CAA Environmental Assessment

Title of airspace change proposal	Inclusion of Fast Jet Area (North) into UK AIP
Change sponsor	MoD
Project reference	ACP-2020-92
Account Manager	[redacted]
Case study commencement date	03 May 2023
Case study report as at	05 June 2023

Instructions

In providing a response for each question, please ensure that the 'status' column is completed using the following options:

- YES
- NO
- PARTIALLY
- N/A

To aid the SARG Lead it may be useful that each question is also highlighted accordingly to illustrate what is:

resolved YES not resolved PARTIALLY not compliant ....NO....

1. Introduction

This CAA environmental assessment and statement describes the environmental factors relevant to the Ministry of Defence (MoD), specifically Joint Training and Exercise Planning Staff's (JTEPS) ('the sponsor') Airspace Change Proposal (ACP) for the inclusion of Fast Jet Areas (FJA) into the UK Aeronautical Information Publication (AIP).

FJAs published in the Military AIP have been historically used by the MoD since more than a decade to facilitate the Ex Joint Warrior (Ex JW) bi-annual tri-service military training exercises in which the UK and other NATO nations participate. However, the introduction of Free Route Airspace (FRA) in the FJA regions in December 2021 and complexities associated with Flight Buffer Zones (FBZ) has made their extant usage untenable and as such these FJAs have ceased to exist. Usage of alternative segregated airspace such as the D064, D701 and D712 complexes is also not considered to be a feasible solution to facilitate Ex JW in terms of their locations and airspace volumes available.

As the requirement for these FJAs still exists, the MoD as sponsors of this ACP are seeking to re-establish two permanent segregated airspace structures while retaining identical locations and dimensions as the earlier FJAs. These new FJAs are in Class C airspace within the Scottish

Upper Information Region (UIR) extending from FL245 to FL550 and will be located over North Scotland and the North Sea/Atlantic Ocean as FJA North (FJA(N)) and over the Hebrides and the west coast of Scotland as FJA South (FJA(S)).

2. Nature of the Proposed Change		Status
2.1	Is it clear how the proposed change will operate, and therefore what the likely environmental impacts will be?	YES
	The proposed FJAs will be activated by the Military Airspace Management Cell (MAMC) via Notices to Aviation (NOTAM) when required during the two-week period of Ex JW exercises to be conducted in the Spring and Autumn (i.e., a total of four weeks). Based on historical activation data collected between 2018 and 2022 by NATS, it is anticipated that there will be a 'worst case' maximum of five activations of the FJAs per season (i.e., a total of 10 annually), with each activation lasting up to three hours circa 1030 - 1330 UTC. A 6:4 split between usage of FJA(S) and FJA(N) is anticipated with no simultaneous activations of FJA(S) and FJA(N). Should the FJAs not be required, the airspace will be handed back for civil use under Flexible Use of Airspace (FUA) and Airspace Management (ASM) policy principles. This ACP has been scaled as a Level M2 change as it concerns changes to airspace above 24,500 ft. (FL245). Therefore, in accordance with the Department for Transport's (DfT) altitude-based priorities[1], the environmental priority is to reduce aircraft CO_2 emissions in support of the objective to ensure that the aviation sector makes a significant and cost-effective contribution towards reducing global emissions. Therefore, only an assessment of CO_2 is required and there is no explicit requirement for the sponsor to assess other environmental aspects, including impacts on local air quality, noise, tranquillity, and biodiversity. For a Level M2 change, if the anticipated impact on CO_2 emissions is negative, an assessment of fuel burn and CO_2 emissions using TAG is required, including annual totals and on a per flight basis. If the anticipated impact on CO_2 emissions is positive, a qualitative assessment and explanation is adequate. Additionally, for a Level M2 change, environmental impacts that are a direct result of military aircraft or military operations (including civil aircraft carrying out military function under contract) are not required to be considered or assessed. However, consequential environmental impacts from other airspace users (i.e., civil aviation) that are a result of the proposed change must be assessed in accordance with Level 2 requirements. The sponsor states that the given their location, the activation of the FJAs will impact Oceanic air traffic routes used by General Air Traffic (GAT) including all commercial airlines routing to and from North America/Europe through the Scottish Flight Information Region (FIR), however, impacts on general aviation (GA), gliding, hang gliding, paragliding and helicopter activities are not expected. A reroute around the FJAs will therefore increase track miles, fuel burn and CO_2 emissions. The sponsor's assessment predicts an increase in average fuel burn per flight for FJA(N) and FJA(S) of 46 kg and 63 kg respectively, leading to an increase in	

[1] Department for Transport, Air Navigation Guidance 2017: Altitude-Based Priorities

	average CO_2e emissions per flight of 145 kg for FJA(N) and 201 kg for FJA(S). In terms of total emissions, the sponsor's assessment predicts an increase of 491 tCO_2e for 2023 rising to 585 tCO_2e by 2033, an annual increase of 0.13% from baseline values. For the appraisal period between 2023 – 2033, this will amount to an estimated total increase of 5,972 tCO_2e.

3. Secretary of State Call-in Noise Criterion		**Status**
3.1	Is the proposal likely to meet the Secretary of State's criterion for call-in on noise impacts? If yes, has the additional assessment on that criterion been undertaken and what are the results? If no, what is the rationale for that conclusion? *The criterion, as set out in the DfT's Air Navigation Guidance (2017)[2] is that the proposed airspace change could lead to a change in noise distribution resulting in a 10,000 net increase in the number of people subjected to a noise level of at least 54 dB[3] as well as having an identified adverse impact on health and quality of life.[4]*	N/A
	This ACP has been scaled as a Level M2 airspace change and therefore noise impacts are scoped out of the assessment on the basis that all changes will occur above 7,000 ft.	

4. Statement of Need		**Status**
4.1	Does the Statement of Need include any environmental factors?	NO
	The Statement of Need (SoN) does not include any environmental factors.	

5. Design Principles		**Status**
5.1	Does the final set of Design Principles include any environmental objectives?	YES

[2] The DfT's call-in criteria are set out in The Civil Aviation Authority (Air Navigation) Directions 2017, Section 6, paragraph (5). These Directions are replicated in Annex D of the DfT's Air Navigation Guidance 2017,

[3] LAeq 16h noise exposure.

[4] The assessment of the numbers of people affected and the associated adverse impacts on health and quality of life of the airspace change proposal should be carried out by the sponsor in accordance with the requirements set out in the DfT's Guidance.

	The sponsor developed a set of 11 Design Principles (DP), two of which are considered to include an environmental objective or lead to a positive environmental outcome: • DP(i): Minimise environmental impacts, where relevant. • DP(h): Minimise noise impacts, where relevant. Additionally, '*DP(g): Will be FL 245 and above and suitable dimensions to minimise impact on other airspace users and the network, where possible'* is considered to influence the nature and scale of consequential environmental impacts on GAT. It should be noted that not all the design principles include a SMART objective, are fully defined, or relate directly to the scope of this ACP.	
5.2	Does the proposal explain how and to what extent the final airspace design achieves any environmental Design Principles?	YES
	In terms of '*DP(g): Will be FL 245 and above and suitable dimensions to minimise impact on other airspace users and the network, where possible' and* '*DP(i): Minimise environmental impacts, where relevant'* – the final airspace design of the FJAs will result in an increase in track miles, fuel burn and CO_2 emissions when GAT are required to reroute around the FJAs' airspace when activated. However, the sponsor states that impacts will be mitigated through Letters of Agreements with stakeholders suppressing activations of surrounding Managed Danger Areas (MDA) thereby allowing aircraft to route through them instead. The FJAs will also be managed through the MAMC and the airspace will be handed back for civil use under FUA and ASM policy principles should the FJAs not be required. There is no requirement for the sponsor to assess environmental impacts other than CO_2 emissions. It is therefore considered that the final airspace design partially achieves these design principles. In terms of '*DP(h): Minimise noise impacts, where relevant'* – this ACP is scaled as Level M2 and therefore noise impacts are scoped out of the assessment on the basis that all changes will occur above 7,000 ft. It is therefore considered that the final airspace design achieves this design principle.	
5.3	Were there any proposed environmental Design Principles that were rejected from the final set? If so, is the rationale for rejecting those Principles reasonable?	NO
	No environmental Design Principles were rejected from the final set. The original '*DP(h): Minimise noise and environmental impacts, where relevant*' was separated into two distinct DPs as DP(i) and DP(h).	
5.4	Were there any design options during the airspace change process that might have better met the environmental Design Principles than the final proposal as submitted to the CAA? If so, is the rationale for rejecting those options set out?	NO

	The sponsor only developed the following two design options: • Option 0 – Do Nothing • Option 1 – Two separate volumes of Airspace: FJA(N) and FJA(S)/Establishing FJA(N) and FJA(S) as per previous dimensions/ Including FJA(N) and FJA(S) into UK AIP Option 0 considered the use of alternative extant MDAs but was discounted at Step 2A: Design Principle Evaluation on the basis that it does not meet the requirements of the Ex JW and the SoN. Nevertheless, the sponsor states that use of the extant MDAs for the Ex JW, especially the D701 complex, would have been more impactful in terms of rerouting of GAT and thereby CO_2 emissions than an activation of FJA(N) and FJA(S) (albeit to a smaller degree), due to the greater number of Air Traffic Service (ATS) routes passing through it. Use of the other MDAs are considered to have negligible differences in terms of environmental impacts compared to the FJAs. Note however that the baseline considered in the CO_2 emissions assessment assumes no rerouting of GAT in order to represent 'worst case' impacts. Option 1 was therefore retained and progressed through the options appraisals as the sponsor's final design option given that it largely replicates the previous airspace structures that the sponsor used to conduct the Ex JW and therefore meets the requirements listed in the SoN.

6. Options Appraisal		**Status**
6.1	Have environmental impacts been adequately reflected and assessed in the Options Appraisal?	YES
	This ACP has been scaled as a Level M2 change with an anticipated negative impact on CO_2 emissions. The sponsor has therefore presented an assessment of fuel burn and CO_2 emissions using TAG, including annual totals and on a per flight basis. The sponsor's options appraisals also conclude no impacts on noise and local air quality due to the airspace change being at FL245 and above. Impacts on biodiversity or tranquillity have also not been considered, however, due to this ACP being scaled as a Level M2, assessment requirements for these metrics are out of scope.	
6.2	Is the final proposal as submitted to the CAA the airspace design option that also produced the best environmental impacts as assessed by the Options Appraisal? If not, does the rationale for selecting the preferred option adequately explain this choice?	YES
	As stated in Question 5.4 above, only Option 1 was developed and progressed through the options appraisals as the sponsor's preferred design option and submitted to the CAA in the final proposal.	

7. Noise [for Level 1 and Level M1 airspace change proposals]		**Status**
7.1	Has the noise impact been adequately assessed and presented in both the consultation material and the final submission to the CAA, taking account of scalability and proportionality?	N/A
	This ACP is scaled as Level M2 and therefore noise impacts are scoped out of the assessment on the basis that all changes will occur above 7,000 ft.	
7.2	If a noise assessment has not been undertaken by the sponsor, has this decision been adequately explained and evidenced in both the consultation material and the final submission to the CAA, and is the rationale reasonable?	N/A
	This ACP is scaled as Level M2 and therefore noise impacts are scoped out of the assessment on the basis that all changes will occur above 7,000 ft.	
7.3	Summary of anticipated noise impacts from the final proposed airspace change.	
	This ACP is scaled as Level M2 and therefore noise impacts are scoped out of the assessment on the basis that all changes will occur above 7,000 ft.	

8. CO_2 Emissions		**Status**
8.1	Has the impact on CO_2 emissions been adequately assessed and presented in both the consultation material and the final submission to the CAA, taking account of scalability and proportionality?	YES
	This ACP has been scaled as a Level M2 change with an anticipated negative impact on CO_2 emissions. The sponsor has therefore presented an assessment of fuel burn and CO_2 emissions using TAG, including annual totals and on a per flight basis. The environmental assessment is given in the '*EGDFJAN & EGDFJAS Environmental Benefits Assessment (A22152 October 2022 Version 1.0)*' report by NATS Analytics and establishes that based on a 'worst case' scenario, the sponsor's design option will increase CO_2 emissions when compared to the modelled baseline values. This 'worst-case' scenario assumes a total of 10 activations of the FJAs with no simultaneous activation of FJA(N), FJA(S) or other MDAs. Activation times are assumed to be between 1030 to 1300 UTC. A Traffic Filter Region (TFR) was first defined to identify traffic whose trajectory is likely to be negatively impacted by the activation	

of the FJAs. All trajectories benefitting from a reroute were discounted. Further, a Simulated Region extending over a larger airspace volume was developed to account for the entire flight trajectory when changes in the Oceanic Entry/Exit Points (OEP) to the UK FIR occurred due to activation of the FJAs. The North Atlantic Tracks are therefore assumed to remain unchanged as flights reroute around the activated FJAs.

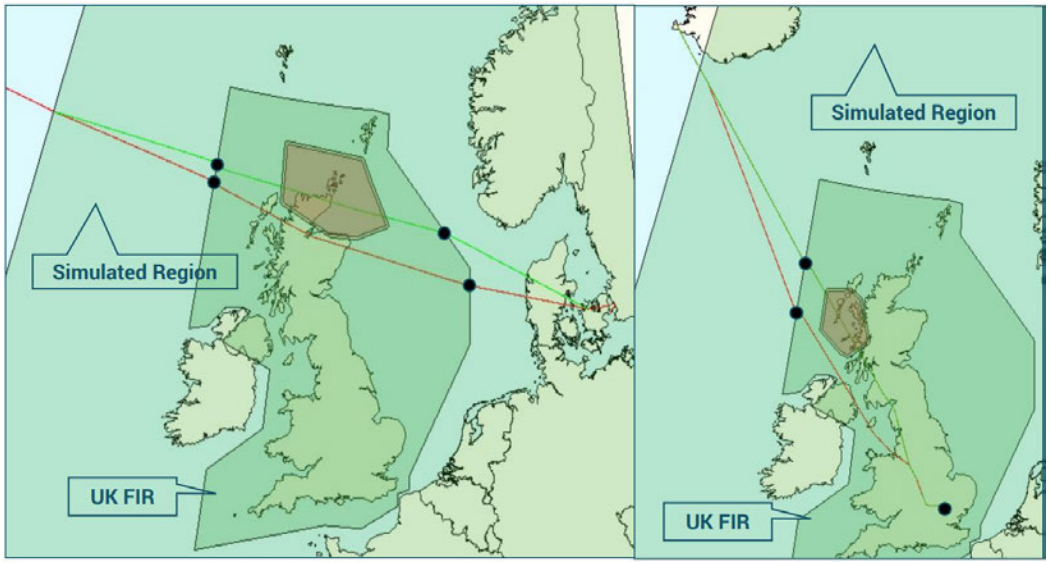

Figure 1: UK FIR, Simulated Region with locations of FJA(N) (left) and FJA(S) (right), overlaid with an example of a baseline flight trajectory (green) and a rerouted trajectory scenario (red), black dots marking entry/exit points to the UK FIR

The sponsor's assessment methodology consisted of analysing historic data based on FJA activation months, day of week, Oceanic Track locations, and traffic counts to identify days representative of an appropriate traffic sample in line with post-Covid19 recovery. Five days in May-June 2022 were then selected and simulated in NEST (v1.8) in order to create sample traffic levels potentially impacted by an activation of FJA(N) and FJA(S) - 412 flights and 699 flights respectively.

The traffic sample identified was then assessed for the baseline scenario, activation of FJA(N) and FJA(S) scenarios (i.e., no reroute vs reroute around the FJAs) in terms of average track miles, fuel burn and CO_2e emissions per flight which were calculated using BADA 4.2 and an emission factor of 3.18 kg CO_2e per kg of fuel burn. These results were then scaled up by the average number of flights impacted per activation: 145 flights for FJA(N) and 313 flights for FJA(S)), and by 10 to give annual results depending on the 6:4 split for FJA(S) and FJA(N) usage. Projection to 2033 (10 years post implementation) was performed using Eurocontrol's October 2021 STATFOR traffic forecast until 2027 and NATS' extension thereafter.

	The sponsor's assessment predicts an increase in average fuel burn per flight for FJA(N) and FJA(S) of 46 kg and 63 kg respectively, leading to an increase in average CO_2e emissions per flight of 145 kg for FJA(N) and 201 kg for FJA(S). In terms of total emissions, the sponsor's assessment predicts an increase of 491 tCO_2e for 2023 rising to 585 tCO_2e by 2033, an annual increase of 0.13% from baseline values. For the appraisal period between 2023 – 2033, this will amount to an estimated total increase of 5,972 tCO_2e. The sponsor has also presented a TAG assessment using DfT's Greenhouse Gases Workbook (version May 2022). The latest version of the workbook is from May 2023, however differences in monetised results using the updated workbook are negligible. The assessment also considers 1% of total emissions as traded based on flights whose origin and destination are within the EU (i.e., the older EU Emissions Trading Scheme (ETS)). However, following the implementation of the UK ETS, routes eligible for trading include 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. The sponsor has stated that the location of the FJAs have an impact on Oceanic air traffic routes including all commercial airlines routing to and from North America/Europe and therefore has assumed a majority of flights (99%) ineligible under the older EU ETS. Given that the scope of the UK ETS is similar to the scope of the older EU ETS, it is considered that a change from the 1% considered as traded emissions is unlikely to be substantial. An updated version of Eurocontrol's STATFOR traffic forecast from March 2023 for the 2023 to 2029 period is also available. However, the traffic growth rate in latest version is similar to the one considered in the sponsor's assessment and therefore a reassessment using the March 2023 forecast is unlikely to show any significant differences. Three recommendations have therefore been proposed in order to address the observations above (see Question 17.1).	
8.2	If an assessment of the impact on CO_2 emissions has not been undertaken by the sponsor, has this decision been adequately explained and evidenced in both the consultation material and the final submission to the CAA, and is the rationale reasonable?	N/A
	This ACP has been scaled as a Level M2 change with an anticipated negative impact on CO_2 emissions. The sponsor has presented an assessment of fuel burn and CO_2 emissions using TAG, including annual totals and on a per flight basis.	
8.3	Summary of anticipated impact on CO_2 emissions from the final proposed airspace change.	
	The sponsor's assessment results are as follows:	

Average per flight from 2022 5 day sample	Avg track distance (NM)	Avg fuel burn (kg)	Avg CO_2e (kg)
Baseline - EGDFJAN Flights	3,333.69	42,343.56	134,652.51
Scenario - EGDFJAN	3,339.74	42,389.10	134,797.34
Baseline Vs Scenario EGDFJAN	6.05	45.54	144.82
Baseline - EGDFJAS Flights	3,472.18	45,009.79	143,131.12
Scenario - EGDFJAS	3,477.65	45,072.91	143,331.86
Baseline Vs Scenario EGDFJAS	5.47	63.13	200.75

Figure 2: Average track miles, fuel burn and CO_2e emissions per flight for the baseline and FJA activation scenarios. An activation of FJA(S) is estimated to result in more impacts due to its location as compared to FJA(N).

Year	Traffic	Baseline Fuel (T)	Scenario Fuel (T)	Fuel Difference (T)	Baseline CO_2e (T)	Scenario CO_2e (T)	CO_2e difference (T)
2023	618	26,180	26,208	28	83,253	83,342	90
2024	645	27,306	27,335	29	86,833	86,926	93
2025	654	27,688	27,718	30	88,048	88,143	95
2026	664	28,104	28,134	30	89,369	89,465	96
2027	674	28,525	28,556	31	90,710	90,807	98
2028	684	28,953	28,984	31	92,070	92,169	99
2029	694	29,387	29,419	32	93,451	93,552	101
2030	704	29,828	29,860	32	94,853	94,955	102
2031	715	30,275	30,308	33	96,276	96,380	104
2032	726	30,730	30,763	33	97,720	97,825	105
2033	737	31,191	31,224	34	99,186	99,293	107

Year	Traffic	Baseline Fuel (T)	Scenario Fuel (T)	Fuel Difference (T)	Baseline CO_2e (T)	Scenario CO_2e (T)	CO_2e difference (T)
2023	2,002	90,107	90,234	126	286,541	286,943	402
2024	2,088	93,982	94,114	132	298,862	299,281	419
2025	2,117	95,298	95,431	134	303,046	303,471	425
2026	2,149	96,727	96,863	136	307,592	308,023	431
2027	2,181	98,178	98,316	138	312,206	312,644	438
2028	2,214	99,651	99,790	140	316,889	317,334	444
2029	2,247	101,145	101,287	142	321,642	322,094	451
2030	2,281	102,663	102,807	144	326,467	326,925	458
2031	2,315	104,203	104,349	146	331,364	331,829	465
2032	2,350	105,766	105,914	148	336,334	336,806	472
2033	2,385	107,352	107,503	151	341,380	341,858	479

Figure 3 (left): Track miles, fuel burn and CO_2e emissions for the baseline and FJA(N) activation scenario

Figure 4 (right): Track miles, fuel burn and CO_2e emissions for the baseline and FJA(S) activation scenario

Year	Traffic	Baseline Fuel (T)	Scenario Fuel (T)	Fuel Difference (T)	Baseline CO_2e (T)	Scenario CO_2e (T)	CO_2e (T) difference
2023	2,620	116,287	116,442	155	369,794	370,285	491
2024	2,733	121,288	121,449	161	385,695	386,208	513
2025	2,771	122,986	123,149	163	391,095	391,615	520
2026	2,813	124,831	124,996	166	396,961	397,489	528
2027	2,855	126,703	126,871	168	402,916	403,451	535
2028	2,898	128,604	128,775	171	408,959	409,503	543
2029	2,941	130,533	130,706	173	415,094	415,645	552
2030	2,985	132,491	132,667	176	421,320	421,880	560
2031	3,030	134,478	134,657	179	427,640	428,208	568
2032	3,075	136,495	136,677	181	434,055	434,631	577
2033	3,121	138,543	138,727	184	440,565	441,151	585

Figure 5: Track miles, fuel burn and CO_2e emissions for the baseline and cumulative FJA activation scenarios

The sponsor states that impacts will be mitigated through Letters of Agreements (LoA) with stakeholders suppressing activations of surrounding MDAs thereby allowing aircraft to route through them instead. The FJAs will also be managed through the MAMC and the airspace will be handed back for civil use under FUA and ASM policy principles should the FJAs not be required.

9. Local Air Quality [for Level 1 and Level M1 airspace change proposals]		**Status**
9.1	Has the impact on Local Air Quality been adequately assessed and presented in both the consultation material and the final submission to the CAA, taking account of scalability and proportionality?	N/A
	This ACP is scaled as Level M2 and therefore local air quality impacts are scoped out of the assessment on the basis that all changes will occur above 7,000 ft.	
9.2	If an assessment of the impact on Local Air Quality has not been undertaken by the sponsor, has this decision been adequately explained and evidenced in both the consultation material and the final submission to the CAA, and is the rationale reasonable?	N/A
	This ACP is scaled as Level M2 and therefore local air quality impacts are scoped out of the assessment on the basis that all changes will occur above 7,000 ft.	
9.3	Summary of anticipated impact on Local Air Quality from the final proposed airspace change.	

	This ACP is scaled as Level M2 and therefore local air quality impacts are scoped out of the assessment on the basis that all changes will occur above 7,000 ft.

10. Tranquillity [for Level 1 and Level M1 airspace change proposals]		**Status**
10.1	With specific reference to Areas of Outstanding Natural Beauty and National Parks - Has the impact on tranquillity been adequately considered and presented in both the consultation material and the final submission to the CAA, taking account of scalability and proportionality?	N/A
	This ACP is scaled as Level M2 and therefore tranquillity impacts are scoped out of the assessment on the basis that all changes will occur above 7,000 ft.	
10.2	If consideration of the impact on tranquillity has not been undertaken by the sponsor, has this decision been adequately explained and evidenced in both the consultation material and the final submission to the CAA, and is the rationale reasonable?	N/A
	This ACP is scaled as Level M2 and therefore tranquillity impacts are scoped out of the assessment on the basis that all changes will occur above 7,000 ft.	
10.3	Summary of anticipated impact on tranquillity from the final proposed airspace change.	
	This ACP is scaled as Level M2 and therefore tranquillity impacts are scoped out of the assessment on the basis that all changes will occur above 7,000 ft.	

11. Biodiversity [for Level 1 and Level M1 airspace change proposals]		**Status**
11.1	Has the impact on biodiversity been adequately assessed and presented in both the consultation material and the final submission to the CAA, taking account of scalability and proportionality?	N/A
	This ACP is scaled as Level M2 and therefore biodiversity impacts are scoped out of the assessment on the basis that all changes will occur above 7,000 ft.	

11.2	If assessment of the impact on biodiversity has not been undertaken by the sponsor, has this decision been adequately explained and evidenced in both the consultation material and the final submission to the CAA, and is the rationale reasonable?	N/A
	This ACP is scaled as Level M2 and therefore biodiversity impacts are scoped out of the assessment on the basis that all changes will occur above 7,000 ft.	
11.3	Summary of anticipated impact on biodiversity from the final proposed airspace change.	
	This ACP is scaled as Level M2 and therefore biodiversity impacts are scoped out of the assessment on the basis that all changes will occur above 7,000 ft.	

12. Traffic Forecasts		**Status**
12.1	Have traffic forecasts been provided, are they reasonable, and have these been used to reflect the anticipated environmental impacts of the proposal?	YES
	This ACP is not expected to result in a change in the types or number of aircraft or airspace users in the impacted airspace and therefore the sponsor has only submitted one set of forecasts. The traffic forecast covers the opening year, 2023, until 2033 which is 10 years from the intended year of implementation of the ACP. Projection to 2033 was performed using Eurocontrol's October 2021 STATFOR traffic forecast until 2027 and NATS' extension thereafter. The number of flights for this forecast period are given in Question 8.3. An updated version of Eurocontrol's STATFOR traffic forecast from March 2023 for the 2023 to 2029 period is also available. However, the traffic growth rate in latest version is similar to the one considered in the sponsor's assessment and therefore a reassessment using the March 2023 forecast is unlikely to show any significant differences.	

13. Consultation		**Status**
13.1	Has the sponsor taken account of any environmental factors (noise, CO_2 emissions, Local Air Quality, tranquillity, or biodiversity) raised by consultees or has evidence been provided to indicate why this has not been possible?	N/A
	There were no environmental factors raised by consultees in respect of this ACP.	

13.2	Has the sponsor taken account of any consultation response submitted by ICCAN? If so, what are the outcomes?	N/A
	ICCAN did not provide a consultation response to this ACP. The Stage 3 consultation gateway was held in November 2022 and ICCAN was wound down at the end of September 2021.	

14. Public Evidence Session (if held)		**Status**
14.1	If a Public Evidence Session has been held, was any <u>new</u> evidence on potential environmental impacts presented?	N/A
	No public evidence session was held for this ACP.	
14.2	If so, was the new evidence relevant and material to the CAA's consideration of the environmental impacts of the submitted airspace change proposal?	N/A
	No public evidence session was held for this ACP.	

15. Compliance with policy and guidance from Government, ICCAN or the CAA		**Status**
15.1	Has the sponsor satisfied all relevant policy and/or guidance from either the Government, ICCAN or the CAA, with regards to environmental impacts of the proposed airspace change?	PARTIAL
	The sponsor has satisfied relevant policy and/or guidance with regards to environmental impacts of the proposed airspace change. Three recommendations have been proposed in order to address the observations regarding the use of the most up-to-date sources of data for the traffic forecast considered, the use of the latest version of the DfT's Greenhouse Gases Workbook and validity of the estimated share of traded and non-traded emissions considered in the CO_2 assessment. See Question 8.1 and Question 17.1. Any best practice guidance that has been issued by ICCAN specifically on the topic of consultation process/practice will be considered in the CAA's Consultation Assessment report rather than within this Environmental Assessment report.	
15.2	Has the sponsor adequately considered the DfT's Altitude-Based Priorities[5]?	YES

[5] Paragraph 3.3, DfT's Air Navigation Guidance 2017

	The sponsor has adequately considered the DfT's Altitude-Based Priorities and assessed all the required metrics for a Level M2 change with CO_2 emissions given priority over noise above 7,000 ft.

16. Other aspects		**Status**
16.1	Are there any other aspects of the airspace change proposal that have not already been addressed in this report but that may have a bearing on the environmental impact?	NO
	There are no further aspects of the airspace change proposal that have not already been addressed in this report but that may have a bearing on the environmental impact.	

17. Recommendations/Conditions/PIR Data Requirements		**Status**
17.1	Are there any Recommendations which the change sponsor **should try** to address either before or after implementation (if approved)? If yes, please list them below.	YES
	The sponsor should try to address the following recommendations before implementation of the ACP (if approved): • Update the traffic forecasts using the most up-to-date and credible, clearly referenced sources of data • Confirm the share of traded and non-traded emissions under the UK ETS applicable to the TAG assessment for CO_2 emissions • Update the CO_2 calculations and TAG assessment for CO_2 emissions using this updated traffic forecast, share of traded and non-traded emissions considered, and using the most up-to-date version of the DfT's Greenhouse Gases Workbook	
17.2	Are there any Condition(s) which the change sponsor **must fulfil** either before or after implementation (if approved)? If yes, please list them below.	NO
	There are no conditions that the sponsor must fulfil either before or after implementation.	
17.3	Are there any specific requirements in terms of the data to be collected by the change sponsor for the Post Implementation Review (if approved)? If yes, please list them below.	YES
	The sponsor should collect the following data for the Post Implementation Review (if approved): • Number, timings, and duration of FJA(N) and FJA(S) activations	

	• Number, type, and trajectories of aircraft rerouting around the FJAs • A re-assessment of fuel burn and CO_2 emissions using TAG with actual data if any of the 'worst case' assumptions considered in the assessment presented in the final submission have been exceeded after implementation of the ACP

18. Summary of Assessment of Environmental Impacts & Conclusions

This airspace change proposal (ACP) seeks to establish two permanent segregated airspace structures in Class C airspace within the Scottish Upper Information Region (UIR) extending from FL245 to FL550: Fast Jet Area North (FJA(N)) over North Scotland and the North Sea/Atlantic Ocean and Fast Jet Area South (FJA(S)) over the Hebrides and the west coast of Scotland. These FJAs will be used to facilitate the Ex Joint Warrior (Ex JW) bi-annual tri-service military training exercises in which the UK and other NATO nations participate.

As the airspace change is sponsored by the Ministry of Defence (MoD) and only impacts flights above 24,500 ft. (FL245), it has been assigned as a Level M2, and therefore only an assessment of CO_2 is required and there is no explicit requirement for the sponsor to assess other environmental aspects, including impacts on local air quality, noise, tranquillity, and biodiversity.

For a Level M2 change, if the anticipated impact on CO_2 emissions is negative, an assessment of fuel burn and CO_2 emissions using TAG is required, including annual totals and on a per flight basis. If the anticipated impact on CO_2 emissions is positive, a qualitative assessment and explanation is adequate. Additionally, for a Level M2 change, environmental impacts that are a direct result of military aircraft or military operations (including civil aircraft carrying out military function under contract) are not required to be considered or assessed. However, consequential environmental impacts from other airspace users (i.e., civil aviation) that are a result of the proposed change must be assessed in accordance with Level 2 requirements.

The sponsor estimates an increase in track miles, fuel burn and CO_2 emissions over the appraisal period of this ACP due to rerouting of General Air Traffic (GAT) around the activated FJAs. An increase in average fuel burn per flight for FJA(N) and FJA(S) of 46 kg and 63 kg respectively has been calculated, leading to an increase in average CO_2e emissions per flight of 145 kg for FJA(N) and 201 kg for FJA(S). In terms of total emissions, the sponsor's assessment predicts an increase of 491 tCO_2e for 2023 rising to 585 tCO_2e by 2033, an annual increase of 0.13% from baseline values. For the appraisal period between 2023 – 2033, this will amount to an estimated total increase of 5,972 tCO_2e.

Despite having negative environmental impacts, this ACP is considered to meet its objectives in terms of the Statement of Need (SoN). The sponsor states that impacts will be mitigated through Letters of Agreements (LoA) with stakeholders suppressing activations of surrounding Managed Danger Areas (MDA) thereby allowing aircraft to route through them instead. The FJAs will also be managed through the Military Airspace Management Cell (MAMC) and the airspace will be handed back for civil use under Flexible Use of Airspace (FUA) and Airspace Management (ASM) policy principles should the FJAs not be required.

Level 2 ACP

Environmental assessment sign-off	Name	Signature	Date
Environmental assessment completed by Airspace Regulator (Environment)	[redacted]	[redacted]	05/06/2023

Manager Airspace Regulation - Approval	Name	Signature	Date
Environmental assessment approved by Manager Airspace Regulation	[redacted]	[redacted]	8 June 2023