



Ministry  
of Defence

Defence Airspace and Air Traffic  
Management (DAATM) on behalf of  
US Air Forces in Europe (USAFE)

Email: [REDACTED]

01 October 2024

## **ACP-2021-078 ENABLING REMOTELY PILOTED AIRCRAFT SYSTEM OPERATIONS FROM RAF FAIRFORD – HALE**

### **Introduction**

1. This is the formal response to the request for Post Implementation Review (PIR) Data requirements for ACP-2021-078. On 16 February 2024, the EGD218 complex was approved for notification pending the satisfaction of several conditions for use. Those conditions were met, allowing for the first two activations to occur on 22 and 24 August 2024.
2. After CAA approval of ACP-2021-078, Birmingham Airport identified impacts to civil air traffic in and out of Birmingham Airport. Several meetings were conducted to assess the impacts and discuss possible mitigations. As a result of these meetings, on 6 August 2024, the CAA imposed additional conditions on the approval of ACP-2021-078 requiring the Sponsor to conduct an early PIR. This PIR was to focus on impacts to Birmingham Airport operations during the first two planned activations on 22 and 24 August 2024.

### **PIR Requirements**

**Traffic impact analysis for EDG218 complex with specific focus on impacts to the Birmingham airport operations, to include:**

- **Data on air traffic delays.**
- **Details of additional resource allocated.**
- **Engagement feedback from airport operators.**
- **Analysis of additional track miles flown due to activation of the Danger Area (DA).**

3. Overall, five Birmingham arrivals were impacted for each activation. No Birmingham departures were impacted. Feedback received did not describe the additional track miles flown due to the two activations of EGD218 but Birmingham Airport received data from Jet2 and Ryanair that forecasted between 20-145 NM of additional track mileage and between 1-21 minutes of additional flight time per impacted flight, based on routing. Detailed feedback from NATS and Birmingham Airport on the impacts to Birmingham Airport have been included with this submission.

**Record of occurrences of any airspace activation period that is subsequently unused, including duration of activation prior to cancellation and reasons for cancellation, i.e. weather, air system unserviceability, etc.**

4. Both activations were used as scheduled.

**Requests for Danger Area Crossing Services supported and unsupported, with reasoning if unsupported.**

5. No reports of SUACS requests were received by the Sponsor.

**Separate detailed records of all inadvertent excursions from each DA.**

6. No inadvertent excursions were reported.

**Separate detailed records of all unauthorised incursions of each DA.**

7. No unauthorized incursions were reported.

**Noting the approval for dispensation from the SARG SUA Safety Buffer Policy, a report will be required to indicate compliance with the dispensation criteria, to include detailed records of all deviations from the dispensation to the Safety Buffer Policy.**

8. During the first two flights, no deviation from the approved dispensation from the SARG SUA Safety Buffer Policy was identified. It should be noted that USAFE wishes to align the current approved safety buffer for EGD218 with the current SUA Safety Buffer Policy. This would reduce the current buffer from 3 NM (2 NM internal and 1 NM external) to the current policy of a 1 NM external safety buffer for BVLOS RPAS operations. This has been shared with NATS and the Sponsor hopes to explore this further in an upcoming HAZID workshop.

**Conduct analysis of the flight parameters for the US HALE RPA to establish the suitability of the DA design.**

9. An analysis of the flight parameters of US HALE RPA was conducted by the U.S. Air Force when developing options for ACP-2021-078. This internal analysis, along with stakeholder feedback, informed the airspace design to ensure the volume requested was the minimum volume for safe and efficient US HALE RPA operations.

**Review the relevant LoAs for the management and notification procedures.**

10. The LoAs used for EGD218 operations were completed just prior to the first use of the airspace. Overall, they had the desired effect during the first two flights. No stakeholder has identified any required changes to the LoAs.

**Mitigation Solutions Recommended by Birmingham Airport**

11. Birmingham Airport offered two possible solutions during engagement feedback. The first is to raise the floor of EGD218C to FL180. The second solution is to permit under-flying EGD218C, below the current defined base level of FL160, but within the existing levels of the Cotswold FUA.

12. USAFE is unable to accept raising the floor of EGD218C to FL180 as it would not ensure departing HALE RPA can reliably remain within the danger area and in compliance with the safety buffer for this airspace. In the first departure, the HALE RPA reached FL180 approximately 1 NM from the boundary of EGD218C. Additional fuel load, temperature, or winds may impact climb performance such that achieving FL180 by EGD218C cannot be ensured without modification of EGD218B and/or EGD218A to allow for sufficient volume and/or altitude for additional climb prior to the boundary of EGD218C. During engagement with NATS for ACP-2021-078, a ceiling of greater than FL075 in EGD218A or increased lateral volume of EGD218B was expected to create significant impacts to civil air traffic. Changing the dimensions of EGD218A and EGD218B to allow for a higher floor in EGD218C would

only trade one set of impacts with another, and possibly greater, set of impacts to civil air traffic.

14. The Sponsor has no objections to Birmingham Airport's second solution to allow for under-flying of EGD218C. During engagement, NATS shared concerns with this solution due to adjacent airspace delegated to Cardiff.

15. If the Cotswold FUA was not restricted during a time when Cardiff has the delegated airspace, Swanwick ATCOs (S23) would need to coordinate for descent through that delegated airspace to descend aircraft below EGD218C. If Cardiff refused, due to conflicting traffic, S23 would be forced to orbit Birmingham arrivals until descent was possible. NATS shared that this would generate a much higher level of workload and risk to the operation.

16. NATS shared that Cardiff hand back the delegated function to Swanwick at 2300 local. It may be possible to only restrict usage of the Cotswold FUA until 2300 local after which S23 would have control of the airspace and be able to more easily deconflict descending Birmingham arrivals with other traffic. NATS shared that Cardiff occasionally hands the delegated airspace back before 2300 local. In this case, the Cotswold FUA flight planning restriction would still be in place but ATCOs could tactically route Birmingham arrivals through the Cotswold FUA below EGD218C. This would also generate additional workload on sector controllers and may not always be possible.

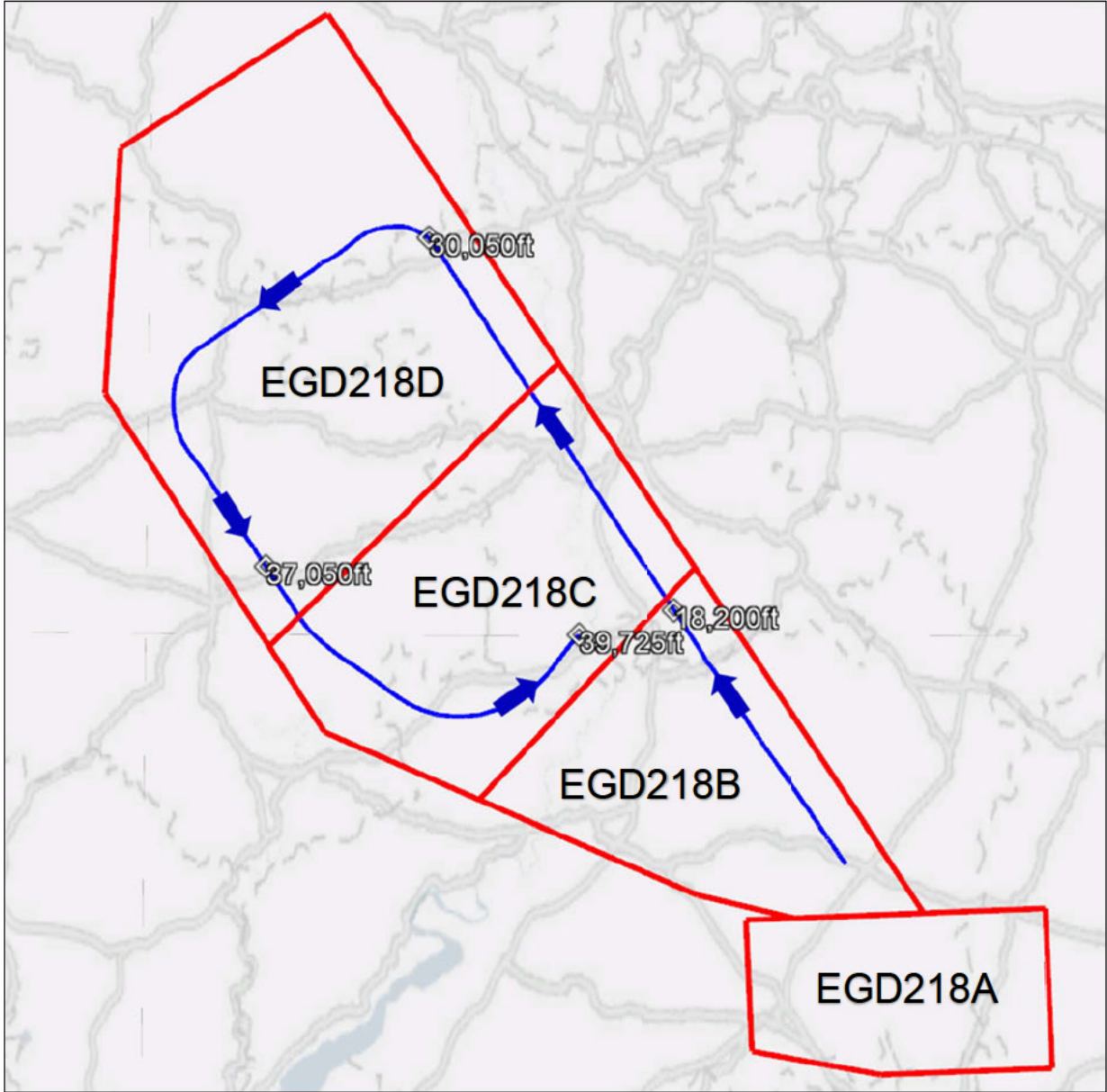
17. This solution requires further safety assurance work by NATS to determine if the potential risk is acceptable to the operation. If acceptable by NATS, this solution would primarily mitigate activations of the EGD218 complex that occur after 2300 local. The Sponsor will continue to engage with NATS on the viability of this solution.

#### **Mitigation by Special Use Airspace Crossing Service (SUACS)**

18. The Sponsor supports additional mitigation through the provision of a SUACS for civil aircraft within EGD218C. Flight planning through EGD218 would still be blocked but this would enable tactical routing through the EGD218, when possible. There are two levels possible for a SUACS in EGD218. One would be to allow a SUACS when the HALE RPA is not in EGD218 and the other would be to permit a SUACS when the HALE RPA is in the airspace but safely separated by attitude.

19. Allowing for a SUACS when EGD218 is not in use by a HALE RPA would greatly reduce the duration of impacts for airspace that will be routinely activated for up to 3 hours but only occupied by a HALE RPA for under one hour.

20. Allowing for a SUACS when civil traffic and the HALE RPA are separated sufficiently by altitude would eliminate even more impacts. For departure activations, the impact could be limited to the first 30 minutes after the HALE RPA departure. Due to the standardized and highly predictable departure profile of HALE RPA, only the initial transit of EGD218C occurs within the lower portion of that airspace. Subsequent transits will be a much higher altitude across EGD218C and EGD218D. On the 24 Aug departure, the HALE RPA was above FL370 before entering EGD218C for the second time enroute to FL500. If procedures allowed for a SUACS for civil aircraft, the HALE RPA would be separated from most Birmingham Airport arrivals by ~20,000 feet or more vertically in all but the first ~30 minutes of the initial climb.



Initial ~35 mins of 24 August departure profile

21. This would also greatly mitigate impacts during HALE RPA arrivals. On arrival, the HALE RPA executes a descending orbit until it reaches FL200 (the floor of EGD218D). At this point, the HALE RPA begins descent from FL200 through EGD218C and then lower through EGD218B and EGD218A to land at RAF Fairford. If required, the HALE RPA can hold within EGD218C and EGD218D at or above FL200.

## **Conclusion**

22. The Sponsor is sensitive to the impacts to civil air traffic caused by the activation of EGD218 and is committed to mitigations that still permit safe and efficient HALE RPA arrival and departure to/from RAF Fairford. This engagement has revealed possible solutions that fit this criterion. Both mitigations acceptable to the Sponsor (civil SUACS and under-flight of EGD218C) require further engagement with NATS and Birmingham Airport. The Sponsor looks forward to exploring both solutions further with NATS and Birmingham Airport to find a suitable mitigation.

26<sup>th</sup> September 2024

████████████████████  
Airspace Access  
HQ USAFE-AFAFRICA A3/A3AA

By e-mail : ██████████████████

### **ACP-2021-078 Post Implementation Review**

Birmingham Airport Limited has been asked to provide feedback to the ACP-2021-078 Post Implementation Review (PIR). This feedback will form three distinct parts:

1. The ACP process.
2. Ongoing dialogue.
3. Operational Impact of recent activations.

#### ACP PROCESS

ACP-2021-078 was initiated in 2021. Birmingham Airport were not aware of this ACP until the publication of the UK AIP in March 2024. Roughly 2 months before the first intended activation of the EGD218A-D. CAP 1616 states that direct stakeholder engagement is required.

Birmingham Airport were, along with NATS En-Route, joint stakeholders in the establishment of the Cotswold FUA, a portion of Controlled Airspace that is directly impacted by the EGD218A-D activations. For clarity, the Cotswold FUA has only ever been used by Birmingham Airport arrivals and departures. So, for Birmingham Airport to be overlooked during the 3-year ACP process is unexpected.

The first formal communication received by Birmingham Airport Limited was an email, sent by NATS En-Route on the 27<sup>th</sup> of March, to an email address of a member of staff who had not worked in ATC for 3 years and was no longer an employee of Birmingham Airport. This e-mail received an automatic “out of office” response which was not followed up.

The lack of direct stakeholder engagement by the MOD, NATS En-Route and the CAA, over a period of 3 years, has led to the commercial operations of Birmingham Airport being directly impacted by ACP-2021-078.

The following is an extract from CAP1616:

**2.44 The change sponsor must maintain clear records of engagement activity with all stakeholders throughout the airspace change process. We will expect to see details of what change sponsors have been told by their stakeholders, how they responded to this feedback, and how it has informed (or not) the development of the airspace change proposal.**

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\*Calls will cost 10p per minute from a BT landline. Calls from other operators and mobiles may vary.

**2.45 The CAA does not intend to set out how engagement must be undertaken in a prescriptive way, as the change sponsor owns the requirement for stakeholder engagement throughout the airspace change process. However, the core principle underpinning the CAA's assessment of whether a change sponsor is facilitating meaningful engagement will be documented evidence that they are engaging in a two-way conversation. The nature of a two-way conversation and how it is evidenced will differ depending on the circumstances, the type of meeting, the relationship between the stakeholder and the change sponsor, and the details of the airspace change proposal.**

In response to our initial challenge to the CAA, the CAA Airspace Regulator (Technical), responsible for the regulatory oversight of this ACP, advised that stakeholder engagement had been carried out via the National Air Traffic Management Advisory Committee (NATMAC). The NATMAC does not constitute direct stakeholder engagement. Such a limited and narrow approach/scope was always going to fail to capture the impacted stakeholders.

Furthermore, in the 20231206-ACP-2021-078 RPAS Ops RAF Fairford, dated 6<sup>th</sup> March 2024, it was stated:

The changes have included re-orientating the airspace, changing the size, shape and altitudes and operating times. All changes have been with the aim of reaching an acceptable solution that will allow US HALE RPA operations while minimising impacts to stakeholders including service providers and other airspace users. These arguments have been accepted at each stage as appropriate, proportionate and acceptable.

I draw your attention to the words 'while minimising impacts to stakeholders including service providers and other airspace users'. By not engaging with either Birmingham Airport or the impacted airlines as stakeholders, the intention of the statement has not been met.

In addition, the following statement, 20231206-ACP-2021-078 RPAS Ops RAF Fairford - HALE Stage 5 Environmental Assessment dated 6<sup>th</sup> of March 2024, was also made:

There are three airports adjacent to the proposed DAs, London Oxford Airport (Kidlington), Cotswold Airport (Kemble), and Gloucestershire Airport.

While the statement is geographically correct, it entirely fails to take into account the position and impact of Birmingham Airport in relation to airspace use around the EGD218A-D complex (as a side-note, the ongoing East Midlands Airport Future Airspace ACP process has resulted in excellent levels of stakeholder engagement with Birmingham Airport on an ongoing basis).

The direct consequence of the activation of the EGD218A-D complex, is a planned and permanent re-distribution of Birmingham inbound and outbound traffic during the periods of activation.

### **ONGOING DIALOGUE**

Once Birmingham Airport had belatedly been made aware of ACP-2021-078 and the impact on Cotswold FUA activities, urgent efforts by Birmingham Airport staff were made to engage with the MOD, NATS-En-Route and the CAA.

A number of online meetings have been held to determine a potential way ahead, with both Birmingham Airport and NATS En-Route procedures working to identify potential solutions to allow the continued use of the Cotswold FUA during EGD218A-D activations. For clarity, the only portion of the EGD218 complex that directly impinges on the Cotswold FUA, is EGD218C.

Of the solutions being suggested, two are by far the best options available to permit the continued use of the Cotswold FUA, without major impact on the EGD218C operations. They are:

1. The NATS En-Route Procedures staff indicated there was scope to adjust the base level of EGD218C (FL160-FL660), from FL160 to FL180 and maintain existing FUA procedures.

Given the overlapping levels of EGD218B (FL50-FL240) & D (FL200-FL660), there is absolutely no operational impact on the RAF Fairford RPAS operation as climb and descent profiles can easily be achieved even with the proposed revised base level of EGD218C.

2. Under-flying EGD218C, below the current defined base level of FL160, but within the existing levels of the Cotswold FUA.

Birmingham Airport agreed to the conduct of 2 RPAS test flights from RAF Fairford and these took place on the 22<sup>nd</sup> and 24<sup>th</sup> of August respectively. This was done in the spirit of co-operation, given the timescales involved, but should not be seen as an acceptance of the AIP.

### **OPERATIONAL IMPACT OF EGD218A-D OPERATIONS**

The operational impact of the 2 recent activations can be seen below with statistics provided by NATS En-Route, with 5 flights impacted on the 22<sup>nd</sup> of August and a further 5 on the 24<sup>th</sup> of August.

#### **22nd August (EGD218 FBZ activation from 2015z-2345z).**

Arrivals:

- EZY53UM GCFV-EGBB
- EXS8YM LEAL-EGBB
- EXS23PW LPMA-EGBB
- EXS21NR GCLP-EGBB
- TOM313 LPFR-EGBB

No Departures impacted.

#### **24th August through 0115z 25th (EGD218 FBZ activation from 2145z-0115z).**

Arrivals:

- RYR2267 LEMG-EGBB
- TOM91K GCFV-EGBB
- EXS65LG LPFR-EGBB
- TOM54D GCLP-EGBB
- EXS856HD GCFV-EGBB

No Departures impacted.

We have also received feedback from 2 of the regular airlines that route via the Cotswold FUA and this feedback is attached at Annex B and Annex C. It is clear from both the data above, together with the data received from Jet2 and Ryanair, that there is a varied but significant impact on the commercial operations of these airlines.

Whilst an Operational and Environmental Impact assessment was carried out as part this ACP process, it failed to ascertain the commercial impact to the airlines impacted by the re-routes necessitated by the activation of EGD218A-D. These are outlined in their submissions to us:



1. Increased fuel burn.
2. Increased CO2 emissions.
3. Increased track mileage.
4. Increased flight time.
5. Increased likelihood of EU261 compensation claims.
6. Decrease in operational flexibility.

As a knock-on effect of these, there is also a commercial, environmental and reputational impact on Birmingham Airport Limited, caused by the impact on the airlines, namely:

1. Failure to meet our scope 3 emissions in-line with current targets.
2. Increase in night flying noise due to delayed flights arriving later than planned.
3. Delayed flights increasing overall number of night-flying beyond current Planning Consent levels.
4. Increase in passenger complaints due to delayed flights.
5. Increased cost to Birmingham Airport and ground staff due to need to retain duty staff longer, for delayed flights.

None of the points above have been considered during the ACP consultation phase due to the lack of consultation.

Birmingham Airport is in the process of agreeing a new Night Flying Policy with Solihull Metropolitan Borough Council (SMBC) that will cover the next three years 2025-2027. There is already significant pressure on the Airport's core night period, the changes proposed in this ACP will only serve to increase this placing additional night noise on communities around the Airport. The evidence of environmental and operational impacts, together with the (yet to be assessed) commercial impact to Birmingham Airport, RyanAir, Jet2 and others, leads to a need to review the scale of the EGD218A-C complex and the significant impact it will have.

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Birmingham Airport believe the solutions offered above are reasonable and deliverable, with little to no impact on the RPAS operation to/from RAF Fairford. Please note that the technical information supplied by airlines in the attached Annexes is from an operational level – we have not, as yet, engaged the senior levels of affected airlines in the potential impact to their operations as we believe the solutions we have offered are deliverable with relative ease.

Yours sincerely

[Redacted signature]

[Redacted name]

[Redacted title]

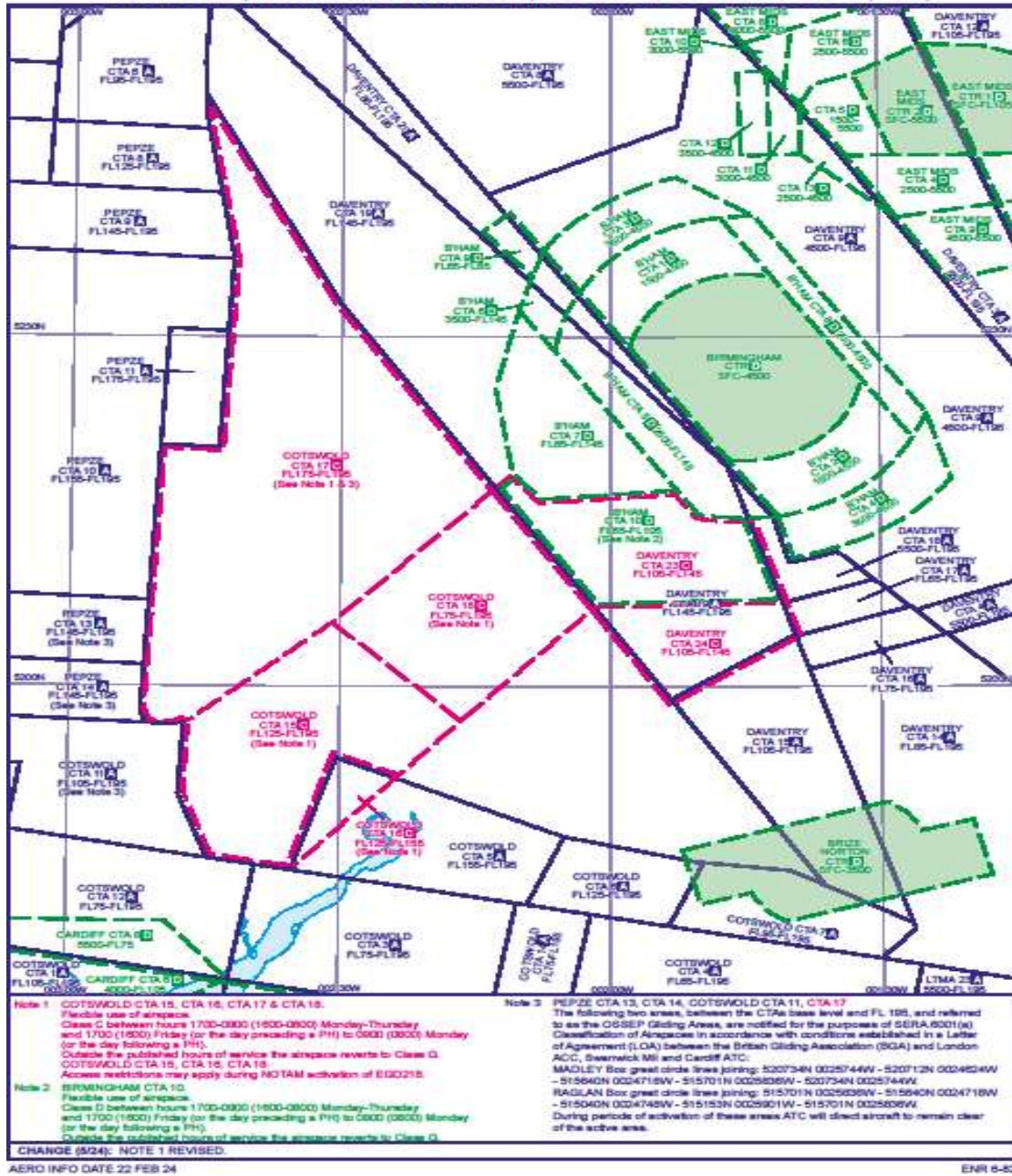
Birmingham Airport Limited

[Redacted address line 1]

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**ANNEX A – COTSWOLD FUA/CTA AIP CHART**

**COTSWOLD (SHAWBURY TRIANGLE) FLEXIBLE USE AIRSPACE (FUA)**



## **ANNEX B - JET 2 FEEDBACK ON FUA CLOSURE IMPACT**

### **Outbound (per aircraft)**

Impact of a non-TANGO domestic routing changing from a BRUMI to an ADMEX departure will be:

- 1 minute additional flight time.
- 20nm increased track mileage.
- 30kg additional fuel penalty.
- \$16 total extra cost.

Impact of a TANGO routing changing from a BRUMI to an ADMEX departure will be:

- 10 minutes additional flight time.
- 68nm increased track mileage.
- 489kg additional fuel penalty.
- \$491 total extra cost.

### **Inbound (per aircraft)**

Impact of a non-TANGO domestic routing changing from a FIGZI to a HEMEL arrival will be:

- 14 minutes additional flight time.
- 98nm increased track mileage.
- 647kg additional fuel penalty.
- \$753 total extra cost.

Impact of a TANGO routing changing from a FIGZI to a HEMEL arrival will be:

- 21 minutes additional flight time.
- 145nm increased track mileage.
- 1013kg additional fuel penalty.
- \$1117 total extra cost.

All Jet2 southern flights to the Canaries as well as mainland Spain, the Balearic Islands and Portugal generally route back to EGBB via FIGZI.

The impact of 2 TANGO routing aircraft from the Canaries and 6 domestic routing aircraft routing via HEMEL instead of FIGZI would equate to an impact of:

- 70 minutes additional flight time.
- 5948kg additional fuel penalty.
- \$6752 total extra costs.
- 22,602kg of extra CO<sub>2</sub>.

There is also the potential risk of the unscheduled launching of rescue aircraft after nightfall during periods of FUA inaccessibility which may leave the airline open to an increase in EU261 compensation claims dependent on the circumstances.

## **ANNEX C – RYANAIR FEEDBACK ON FUA CLOSURE IMPACT**

Inbound – operated by a Boeing 737-800

Impacts on a routing changing from a FIGZI to a HEMEL arrival when operated by a Boeing 737-800 aircraft will be:

- 13 minutes additional flight time.
- 457kg additional fuel penalty.

Inbound – operated by a Boeing 737NG

Impacts on a routing changing from a FIGZI to a HEMEL arrival when operated by a Boeing 737NG aircraft will be:

- 12 minutes additional flight time.
- 568kg additional fuel penalty.

Ryanair have projected that the impact of not being able to utilize the FUA on a weekly basis will equate to:

- Up to 15 inbounds per week affected.
- 8970kg additional fuel burnt causing the production of an additional 34,086kg CO<sub>2</sub>.
- 195 minutes of additional delays due to rerouting potentially impacting approximately 2835 passengers.
- Additional delays will be experienced with ground handling teams not being available due to scheduling conflicts with the extra time required to reroute if the planned route through the FUA is not available.
- In turn, this will lead to delays in disembarking passengers due to ground handling scheduling.

**From:** [REDACTED]  
**To:** [REDACTED]  
**Cc:** [REDACTED]  
**Subject:** [Non-DoD Source] RE: ACP-2021-078 Post Implementation Review  
**Date:** Friday, September 27, 2024 12:39:59 PM  
**Attachments:** [image001.png](#)  
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Hi [REDACTED]

NATS NERL plc has taken a 'quick look' at impacted aircraft due to the activations on 22nd and 24th/25th Aug.

In accordance with the ASM restrictions and route management for EGD218, a quick assessment has been made on the aircraft impacted arriving/departing those airports with restrictions imposed - Manchester Group and Birmingham (PI7 and COTS FUA availability). No ENV assessment has been made as discussed in the meetings between CAA, NATS and Birmingham prior to the activations. This is due to the timelines of the PIR which meant it would not be achievable if full assessments were required. If the sponsor requires full analytical assessment for this period, the work and time scales would need to be agreed, similar to the support provided by NATS during the ACP process.

- 22nd August (EGD218 FBZ activation from 2015z-2345z).

EGBB Arrivals COTS FUA not available (flight planned via South and DTY unless stated):

EZY53UM GCFV-EGBB  
EXS8YM LEAL-EGBB  
EXS23PW LPMA-EGBB (flight planned via Irish Airspace and LIFFY/ENDEQ)  
EXS21NR GCLP-EGBB (flight planned via Irish Airspace and LIFFY/ENDEQ)  
TOM313 LPFR-EGBB

No Departures impacted.

Manchester Group Departures (PI7 not available, flight planned via DTY)

RYR2252 EGCC-LPPT  
RYR8RJ EGGP-LEMG

- 24th August through 0115z 25th (EGD218 FBZ activation from 2145z-0115z).

EGBB Arrivals COTS FUA not available (flight planned via South and DTY unless stated):

RYR2267 LEMG-EGBB  
TOM91K GCFV-EGBB  
EXS65LG LPFR-EGBB  
TOM54D GCLP-EGBB  
EXS856HD GCFV-EGBB

No Departures impacted.

During the activations, NATS operations were asked to provide feedback:

Generally, the feedback has been positive although some first use teething issues were identified:

- One MOR was raised by NATS LAC West, indicating that not all parts of the Operations at Swanwick and Prestwick were aware of the first activation (22nd Aug). This is being investigated formally and an update can be provided once complete. That said, several returns of feedback indicated everyone was aware and praised the communications and readiness for the activation on 22nd Aug.
- The airspace was not handed back following the agreed procedure by 78Sqn which meant that the airspace was sterile for a significant period following the arrival of the RQ4 on its inbound leg. The correct procedures were reiterated to military stakeholders by the MAMC and correct for the departure activation.
- Similarly, during the notification of the completion of activities to release the airspace, Prestwick were not informed by 78Sqn of the de-activation of the airspace, leading to confusion and extra workload to determine the airspace status following an aircraft's notification of a medical emergency. Further discussions have concluded that 78Sqn procedures will be updated ahead of any future activations to include notifying Prestwick of the release of airspace.
- It was noticed by Prestwick that there were some flight plan anomalies relating to the inbound flight coming from Norwegian airspace. The FDP flight plan did not correspond with the OAT plan and expected routing. This was spotted and rectified by the DTS at Prestwick with no concerns or impact on the operation as the aircraft was be controlled as OAT by 78Sqn. This is not believed to be an error on Mil side but more a system quirk. This anomaly is noted by the operation and procedures and LoAs will need to be put in place between civil and military agencies in UK and some adjacent ANSPs to cover any future activations and any potential anomalies of a similar nature. These are anticipated to be based on current procedures for certain flights that can cause similar observations.

Regards

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**NATS**

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