ACP-2022-002

9 January – 7 April 2023

RAFAT use of RAF Syerston for Winter Training

Additional Analysis of Re-routed Traffic Distribution

Issue 1.1

Drafting and Publication History

Issue	Date	Change Summary
1.0	17 Oct 22	Initial Issue
1.1	8 Nov 22	Correction to text on page 10 concerning traffic requesting a Waddington MATZ crossing

Contents

Introduction

Following submission of the ACP 2022-002 TDA proposal to the CAA, further clarity has been requested over traffic redirection. Specifically, the Change Sponsor has been asked to ensure that elements set out in CAP1616 Appendix B Paras B81-B85 (p173/174) have been adequately covered. This document aims to expand on this.

This document contains 2 sections as follows:

Section 1 – Background information

Section 2 – Environmental Assessment

Section 3 – Conclusion

Section 1 – Background Information

CAP 1616 Appendix B

The relevant CAP 1616 Paras are listed below. Highlighted areas have been used to illustrate the most pertinent points:

> ***Temporary changes to airspace design***
>
> *B81. The Government's guidance states that temporary airspace changes are to last for a fixed period that is not usually to be for more than 90 days, after which the airspace will revert back to its original form. In extraordinary circumstances the CAA may extend a temporary change.*
>
> *B82. In line with Government guidance, in respect of a change that would affect the distribution of traffic below 7,000 feet, where practicable, the CAA requires that any communities affected must be informed of the change before a decision is taken by the CAA about its implementation. The nature and impact of the change will influence what level of information is considered acceptable by the CAA. For large scale changes impacting on densely populated areas, widespread notification via local media, social media, advertising and owned media may be appropriate, and may reduce community concerns and complaints about the change – in particular if clear information about the scope and duration of changes is provided. Less impactful changes may require less extensive information approaches for the CAA to approve implementation, for example reaching out via third parties and representative organisations, social media channels and website information. The online airspace change portal will also offer another mechanism to communicate with impacted parties.*
>
> *B83. The CAA is required to consider the sponsor's assessment of the noise impact of each proposed temporary change to airspace design before we make our decision on the proposal, unless we are satisfied that the specific details of the proposal mean that this is not needed. The detail of this assessment should be agreed between the sponsor and the CAA at an early stage of the sponsor's planning. Assessments may include consideration of*

both primary or secondary noise metrics. If agreement cannot be reached, the CAA will determine the detail of the assessment. We do not require a sponsor proposing a temporary airspace arrangement to follow the options appraisal requirements, as this would not be proportionate. However, we do require that the following information should be assessed (which we will take into account before agreeing to the temporary change) and conveyed to those affected:

- *Justification for the change, and confirmation of its effective period.*
- *A qualitative description of changes to traffic patterns, illustrated using operational diagrams overlaid on Ordnance Survey maps or similar; diagrams should be of sufficient detail for those affected to identify where they live in relation of the changes in traffic pattern (see 'Operational diagrams' above).*
- *Details of the frequency of flights and typical altitudes.*
- *Typical noise levels at key locations.*

B84. There is no requirement to assess any other environmental impacts (i.e. CO2, local air quality, tranquillity), because these are likely to be negligible for such a short-term change.

B85. These assessment requirements would need to be re-assessed and possibly expanded if the temporary change extended beyond 90 days.

Engagement Summary Report

The engagement submission referred to the impact of redirected traffic on page 21 and was limited to the following text:

Impact of Redirected Traffic

The Change Sponsor assesses that there will be limited impact of redirected traffic around the TDA on the local area. We believe that there will continue to be low levels of traffic transiting to the west and that compression of traffic to the east will result in a small increase in noise to villages east of Newark. It might lead to GA being less spread out through the day and concentrated more over periods of TDA inactivity, but most of the traffic will be light aircraft and microlights.

The Change Sponsor believes this statement is unchanged but has refocused on this issue. We have re-engaged with both local airfields that we believe will be most affected and with 2 contacts that provided some limited HEAT map evidence. It is noted that follow on requests for more focused HEAT map evidence has been patchy although recently, some new maps have come in. Overall, evidence of accurate traffic patterns, aircraft numbers and noise levels were almost non-existent. Consequently, a qualitative and quantitative assessment has been difficult. However, we have identified 2 areas where traffic patterns could be affected, and they are discussed below.

Section 2 - Environmental Assessment

2 Local Airfields will be affected during periods of TDA activation:

Nottingham Tollerton Traffic

Nottingham Tollerton airfield is located approximately 9nm SW of RAF Syerston. It also sits to the NE of East Midlands airport and under their northern CTA with a base of 2500ft AMSL (Figure 1).

Figure 1 – Local Area Map

There are 3 main users of Nottingham Tollerton airfield:

Arcus Helicopters

Arcus Helicopters conduct helicopter training using R22/R44 aircraft. They tend to focus on training over Newton, a disused airfield just inside the TDA. They also conduct navigation exercises east of Nottingham to Bottesford and north towards Oxton. Both activities will be affected by TDA slots 2 (1200-1245) and 3 (1450-1530) only as they do not tend to fly during slot 1 (0830-0915). They have requested 3 days NOTAM notice but ideally 7 days in order to make arrangements with their customers to avoid flying during periods of TDA activity.

Figure 2 below was provided by Arcus Helicopters and shows their normal operations. As these will be restricted during TDA active periods, there should be limited traffic re-direction.

Figure 2 – Arcus Helicopters Operations

Blue Area

This is the area normally operated in for flight training and examinations
Typical Altitude operating between 700ft and 3000ft on EGNX QNH pressure setting

Red Area

This is our high intensity area of helicopter activity and specifically used for emergency training (company pilots are standardised to synchornise lessons & aircraft operations and keep a good lookout for company traffic)
Typical Altitude operating between 700ft and 3000ft on EGNX QNH pressure setting

Green Arrows

These are the normal departure routes we set out for training flights, solo student navigation flights, and PPL(H) licence holders.
Typical Altitude operating between 1000ft and 2500ft on EGNX QNH pressure setting

Frequency of flights can vary from 4 - 12 flights per day.

Impact. We believe that there will be no change in routing for Arcus Helicopters as they will have to adjust their normal timings to avoid flying during TDA activity.

Sherwood Flying Club and Private Pilots

Traffic tends to depart to the north via Holme Pierrepont National Watersports Centre before routing north or NE. Reciprocal tracks tend to be flown for arriving traffic, with aircraft then joining overhead at 2000ft AMSL. Traffic departing in other directions tend to climb to 2000ft AMSL in the overhead before tracking outbound. Arriving traffic from other directions also tend to join overhead at 2000ft AMSL before joining the circuit. Figure 3 illustrates the normal arcs of operation to the north/northeast and to the south/southeast. Routing west is more limiting due to the East Midlands CTA/CTR and Nottingham City, but traffic can still depart in this direction towards Long Eaton and Derby.

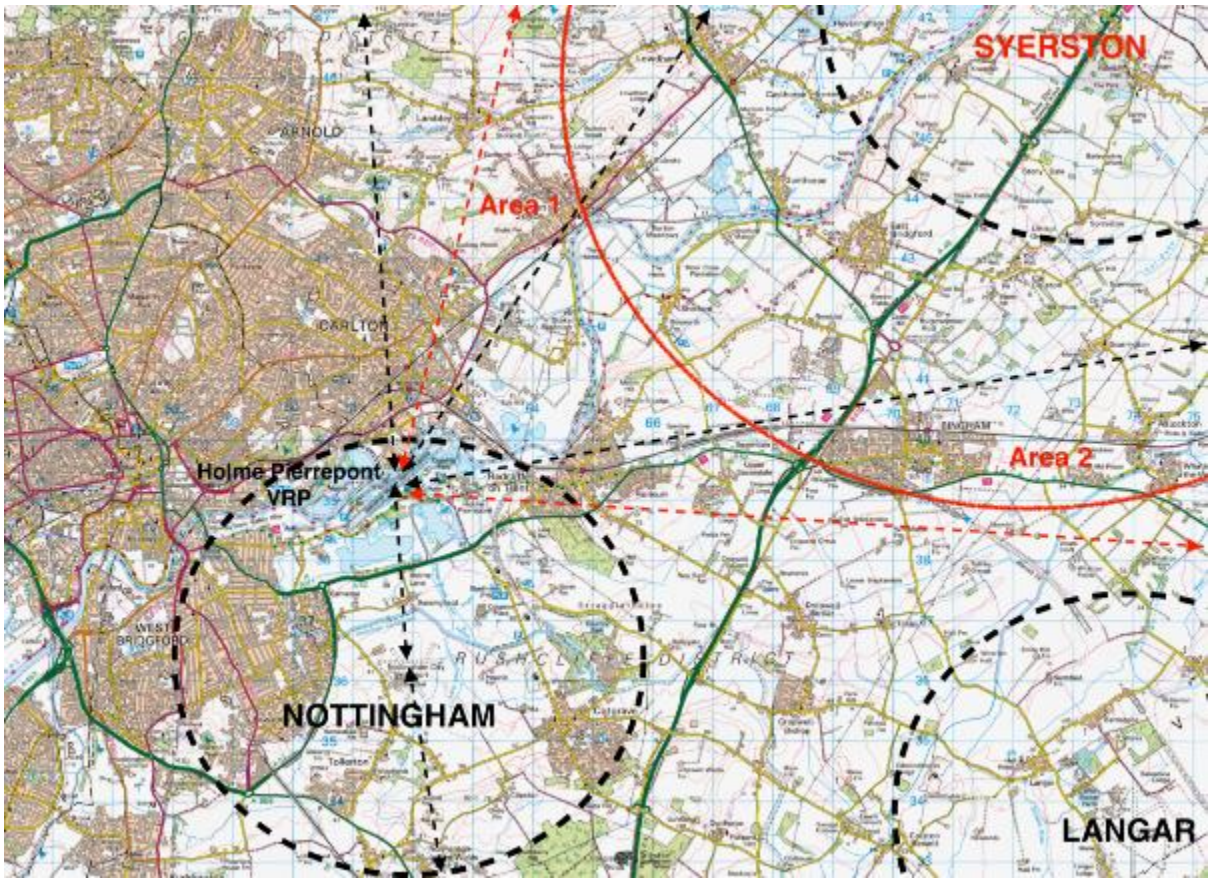

Figure 3 – Nottingham Tollerton Airfield

Impact. We believe that some flying times will be adjusted to avoid periods of TDA activity. Pilots operating during the TDA will have to ensure they remain clear and areas 1 and 2 on the map shown at Figure 3 will have to be avoided. Given the proximity of Langar to the TDA, it is possible that aircraft will avoid this sector entirely, perhaps routing to the south of Langar. Having scoped this effect, we are unable to say for certain how many pilots will adjust their flying times to avoid flying during the TDA and how many will continue to fly but perhaps adjust their ground tracks. Nottingham Tollerton airfield were unable to provide average aircraft

movement numbers. While there are regular light aircraft movements, there are only approximately 40-45 aircraft based at the airport from a mixture of flying training to private pilots who hangar their aircraft there. All are light GA aircraft.

RAF Cranwell Traffic

Some minor changes to several SIDs will have to be made during periods of TDA activation. These SIDs head out towards Syerston but can be tactically adjusted by means of a non-standard departure on the day if required.

Impact. We believe there will be little impact to local noise levels as these SIDs are not used that often, with alternative or non-standard options available. Any adjusted departure tracks will be used by aircraft climbing into the medium airspace reducing noise impacts. These non-standard departures will only be required during active TDA slots, a maximum of 2 hours 10 minutes Monday – Friday only.

Transit Traffic

Other than local airfield operations, transit traffic has been identified as the other affected area and the Change Sponsor has made the following observations:

HEAT map information is a useful tool to identify hotspots and big picture information but is not readily available and can be difficult to obtain focused information. The HEAT maps we received were provided by well-intentioned individuals who were happy to help but were either unable to show an entire picture or were cluttered and difficult to read. However, the following deductions could be made by analysing the HEAT maps we received and from talking to local pilots/ATC personnel:

- HEAT map analysis shows that winter is significantly quieter than summer although there is still regular transit traffic all year. This TDA request falls in winter.

- The majority of traffic tends to route to the east of RAF Syerston as the western side is closer to the East Midlands CTA, Langar and Nottingham Tollerton. However, transit traffic does still route this way.

- Much transit traffic avoids RAF Syerston by more than the ATZ of 2nm as it is recognised as having periods of more intense gliding activity.

- A lot of GA traffic tends to operate in the 2000-4000ft AMSL band, probably due to aircraft performance and weather. Lower heights tend to be avoided due to military traffic that often operate at low level. Civil helicopter traffic does operate lower.

- Figures 4 and 5 below were produced by the Manchester Airports Group who own and run East Midlands Airport. They represent a one-week snapshot of traffic below approximately 7000ft, with figure 4 in January and Figure 5 in June. The images are limited to the radars range but help to illustrate the seasonal

differences in traffic levels and routing. These HEAT maps do not show all traffic however, with tracks tending to show aircraft routing to/from East Midlands (excluding airline traffic) and traffic asking to access East Midlands airspace. The TDA is shown by the red circle.

Figure 4 – MAG HEAT Map January 1-Week Snapshot

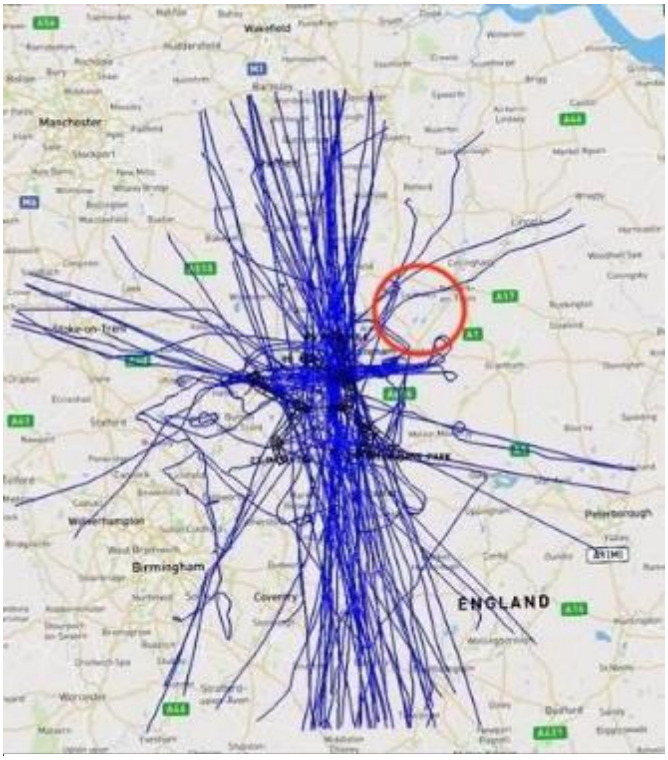

Figure 5 – MAG HEAT Map June 1-Week Snapshot

- Most GA traffic routes around RAF Syerston rather than flying over it. Figure 6 below was produced by BAE Systems and shows a 6-month period from January to June 2022, all traffic at or below 9500ft AMSL. Although difficult to easily break-out, it does show most traffic routes to the east of RAF Syerston and tends to avoid the ATZ by some distance.

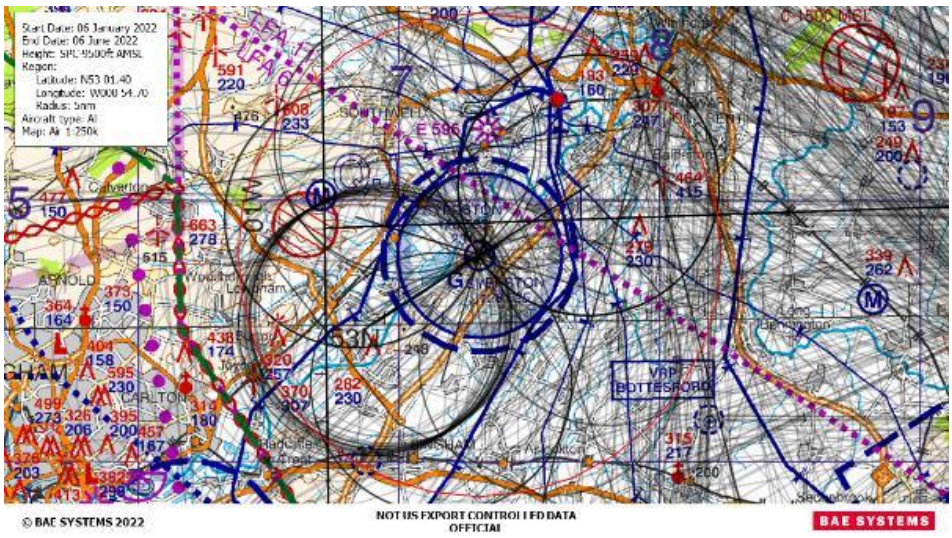

Figure 6 – BAE Systems HEAT Map January – June 2022, Surface – 9500ft AMSL

Impact. We believe that some transit traffic will adjust their timings to avoid periods of TDA activation. Other GA traffic will route a little further to the east as this gap reduces from 7nm to 4nm and the western transit route may see less traffic as it will be reduced from 5nm to 2nm. Some traffic may route over the TDA at or above 4000ft AMSL and some may request a DACS from Waddington Radar. It is impossible to say how many GA aircraft will be affected and how they will ensure they remain clear of the TDA, but we assess that there will be minimal changes to noise levels in the local area as traffic levels should not increase and avoiding traffic will likely route in areas that are well used for this purpose anyway. We are also confident that we have created an environment that will both inform GA of planned TDA slot use and provide them with a safe means to transit the area using a LARS from RAF Waddington. This reflects the statement made in the engagement summary on page 21.

ACP 2019-018 Environmental Assessment

The RAF Waddington ACP stage 3b report did make a qualitative and quantitative assessment on likely traffic levels that pass within 5nm of the RAF Waddington overhead. This was based on information provided by RAF Waddington ATC. It suggested that the peak of local GA transit traffic occurs during August but there could be as many as 15-20 movements in the local area daily, with the majority requesting crossings below 4000ft AAL (Waddington). Essentially, they concluded:

- Once any segregated airspace is activated, it is thought that most of these aircraft will continue to request and obtain a DACS to cross the low airspace design, with only a small percentage of them requiring a reroute due to activity within the segregated airspace.

- In the MOD's Stage 2 submission a rationale was proposed that since the ACP was expected to impact less than 30 civil aircraft per day, the MOD should not be required to conduct any Leq contours or WebTAG noise modelling. To do so was assessed at disproportionate to the impact created; the CAA accepted this rationale. CAP 1616 also proposes that change sponsors should consider Nx contours and overflight as environmental metrics for noise measurement. Whilst the MOD had not specifically mentioned these in the Stage 2 submission, the Change Sponsor similarly proposes that taking into account the predicted low numbers of civil aircraft being impacted by the proposed airspace, there would be minimal change to the areas overflown and, therefore, has scoped out the requirement to use Nx contours and overflight in its environmental assessment.

- The Change Sponsor also considered whether it would be possible or indeed useful to provide operational diagrams of civil traffic patterns to compare likely changes between the baseline scenario and the situation after the implementation of any proposed airspace over Waddington. In this case the MOD proposes that since the surrounding airspace is Class G, where the majority of the civil air traffic is GA and engaged predominantly in leisure or sporting activity, it would be difficult to predict any definite traffic patterns created by any new

segregated airspace. CAP 1616A suggests that operational diagrams may be useful.

- The MOD has scoped out the requirement to conduct noise modelling as to do so was assessed as disproportionate to the impact created. For the entirety of the activation period of any segregated airspace civil air traffic will be able to take advantage of a DACS and it is thought that for the majority of the activation period such requests will be successful, with minimal requirements to reroute. The MOD feels, therefore, that it would be difficult to produce accurate and useful operational diagrams for future traffic patterns and that there would be minimal benefit in doing so.

- In seeking some qualitative assessment of the impact of the proposed airspace on noise the Change Sponsor has assessed that the proposed change will not result in an increase in the number of aircraft operating in the local area, nor will the aircraft types be altered. Therefore, the same amount and type of noise is likely to impact the local population as is currently the case. Since the change is likely to impact less than 30 aircraft on the busiest flying day and considering the mitigations put in place (e.g. NOTAM, DACS), the overall impact of the proposed change on noise is thought to be negligible.

- Finally for this section on noise impacts, CAP 1616 requires change sponsors to confirm the minimum noise modelling category that is required to be applied to the airspace change. A rationale to scope out this requirement was provided in Stage 2 of the ACP based on the low numbers of aircraft which might be affected. The CAA was in agreement and a noise modelling category was, therefore, not stipulated for this ACP.

- As with noise, the Change Sponsor has considered the impact of the proposed airspace on CO2 emissions and fuel burn from a qualitative point of view and similarly suggests that the proposed change will not result in an increase in the number of aircraft operating in the local area, nor will the aircraft types be altered. Therefore, whilst there might be a small number of aircraft that do not take advantage of the DACS in order to get a direct routing, the impact on CO2 emissions and fuel burn is thought to be very low.

The Change Sponsor believes that much of the above can be applied to ACP 2022-002 TDA when considering traffic transiting the local area.

Section 3 – Conclusion

The Change Sponsor feels that it has made every effort to fully scope a range of environmental impacts that could arise from this TDA. The lack of available information has limited the ability to make precise conclusions, but we are confident that the only affected traffic patterns will come from light aircraft at Nottingham Tollerton, occasional changes to military aircraft on an IFR departure from RAF

Cranwell and from low level traffic transiting the area to the east and west of RAF Syerston. Judgement has been exercised to reach these findings with the limited information at our disposal, but ultimately, the results of traffic redirection could feed into the overall conclusions of the TDA and whether the MOD believes that RAF Syerston could be used for limited RAFAT training in the future. Also, the use of daily slots and NOTAM's promulgated at least 72 hours in advance (RAFAT will aim for 7 days) should allow GA to plan in advance and by minimising the use of slots to a maximum of 2 hours 10 mins total Monday-Friday only should allow much of the local and transit traffic to continue their normal operations.

Additionally, the Change Sponsor has been developing an engagement strategy to inform the local population of RAF Syerston of the proposed activity. There is nothing to mandate the engagement strategy, but para 302 of CAP1616 highlights the SoS's guidance of engaging with local communities that may be affected by the TDA of the decision prior to implementation. The MOD does feel that it would be advantageous to inform the local population, and this will ultimately feed into the final conclusions of this study and whether the MOD feels that RAF Syerston could be used in the future for limited RAFAT training. So far, three meetings have been held with the local parish, district and county councils who have offered their support and assistance and the RAF Waddington Media and Comms Officer (MCO) and the RAFAT Public Relations Manager (PRM) will now be managing this and any future engagement. They plan on working alongside these authorities to assist in communicating the nature, detail and potential impacts of the TDA on the local population and businesses and will collate and action any feedback and complaints that may arise. Social media, local council newsletters and potentially leaflet distribution are being considered to communicate the message prior to the initiation of the proposed TDA, however this will not formally begin until approval for the TDA has been granted.