

Heathrow Airspace Modernisation - Stakeholder Engagement

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Community Presentation to the NACF meeting 20 March 2024

1. Heathrow Airspace Modernisation - Context

Stage 2 decision making - *minutes of 16 November 2023 meeting between CAA and Heathrow and CAA letter dated 26 January 2024 responding to HR letter dated 4 December 2023 released on 7 March 2024*

- Why such delay in release of above documents?
- Why have not all the documents been released? CNGs (and presumably other Stakeholders) have not seen HR letter dated 4 December 2023 and other intervening correspondence.
- The material released by the CAA does not explain what the real issues are. The underlying reasons are unclear. The correspondence refers only to relatively (apparently) minor procedural issues rather than very significant substantive issues raised by communities to both Heathrow (HR) and the CAA.
- This is not a satisfactory basis for engagement nor a precursor to formal consultation.

2. What are the Implications for HR Airspace modernisation?

- Communities raised fundamental issues at the outset concerning the Design Principles. This was followed by challenges regarding the basis of identifying the CLOOs and the IOA assessment. These matters have not been addressed.
- Towards the end of the Stage 2 process, due to capacity considerations, HR reverted to vectored arrivals as the main basis of arrivals. However, retained options still include radical 'bendy' PBN flight arrival paths, which will cause areas to be overflowed by multiple routes; - leading to conflict with key DPs and more fundamentally Airspace Navigation Guidance (ANG) 2017.
- Whilst HR has dismissed 'do nothing' (as by definition it does not reflect airspace modernisation), it has not produced a 'do minimum option'. This is a standard requirement for national infrastructure projects under Treasury Green Book option appraisal guidance. A 'do minimum' must be examined as it will minimise significant adverse impacts, and cause far less community disruption, especially having regard to the 'change effect'.
- How far back in the AM process does HR have to go now? What are the decision-making timescale implications? What confidence should community stakeholders have that the CAA and HR will adopt an acceptable approach towards a Stage 2 resubmission?

3. HR Stakeholder Engagement

- TAG (and Friends of Richmond Park) were asked to participate in a formal Stakeholder Engagement Record (SER) process with HR. TAG involved other CNGs (who had particular interest in technical aspects of AM) in the meeting arranged to discuss the SER.
- TAG found the spirit of these discussions constructive but many of the main challenges did not reach a conclusion, or decision making was proposed by HR to be deferred to Stage 3. This is regarded by Communities as too late for meaningful engagement or as a basis for formal consultation, which must follow the 'Gunning Principles'.
- TAG returned the SER to HR's AM team on 14 August 2023. HR suggested a further meeting but nothing further was arranged prior to - or after - the Stage 2 submission on 30 August.

4. CAA Involvement and Oversight

- It should be noted Air Navigation Guidance (which goes to the heart of many community concerns) is legally binding on both HR and CAA.
- TAG wrote to Stuart Lindsey, CAA Head of Airspace Modernisation, on 6 Sept 2023 setting out its concerns in relation to HR's Stage 2 application. This is appended to this presentation for information purposes. HR's AM team (and others) were copied into this correspondence.
- The correspondence was acknowledged, and TAG was advised the CAA technical team would respond. This has been followed up, but a response has yet to be received.

5. Conclusions

- TAG believe there has been a lack of transparency and openness in the engagement between the CAA, HR and Community Stakeholders. There are also very significant shortcomings in the evidence base and evaluation framework established by the the DfT and CAA (discussed on numerous occasions at the NACF) which if not addressed will potentially lead to serious detrimental environmental impacts to many living around HR.
- CNGs are most concerned to achieve satisfactory outcomes, rather than technical compliance in what seems to be an arcane tick box process enshrined in CAP 1616 (rather than true engagement).
- However, based on what has been seen so far it is believed that the CAA has primarily raised process in its formal statements – TAG and other CNGs believe the failings go further and to substantive issues with the provisions and operation of CAP 1616 and the application of ANG 2017.

6. Actions Required

- A response from the CAA to the issues raised in the TAG letter regarding the Stage 2 submission sent on 6 September 2023 would be extremely helpful - to HR as well as CNGs - in identifying what the underlying issues are.
- HR to detail how far back in the AM process they will have to go. Share the new decision-making timescale. Include PBN enabled do minimum options in the process.

Background extracts

Appendix 1 - TAG Submission to CAA 05 09 2023

Appendix 1

Submission to CAA by TAG 5 September 2023

Airspace Modernisation: Airspace Change Proposal
Stage 2 Submission - Step 2B Engagement on Initial Options Appraisal (IOA)

Community Response
Teddington Action Group (TAG) 5 September 2023

Summary

The presentation pack issued by Heathrow (HR) Airspace Management (AM) to community groups on 7 July 2023 does not form a satisfactory basis for submission of a Stage 2B IOA application nor to progress to the next stage under CAP 1616. A submission based on the current proposals should be rejected by the CAA.

Engagement to date and non-compliance with ANG

HR AM entered into a formal stakeholder engagement record (SER) process with TAG (the initial meeting was attended by other HR community groups). This covered earlier submissions and TAG's key concerns were summarised in tabular format sent on 6 June 2023. Although a response has been received HR does not address the issues raised on a substantive basis. This paper should be read in conjunction with the TAG SER pro-forma, TAG's previous submissions and HR's latest reply.

Critically TAG has explained how HR's Design Principles (DPs), Comprehensive List Of flight path Options (CLOOs), DP Evaluation (DPE) and Initial Option Appraisal (IOA) do not follow Air Navigation Guidance 2017 (ANG) Directions which are binding on both HR and the CAA.

Key concerns include:

- Failure to address the significant adverse impacts of aviation noise or to comply with altitude-based priorities as required by ANG 17 (see below)
- HR's DPs, CLOOs, DPE and IOA are founded on a simplistic, unrealistic, and unreliable noise analysis based on a 'numbers within noise contour' and a single hypothetical flight path approach. In addition to not corresponding to explicit ANG instructions, the analysis is incomplete, only reflecting numbers falling within hypothetical contours based on notional individual flight paths, reliant on a single aircraft type and not considering route usage or most critically flight path interaction. These factors are essential in terms of assessing cumulative impacts and significant adverse effects of aviation.
- Key HR DPs, which go to the heart of consideration of adverse impact, are omitted from the Initial Option Appraisal DPE, resulting in inappropriate shortlisting of certain flight paths and exclusion of others, which are likely to be critical to a satisfactory outcome
- Dependence on long term primary LAeq metrics and thresholds, which are based on SoNA 14, itself widely accepted to be inherently flawed, including by ICCAN. This reliance fails to reflect (a) ICAO advice that only one third of aviation noise impacts can be related to these measures and (b) WHO health advice (a composite study encompassing over 20 previous reports) regarding acceptable aviation noise levels

- HR's reliance on analysis based on inappropriate and unsupported noise metrics such as Partial LOAELs, totally ignoring cumulative effect and having no foundation in terms of assessment of the health impacts over the dense population surrounding Heathrow
- These factors will lead to deficient decision making and lack of trust in aviation governance by affected communities

Health and Quality of Life (QOL)

Most importantly the analysis fails to address factors that are central to consideration of health and quality of life impacts of aviation noise (factors mandated in ANG). These include:

- The cumulative impact of combinations of flight paths leading to unacceptable noise outcomes
- The fact that higher levels of noise lead to disproportionately higher levels of adverse impact (recognised in ANG)
- Failure by the DfT, CAA and HR to consider or assess the health impacts of highly concentrated flight paths, despite clear evidence from HR's 2014 trials (studied by Andersen for HR in its 2015 report) and international evidence. This concern was acknowledged by the CAA's former Chief Executive, describing highly concentrated flight paths as 'Noise Sewers'
- Failure to consider the change effect (either caused by being newly or more intensely affected). International research shows this has 6-9 dB LAeq equivalent adverse impact, which is not reflected in HR or DfT (web)TAG analysis

Given that the unique situation of HR and its noise footprint, which the CAA acknowledged in CAP 1165 is larger than the next five European airports (Paris, Frankfurt, Amsterdam, Munich and Madrid) added together, already causes huge hidden public health costs to the UK, the health impact omissions referred to above are very serious. In practically any other context failure to address foreseen health consequences would amount to negligence.

Short listed flight path options – inappropriate inclusions and exclusions

For very many years the separation of HR arrivals and departures has been an essential component of respite relief, resulting from operational modal changes (i.e., based on wind direction). The importance of this form of respite was a key consideration in the adoption of the 'western preference' protocol.

HR's presentation material now indicates that vectoring, rather than PBN will remain the principal basis for arrivals at lower level (sub 7000 ft) under its airspace change proposals. This has been confirmed in HR AM's email to Carole Marr dated 14 July 2023. This is most welcome and should be adopted as a core principle of HR AM for the following reasons;

- Radically different close in and low altitude level arrival routes would represent the most extreme type of change imaginable in the use of airspace around HR – a factor not considered in the DPE or IOA

Appendix 1

Submission to CAA by TAG 5 September 2023 (Pt 2)

- The highly curved radical arrival flight path options will have by far the greatest adverse noise impact, as they involve tight turns (involving additional thrust settings and consequent impact on noise profiles) as well as very significant change and highly concentrated routes over areas that are already badly impacted by departures. On the basis of HR's Stage 2 Submission, the general pattern of departure routes will not change substantively and there would be areas subject to both very noisy departures and close in arrivals
- The full impact of these arrival proposals would be magnified having regard to their suggested use during the extremely sensitive night period between 4.30-6.00 am over new areas where most people - who already suffer a great many very late and loud evening departures - will not have been exposed to such arrival noise before. Apart from potentially leading to a quiet period at night of only 3.5-4 hours for these communities (with the direct consequence of health impacts resulting from irregular, disrupted and disjointed sleep patterns), the effect of such significant loss of respite would be enormous due to imposition of arrivals over areas already suffering major noise disturbance from late night departures

These PBN arrival routes should have been abandoned under the IOA, as they will inevitably fail the tests set in key DPs, including avoidance of multiple routes overflying the same communities, loss of respite, and avoidance of increases of noise over the same communities. In practical terms, it is clear that it will not be possible to achieve adequate respite relief if the same areas are impacted by arrivals and departures. ANG recognises that adherence to existing flight path patterns in lower airspace should be given preference.

Given these considerations and in the interest in providing all stakeholders greater certainty in future, these radical arrival flight path options should be discontinued.

An option that hasn't been addressed provides a proposed solution

The development of the CLOOs and flawed analysis in the IOA has resulted in the omission of a key option that should have been identified and worked up having regard to CAP 1616 and ANG requirements. No serious attempt has been made to define or assess a future flight path solution based on a 'Do Minimum' approach (notwithstanding this is requirement in CAP 1616). This is not the same as a 'Do Nothing' base case.

Under such an option PBN could be applied to departures and arrivals within upper airspace (i.e., over 7000ft). Based on the IOA conclusion that vectored arrivals will form the principal basis of arrivals, the same principle could be applied to departures, either under vectoring at low level (to avoid the most extreme concentration effects) or following as far as is reasonably possible the existing pattern and route usages with managed dispersion using PBN technologies. Such an approach is unlikely to impact disproportionately on commercial considerations such as capacity or fuel usage (over the full course of a flight).

This would have the advantage of minimising the change – and potentially concentration – effects. Major gains to the efficiency of upper airspace (above 7000 ft) could still be achieved through the use of PBN (and thereby meet the primary objectives for UK Airspace Modernisation). As part of a Do Minimum 'enhanced base case' particular problem areas

where neighbourhoods are already impacted badly by noise from multiple routes (e.g., SE London) could be addressed through equitable noise sharing and appropriate adjustments to routes (minimising their environmental impact).

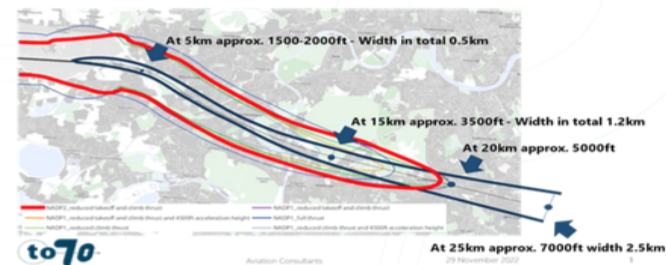
Other Considerations

Bushy, Home and Windsor Great Parks and the world-renowned heritage section of the Thames between Hampton Court and Richmond should be treated on an equivalent basis as Richmond Park. There is no rationale for doing otherwise.

Respite – HR should confirm it will apply Andersen's conclusions that noise improvements of 4 dBLAeqT (where T is the period of overflight – not an overall annual average) and below are 'worth having', that 4-9 dB is 'noticeable and 9 dB is 'valued'. N> metrics should be given equal weight. Overall average long term LAeq metrics are not appropriate in assessing respite as they are not transparent and do not describe the noise experience of areas under quite different circumstances.

Impact of Flightpaths - use of overflight contours to suggest noise impacted areas is especially misleading near the airport and where paths diverge. The overflight metric may suggest some separation of noise from different flight paths whereas in reality there will be continuous noise. A simple 3km wide path (1.5km each side from the centreline) would give a better indication of noise impact. Overflight metrics seem to be the main way Heathrow has chosen to display options; however, this is fundamentally misleading and suggests much less noise near the airport which is not the case. The following graphic has already been shared and shows a A320 60dB Lamax noise contour in Red being much wider than the dark blue overflight metric;

Airbus A320 – 60 dB LAmax contour vs Overflight Metric

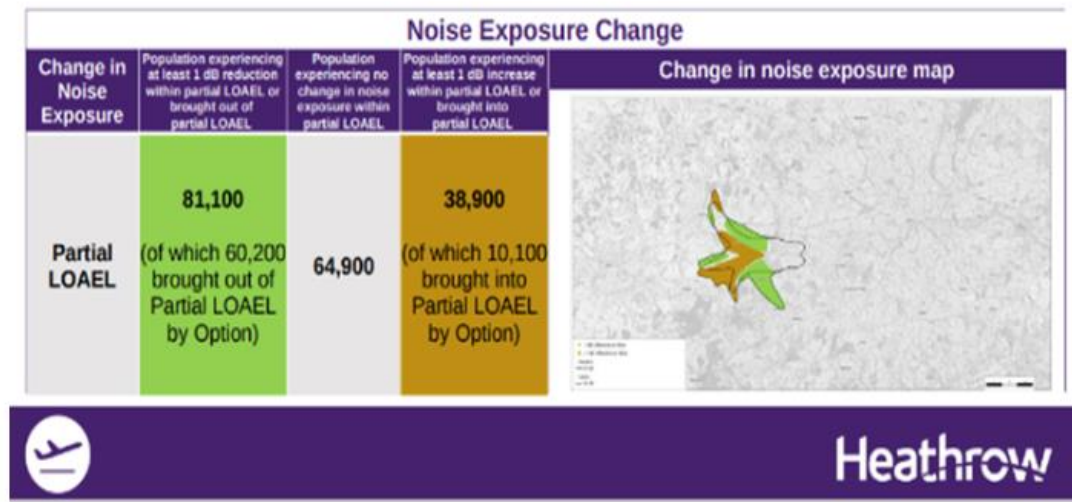


Change and Concentration – it is clear from Heathrow's 2014 trials and US experience these issues remain key considerations and need to be fully understood (the DfT admitted at the NACF that no UK study of health impacts associated with highly concentrated PBN flight paths has been undertaken). Andersen Acoustics analysis of the 2014 PBN trials showed the

Appendix 1

Submission to CAA by TAG 5 September 2023 (Pt 3)

trials generated multiple complaints far beyond the UK LOAEL levels. Complaints received today by Heathrow go beyond the UK LOAEL levels. The fact that levels of annoyance are being created to cause people to complain cannot be ignored especially as the UK SoNA 2014 never covered any areas below 51dB LAeq. WHO (2018) shows significant annoyance to 45dB Lden levels. Change should be measured to at least 45dB LAeq and preferably to 42dB LAeq (the WHO 45 dB Lden equivalent). Although the diagram below (from the supplied documents) shows change, as it only looks at a single >+/-1 dB LAeq change level, it is not clear if there are any areas of >2dB >3dB and larger change which would show further concentration impacts. This diagram should be extended with further change level contours used (2dB,3dB etc) in the assessment up to and including the highest level of change seen.



Background Extracts

Appendix 2 – key issues from TAG CAA Submission 05 09 23

Appendix 2 TAG-CAA submission extracts

Key issues not addressed in Engagement to date – ANG 2017

HR's Design Principles (DPs), Comprehensive List Of flight path Options (CLOOs), DP Evaluation (DPE) and Initial Option Appraisal (IOA) do not follow Air Navigation Guidance 2017 (ANG) Directions which are binding on both HR and the CAA. Key concerns include:

- Failure to address the significant adverse impacts of aviation noise or to comply with altitude-based priorities as required by ANG 17
- HR's DPs, CLOOs, DPE and IOA are founded on a simplistic, unrealistic, and unreliable noise analysis based on a 'numbers within noise contour' and a single hypothetical flight path approach. In addition to not corresponding to explicit ANG instructions, the analysis is incomplete, only reflecting numbers falling within hypothetical contours based on notional individual flight paths, reliant on a single aircraft type and not considering route usage or most critically flight path interaction. These factors are essential in terms of assessing cumulative impacts and significant adverse effects of aviation.
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Appendix 2 TAG-CAA submission extracts

Key issues not addressed in Engagement to date – Health and Quality of Life

HR's IOA methodology does not address factors that are central to consideration of health and quality of life impacts of aviation noise (factors mandated in ANG). These include:

- The cumulative impact of combinations of flight paths leading to unacceptable noise outcomes
- The fact that higher levels of noise lead to disproportionately higher levels of adverse impact (recognised in ANG)
- Failure by the DfT, CAA and HR to consider or assess the health impacts of highly concentrated flight paths, despite clear evidence from HR's 2014 trials (studied by Andersen for HR in its 2015 report) and international evidence. This concern was acknowledged by the CAA's former Chief Executive, describing highly concentrated flight paths as 'Noise Sewers'
- Failure to consider the change effect (either caused by being newly or more intensely affected). International research shows this has 6-9 dB LAeq equivalent adverse impact, which is not reflected in HR or DfT (web)TAG analysis
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- The highly curved radical arrival flight path options will have by far the greatest adverse noise impact, as they involve tight turns (involving additional thrust settings and consequent impact on noise profiles) as well as very significant change and highly concentrated routes over areas that are already badly impacted by departures. Based on HR’s Stage 2 Submission, the general pattern of departure routes will not change substantively and there would be areas subject to both very noisy departures and close in arrivals.
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Given these considerations and in the interest in providing all stakeholders greater certainty in future, the radical arrival flight path options should be discontinued.

Appendix 2 TAG-CAA submission extracts

Key issues not addressed in Engagement to date – an option that should have been considered

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