

CAA CAP 1616 Options Appraisal Assessment (Phase I Initial)

Title of Airspace Change Proposal:	Enabling RPAS and RAF Aerobatic Team Operations Out of RAF Waddington		
Change Sponsor:	MOD		
ACP Project Ref Number:	ACP-2019-18		
Case study commencement date:	18/04/2022	Case study report as at:	28/04/2022

Account Manager: ██████████		Airspace Regulator (Engagement & Consultation): ██████████		IFP: ██████████		OGC: ██████████	
Airspace Regulator (Technical): ██████████		Airspace Regulator (Environmental): ██████████		Airspace Regulator (Economist): ██████████		ATM (Inspector ATS Ops): ██████████	

Instructions
To aid the SARG project leader's efficient project management, please highlight the "status" cell for each question using one of the four colours to illustrate if it is:

Resolved - GREEN
 Not Resolved – AMBER
 Not Compliant – RED
 Not Applicable - GREY

Guidance
The broad principle of economic impact analysis is **proportionality**; is the level of analysis involved proportionate to the likely impact from that ACP? There are three broad levels of economic analysis; qualitative discussion, quantified through metrics, and monetised in £ terms. The more significant the impact, the greater should be the effort by sponsors to quantify and monetise the impact.


1. Background – Identifying the impact of the shortlist of options (including Do Nothing (DN) / Do Minimum (DM))		Status
1.1	Are the outcomes of the options' scenarios clearly outlined in the proposal?	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
1.1.1	Has the change sponsor produced an Options Appraisal (Phase I - Initial) which sets out how they have moved from the Statement of Need to the airspace change design options? [E12]	Yes, the sponsor provides an initial options appraisal (IOA) setting out how the proposed options address the Statement of Need and are in line with the DPs. <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
1.1.2	Does the list of options include a description of the change proposal?	Yes, the sponsor provides a description of the change proposal, and presents a total of: <ul style="list-style-type: none"> - <u>Six low level airspace design options.</u> Airspace designs for the airspace in the vicinity of RAF Waddington below 9500 ft above mean sea level (AMSL). The sponsor identifies 6 low level airspace design options. - <u>Two medium level airspace design options.</u> Airspace designs for the airspace in the vicinity of RAF Waddington 9500 ft AMSL – FL195. The sponsor identifies 2 medium level airspace design options. <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
1.1.3	Has the sponsor stated on what criteria the longlist of options has been assessed?	The sponsor assigns to each DP a priority and assesses each design option against the DPs in the DPE. The sponsor has not used the high-level criteria to explain how an option meets, partially meets or does not meet a DP, but manages to narrow down the list of the options that will be taken to Step 2B and then to Stage 3. <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
1.1.4	Where options have been discounted, does the change sponsor clearly set out why?	The sponsor uses the DPE exercise to discount options that will not be taken to the IOA, providing a robust justification for doing so. Among the low level airspace design option, Option 1 is the only option that meets all the DPs uses the “ <i>smallest volume of airspace and, without stubs, such that it will reduce the impact on operations at Wickenby and Temple Bruer particularly</i> ” while for the medium level airspace design both options are taken to the IOA. <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>

1.1.5	Has the change sponsor indicated their preferred option in the Options Appraisal (Phase I - Initial)? [E8]	The sponsor states that Option1 and Option 7 are the preferred options.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1.1.6	Does the Initial Options Appraisal (Phase I - Initial) detail what evidence the change sponsor will collect, and how, to fill in any evidence gaps and how this will be used to develop the Options Appraisal (Phase II - Full)?	Yes, the sponsor has identified a plan of what will be conducted at the next stage.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1.1.7	Does the plan for evidence gathering cover all reasonable impacts of the change? [E12]	The plan provided is reasonable at this stage.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

2. Direct impact on air traffic control		Status			
2.1	Are there direct cost impacts on air traffic control / management systems? If so, please provide below details of the factors considered and the level in which this has been analysed.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2.1.1	<i>Examples of costs considered (please add costs that have been discussed, and any reasonable costs that the Airspace Regulator (Technical) feels have NOT been addressed)</i>				
		Not applicable	Qualitative	Quantified	Monetised
2.1.2	Infrastructure changes	x			
2.1.3	Deployment	x			
2.1.4	Training	x			
2.1.5	Day-to-day operational costs / workload / risks	x			
2.1.6	Other (provide details)				
2.1.7	<p>Comments: The sponsor has not provided any information to indicate costs associated with the implementation of any of the options. However, it is reasonable to assume there will be a cost incurred by the MOD at its RAF Waddington operation to incorporate the required system changes and to train its ATC staff. In addition, there will be a cost involved to incorporate the required amendments into the AIP and the cascading amendments that will be required as a result. The sponsor states that there will not be additional infrastructural, deployment and training costs that might affect the civil aviation because of the implementation of the proposed change.</p>				

2.2	Are there direct beneficial impacts on air traffic control / management systems? If so, please provide details and how they have been addressed:					<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.2.1	<i>Examples of benefits considered</i>	Not applicable	Qualitative	Quantified	Monetised				
2.2.2	Reduced work-load		x	N/A	N/A				
2.2.3	Reduced complexity / risk		x	N/A	N/A				
2.2.4	Other (provide details)								
2.2.5	Comments: The sponsor states that the introduction of the proposed change might increase the risk of loss of safe separation / mid-air collision (LoSS/MAC) due to re-routing aircraft creating bottlenecks and it might also increase controller workload due to funnelling, DACS requests.								
2.3	Where monetised, what is the net monetised impact on air traffic control (in net present value) over the project period? N/A								
2.4	Are the direct impacts on air traffic management analysed accurately and proportionately? The sponsor provides a qualitative assessment of the direct impacts on the air traffic management and this is in line with CAP1616 requirements at this stage.					<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

3. Changes in air traffic movements / projections					Status			
3.1	What is the impact of the ACP on the following and has it been addressed in the ACP proposal?				<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Not applicable	Qualitative	Quantified	Monetised			
3.1.1	Number of aircraft movements		x	x	N/A			
3.1.2	Type of aircraft movement		x	N/A	N/A			
3.1.3	Distance travelled	x						
3.1.4	Area flown over / affected		x	N/A	N/A			
3.1.5	Other impacts							

3.1.6	<p>Comments: The sponsor provides a qualitative assessment of the impacts that the proposed military change might have on the civil aviation, clarifying that it might affect the GA users when the Protector will require the activation of the segregated airspace for 1-2 days per week during the initial stage. The sponsor provides an extract of the conversation with the ATC to demonstrate the number of GA movements that had been affected pre-pandemic and to show the magnitude of the potential impact</p>															
3.2	<p>Has the forecasting of traffic done reasonably using best available guidance (e.g. DfT WebTAG, the Green Book, Academic sources...etc?) The proposed airspace change is a provisional M1, and the sponsor must therefore consider how the civil traffic might change because of the proposed change, in accordance with Level 1 requirements (see CAP1616 Para B42 and 43). However, the sponsor has provided a rationale as to why providing quantitative assessments and therefore traffic estimates is not achievable at this stage and the evidence and justification provided within the document is considered sufficient.</p> <p>The sponsor states as follows: <i>“the busiest month of Aug 2019 the total number of MATZ crossing requests was 76 under the current airspace construct. Dividing this by 4 gives a weekly total of 19. Assuming there were 2 or 3 busy flying days in any given week, the figures suggest an average of 6 – 10 MATZ crossing requests per day. This would align with the qualitative estimate of 15 – 20 crossings of the Waddington MATZ and overhead”.</i></p> <div style="text-align: right;">  </div>															
3.3	<p>What is the impact of the above changes (3.1) on the following factors below?</p> <ul style="list-style-type: none"> • Noise impact: the sponsor states that due to the proposed airspace change, some GA and military aircraft will route around the segregated airspace, while others will opt for a crossing service (e.g., DACS). This seems to be already the current situation and it is expected that the potential noise impact would be very low compared to the Do-Nothing. • Fuel burn: the proposed low level airspace option might lead to a small increase in fuel burn for those GA users that cannot or do not use the crossing services (e.g., DACS). • Greenhouse gas impact: the sponsor states that for both low and medium level airspace change designs “there will be no additional flying anticipated from civil GA community, but there will be a minimal increase in the emissions from Protector activity, although overall reduction in impact is likely in local area due to relocation/retirement of several flying assets”. • Air quality: the proposed low level airspace design might have an impact on the overall air quality due to the GA users re-routing, no changes are expected with the medium level airspace designs. • Tranquillity and Biodiversity: The sponsor states that while only a small number of aircraft will be rerouted and might overfly sensitive areas if the crossing service is not used, the sponsor will endeavour to minimise overflight of sensitive areas as the ACP progresses. 															
	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 15%;"></th> <th style="width: 15%;">Not applicable</th> <th style="width: 15%;">Qualitative</th> <th style="width: 15%;">Quantified</th> <th style="width: 15%;">Monetised</th> </tr> </thead> <tbody> <tr> <td>3.3.1</td> <td></td> <td style="text-align: center;">x</td> <td style="text-align: center;">N/A</td> <td style="text-align: center;">N/A</td> </tr> <tr> <td>3.3.2</td> <td></td> <td style="text-align: center;">x</td> <td style="text-align: center;">N/A</td> <td style="text-align: center;">N/A</td> </tr> </tbody> </table>		Not applicable	Qualitative	Quantified	Monetised	3.3.1		x	N/A	N/A	3.3.2		x	N/A	N/A
	Not applicable	Qualitative	Quantified	Monetised												
3.3.1		x	N/A	N/A												
3.3.2		x	N/A	N/A												
3.3.1	Noise															
3.3.2	Fuel Burn															

3.3.3	CO2 Emissions		x	N/A	N/A
3.3.4	Operational complexities for users of airspace	x			
3.3.5	Number of air passengers / cargo	x			
3.3.6	Flight time savings / Delays	x			
3.3.7	Air Quality		x	N/A	N/A
3.3.8	Tranquillity and Biodiversity		x	N/A	N/A
3.4	<p>Are the traffic forecast and the associated impacts analysed proportionately and accurately according to available guidelines (e.g. WebTAG or the Green Book?)</p> <p>The sponsor has not provided an estimate of how the civil traffic might change because of the introduction of the proposed airspace change at this stage but provides an indication of the magnitude of the impact and the number of flight that were affected under the current structure in the busiest month in 2019. This demonstrate that the impact is going to be marginal and that would be too onerous for them to provide an estimate.</p>				
3.5	<p>What is the total monetised impact of 3.3? (Provide comments)</p> <p>N/A</p>				

4. Benefits of ACP					Status
4.1	Does the ACP impact refer to the following groups and how they are impacted by the ACP?				
		Not applicable	Qualitative	Quantified	Monetised
4.1.1	Air Passengers	x			
4.1.2	Air Cargo Users	x			
4.1.3	General aviation users		x	x	N/A
4.1.4	Airlines	x			
4.1.5	Airports	x			
4.1.6	Local communities		x	N/A	N/A
4.1.7	Wider Public / Economy	x			

4.1.8	Comments: The sponsor states the proposed airspace change might bring benefits to the GA users because it will ease the access to the airspace by using the crossing service (e.g., DACS). When considering the medium level airspace change design, however, the sponsor predicts that “ <i>Option 8 medium could be problematic for Skydive Langar, a local parachuting school, but at the same time the sponsor is confident that Option 8 medium can be redesigned to remove the impact on Skydive Langar</i> ”.	
4.2	How are the above groups impacted by the ACP, especially (but not exclusively) looking at the following factors below:	
4.2.1	Improved journey time for customers of air travel	N/A
4.2.2	Increase choice of frequency and destinations from airport	N/A
4.2.3	Reduced price due to additional competition because of new capacity	N/A
4.2.4	Wider economic benefits	N/A
4.2.5	Other impacts	N/A
4.2.6	Comments: Nil	
4.3	What is the overall monetised impacts associated with 4.1 and 4.2 the above? N/A	
4.4	What are the non-monetised but quantified impacts of the above? N/A	
4.5	What are the qualitative / strategic impacts described above? N/A	
4.6	What is the overall monetised benefits-costs ratio (BCR) of the policy? Is it more than 1? N/A	
4.7	Have the sponsors provided reasonable justification for the proportionality of analysis above? The sponsor has provided an appropriate level of details according to the level assigned to this ACP.	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
4.8	If the BCR is less than 1, are the quantitative and qualitative strategic impacts proportional to the costs of the ACP? N/A	

5. Other aspects	
5.1	Nil

6. Summary of Assessment of Economic Impacts & Conclusions

6.1 The proposed airspace change aims to optimises an approach for RPAS to operate from and to RAF Waddington. This approach will support the safe integration of the RPAS into the national airspace structures and given the there is a requirement for the RAF Acrobatic Team to conduct display flying activity over RAF Waddington from 2023, the sponsor propose to conduct this operation in conjunction with the Protector one in this ACP. For this reason, the sponsor has developed two categories of options designed as follows:

- Six Low level airspace design options. Airspace designs for the airspace in the vicinity of RAF Waddington below 9500 ft above mean sea level (AMSL). The sponsor identifies 6 low level airspace design options.
- Two Medium level airspace design options. Airspace designs for the airspace in the vicinity of RAF Waddington 9500 ft AMSL – FL195. The sponsor identifies 2 medium level airspace design options.

The sponsor highlights that at least one low level and one medium level airspace design option will be required to accommodate Protector’s operation in the UK and that the RAFAT activity will only require one low level airspace design and it will not need to access to any medium level airspace designs.

In the IOA options are assessed against the baseline, following CAP1616 requirements and all the impacts in Table E2 are included in the assessment. As a result of the IOA, the sponsor identifies two preferred options, Option 1 and Option 7, that will be taken forward to Stage 3. Option 8 is also included in the shortlisted options that will be fully assessed in Stage 3.

Outstanding issues?

Serial	Issue	Action required

CAA Initial Options Appraisal Completed by	Name	Signature	Date
Airspace Regulator (Economist)	[REDACTED]	[REDACTED]	28/04/2022