

The Civil Aviation Authority's response to Heathrow Airport Limited's Environmental Impact Assessment Scoping Report

CAP 1891

A large, abstract graphic composed of overlapping, semi-transparent blue shapes in various shades, ranging from light cyan to deep navy blue. The shapes are curved and layered, creating a sense of depth and movement. The graphic occupies the lower two-thirds of the page, starting from the left edge and extending towards the right, with some shapes overlapping the white background.

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The CAA's response to HAL's Environmental Impact Assessment Scoping Report

Introduction

1. The CAA is the UK's specialist aviation regulator. We work so that:
 - the aviation industry meets the highest safety standards. We regulate the safety of airport design against UK, European and international safety criteria.
 - consumers have choice, value for money, are protected and treated fairly when they fly. We regulate the costs of operating Heathrow airport and, if the Airports National Policy Statement (ANPS) is designated, will regulate the costs of expanding the airport.
 - airspace is well managed. We make decisions on proposals to change airspace design, which we do against the background of Directions and environmental guidance from the Secretary of State.
 - the aviation industry manages security risks effectively.

We also provide the government, and third parties on a commercial basis, with environmental advice as requested, including information about the noise effects of aviation operations.

In general, it is for government to determine environmental policy and for the CAA, where required, to implement such policy as it relates to our functions.

2. We welcome the opportunity to respond to Heathrow Airport Limited's (HAL) Environmental Impact Assessment (EIA) scoping report in our capacity as a prescribed statutory consultee in the planning process.
3. By way of general introductory comment, in paragraphs 5 to 15 we provide a high-level overview of our regulatory roles and how they relate to the Development Consent Order (DCO) process. In paragraphs 16-20 we explain how we approached our consideration of HAL's EIA scoping report. In paragraphs 21–59 we provide such comments as we have at this stage on those chapters of HAL's EIA scoping report that relate to the CAA's regulatory roles.
4. For further information about the CAA's responsibilities or on any of our comments in this paper, please contact us at DCO.Coordination@caa.co.uk.

The DCO and CAA's Regulatory Processes

5. In addition to obtaining a DCO, HAL will also be required to obtain a number of regulatory approvals from the CAA in order for a new third runway to become operational. The CAA's regulatory approval processes will continue throughout the planning and construction phases. The environmental statement that will form part of HAL's DCO application will contain topics which are relevant to the CAA's regulatory processes. The three most significant regulatory areas are as follows.

Economic Regulation

6. The CAA is the economic regulator of HAL. In this capacity, we regulate the maximum revenue per passenger that HAL can make from airport charges. In setting that maximum the CAA's primary duty, as set out in s. 1(1) of the Civil Aviation Act 2012 (the Act), is to carry out its functions "in a manner which it considers will further the interests of users of air transport services regarding the range, availability, continuity, cost and quality of airport operation services". The other matters to which we must have regard are set out in s.1(3) of the Act.
7. S.1(3)(d) requires us to have regard to the need to secure that HAL can take reasonable measures to reduce, control or mitigate the adverse environmental effects of the airport and associated facilities. We will make appropriate allowances for the efficient costs of environmental mitigations and seek to put in place incentives to minimise these costs, including so that capacity expansion does not become unaffordable for airport users.
8. Accordingly, the efficiency of the costs(which we interpret broadly to include that there is a clear statutory driver on HAL to incur the costs, that HAL has identified the most efficient option and that its costs of delivering such options are efficient) of HAL's environmental mitigations falls to be considered in the context of the CAA's primary duty to airport users as specified in s.1(1) of the Act.

Safety Regulation

9. The CAA has a number of safety oversight responsibilities in the UK. The CAA oversees the safety of aircraft and air navigation, the control of air traffic, air traffic services personnel, the licensing of aerodromes and air crew. In recent years, the European Commission, the European Aviation Safety Agency (EASA) and International Civil Aviation Organisation have played an increasingly significant role.
10. The CAA is the national supervisory authority for the certification of air navigation services (ANS) providers covering the requirements of Regulation (EU) No. 1035/2011. Those requirements include technical and operational competence and capability, specific requirements for the provision of air traffic services,

meteorological services, aeronautical information services and communication, navigation or surveillance services.

11. The CAA is also the designated competent authority for the licencing of aerodromes under Regulation (EU) No. 139/2014. The licensing process ensures continuous oversight of safety standards at civil aerodromes. Since this regulation came into force in 2014, Heathrow Airport's aerodrome licence has been converted to an EASA compliant licence.
12. Safety assurance of proposed changes can only be provided if the proposer submits to the approving authority a fully detailed concept of operations for how it intends to achieve an acceptable level of safety.
13. It might not be possible to issue some approvals without trialling the operation first. In such circumstances, permission to operate a trial may sometimes be given so that the operator can demonstrate that the concept works as intended (potentially with further mitigating action required to ensure the concept meets all requirements).

Airspace Change

14. The CAA is responsible for making decisions on proposals to change airspace design. As part of that decision-making role, we take into account a range of factors including safety, efficiency and guidance on environmental objectives from the Secretary of State. The evidence we use to consider those factors, and how it should be prepared, is set out in our regulatory process 'Airspace Design: Guidance on the regulatory process for changing airspace design including community engagement requirements'(CAP1616).
15. As set out in the Government's final ANPS, we expect any airspace changes associated with the new runway proposals to follow the CAA's airspace change process as set out in our guidance in CAP1616. Our guidance specifies the evidence we need from the organisation sponsoring an airspace change, including the relevant environmental data and the methodologies for producing it. The process and evidence are iterative and HAL is not yet at the stage of designing flightpaths to support their proposals. This means that some assumptions will need to be made in due course for the purposes of EIA.

CAA's response to HAL's EIA Scoping Report

16. The CAA's regulatory processes will to a significant extent run in parallel with the DCO process, but not conclude until after the DCO application has been submitted. Accordingly, the CAA may be asked by the Planning Inspectorate ("PINS") and the Secretary of State to provide an interim opinion regarding the viability of HAL's scheme.

17. It would therefore be prudent for the EIA scope and methodology to be consistent with the requirements of the CAA's regulatory processes in order to avoid duplication and aid clarity for stakeholders. Where this is not possible, we suggest that HAL explains its choice of methodology with great care and sets out the difference between the methodology used for EIA purposes and that to be used for the purposes of any submissions seeking CAA approval.
18. We have considered HAL's EIA scoping report on that basis, and we are using this response to inform PINS of the information we consider should be provided in HAL's environmental statement. We have in particular considered HAL's proposed scope and methodology to assess and mitigate the environmental effects of expansion. We have only commented on relevant chapters/EIA topics.
19. Our response below contains comments on those chapters of HAL's EIA Scoping Report that relate to our regulatory roles. In respect of airspace change CAP 1616 and CAP 1616a¹ provide the relevant methodologies for use in environmental assessments to assist those preparing airspace change proposals. To facilitate consistency between HAL's EIA and our approach to assessing the environmental impacts of airspace change proposals, we comment in detail on the relevant chapters of the EIA.
20. In contrast, our economic regulation powers relate to the development of the airport infrastructure. Capacity expansion is a bespoke project which will have a range of environmental impacts and the scope of these will only become clear as HAL's plans are crystallised through the planning process. In these circumstances, it is not practicable or appropriate for us to set out standard methods for the assessment of plans that remain under development and, rather than comment on the detail of HAL's EIA scope and methodology, we have set out our general approach above.

Chapter 5 - Air Quality and odour

21. The CAA's airspace change process, set out in CAP1616, includes methods for assessing air quality and odour issues as part of the Options appraisal a sponsor must undertake. That appraisal is required at stage 2A 'Define Options'.
22. At the core of the options appraisal is an assessment of the cost and benefits of the proposal. As part of the assessment, the change sponsor is required to monetise as many costs and benefits as possible to allow direct comparison between options. To achieve this the DfT's WebTAG² assessment tool is to be used.

¹ CAP 1616a is CAA publication 'Airspace Design: Environmental requirements technical annex'

² <https://www.gov.uk/guidance/transport-analysis-guidance-webtag>

23. CAP 1616 states that changes to local air quality impacts (which would likely include changes in both ground and air traffic movements) are to be included in the options appraisal process. These changes to local air quality must be explained in consultation material.
24. Changes to local air quality impacts must be identified when any such change affects emissions below 1000ft. Air Quality levels referred to for an aviation project such as that envisaged by HAL are SO₂, NO₂, and NO_x. The threshold for these levels is contained within section A of annex 11 to the Local Air Quality Directive:2008/50/EC. That Directive requires review of the situation every five years, or whenever significant changes in the activities may affect levels of these pollutants. The proposal contained within HAL's DCO application will result in significant changes in activities.
25. Assessment of increase in Particle Matter (PM) from aircraft should not solely focus on fuel emissions as there is also the potential for PM from other aircraft aspects, such as the wear of brake linings and tyres. Other environmental impacts will need to include those that occur as incidental impacts on and from other airspace users. For example, there may be impacts that arise from changes to General Aviation activity or changes in activity at other airports.

Chapter 6 - Biodiversity

26. In relation to biodiversity, CAP1616 requirements are unspecific. In essence, the CAA does not have any specified or preferred methodology for assessing biodiversity impacts, but the CAA will be seeking to verify that any biodiversity impacts that arise from the new airspace design have been considered.
27. Based upon the proposed scope, it is likely that the biodiversity assessment undertaken by Heathrow will also satisfy our CAP1616 requirements, provided that the assessment also makes explicit consideration of any impacts specific to the operation of the airspace design. In this regard, the scoping document does indicate that "Production of aural and visual stimuli and vibration produced by departing/arriving aircraft" will be an element of the biodiversity assessment (Table 6.10, page 6.41). The document also includes reference to the legislation and policy that is also cited in the DfT's Air Navigation Guidance 2017.
28. CAP1616 makes clear that biodiversity relates to areas of landscape with specific statutory purposes (AONBs and National Parks and seeks to secure their continued protection). WebTAG contains a biodiversity impacts worksheet and a landscape worksheet, completion of which focuses on descriptions of the feature in terms of tranquillity and landcover, and its classification in terms of their rarity, importance, substitutability and impact.
29. We note the list of bodies HAL is engaging in relation to biodiversity. HAL should consider whether it also needs to engage with the CAA as a potential competent

authority in relation to, for example, nesting birds, under the Conservation of Habitats and Species Regulations 2017.

Chapter 7 - Carbon and other greenhouse gases

30. Paragraph 7.10.4, should include a list of mitigations to be used in the assessment, as has been done for other topics.
31. The CAA's airspace change process requires the assessment of CO2 emission (in the context of climate change impacts); it does not require the assessment of any other greenhouse gases. The scoping document appears to limit the scope of the assessment of CO2 emissions: for example, Table 7.4 (page 7.12). In setting out baseline conditions, the document only refers to emissions from aircraft in the landing and take-off (LTO) cycle being within scope. For the purposes of CAP1616, the CAA would require the scope of the CO2 emissions assessment to reflect the "point to point" change in airspace design, i.e. the point at which the procedure design changes to the point at which it "re-joins" the existing procedure. This may extend beyond the LTO cycle (e.g. the cruise phase). Table 7.5 (page 7.13) does refer to flight phases beyond the LTO cycle (i.e. cruise). HAL should clarify the scope of this part of the assessment.
32. The temporal scope proposed by HAL (to 2050) appears adequate for CAP1616 purposes. CAP 1616 would necessitate a period that is at least 10 years from the implementation of the new airspace design. Scenarios will also reflect 2R and 3R which is also consistent with the likely CAP1616 requirements. This temporal scope in relation to airspace change should be consistent across other environmental topics.
33. There are aspects of the methodology for CAP1616 that are not set out in HAL's scoping document. These are:
 - The ratio for conversion of aviation fuel burn to CO2 should be 3.18.
 - The use of the DfT's WebTAG to produce a monetised value of the CO2 emission impact for aircraft operations.
 - A statement that the impact will also include an annual total tonnage for the CO2 emission impact from aircraft operations.
34. Additionally, paragraph 7.9.22 notes that only emissions from departing flights will be assessed. This is inconsistent with the CAP1616 requirements which require a sponsor to assess the impact on arriving flights if the new airspace design affects the arriving traffic. It would seem likely that any airspace design that is proposed in order to utilise a new third runway would affect arriving flights.

Chapter 8 - Climate Change

35. The assessment, especially for flood risk should consider use of a longer time frame than 50 years. One hundred years is typical.
36. This Chapter is limited to the impacts upon Heathrow from climate change effects. On that basis the scoping methodology has no reference to CAP1616 requirements other than to ensure that any relevant assumptions used for environmental impact modelling (e.g. noise, CO2 emissions, local air quality) properly reflect any estimated impacts from climate change over the assessment period. These should be revealed by the document's proposed 'In-combination Climate Change Impacts' assessment.

Chapter 9 - Community

37. Paragraph 9.3.5 – 5.a notes that schools will be considered as part of the assessment. We suggest that schools could be broadened out to include other education institutions and organisations, such as universities.
38. Paragraphs 9.4.7 and 9.6.1 both state that a data source for community insight will be National Statistics (Census data). The current data drawn upon is from 2011 – the report could note that the most up to date Census data will be used to inform monitoring, where possible.

Chapter 12 - Health

39. If HAL uses WebTAG as an element of their methodology for assessing noise and local air quality, then health impacts will be captured to the extent that they are required by CAP1616.
40. Whilst the scoping document does recognise that the health impacts from aviation's noise and local emissions need to be included in the Health Impact Assessment (HIA), it does not explicitly state that WebTAG will be used as part of that assessment other than a single reference at paragraph 12.9.30.
41. The methodology should include the use of WebTAG for both noise impacts and local air quality impacts.

Chapter 15 - Major Accidents and Disasters

42. Air travel, as with all other forms of transport, presents safety risks to consumers on board aircraft and the public (third parties).

Safety on board the aircraft (in flight or at the aerodrome)

43. From a safety perspective, it is noted that there is currently little or no material pertaining to how aircraft are moved to, from and around the airport. This material will be required to consider the significance of the risks consequent on those matters.

44. Regarding Appendix 15.2, we note that not all CAA Civil Aviation Publications (CAP) references are relevant following the UK's transition to EASA oversight rules e.g. CAP168. HAL should include correct references to current EASA and ICAO Standards and Recommended Practices (SARPS).
45. In terms of accident risks, the proposals will impose changes on operations or functions that are not all in Heathrow's control but are relevant to safety. The following should therefore be considered:
- Para 15.4.3 and Para 15.8.2 (point 8): It is unclear if NATS' London Terminal Control (LTC) functions pertaining to moving aircraft to and from Heathrow are included in scope. They should be included and are not considered 'external' to Heathrow's operation.
 - Para 15.7.9: The need for airspace re-design should be acknowledged. Specifically, on completion of the initial climb, aircraft are likely to follow newly designed routes (possibly over populations currently not over-flown) in order to ensure safe integrated route separation for all airspace users. In addition, the need for re-designed missed approach procedures (and routings) may be of significance.
 - Table 15.5: As above in 15.7.9 this should also consider manoeuvring and missed approaches, as new procedures will be required.
 - Table 15.7 footnotes 13 and 14: Aircraft track interactions with other airports may change as a result of the new runway development, and therefore potential risks should be assessed.
46. Regarding Table 15.6, the 'Transport Accident' entries do not appear to include mid-air accident risk. Such a risk could arise from new routings to and from the revised runway configuration, alternation patterns and (in the construction phase) interference with communications, navigational aids or surveillance equipment necessary for the safe conduct of flight.
47. Regarding paragraph 15.9.17, the assessment year does not include the 'Early ATMs' scenario where the risks are different: for example, there will be more flights and potentially different procedures involved. HAL should therefore include an assessment of the Early ATMs case, as they have proposed under other EIA topics.

Public Safety

48. Public or third party risks are often described as individual or societal risk. In the context of the DCO process, the responsibility for judging the tolerability of public safety lies with the relevant decision maker who is able to weigh the benefits of a proposal against the safety risks. This would include the Secretary of State designating the ANPS and PINS and the Secretary of State in considering the DCO application.

49. The CAA has no specific policy or regulatory role regarding the tolerability of third party safety risks. The CAA can provide support to aid the assessment or decision maker e.g. accident statistics or mandatory occurrence reporting.
50. The CAA would make the following comments:
- The study area for major accidents involving aircraft appears to be ambiguous. In Table 15.5 the phases of flight are included, however, Paragraph 15.4.1 and Figure 15.1 show the study area as areas approx. 1km from the airport boundary for land receptors, including human populations beyond the airport. We would expect the study area to be greater than 1km from the airport boundary, taking into account risks associated with the phases of flight.
 - Paragraph 15.7.10 suggests that the study area is conservative, as it is larger than the Public Safety Zone (PSZ). This is potentially misleading. The PSZ is an area where individual risk mitigation is applied in the form of development control, as set out in DfT's PSZ policy³, aimed at reducing people congregating in the higher risk areas at the end of the runways. Risks still exist outside these areas including societal risks, and the expansion of Heathrow will change these risks either by increasing the number of flights or by affecting different populations.
 - Table 15.6 includes the 'likely significant effects requiring assessment'. The M25 motorway system will have to be diverted and placed in a tunnel to accommodate the new runway overhead. The assessment should therefore include the risks associated with an aircraft and/or its fuel load, involved in a runway excursion close to the location of the tunnel, as this could result in a major accident scenario involving vehicles on the motorway.
 - Table 15.6 also includes 'birdstrike' risks. It will also be important to ensure that any landscaping or water features proposed as mitigation of the development do not increase the risk of bird strike to aircraft using the aerodrome.

Chapter 16 - Noise and vibration

51. CAA is responsible for the environmental assessment of airspace change proposals, to be aligned with government policy aims to:
- a. limit and, where possible, reduce the number of people in the UK significantly affected by the adverse impacts from aircraft noise;
 - b. ensure that the aviation sector makes a significant and cost-effective contribution towards reducing global emissions; and

³ <https://www.gov.uk/government/publications/control-of-development-in-airport-public-safety-zones>

- c. minimise local air quality emissions and in particular ensure that the UK complies with its international obligations on air quality
52. The CAA has a statutory duty⁴ to publish environmental information on the environmental effects of civil aviation in the UK.
53. We welcome the risk-based approach to the assessment of noise and support the proposed LOAEL and SOAEL noise levels for air noise.
54. With a risk-based approach to identifying significant adverse impacts there is greater need to control and, where necessary, limit these impacts. We believe the proposed noise envelope needs to be aligned with the adverse impacts that will be set out in the environmental statement.
55. We note the emphasis on identifying those at risk of significant adverse effects due to noise exposure in the context of the EIA Regulations, but feel that the proposed methodology needs to more clearly set out how it will demonstrate that the DCO project will 'mitigate and minimise adverse impacts on health and quality of life', i.e. between LOAEL and SOAEL, where not identified as significant adverse effects.
56. The proposed mitigations make no mention of a night noise insulation scheme. Whilst a 6.5-hour night ban is proposed, depending on how the runways are operated some locations could see increases within the overall 8-hour night noise exposure period.
57. Whilst these may be addressed by the proposed daytime noise insulation schemes, there is a need for additional insulation criteria based on night noise exposure in order to ensure that night noise impacts are appropriately mitigated.
58. Spatially, the extent for noise consideration extends at least to an altitude of 7000ft. In this regard, HAL will need to make sure that they use CAP1498 as the metric for assessing "overflight" by aircraft up to 7,000ft.
59. Airspace change submissions must follow the CAAs revised process which is set out in CAP1616 (references to earlier draft guidance in paras 16.11.8 and 16.11.10 to CAP1520 should be removed).

⁴ S. 84 Civil Aviation Act 2012

