prestwick) OS, shall initiate EGD514 cancellation via the UK AMC and inform the ASWC / Air C2 Force of the reason.

Extract 1. Para A.3.2 – Condition of EGD514 Activation

5.2 Data regarding air traffic delays. PIR Item 22b

- 5.2.1 There has been *no evidence* or informal feedback provided to the Sponsor that indicates a delay to air traffic when EGD514 is activated either through Military or Civilian communication channels.

5.3 Details of additional resource allocated, considering daily and seasonal traffic patterns. PIR Item 22c

- 5.3.1 Activations of EGD514 directly support Large Scale Collective Training serials; in some circumstances with a notified 80 simultaneous participating aircraft. Military air traffic (RAF Air C2 Force) planning departments allocate a greater workforce to control and supervise this activity – coincident with activity within EGD514. The Air Operate Programme (AOP) details *Episodic Engagement* and is typically published 12-months in advance of Large Force Exercises; in order to allow for the appropriate apportionment of workforce and associated supporting functions.
- 5.3.2 Activations of EGD514 require significant workforce investment from the Air C2 Force – 19 Sqn (RAF Boulmer) quote directly: ‘*large scale events represent a near 100% uplift in resource. The impact is not just the console time; for routine business we just brief the sortie scenario and sit down 30 mins before the first aircraft is due. For Large Scale activity it involves a full day of planning beforehand.*’
- 5.3.3 19 Sqn (RAF Boulmer) workforce allocation – 80% workforce resource increase
Typical flying wave (EGD323): *10 personnel*
Large Force Exercise (EGD514): *18 personnel* (with a requirement for a simultaneous planning group)
- 5.3.4 78 Sqn (Swanwick Military) workforce allocation – 50% workforce resource increase
Typical flying wave: North Bank: 2 personnel and East Bank: 6 personnel

Large Force Exercise (EGD514): North Bank: 3 personnel and East Bank: 9 personnel.

- 5.3.5 NATS advise that for each year, planning meetings are held to estimate and plan for the required staffing levels that will be required during two distinct periods of the following year, *summer* and *winter*. Traffic flows vary considerably throughout the year, requiring extra staffing during the summer months.
- 5.3.6 From this plan, each radar position is given projected opening and closing times through the day and staff resources are allocated appropriately. The data used for this planning is a combination of the previous year's traffic levels, predicted change to these traffic levels, and actual opening and closing times of all sectors as recorded by an Operational Positional Monitoring system (OPM). This allows modelling of the required resourcing for the following year. Once these numbers are agreed, they are monitored throughout the year and changes made where necessary.
- 5.3.7 For every sector, resource has to be allocated to cover their opening and closing throughout each 24-hour period. This is also adjusted for each day of the week, as some days are predicted to be significantly busier than others based on the advance filing of airline flight plans.
- 5.3.8 Tangible resource figures have not been provided by NATS or other Stakeholders and therefore the Sponsor deduces the impact is negligible or marginal and accepted by these Stakeholders.

5.4 Service Provision/Resource Issues – Conclusion

- 5.4.1 From the evidence provided above, there has been no evidence or informal feedback provided that indicates a requested air traffic service has been refused relating to the activation of EGD514 – *service provision has been provided as described within the EGD514 Letter of Agreement*. In order to safely support Large Force Exercise activity, military agencies must provide an uplift in workforce to support tactical delivery during both the live execute and also that of the planning cycle. Civilian organisations have not provided tangible figures to support any required uplift.

6. PIR Data Requirement – *Infringement Statistics*

6.1 Data on the % change in infringements, compared on a monthly basis before and after the change. PIR Item 28a

- 6.1.1 Infringements in this context means the unauthorised entry of an aircraft into airspace controlled by air traffic control.
- 6.1.2 EGD514 has been designed (conservatively positioned laterally, vertically and geographically) to minimise any associated impact to General Aviation traffic; therefore maximising access to airspace and reducing any chance of infringement.
- 6.1.3 Following analysis of safety reports related to EGD514 activations from both civil and military sources and any feedback from Stakeholders, the Sponsor confirms that there have been *no reported infringements* during the Implementation Period.

6.2 Infringement Statistics – Conclusion

- 6.2.1 The sponsor reaffirms that there have been *no infringement reports* during the Post Implementation Review Period for ACP-2020-026.

7. PIR Data Requirement – *Traffic Figures (air transport movements)*

7.1 *Data on the Actual vs Forecast figures. PIR Item 31a*

- 7.1.1 Predicted figures were based upon 32 activations of the Danger Area (given intended number of activations expected during calendar year 2023 [Final Submission - Stage 4B.pdf](#)).

Year	Traffic
2023	4230
2024	4412
2025	4474
2026	4541
2027	4609
2028	4678
2029	4748
2030	4819
2031	4892
2032	4965
2033	5039

Figure 2: Forecast Impacted Traffic Figures (Stage 4B Submission)

- 7.1.2 Whilst the Implementation period is acknowledged as 12 December 2023 to 22 March 2025, any activations of EGD514 within calendar year 2025 have not been included in the following analysis.²

7.2 *Data on the % change compared monthly before and after the change. PIR Item 31b*

- 7.2.1 Given the infrequency of the activation of EGD514, the Sponsor suggests that an *annual comparison* is employed to provide a more representative sample of data.
- 7.2.2 When the actual (annual) versus predicted figures are compared – 1,498 impacted flights from the 22 activations were analysed the forecast initially considered 4,412 fights would be impacted. These impacted flights are those that would typically plan to route through airspace now occupied by EGD514.

² 2025 activations not included due to required timeframe for conducting environmental analysis.

- 7.2.3 If the figures for the Implementation Period are scaled to uplift from the 22 actual activations to the 2024 forecast (32 activations) 1,977 flights would be impacted – approximately 55% fewer than anticipated.

7.3 *Reconfirmation that there have been no factors that would cause a material change to the traffic forecasts provided in support of the original proposal, i.e. that the original forecast is still reasonable PIR Item 31 c*

- 7.3.1 The traffic sample used to inform the predicted forecast [Final Submission - Stage 4B V2.pdf](#) (page 13) was taken from the 2205 AIRAC from EUROCONTROL This AIRAC was chosen in order to provide a reasonable mid-point in traffic numbers, between the two expected activation periods of March and August/September. A 2022 AIRAC was required to give an up-to-date baseline set of traffic that was not considerably impacted by the COVID-19 pandemic.
- 7.3.2 Whilst it is acknowledged by the Sponsor that a full recovery (post pandemic) is yet to be achieved, the Sponsor contends that the original forecast and use of the 2205 AIRAC in order to determine baseline traffic figures was a reasonable projection.
- 7.3.3 The traffic sample for the actual figures (provided as part of this Post Implementation Review) are based upon data from AIRACs 2406, 2407, 2408 and 2409 from EUROCONTROL, covering the actual dates when EGD514 was active during calendar year 2024.
- 7.3.4 The active periods were compared with inactive ones while maintaining the same NAT track structure and day of the week within the data range 2 July 2024 to 1 October 2024.

7.4 Traffic Figures – Conclusion

- 7.4.1 The actual number of impacted aircraft was far fewer than predicted within the Stage 4B Final Submission – this was mainly due to the reduced number of ACP-2020-026 Danger Area activations, cited due to ‘urgent operational requirements.’ To provide a more representative indication, with activations increased through calculations the difference was less apparent. The lower impacted figure may indicate that the Danger Area has a lesser impact than forecast on the NAT track structure.

8 PIR Data Requirement – *Traffic Dispersion Comparison*

8.1 Density plots that show concentration. PIR Item 34a

- 8.1.1 To compare density on active versus inactive EGD514 periods, flights were matched based on origin, destination and aircraft type. A total of 18 activation days were analysed out of a possible 24 (*16.1 Number, Timings and Duration of Danger Area Activation - refers*), 4 activations were excluded due to weather-related cancellations or differences in NAT track structure.

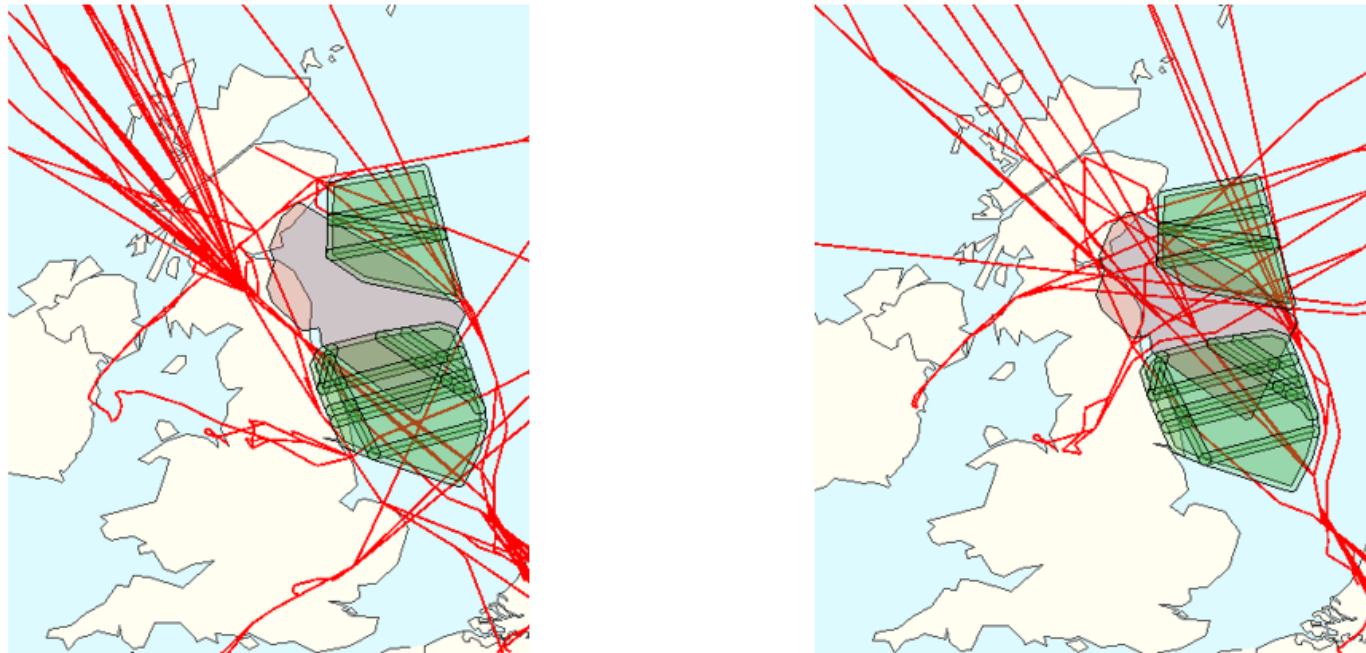


Figure 3: Traffic Dispersion during active and inactive periods

- 8.1.2 The illustration below provides a density plot showing the active days and times of EGD514 across the date/time periods identified from (16.1 *Number, Timings and Duration of Danger Area Activation*), faint traces through D514 are pre/post activation routings via Free Route Airspace.

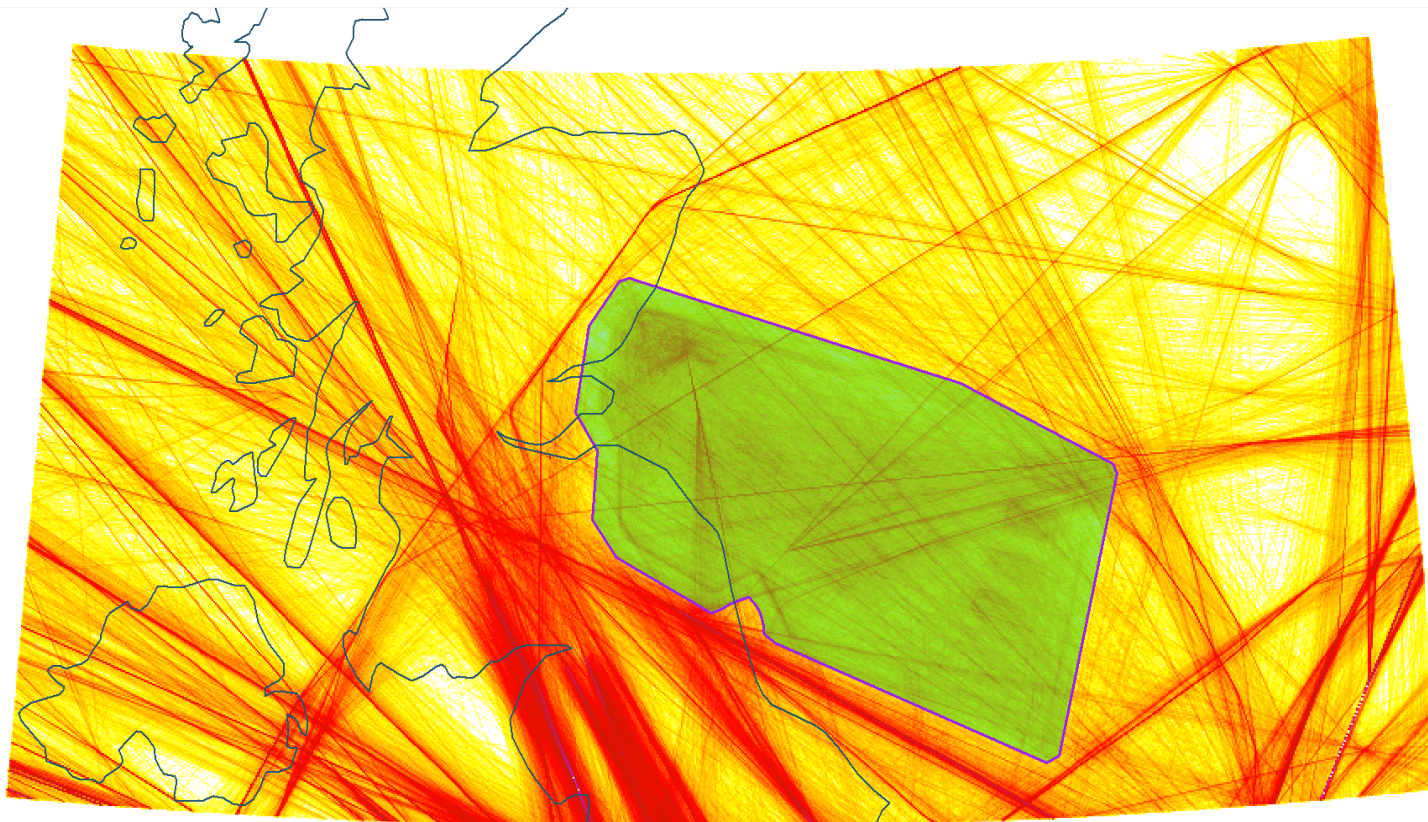


Figure 4: EGD514 activation Heat Map

8.2 Lateral and vertical analysis. PIR Item 34b

- 8.2.1 Lateral and vertical traffic dispersion analysis was conducted regarding Newcastle International Airport and Dundee Airport Limited. The results of which can be found at Annex B (Newcastle International Airport) and Annex C (Dundee Airport Limited).
- 8.2.2 Analysis was conducted using the [ADS-B Exchange - replay function](#). Activation periods of EGD514 were modelled using the dates/times from *Section 16. Other Information of Relevance (2024 activations)* and the associated requirements of activation from the EGD514 Letter of Agreement. From the activation periods analysed, *no* Newcastle International Airport flights were seen to route either to or from the Copenhagen Flight Information Region during the activation periods.
- 8.2.3 Analysis of Dundee Airport Limited flights was also conducted over the same activation period using the ADSB replay function, the Sponsor assesses that the overall traffic dispersion impact to Dundee is negligible – largely due to the high base level and sympathetic geographical positioning of EGD514. Where possible (but without commitment) the Sponsor will seek radar support from RAF Leuchars to ensure that Dundee flights both inbound and outbound are provided with the most expeditious routing when EGD514 is activated.

8.3 Weather/MET impacts. PIR Item 34c

- 8.3.1 Out of a planned 24 activations of EGD514 during calendar year 2024, 22 activations were executed – 2 planned activations were cancelled due to unsuitable weather, conditions deemed unsafe to conduct large force exercise activity.
- 8.3.2 The first cancellation of Danger Area booking (22 August 2024, 0815 – 1130Z) occurred on the morning of planned activation. The second cancellation of EGD514 (1 October 2024, 1930 – 2330Z) also occurred on the same day as the planned activation.
- 8.3.3 The below extract is taken from Exercise STORM WARRIOR 24-2. Due to the requirement for Segregated Airspace to be '*requested as far in advance as possible*' (no later than 0900hrs local at D-1) to the Military Airspace Management Cell via the LARA³ web booking client. The MoD and USAFE were found to be in a position where no *East Coast* Segregated Airspace was available for training activity on the same day as EGD514 cancellation.

23. While out with the scope of SW24, it became apparent after the cancelled missions that early return of D514 airspace yields no benefit to MoD. Booking of D323 is required the day before it is required. Therefore, early return of D514 following a mission cancellation may leave operators without segregated airspace for extended period.

Extract 2: Exercise Storm Warrior 24-2 report

- 8.3.4 This circumstance and impact are now better understood by the exercise and planning stakeholders, irrespective this remains a condition of activation.

8.4 Traffic Dispersion Comparison – Conclusion

- 8.4.1 From the conducted analysis during the Implementation Period it appears that traffic dispersion for flights at cruising level (when EGD514 is activated) occurs as expected

³ Local and sub-regional airspace management support system – developed by EUROCONTROL.

with a significant proportion of traffic routing along the southerly boundary of the Danger Area (and Flight Plan Buffer Zone). The sympathetic design, high base level and geographical positioning creates minimal dispersion requirements on local stakeholder aerodromes as seen in the ADSB analysis conducted for Newcastle International Airport and Dundee Airport Limited.

9 PIR Data Requirement – Operational Feedback

9.1 Any direct feedback from airlines/air traffic controllers. PIR Item 37a

- 9.1.1 For details of feedback responses, see separate Annex A Operational Feedback Document.
- 9.1.2 Appendix A – ‘*PIR Feedback Form EGD514*’ provides a list of the questions posed to the below Stakeholders and National Air Traffic Management Advisory Committee Members.

Organisation	Stakeholder	PIR Response
Air Navigation Solutions	Primary	
Borders Gliding Club (Milfield)	Primary	Yes (Annex A)
Dundee Airport Limited	Primary	Yes (Annex A)
Edinburgh International Airport	Primary	
NATS Civil Airspace Managers	Primary	
NATS Military Interface Lead	Primary	Yes (Annex A)
NATS Prestwick	Primary	
NATS ScTMA Sponsor	Primary	Yes (37b)
Newcastle International Airport	Primary	
Teesside International Airport	Primary	Yes (Annex A)
78 Squadron Military Airspace Management Cell	Primary	
United States Visiting Forces (USVF), HQ United States Country Rep-UK (HQ USCR-UK).	Primary	Yes (37b)
Airlines UK	NATMAC	
Airports UK	NATMAC	
Airfield Operators Group (AOG)	NATMAC	
Aircraft Owners and Pilots Association (AOPA)	NATMAC	
Airspace Change Organising Group (ACOG)	NATMAC	
Association of Remotely Piloted Aircraft Systems UK (ARPAS-UK)	NATMAC	
Aviation Environment Federation (AEF)	NATMAC	
British Airways (BA)	NATMAC	
BAe Systems	NATMAC	
British Airline Pilots Association (BALPA)	NATMAC	
British Balloon and Airship Club	NATMAC	
British Business and General Aviation Association (BBGA)	NATMAC	
British Gliding Association (BGA)	NATMAC	Yes (Annex A)
British Helicopter Association (BHA)	NATMAC	
British Hang Gliding & Paragliding Association	NATMAC	
British Microlight Aircraft Association (BMAA)	NATMAC	
British Skydiving	NATMAC	
Drone Major	NATMAC	
General Aviation Alliance (GAA)	NATMAC	
Guild of Air Traffic Control Officers (GATCO)	NATMAC	
Honourable Company of Air Pilots (HCAP)	NATMAC	
Helicopter Club of Great Britain (HCGB)	NATMAC	
Isle of Man CAA	NATMAC	
Light Aircraft Association (LAA)	NATMAC	

Low Fare Airlines		
Military Aviation Authority (MAA)	NATMAC	
Ministry of Defence - Defence Airspace and Air Traffic Management (MoD DAATM)	NATMAC	Yes (37b)
NATS	NATMAC	
Navy Command HQ	NATMAC	
Osprey Consulting Services	NATMAC	Yes (37b)
PPL/IR (Europe)	NATMAC	
UK Airprox Board (UKAB)	NATMAC	
UK Flight Safety Committee (UKFSC)	NATMAC	

Table 2: List of Stakeholder Organisations

9.2 Any additional feedback from relevant flight operation sub-committee (sub-group of airport consultative committee). PIR Item 37b

- 9.2.1 Additional feedback was received from the NATS Airspace Engagement Manager with a reference to 'Future Airspace Strategy Implementation North' (FASI-N) Scottish Terminal Manoeuvring Area (ScTMA) ACP-2019-74, given the close/overlapping proximity of this proposal and ACP-2020-026. The Sponsor agreed to continued dialogue with NATS as ACP-2019-074 developed.
- 9.2.2 Feedback was received from *Osprey Consulting Services* regarding the Berwick Bank Transponder Mandatory Zone (TMZ) Airspace Change Proposal, the Defence Airspace & Air Traffic Management provided response can be found at Appendix B.
- 9.2.3 The Sponsor also notes detail within AIRAC 03/2025 (20 March 2025) and EGD219F (HALE Remotely Piloted Air System Corridor) which will require longer term negotiation and likely inclusion within any produced Letter of Agreement as to how simultaneous activations of the Danger Areas would work operationally – this Letter of Agreement is currently in joint development and the Sponsor will continue engagement with DAATM and USAF.
- 9.2.4 Feedback and engagement have occurred with USVF during the Implementation Period regarding access and usage of EGD514, specifically Exercise POINT BLANK 25 (USAF sponsored Large Force Exercise) on 21, 27 and 28 January 2025 (captured at 16.1 Number, Timings, and Duration of Danger Area Activation).

9.3 Operational Feedback – Conclusion

- 9.3.1 The Sponsor assess that the Operational Feedback received provides a representative sample of data and is largely consistent with the rate of responses observed during the Consultation Period for ACP-2020-026. Operational Feedback is largely positive and as initially intended in the Danger Area design, impact to Key Stakeholder operational activity is minimal and where impact is expected early engagement and/or procedures are designed to ensure that operations can continue with limited disruptions.

10 PIR Data Requirement – Denied Access

10.1 Reasons for individual refusals of access. PIR Item 40b

- 10.1.1 This section applies to General Aviation (GA) pilots who believe they were refused access to segregated airspace.

- 10.1.2 Responses from GA pilots regarding refusals of access are formally recorded by the CAA via form (FCS1522). The Sponsor wrote to the CAA to understand if any FCS1522 had been received regarding access to EGD514 by GA.
- 10.1.3 The CAA confirmed that *no FCS1522 returns* related to EGD514 had been received during the Post Implementation Review period.
- 10.1.4 Refusals of access should also be reported and captured by either civil or military controlling agencies. Over the Implementation Period there were no such incidents either recorded or passed to the Sponsor.
- 10.1.5 This result is further reinforced by the initial Operational Impact (Section 11. Final Submission) – *‘due to the proposed position and base-level of the Danger Area there should be no impact on VFR operations. Baseline analysis was included within the Stage 3 Consultation Documentation.’*

10.2 Denied Access – Conclusion

- 10.2.1 During the Implementation Period the Sponsor has received no feedback regarding refusal of access to segregated airspace. Channels that were available for this potential feedback included civil or military agencies and through the FCS1522 reporting mechanism. Further, given the geographical location and base flight level associated with EGD514 it would be very unusual for the General Aviation community to be operating within this locality.

11 PIR Data Requirement – Letters of Agreement (LoAs)

11.1 Evidence of usage of operational agreements between ANSPs and airspace users. PIR Item 46a

- 11.1.1 The CAA articulated within ACP-2020-026 *‘Decision Conditions and Recommendations’* (Reference 18) that the Letter of Agreement⁴ must be finalised with an appropriate version provided to the CAA along with evidence of the agreement of all parties (Condition 1 of ACP Decision).
- 11.1.2 This confirmation (Condition 1) was sent via email to the CAA and subsequently acknowledged on 20 February 2024.
- 11.1.3 Condition 2 of the ACP-2020-026 *‘Decision Conditions and Recommendations’* referred to any ‘amendments to the airspace management and operational procedures in the Letter of Agreement which may alter the impacts of the airspace design.’
- 11.1.4 The CAA recommended that Condition 2 should be adopted as ‘business as usual’ where discussion should take place within the existing Joint and Integrated Construct.

⁴ Letter of Agreement for ACP-2020-026 is marked ‘NATS Private’ and is therefore not shared within this submission.

11.1.5 The Sponsor confirms that during the Implementation Period there has been *no requirement* to amend airspace or operational procedures contained with the Letter of Agreement.

**11.2 Data concerning the activation/utilisation of Letter of Agreement procedures.
PIR Item 46b**

11.2.1 The Letter of Agreement specifies several requirements that must be satisfied in order for EGD514 to be activated, if these conditions *cannot be met* the Letter of Agreement provides unquestionable clarity that 'initiation of cancellation' shall occur – this confirmation of availability shall be provided at D-1 (24 hours prior to planned activation).

11.2.2 The Sponsor confirms that during the Implementation period there have been no circumstances where *cancellation of EGD514* was required due to an inability to meet the criteria within the Letter of Agreement for Danger Area activation.

11.2.3 The table below lists the Letter of Agreement (LoA) Holders, provides a qualitative assessment of how frequently the procedures are used, amendment history and any related Sponsor comments.

Letter of Agreement Holder	Usage	Amendments	Sponsor Comments
NATS (enroute) Scottish Control (Prestwick)	During Activation of EGD514	None since implementation of EGD514 (effective 22 Feb 2024)	Key enabler for EGD514 activation – originator for LoA
Head Quarters Air Command	Higher level oversight only	None since implementation of EGD514 (effective 22 Feb 2024)	Large Force Exercise occurrences provided by HQ Air Command to Exercise Planners – ultimately determining number of EGD514 activations per year
78 Squadron Swanwick	During Activation of EGD514	None since implementation of EGD514 (effective 22 Feb 2024)	Unit responsible for wide tasking – related to Danger Area bookings through Military Airspace Management Cell to tactical air traffic control provision during EGD514 activations. Mandated to provide ATS as per LoA
Newcastle International Airport	During Activation of EGD514	None since implementation of EGD514 (effective 22 Feb 2024)	Key stakeholder, engaged throughout ACP process
Teesside International Airport	During Activation of EGD514	None since implementation of EGD514 (effective 22 Feb 2024)	Key stakeholder, engaged throughout ACP process

Table 3: Letter of Agreement Holders

11.2.4 Review period for EGD514 LoA is specified as 2 years – effective 22 Feb 2024, with review expected 22 Feb 2026. Irrespective, amendments to the LoA can be requested at any stage. Reviewing the LoA requires all parties to reach a consensus.

11.3 Letter of Agreement: Conclusion

11.3.1 The Sponsor confirms that prior to the Implementation Period *Condition 1* had been satisfied and reaffirms that during the implementation period there was no requirement to amend ‘airspace or operational procedures’ (*Condition 2*). The Sponsor highlights that the next review of the LoA is expected 22 February 2026.

12 PIR Data Requirement - Impact on environmental factors (*Noise, Fuel & CO2 Emissions*)

12.1 Operational diagrams (for example radar track diagrams and track density diagrams). PIR Item 49j

12.1.1 Operational diagrams are provided at Enclosure C.

12.2 Annual Fuel and CO2 usage. PIR Item 49o

12.2.1 The below table shows the net CO2 benefit when EGD514 is active and when scaled for all impacted flights, this equates to a -45 tonne (fuel) net benefit and a -141 tonne (CO2 emissions) net benefit: versus periods of inactivation. As a percentage of the overall distance and CO2 emissions this represents a 0.1% change in track miles and 0.2% change in fuel and CO2 emissions. This indicates a minimal change over the full track profile and within the anticipated margin of error.

Activation Status	Traffic (Flights)	Distance (NM)	Fuel Impact (Tonnes)	CO2e Impact (Tonnes)
Active	1,498	2,189,705	22,385	71,149
Inactive		2,191,787	22,430	71,290
Difference		-2,082	-45	-141

Table 4: Flight Impact during activation period

12.3 Per flight fuel and CO2 usage. PIR Item 49p

12.3.1 The following table shows the average impact per flight when EGD514 is active (versus periods of inactivity). The results reflect a -1.3 nautical mile net benefit, -29.7 kg fuel net benefit and a -94.5 kg CO2 net benefit when EGD514 is active.

Activation Status	Distance (NM)	Fuel Impact (kg)	CO2e Impact (kg)
Active	1,461.8	14,943.5	47,496.0
Inactive	1,463.1	14,973.2	47,590.4
Difference	-1.3	-29.7	-94.4

Table 5: Individual Flight Impact during activation period

12.4 TAG Greenhouse Gases Workbook outputs. PIR Item 49q

12.4.1 The TAG Greenhouse Gases Workbook output can be found at Enclosure B. This includes TAG calculations based on 22 activations during calendar year 2024.

	With EGD514 Activations	Without EGD514 Activations	Difference
Flights	1,498	1,498	0.0
CO2e Burn Per Flight (kg)	47,496	47,590	-94.4
Traded CO2 (T)	1,968	1,972	-4
Non-traded (T)	69,180	69,318	-137
Total Annual CO2 (T)	71,149	71,290	-141

Table 6: WebTag CO2 Emission Summary

12.4.2 Emissions are categorised as either Traded or Non-Traded. Where Traded flights are defined through the UK Emissions Trading Scheme as UK domestic flights, flights between the UK and Gibraltar and flights departing the UK to European Economic Area (EEA) states conducted by all included aircraft operators, regardless of nationality.

12.4.3 Based on the origin and destination of the impacted flights 2.8% of emissions are Traded and 97.2% are Non-Traded.

Greenhouse Gases Workbook - Worksheet 1

Scheme Name: ACP-2020-026

Present Value Base Year 2010

Current Year 2025

Proposal Opening year: 2024

Project (Road/Rail or Road and Rail) road

Overall Assessment Score:

Net Present Value of carbon dioxide equivalent emissions of proposal (£):

£17,618

*positive value reflects a
net benefit (i.e. CO2E
emissions reduction)

Quantitative Assessment:

Change in carbon dioxide equivalent emissions over 10 year appraisal period (tonnes):

-141

(between 'with scheme' and 'without scheme' scenarios)

Of which Traded

-3.912346654

Change in carbon dioxide equivalent emissions in opening year (tonnes):

-141

(between 'with scheme' and 'without scheme' scenarios)

Net Present Value of traded sector carbon dioxide equivalent emissions of proposal (£):

£501

(N.B. this is not additional to the appraisal value in cell I17, as the cost of traded sector emissions is assumed to be internalised into market prices. See TAG Unit A3 for further details)

*positive value reflects a
net benefit (i.e. CO2E
emissions reduction)

Change in carbon dioxide equivalent emissions by carbon budget period:

	Carbon Budget 1	Carbon Budget 2	Carbon Budget 3	Carbon Budget 4
Traded sector	0	0	0	-3.912346654
Non-traded sector	0	0	0	-137.4952417

Qualitative Comments:

Sensitivity Analysis:

Upper Estimate Net Present Value of Carbon dioxide Emissions of Proposal (£):

£26,427

Lower Estimate Net Present Value of Carbon dioxide Emissions of Proposal (£):

£8,809

12.5 Supporting input data. PIR Item 49r

- 12.5.1 Assumptions - flights impacted by EGD514 activation would route through either EGD323 or EGD613.
- 12.5.2 Assumptions - the fuel impact of EGD514 activation would happen at cruise. This was calculated by multiplying the difference in route length (NM) by the BADA 4.2 aircraft type cruising fuel burn at its Requested Flight Level (RFL).
- 12.5.3 Actual – calculations based on 18 activations and scaled to 22 to match the recorded number of activations.
- 12.5.4 In 2024, 1,498 impacted flights were recorded from 22 activations, from this there was a 25% match rate, resulting in 373 impacted flights analysed.
- 12.5.5 Calculations - extreme cases have been filtered from the traffic sample using a mirror-based percentile method. This approach determines the lower and upper bounds by selecting the more extreme value of the 10th and 90th percentile and mirroring it to create a symmetrical range. This ensures a balanced measure of dispersion while handling distributions with extreme values.

12.6 Description of predication model and version number. PIR Item 49s

- 12.6.1 The traffic sample for the actual figures (provided as part of this Post Implementation Review) are based upon data from AIRACs 2406, 2407, 2408 and 2409 from EUROCONTROL, covering the actual dates when EGD514 was active during calendar year 2024.
- 12.6.2 The active periods were compared with inactive ones while maintaining the same NAT track structure and day of the week within the data range 2 July 2024 to 1 October 2024.

12.7 Impact on Environmental Factors (Fuel and CO2 Emissions): Conclusion

- 12.7.1 The environmental analysis indicates that when EGD514 is active (scaled to 22 activation days – for calendar year 2024), there was a -45 tonne (fuel) net benefit and -141 tonne (CO2 emission) net benefit over full trajectories. This assessment is consistent with the initial environmental analysis which indicated that when EGD514 was active the network experienced a net environmental benefit.⁵

13 PIR Data Requirement - Impact on International Obligations

13.1 Details on feedback from operators or neighbouring states. PIR Item 52a

- 13.1.1 There has been *no* feedback from operators or neighbouring states regarding any impact on International Obligations.
- 13.1.2 The Sponsor does however highlight the 'North Sea Area Initiative' which seeks to find new solutions to design and utilise available airspace resources in a defined

⁵ A change to the assumptions made when conducting environmental analysis may later the observed benefit.

geographic region to meet the training needs of an increasing number of fifth generation⁶ aircraft that are entering service within Europe.

- 13.1.3 The EUROCONTROL 'Head of Stakeholder Support and Business Management' made a specific reference to ACP-2020-026 during discussions and questioned whether this Danger Area could form part of a larger modular system and compliment any possible cross-border solutions that are being considered.
- 13.1.4 No discussions (either formal/informal) have occurred with the Sponsor of EGD514 since the 'North Sea Area Initiative' discussion was conducted by EUROCONTROL on 17 October 2023.

13.2 Impact on International Obligations: Conclusion

- 13.2.1 The Sponsor confirms nil feedback from operators or neighbouring states regarding any impact on International Obligations during the Implementation Period. Limited, informal exchanges have been noted regarding the 'North Sea Area Initiative.'

14. Impact on Ministry of Defence Operations

14.1 Feedback from Ministry of Defence. PIR Item 55a

- 14.1.1 Having canvassed opinion from all relevant areas of the MOD, there have been no unforeseen impacts on MOD operations. Overall the Airspace Change is seen as positive and allows more effective large-scale training to take place.
- 14.1.2 Regular signposting to ACP-2020-026 occurred both pre and during the Implementation Period with detail covered extensively by Defence Airspace and Air Traffic Management – most notably amongst the Military Airspace Users Working Group (MAUWG).
- 14.1.3 Ministry of Defence users have expressed how ACP-2020-026 has fulfilled the initial Statement of Need (submitted June 2021), whilst still abiding to the Design Principles (submitted April 2021) – the Sponsor highlights that the key Design Principle, Priority 1: *'The airspace design must be safe, with any hazards identified and risks mitigated such that they are as low as reasonably practicable and tolerable.'* Has been satisfied.

14.2 Impact on Ministry of Defence Operations: Conclusion

- 14.2.1 The Ministry of Defence reports positive change on operations during the implementation period and expresses how the Airspace Change associated with ACP-2020-026 has facilitated Large Force Exercise activity in order to meet Defence Priorities.

⁶ Those aircraft which include major technological development during the first part of 21st century

15. Stakeholder Feedback

15.1 *Feedback received during implementation period. PIR Item 58a*

- 15.1.1 The Sponsor confirms that *nil feedback* has been received from a community perspective in the period between implementation and post implementation review of ACP-2020-026.

15.2 *Locations of feedback. PIR Item 58b*

- 15.2.1 Not applicable due to nil received feedback from Stakeholders.

15.3 *Feedback via FCS 1522 Form. PIR Item 58c*

- 15.3.1 The Sponsor requested details regarding any received FCS 1522 documents (email 24 Feb 2025), however no response was provided. The Sponsor therefore assumes that nil complaints were made regarding EGD514.

15.4 Stakeholder Feedback: Conclusion

- 15.4.1 This low-level of Stakeholder feedback was anticipated due to the geographical positioning and high base level associated with Danger Area ACP-2020-026. There were nil returns of the FCS 1522 Form.

16. Other Information of Relevance (if appropriate)

16.1 Number, Timings and Duration of Danger Area Activation

No	Date	Duration	Exercise	Remarks	No	Date	Duration	Exercise	Remarks
1	26 Feb 24	0900 – 1500	CW 24-1	Ex Canx	29	24 Sep 24	0900 – 1300	CW 24-2	
2	27 Feb 24	0900 – 1500	CW 24-1	Ex Canx	30	25 Sep 24	0900 – 1300	CW 24-2	
3	28 Feb 24	1000 – 1400	CW 24-1	Ex Canx	31	26 Sep 24	0900 – 1300	CW 24-2	
4	29 Feb 24	1000 – 1400	CW 24-1	Ex Canx	32	27 Sep 24	0900 - 1300	CW 24-2	
5	4 Mar 24	1000 – 1400	CW 24-1	Ex Canx	33	30 Sep 24	1930 – 2330	CW 24-2	
6	5 Mar 24	1000 – 1400	CW 24-1	Ex Canx	34	1 Oct 24	1930 – 2330	CW 24-2	Canx Wx
7	6 Mar 24	1000 – 1400	CW 24-1	Ex Canx	35	2 Oct 24	1930 – 2330	CW 24-2	
8	7 Mar 24	1000 – 1400	CW 24-1	Ex Canx	36	3 Oct 24	1930 – 2330	CW 24-2	
9	11 Mar 24	1000 – 1400	CW 24-1	Ex Canx	37	21 Jan 25	0930 – 1500	FS25 & PB25	Not included
10	12 Mar 24	1000 – 1400	CW 24-1	Ex Canx	38	23 Jan 25	0930 – 1215	FS25	Not included
11	13 Mar 24	1000 – 1400	CW 24-1	Ex Canx	39	27 Jan 25	1100 – 1500	PB25	Not included
12	14 Mar 24	1000 – 1400	CW 24-1	Ex Canx	40	28 Jan 25	1100 – 1500	PB25	Not included
13	16 Jul 24	0815 – 1100	SW24-1		41	30 Jan 25	0930 – 1215	FS25	Not included
14	18 Jul 24	0815 – 1100	SW24-1		42	6 Feb 25	0930 – 1215	FS25	Not included
15	23 Jul 24	0815 – 1100	SW24-1		43	13 Feb 25	0930 – 1215	FS25	Not included
16	25 Jul 24	0815 – 1100	SW24-1		44	20 Feb 25	0930 – 1215	FS25	Not included
17	6 Aug 24	1945 – 2300	SW24-2		45	25 Feb 25	1000 – 1400	CW25-1	Not included
18	8 Aug 24	1945 – 2300	SW24-2		46	27 Feb 25	1000 – 1400	CW25-1	Not included
19	13 Aug 24	0815 – 1130	SW24-2		47	3 Mar 25	1000 – 1400	CW25-1	Not included
20	15 Aug 24	0815 – 1130	SW24-2		48	4 Mar 25	1000 – 1400	CW25-1	Not included
21	20 Aug 24	0815 – 1130	SW24-2		49	5 Mar 25	1000 – 1400	CW25-1	Not included
22	22 Aug 24	0815 – 1130	SW24-2	Canx Wx	50	6 Mar 25	1000 – 1400	CW25-1	Not included
23	16 Sep 24	0900 - 1300	CW 24-2		51	7 Mar 25	1000 – 1400	CW25-1	Not included
24	17 Sep 24	0900 – 1300	CW 24-2		52	10 Mar 25	1000 – 1400	CW25-1	Not included
25	18 Sep 24	0900 – 1300	CW 24-2		53	11 Mar 25	1000 – 1400	CW25-1	Not included
26	19 Sep 24	0900 – 1300	CW 24-2		54	12 Mar 25	1000 – 1400	CW25-1	Not included
27	20 Sep 24	0900 – 1300	CW 24-2		55	13 Mar 25	1000 – 1400	CW25-1	Not included
28	23 Sep 24	0900 – 1300	CW 24-2		56	14 Mar 25	1000 – 1400	CW25-1	Not included

Table 7: Number, Timings and Duration of Danger Area Activation

Ex Canx (Exercise Cancelled). Canx Wx (cancelled due weather limitations). Not included (not included in Environmental Analysis).

16.2 Confirmation of nil impact below 7,000ft to civil operations

- 16.2.1 The Sponsor confirms that no feedback has been received throughout the implementation period indicating that there was an impact to civil operations below 7,000ft. The assertion presented at *Section 11. Operational Impact* within the Stage 4B, [Final Submission - Stage 4B V2.pdf](#) – Future Combat Airspace, ACP-2020-026 is assessed as accurate.
- 16.2.2 This claim is further reinforced by the ADSB analysis conducted to support section 8.2 Lateral and Vertical Analysis.

16.3 Confirmation of nil impact below 7,000ft to civil operations: Conclusion

- 16.3.1 Given the extensive Implementation Period and considering that EGD514 has been previously used (ACP-2021-048), there has been no tangible evidence provided to the Sponsor that indicates there is an impact to civil operations below 7,000ft. The Sponsor therefore concludes that there is no detrimental impact to operations or the impact is negligible.

Appendix A – PIR Feedback Form EGD514

EGD514 Post Implementation Feedback Form



Ministry
of Defence

[REDACTED]
Airspace Change Sponsor

John Collier Facility

Hangar 1

RAF Waddington

Lincoln

LN5 9NB

Telephone MOD [REDACTED]

E-mail: [REDACTED]

1. What is your name?

2. What is your email address?

3. What is your Service/Group/Unit/Station/Squadron

4. Were you aware of the introduction of the new Danger Area (EGD514)?

Yes

No

5. If yes (to Q4), how did you first hear about EGD514?

6. If applicable – has EGD514 allowed you to meet your operational objectives?

Yes

No

Unsure

7. Please provide any amplifying comments to support Q6

8. In your opinion has the creation of EGD514 created any operational issues?

Yes No Unsure

9. If yes (to Q8), please expand upon any operational issues.

10. Are you aware of any safety related incidents that have occurred within EGD514?

Yes No

11. If so, please expand on any safety related matters

12. Have you/your operators experienced any delays accessing EGD514?

Yes No

13. If yes (to Q11), please identify where the delay may have originated

14. Are you familiar with the conditions of activation for EGD514 (Letter of Agreement)?

Yes No

15. Are you aware of any issues related to the conditions of activation for EGD514 (Letter of Agreement)? If so, please expand below

16. Any other observations you may have regarding EGD514 e.g. is the new Danger Area large enough? Can it be activated frequently enough to meet your operational requirement?

17. The MOD is keen to reduce the impact of its operations on other airspace users. Can you suggest any mitigations that would resolve any concerns that you have?

18. Are there any other general considerations that you would like the Sponsor to consider in relation to this Airspace Change Proposal?

In accordance with CAP1616, responses will be published on Citizen Space via the CAA Airspace Change Portal. Responses will be subject to moderation by the CAA. Please indicate below if you would prefer for your response to be published anonymously (personal details will only be seen by the CAA).

Publish Response

Publish Response Anonymously

Appendix B - Osprey Consulting Services Berwick Bank (TMZ) Airspace Change Proposal

DAATM engaged with MOD airspace users regarding the Stage 3 ACP material that Osprey provided for the Berwick Bank windfarm proposal. The majority of stakeholders stated that they would expect minimal impact as a result of the new TMZ and that they would use the same procedures/mitigations that they already do for existing TMZs, such as for the adjacent Seagreen TMZ.

MOD stakeholders agreed that a TMZ joined with the existing Seagreen TMZ in one continuous shape would be the most appropriate solution.

In response to your question regarding whether MOD Leuchars would, in principle, agree to operate as the TMZ Controlling Authority for the proposed Berwick Bank TMZ (and additionally the existing Seagreen TMZ), I can confirm that MOD Leuchars have agreed to this with the following caveats:

- *They will only be able to act as TMZ Controlling Authority within their existing operating hours, which are currently Mon-Fri 0900-1700 Local. The ACP sponsor is responsible for ensuring the AIP entry accurately captures this limitation.*
- *Future ATM equipment that is due to be implemented at MOD Leuchars (current estimate ~2027) may result in reduced/zero non-cooperative surveillance coverage of the TMZ, at which point the sponsor is responsible for finding a replacement CA and associated AIP updates.*
- *The sponsor will draft a suitable LOA for MOD agreement, which clearly defines what is required from MOD Leuchars ATC.*

Through our direct conversations with yourselves, the issue of the proposed TMZ (and existing Seagreen TMZ) overlapping with the new EGD514 has been investigated from a MOD perspective. As per CAA policy, the airspace with the more restrictive nature takes precedence, which in this case would be the Danger Area.

It was identified that there may be occasions when non-transponding traffic in the Danger Area (but ivo the TMZ) may cause a confliction, from the perspective of traffic outside the Danger Area that is due to transit the TMZ under a Deconfliction Service. Whilst the non-transponding traffic would remain in the Danger Area and the other traffic would be in the non-overlapping portion of the TMZ – so there wouldn't necessarily be a physical confliction – from an ATS provision perspective, the controller of the traffic outside the Danger Area would have to treat it as though there could be a confliction, due to the lack of SSR information. It should be noted that Osprey analysis showed that very few aircraft transit the area, this coupled with the very infrequent EGD 514 usage, reduces the likelihood of this occurring even further.

To increase the awareness of ATS providers involved in the above scenario and thus improve the effectiveness of ATS provision, it is proposed that early passage of traffic information from the Danger Area ATS provider to MOD Leuchars ATC, regarding relevant non-transponding traffic, would allow them to determine the most suitable route through the area and thereby reduce the likelihood of a perceived confliction. The Danger Area (Exercise) sponsor would also be able to limit the operating area of non-transponding traffic, such that they do not present a confliction ivo the Seagreen and Berwick Bank TMZs.

Appendix C – CAA PIR Data Request (ACP-2020-026)

OFFICIAL - Named Parties Only. This information is intended for the CAA and ACP Sponsor only

Safety and Airspace Regulation Group



Airspace Change Process Post Implementation Review Data Request

ACP Project Reference:	ACP-2020-026		
Title of Airspace Change:	Future Combat Airspace		
Change Sponsor:	MOD		
CAA Decision Document:	Airspace change proposal public view (caa.co.uk)		
CAA Decision Date:	27 Nov 23	AIRAC Date(s):	22 Feb 24
PIR Data Submission Requested:	12 Dec 23	PIR Data Submission Required by ¹ :	22 Mar 25 (1yr post impl +28 days)

Contents

Introduction	2
What does this activity entail?	2
Data requests	2
Format of data	3
Instructions for the Change Sponsors	3
General Observations	4
Safety Data	5
Service provision/ resource issues	6
Utilisation of Continuous Climb Operations (CCO) and Continuous Descent Operations (CDO)	7
Infringement statistics	8
Traffic figures (air transport movements)	9
Traffic dispersion comparisons	10
Operational Feedback	11
Denied Access	12
Utilisation of SIDs/STARs/IAPs	13
Letters of Agreement (LoAs)	14
Impact on environmental factors (including noise)	15
Impact on International obligations	18
Impact on Ministry of Defence operations	19
Stakeholder feedback	20
Other information of relevance (if appropriate)	21

¹ A 28-day period to collate the data is usually requested, however an extension to the 28-day response period may be granted if sufficiently justified.

Safety and Airspace Regulation Group

Introduction

1. The CAA's airspace change process is a seven-stage mechanism that is set out in detail in CAP 1616. Stage 7 of this process is a Post Implementation Review (PIR) that normally begins one year after implementation of the change. The PIR is an assessment of whether the anticipated impacts and benefits in the approved change and published decision are as expected and where there are differences, what steps (if any) the CAA requires to be taken.
2. Irrespective of whether the CAA decision to approve the change was made under the previous process (set out in CAP 725), all PIRs should normally be in accordance with the process requirements of CAP1616. However, when assessing the expected impacts against the actual impacts, the methodology adopted at the time of the original CAA decision should be used.
3. Once the change sponsor's PIR data submission is published on the portal, there will be a 28-day window during which any stakeholder may provide any feedback when carrying out this review about whether the impacts of the change are those expected, 12 months on.

What does this activity entail?

4. Before the CAA can commence the PIR of an airspace change, the change sponsor must provide the CAA with a PIR submission that includes data pre-requested by the CAA. This data would normally be stipulated within the decision document at Stage 5 although this is not the case for changes pre-2018 (CAP 725). This PIR data request form sets out that list of data required in order for the CAA to complete the PIR assessment. If required, the CAA may request data additionally to the data that was requested within the regulatory decision.
5. This list is not exhaustive, and some requirements will not apply in every case. Where a data request is required, it will be clearly marked with a cross in the relevant 'Yes' field.

Data requests

6. Where the data illustrates impacts other than those anticipated, the change sponsor is to provide (and evidence) their analysis of why this is the case.
7. If certain data is unavailable or is disproportionately burdensome to provide, the CAA will consider any justifications explaining the reasons for not providing the data and the CAA may adjust the requirements on this basis. Additionally, the CAA reserves the right to follow up with additional requests for data throughout the review period.
8. Any other data that would provide evidence of other benefits or impacts should also be included in an appropriate format.

Safety and Airspace Regulation Group

Format of data

9. The format of each data request required will be stipulated below in the associated column.
10. Where data is provided to the CAA as part of the change sponsor's PIR submission, it must be in a format that is consistent with, and comparable to, data provided as part of the original consultation and formal ACP, if possible. Scaling of the data should be consistent throughout to enable a like-for-like comparison.
11. The PIR submission must be in a suitable format for publishing onto the CAA's Airspace Portal.

Instructions for the Change Sponsors

12. The change sponsor is required to commence monitoring and gathering of data on the impacts of the change as soon as the change has been implemented². On receipt of this data request form, the change sponsor should begin to collate the data required, analyse each data request (summarising the conclusions of the analysis), and submit it via email to the assigned AR Project Officer in a Post Implementation Review Submission. The date on which the CAA requires the data to be submitted is stipulated at the top of this document.
13. If for any reason, the change sponsor is unable to support this data request at the time requested by the CAA, justification as to why must be submitted to the AR Project Officer. Such requests for a delay in submitting the data must be agreed with the CAA, including an agreement of an appropriate time that this activity can take place.

² Subject to the impacts of COVID-19 pandemic: [Airspace Change Proposals Post-Implementation Reviews \(PIRs\) impacted by COVID 19 - Update February 2021](#)

Safety and Airspace Regulation Group

General Observations

14. The following general observations are to enable an overview of the effectiveness of the airspace change.
15. The change sponsor is required to submit a qualitative statement against each data request which supports the conclusion reached in each case.
16. The CAA will review the analysis of the data submitted to ensure the anticipated impacts and benefits in the approved change were as expected.

		Required for the review?	Format of the data required.	Information of relevance in support of the request.
a)	An overview statement on whether, in the change sponsor's view, the original proposal met the intended objectives as described on the CAA's decision to approve the change.	Yes <input checked="" type="checkbox"/>	Narrative.	
b)	On overview statement on whether, in the change sponsor's view, the original proposal met any conditions described on the CAA's decision to approve the change (if applicable).	Yes <input checked="" type="checkbox"/>	Narrative.	
c)	Confirm that implementation occurred on the dates identified in the Decision Letter. If no implementation date was specified in the Decision, please state so.	Yes <input checked="" type="checkbox"/>	Narrative.	
d)	If there was a significant delay between the planned and actual implementation date, please provide an explanation.	Yes <input checked="" type="checkbox"/>	Narrative.	
e)	Identify whether any other issues of significance have occurred during the period 12 months after date of implementation ³ .	Yes <input checked="" type="checkbox"/>	Narrative.	
f)	Other than normal promulgation activity (e.g. NOTAM, AIC etc.), identify what steps were undertaken to notify local aviation stakeholders that the airspace change was about to be implemented.	Yes <input checked="" type="checkbox"/>	Narrative.	

³ CAP 1616 Ed 4 Part 1 The Airspace Change Process: Paragraph 270.

Safety and Airspace Regulation Group

Safety Data

17. The following safety data is required to enable an assessment that the new airspace design is at least as safe as the original design, if not safer.
18. The change sponsor must collate the data requests below, analyse and submit a qualitative statement against each data request which supports the conclusion reached in each case.
19. The CAA will review the statistics submitted concerning these events and assess whether the revised airspace design is a contributory factor in any incidents which have occurred. If there have been no reported events, the sponsor should articulate this in their PIR submission.

		Required for the review?	Format of the data required.	Information of relevance in support of the request.
a)	Data concerning any recurring instances of Instrument Flight Procedures (IFPs, SIDs, STARs, Holds) not being flown correctly. ⁴	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Narrative evidenced by data (flight data).	IFPs associated with impacted airports.
b)	Report concerning any known Mandatory Occurrence Reports (MORs).	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Narrative supported by copies of the original MOR Report(s).	Including information relating to relevant Defence Air Safety Occurrence Reports (DASORs).
c)	Report concerning any known AIRPROX reports.	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Narrative supported by copies of the original AIRPROX Report(s).	
d)	Report concerning any known Air Safety Reports (ASR) ⁵ .	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Narrative supported by copies of the original ASR Report(s).	

⁴ Any instances of IFPs not being flown correctly must be notified to the assigned CAA Project Officer.

⁵ This may include relevant reports submitted through CHIRP.

Safety and Airspace Regulation Group

Service provision/ resource issues

20. The change sponsor will need to demonstrate that adequate resources are in place to facilitate the operation of the new airspace design, and that air traffic services are being provided as forecast in the approved change without unanticipated negative impact on other airspace users.
21. The change sponsor must collate the data requests below, analyse and submit a qualitative statement against each data request which supports the conclusion reached in each case.
22. The CAA will assess whether there is adequate resource in place to support the operation comparing the change sponsor's data with the approved change.

		Required for the review?	Format of the data required.	Information of relevance in support of the request.
a)	Data on refusals of service.	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Narrative evidenced by supporting data (table format).	Where this relates to the MOD provision of Air Traffic Services to those civilian flights specified in the Letter of Agreement.
b)	Data regarding air traffic delays.	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Narrative evidenced by supporting data (table format).	
c)	Details of additional resource allocated, considering daily and seasonal traffic patterns.	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Narrative evidenced by supporting data (table format).	

Safety and Airspace Regulation Group

Utilisation of Continuous Climb Operations (CCO) and Continuous Descent Operations (CDO)

23. Where the original change cited improvements in CCO/CDO utilisation, the change sponsor will need to provide data to demonstrate any subsequent improvement.
24. The change sponsor must collate the data requests below, analyse and submit a qualitative statement against each data request which supports the conclusion reached in each case.
25. The CAA will assess whether the anticipated benefit has been delivered by comparing the change sponsor's data against the approved change.

		Required for the review?	Format of the data required.	Information of relevance in support of the request.
a)	The % of traffic achieving CCO and/or CDO, compared monthly before and after the change (e.g. comparing the month of July before and after the change).	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Narrative evidenced by supporting data (flight data).	

Safety and Airspace Regulation Group

Infringement statistics

26. Where the revised airspace design changes the dimensions of controlled airspace, the change sponsor will need to provide an analysis of airspace infringements.
27. The change sponsor must collate the data requests below, analyse and submit a qualitative statement against each data request which supports the conclusion reached in each case.
28. The CAA will assess whether the airspace design was a contributory factor in any increase in infringements⁶. Was an infringement risk identified in the approved change and has it been mitigated?

		Required for the review?	Format of the data required.	Information of relevance in support of the request.
a)	Data on the % change in infringements, compared on a monthly basis before and after the change.	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Narrative evidenced by supporting data (table format).	Relating to impacted airports and en-route CTAs. Information relating to infringements of the Danger Area itself should also be considered in this section.

⁶ A review of any relevant data from the CAA's safety intelligence database will also be conducted.

Safety and Airspace Regulation Group

Traffic figures (air transport movements)

29. Traffic figures over the period will give a general overview of the nature of the operation following the implementation of the change. In addition, where the change was predicated on a forecast increase in traffic numbers, the change sponsor will need to confirm whether or not the increase forecast in the approved change has been realised.
30. The change sponsor must collate the data requests below, analyse and submit a qualitative statement against each data request which supports the conclusion reached in each case.
31. The CAA will consider the extent of any difference between the predicted and actual traffic figures and the extent to which the impacts of the change can be explained by those differences.

		Required for the review?	Format of the data required.	Any information of relevance in support of the request.
a)	Data on the actual vs predicted figures.	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Narrative evidenced by supporting data (table format).	Number and type of aircraft rerouting around the Danger Area.
b)	Data on the % change compared monthly before and after the change.	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Narrative evidenced by supporting data (table format).	
c)	Reconfirmation that there have been no factors that would cause a material change to the traffic forecasts provided in support of the original proposal, i.e. that the original forecasts are still reasonable. ⁷	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Narrative.	Reconfirmation that the Eurocontrol STATFOR and NATS forecasts used in the final proposal are still reasonable when compared to actual traffic figures.

⁷ Includes the impacts of COVID-19 pandemic.

Safety and Airspace Regulation Group

Traffic dispersion comparisons

32. It is necessary to establish whether aircraft are flying routes and/or utilising airspace forecast in the CAA's decision to approve the change. A key part of the CAA's post-implementation review will be to analyse the 'before and after' dispersal of aircraft to understand whether the new airspace design is being operated as anticipated.
33. The change sponsor must collate the data requests below, analyse and submit a qualitative statement against each data request which supports the conclusion reached in each case.
34. The CAA will assess whether there have been any unforeseen or unintended operational impacts of the approved change.

		Required for the review?	Format of the data required.	Any information of relevance in support of the request.
a)	Density plots that show concentration.	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Narrative supported by heat plots showing where aircraft have concentrated within the acceptable tolerances of the procedure design.	Trajectories of aircraft rerouting around the Danger Area. The density plots should be overlaid on the same maps/charts as the lateral vertical plot analysis. The maps/charts should be suitable such that they can be understood by non-aviation stakeholders.
b)	Lateral and vertical analysis.	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Narrative supported by traffic density plots, that shows aircraft dispersion along with height gained or lost for each plot.	The individual lateral plots will be governed by the data. The vertical plots can be colour-coded and broken down into 1000, 2000 or 3000ft swathes depending on the procedure being considered and can be combined with the individual track plots.
c)	Weather/MET impacts.	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Should be considered if there was a significant weather event	
d)	Any changes to operating fleet mix.	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Narrative evidenced by supporting data (table format).	

Safety and Airspace Regulation Group

Operational Feedback

35. The change sponsor will have to present any feedback directly received by aviation stakeholders operating in, or affected by, the revised airspace design.
36. The change sponsor must collate the data requests below, analyse and submit a qualitative statement against each data request which supports the conclusion reached in each case.
37. The CAA will assess whether there have been any unforeseen or unintended operational impacts of the approved change.

		Required for the review?	Format of the data required.	Any information of relevance in support of the request.
a)	Any direct feedback from airlines/ air traffic controllers.	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Narrative supported by a table showing the feed-back in relation to the change and explaining what the change sponsor has done to address the feed-back.	This is not just negative feed-back. The presented format must make it clear that the change sponsor has dealt with the feed-back within the context of the implemented change.
b)	Any additional feedback from relevant flight operation sub-committee (sub-group of airport consultative committee).	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Narrative supported by evidence of minutes or notes of actions from meetings.	

Safety and Airspace Regulation Group

Denied Access

38. This links to service provision/resources mentioned above. The change sponsor should provide data on refusals of access to the revised airspace design and any underlying factors.
39. The change sponsor must collate the data requests below, analyse and submit a qualitative statement against each data request which supports the conclusion reached in each case.
40. The CAA will assess whether other airspace users are being impacted other than as anticipated as a result of the change⁸.

		Required for the review?	Format of the data required.	Any information of relevance in support of the request.
a)	Data concerning the refusals of access (month on month/ before and after the change).	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Narrative evidenced by logged refusals. (table format).	
b)	Reasons for individual refusals of access.	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Narrative evidenced by logged refusals. (table format).	Whilst the Danger Area is not expected to facilitate access to other airspace users, where situations have been reported relating to not being able to access the airspace then the information should be presented.

⁸ A review of any relevant data from the CAA's safety intelligence database will also be conducted.

Safety and Airspace Regulation Group

Utilisation of SIDs/STARs/IAPs

41. Information concerning the utilisation of the various procedures implemented as part of the change.
The information may highlight areas of unforeseen consequence, for example where a particular procedure is being used more than anticipated with a subsequent impact.
42. The change sponsor must collate the data requests below, analyse and submit a qualitative statement against each data request which supports the conclusion reached in each case.
43. The CAA will assess whether the utilisation data is other than expected.

		Required for the review?	Format of the data required.	Any information of relevance in support of the request.
a)	Data on the % of flights that actually flew the procedure(s) vs the total number of flights (departing or arriving), compared for the relevant time periods before and after the change.	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Narrative evidenced by supporting data (table format).	The utilisation figures must match the figures in the density, lateral and vertical plots in order to see only the aircraft that flew the new procedures; the data would be skewed by VFR departures for example.

Safety and Airspace Regulation Group

Letters of Agreement (LoAs)

44. Where a Letter of Agreement detailing specific procedures was a specific condition of the CAA approval, the change sponsor will need to evidence the level of use of that agreement.
45. The change sponsor must collate the data requests below, analyse and submit a qualitative statement against each data request which supports the conclusion reached in each case.
46. The CAA will assess whether the LoA is being utilised and that it is working as expected.

		Required for the review?	Format of the data required.	Any information of relevance in support of the request.
a)	Evidence of usage of operational agreements between ANSPs and airspace users.	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Narrative.	
b)	Data concerning the activation/ utilisation of LoA procedures.	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Narrative evidenced by supporting data (table format).	

Safety and Airspace Regulation Group

Impact on environmental factors (including noise)

47. Typically, change sponsors will undertake an updated assessment of the environmental impacts that informed the approved change proposal. This updated assessment will be informed by actual flight behaviours following implementation and presented in a comparable format to that used for the change proposal. All updated assessments must be consistent with those presented in the consultation and the submission to the CAA. When using data samples to represent periods of operation, sample periods after implementation must be comparable with any sample periods used before the change.

Depending on the scaling level of the change, updated assessments may include:

- Local air quality
- Noise
- Fuel and CO2 emissions
- Tranquillity
- Biodiversity

The change sponsor will have to either;

- a) Provide supporting evidence to confirm that the impacts presented in the approved airspace change proposal are as anticipated and the conclusions remain unchanged; or
- b) Undertake an updated assessment of the impacts presented in the airspace change proposal using actual data collected post-implementation.

48. Should the change sponsor be required to undertake an updated assessment and depending on the scaling level, the change sponsor must collate the data requests below, analyse and submit a qualitative statement against each data request which supports the conclusion reached in each case.

49. The CAA will review and assess the change sponsor's assessment and determine the extent to which the CAA agrees.

Safety and Airspace Regulation Group

		Required for the review?	Format of the data required.	Any information of relevance in support of the request.
Local Air Quality – required where:				
<ul style="list-style-type: none"> there is a change in aviation emissions (by volume or location) below 1,000 feet; and the location of the emissions is within or adjacent to an identified AQMA. 				
a)	Ambient air quality limit concentrations (in $\mu\text{g.m}^{-3}$).	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Narrative describing impact on AQMA with supporting concentration data (table format).	
b)	TAG Local Air Quality workbook outputs.	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Workbook outputs (table format).	
c)	TAG Air Quality Valuation Workbook outputs.	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Workbook outputs (table format).	
d)	Description of prediction model and version number.	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Narrative.	
e)	Supporting input data (for example movement logs).	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Narrative evidenced by supporting data (table format).	
Noise – required where:				
<ul style="list-style-type: none"> There is a change which alters lateral aircraft tracks or dispersion, or changes aircraft height, below 7,000 feet (above mean sea level) over an inhabited area (Level 1). 				
f)	N60 (night-time) / N65 (daytime) contours.	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Noise contour figures overlaid on Ordnance Survey maps (or similar).	See data collection requirements for 'traffic dispersion comparisons' a) and b).
g)	Leq contours (down to 51 dB LAeq,16h / 45 dB LAeq,8h).	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Noise contour figures overlaid on Ordnance Survey Maps (or similar).	
h)	Leq contour population counts (in thousands), area counts (in km ²) and noise sensitive area counts.	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Table format.	
i)	TAG Noise Workbook – Aviation outputs.	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Workbook outputs (table format).	
j)	Operational diagrams (for example, radar track diagrams and track density diagrams).	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Operational diagrams overlaid on Ordnance Survey maps (or similar).	
k)	Confirmation of CAA CAP 2091 noise modelling category.	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Narrative.	
l)	Description of prediction model and version number.	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Narrative.	
m)	Description of modelling assumptions, for example	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Narrative evidenced by supporting data (table format).	

Safety and Airspace Regulation Group

	modal split, route utilisation and respite.			
n)	Supporting input data (for example movement logs).	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Narrative evidenced by supporting data (table format).	
Fuel and CO2 emissions:				
o)	Annual fuel and CO2 usage (tCO2).	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Table format.	All information required as part of the ACP approval conditions.
p)	Per flight fuel and CO2 usage (tCO2).	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Table format.	Confirmation that the impacts are as anticipated and presented in the approved proposal (together with any necessary supporting evidence) or, a re-assessment of fuel burn and CO2 emissions using DfT's TAG with actual data if any of the assumptions considered in the assessment as presented in the final submission have changed after implementation of the ACP (e.g., number of DA activations). If the anticipated impact for each data request is assessed as positive, a qualitative assessment against each of the required data requests supported by an explanation is adequate (narrative format).
q)	TAG Greenhouse Gases Workbook outputs.	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Workbook outputs (table format).	
r)	Supporting input data.	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Narrative evidenced by supporting data (table format).	
s)	Description of prediction model and version number.	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Narrative.	
Tranquillity:				
t)	Operational diagrams clearly identifying AONBs, National Parks, designated quiet areas and noise sensitive areas identified during Stage 1 (1B Design Principles).	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Narrative and Operational diagrams overlaid on Ordnance Survey maps (or similar).	
Biodiversity:				
u)	Assessment of biodiversity factors including those identified during Stage 1 (Step 1B Design Principles).	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Narrative.	

Safety and Airspace Regulation Group

Impact on International obligations

50. The change sponsor will need to demonstrate that any international obligations identified at the time of the change have been discharged.
51. The change sponsor must collate the data requests below, analyse and submit a qualitative statement against each data request which supports the conclusion reached in each case.
52. The CAA assesses whether the obligations have been met.

		Required for the review?	Format of the data required.	Any information of relevance in support of the request.
a)	Details on any feedback from operators or neighbouring States.	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Narrative.	

Safety and Airspace Regulation Group

Impact on Ministry of Defence operations

53. The change sponsor will need to demonstrate that there has been no unforeseen impact on Ministry of Defence operations.
54. The change sponsor must collate the data requests below, analyse and submit a qualitative statement against each data request which supports the conclusion reached in each case.
55. The CAA assesses whether there has been any unforeseen impact on the Ministry of Defence that would need rectifying.

		Required for the review?	Format of the data required.	Any information of relevance in support of the request.
a)	Details on any feedback from Ministry of Defence.	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Narrative.	Whilst this is an MOD airspace change, information relating to unexpected impacts on broader MOD use of airspace and provision of services may be relevant.

Safety and Airspace Regulation Group

Stakeholder feedback

56. Feedback is needed to identify any issues from a community perspective that were not anticipated a part of the approved change; monthly data over the course of a year is needed so that seasonal traffic changes are taken into account.
57. The change sponsor must collate the data requests below, analyse and submit a qualitative statement against each data request which supports the conclusion reached in each case.
58. A review is made by the CAA of the change sponsors conclusions in identifying any unforeseen or unintended impacts of the change.

		Required for the review?	Format of the data required.	Any information of relevance in support of the request.
a)	Feedback/complaints received by the change sponsor and CAA in the period between implementation and post-implementation review.	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Narrative evidenced by supporting data (table format).	Reference point C, AR Project Officer to liaise with Airspace Classification Team to ascertain applicability.
b)	Details of location of complaints.	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Ordnance Survey map identifying pinned locations.	
c)	Feedback/complaints received via an FCS 1522 Form (UK Airspace Access or Refusal of ATS Report).	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Copies of the FCS 1522 Form relevant to the PIR being conducted.	

Safety and Airspace Regulation Group

Other information of relevance (if appropriate)

		Required for the review?	Format of the data required.	Any information of relevance in support of the request.
a)	Number, timings, and duration of the Danger Area activation.	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Table format.	
b)	Confirmation that there are no impacts to civil traffic patterns below 7,000 ft. beyond those identified in the final submission.	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Narrative evidenced by supporting data (table format).	Analysis of any impacts on local airports (eg Aberdeen, Dundee, Edinburgh, Newcastle and Teesside) and GA activities in the local area.