AIRSPACE MODERNISATION AIRSPACE CHANGE PROPOSAL

STEP 2A APPENDIX E - CLOO COMMUNITY AND INDUSTRY STAKEHOLDER FEEDBACK SUBMISSIONS

December 2022 - April 2023

Heathrow

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Revision History

Version	Date	Amendment	Author
1.0	28th July 2023	Initial issue	Heathrow Airport Ltd
2.0	07th June 2024	Two pieces of supplemental feedback added from page 252 onwards	Heathrow Airport Ltd

Heathrow Stage 2A Engagement: Feedback Form

Thank you for taking the time to complete this feedback form in support of Heathrow's engagement on our Comprehensive List of Options for Airspace Modernisation.

All responses will be shared with the Civil Aviation Authority (CAA) and published on the CAA's Airspace Change Portal, as part of Heathrow's Airspace Change Submission. Personal data will be withheld as follows:
-Individuals' names will be withheld, but organisation names will be shown
-Postcode data will be anonymised to 4/5 digits (i.e. AA11 A)

1. Name

2. What is the name of the organisation or community group you represent?

3. Postcode

4. Did you attend one of Heathrow's Stage 2A engagement workshops?

- ◯ Yes
- ◯ No

5. Thinking about the information that Heathrow has provided and/or presented to you, do you agree or disagree with the following statement about Heathrow's development of flight path options?

"I am satisfied that Heathrow has taken into account the Design Principles when developing the comprehensive list of flight path options"

- ◯ I strongly agree
- ◯ I agree
- ◯ I disagree
- ◯ I strongly disagree
- ◯ I am unsure

6. Please provide any feedback on your answer in the box below.

7. Do you have any feedback on Heathrow's potential concepts for delivering **respite**? *(pages 49-51)*

8. Do you have any feedback on Heathrow's potential approach to **night flights**? *(page 52)*

9. Do you have any feedback on Heathrow's proposed approach to **noise efficient operations**? *(page 53)*

10. Do you have any feedback on Heathrow's overall approach to developing flight path options?

This form is being hosted and managed by Headland Consultancy, an independent research and engagement agency, who are supporting Heathrow throughout this engagement. Data will be collected and managed according to the privacy policy of both organisations, available on their websites.

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Collector: Final (Web Link)
Started: Friday, December 02, 2022 11:34:06 AM
Last Modified: Friday, December 02, 2022 12:32:08 PM
Time Spent: 00:58:02
IP Address: [redacted]

Page 1

Q1

Name

[redacted]

Q2

What is the name of the organisation or community group you represent?

Pavilion Association

Q4 **Yes**

Did you attend one of Heathrow's Stage 2A engagement workshops?

Q5 **I am unsure**

Thinking about the information that Heathrow has provided and/or presented to you, do you agree or disagree with the following statement about Heathrow's development of flight path options?"I am satisfied that Heathrow has taken into account the Design Principles when developing the comprehensive list of flight path options"

Q6

Please provide any feedback on your answer in the box below.

Sometimes I am of the opinion that Heathrow is only interested in the "bottom line" and not its neighbours

Q7

Do you have any feedback on Heathrow's potential concepts for delivering respite? (pages 49-51)

I believe that everybody is entitled to respite for mental and health wellbeing

Q8

Do you have any feedback on Heathrow's potential approach to night flights? (page 52)

All night flights should be kept to a minimum for the same reasons as respite.

Q9

Do you have any feedback on Heathrow's proposed approach to noise efficient operations? (page 53)

Any noise efficient operation should be considered and applied if possible

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Q10

Do you have any feedback on Heathrow's overall approach to developing flight path options?

All flight path options should be carefully thought through and consideration for its neighbours to be included and not just cost effectiveness

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Collector: Final (Web Link)
Started: Monday, December 05, 2022 4:32:12 PM
Last Modified: Monday, December 05, 2022 4:37:28 PM
Time Spent: 00:05:16
IP Address: [redacted]

Page 1

Q1

Name

[redacted]

Q2

What is the name of the organisation or community group you represent?

Pavilion

Q4 **Yes**

Did you attend one of Heathrow's Stage 2A engagement workshops?

Q5 **I strongly agree**

Thinking about the information that Heathrow has provided and/or presented to you, do you agree or disagree with the following statement about Heathrow's development of flight path options?"I am satisfied that Heathrow has taken into account the Design Principles when developing the comprehensive list of flight path options"

Q6

Please provide any feedback on your answer in the box below.

All information was clear and consistent

Q7

Do you have any feedback on Heathrow's potential concepts for delivering respite? (pages 49-51)

Respite in our area is very important

Q8

Do you have any feedback on Heathrow’s potential approach to night flights? (page 52)

These have to be limited

Q9

Do you have any feedback on Heathrow’s proposed approach to noise efficient operations? (page 53)

None

Q10

Do you have any feedback on Heathrow’s overall approach to developing flight path options?

They look good

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Collector: Final (Web Link)
Started: Thursday, December 08, 2022 6:28:54 PM
Last Modified: Thursday, December 08, 2022 6:46:01 PM
Time Spent: 00:17:06
IP Address: [redacted]

Page 1

Q1

Name

[redacted]

Q2

What is the name of the organisation or community group you represent?

Buckinghamshire council

Q4

Did you attend one of Heathrow's Stage 2A engagement workshops?

Yes

Q5

Thinking about the information that Heathrow has provided and/or presented to you, do you agree or disagree with the following statement about Heathrow's development of flight path options?"I am satisfied that Heathrow has taken into account the Design Principles when developing the comprehensive list of flight path options"

I strongly disagree

Q6

Please provide any feedback on your answer in the box below.

It is stated that this is a data driven approach but there is no information provided as to how these data sets were created, validated or used

Q7

Do you have any feedback on Heathrow's potential concepts for delivering respite? (pages 49-51)

What does respite mean? you say it is scheduled relief (how is this defined?) from noise (all aircraft noise? how is this measured?)) for a set period of time (how long - minutes? hours?) and for whom and where?

Q8

Do you have any feedback on Heathrow's potential approach to night flights? (page 52)

There should be no night flights of any sort as the impact on health is so great

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Q9

Do you have any feedback on Heathrow's proposed approach to noise efficient operations? (page 53)

These do not take into account those communities who are not directly overflown but who suffer from aircraft noise from both arrivals and departures on an almost continual basis. There is no attempt to look at how any form of noiseless time can be achieved for local communities

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Q10

Do you have any feedback on Heathrow's overall approach to developing flight path options?

This seems to be totally flawed as the communities have no way of knowing whether these flight path options were derived from validated data and how the impact on various communities was assessed. The metrics used only seem to take account of those overflown and non validated noise data. There should have been much more time taken to explain all the stages in detail and better graphics provided so that the impacts on the ground could be more clearly followed and questions asked. At no stage were communities asked for their input into this and our comments on the previous stage were ignored. It seems we are simply being done to.

COMPLETE

Collector: Final (Web Link)
Started: Friday, December 09, 2022 9:54:00 AM
Last Modified: Friday, December 09, 2022 10:18:40 AM
Time Spent: 00:24:39
IP Address: [redacted]

Page 1

Q1

Name

[redacted]

Q2

What is the name of the organisation or community group you represent?

Ealing Aircraft Noise Action Group

Q4

Did you attend one of Heathrow's Stage 2A engagement workshops?

No

Q5

Thinking about the information that Heathrow has provided and/or presented to you, do you agree or disagree with the following statement about Heathrow's development of flight path options?"I am satisfied that Heathrow has taken into account the Design Principles when developing the comprehensive list of flight path options"

I disagree

Q6

Please provide any feedback on your answer in the box below.

The potential departure routes shown effectively cover every community for miles around Heathrow.

Q7

Do you have any feedback on Heathrow's potential concepts for delivering respite? (pages 49-51)

Respite on departure is never going to be satisfactory, since the two runways, and therefore their departure tracks are so close together that a departure from one runway is audible to residents under the track from the other. Therefore a route used for departures from one runway should be a long way away from any route used for departures from the other when departures from both are in the same directional mode.

Q8

Do you have any feedback on Heathrow’s potential approach to night flights? (page 52)

It can never be acceptable for flights to wake residents, or to keep residents awake during the night. There is a huge cost in terms of health, poor productivity and poor learning arising from Heathrow's night operations. There should be no movements into or out of Heathrow between 23.00 and 7.00, apart from real and immediate emergencies.

Q9

Do you have any feedback on Heathrow’s proposed approach to noise efficient operations? (page 53)

Scientists have demonstrated that one current departure mode causes less noise on the ground than the one preferred and most often used by airlines. Heathrow should impose the use of the quieter mode of climb on all flights. All departures should operate on continuous climb so that they are higher than at present over residents.

Q10

Do you have any feedback on Heathrow’s overall approach to developing flight path options?

Ealing has suffered for over 50 years from a proportion of Heathrow's easterly departures flying overhead , which before the pandemic was 40% of these, some 260 flights a day, running from 6.00 to 23.30 and often later. The burden of this overhead noise should be reduced when airspace change is implemented.

COMPLETE

Collector: Final (Web Link)
Started: Friday, December 09, 2022 11:09:24 AM
Last Modified: Friday, December 09, 2022 3:03:17 PM
Time Spent: 03:53:52
IP Address: [redacted]

Page 1

Q1

Name

[redacted]

Q2

What is the name of the organisation or community group you represent?

Respondent skipped this question

Q4

Did you attend one of Heathrow's Stage 2A engagement workshops?

Yes

Q5

Thinking about the information that Heathrow has provided and/or presented to you, do you agree or disagree with the following statement about Heathrow's development of flight path options?"I am satisfied that Heathrow has taken into account the Design Principles when developing the comprehensive list of flight path options"

I strongly disagree

Q6

Please provide any feedback on your answer in the box below.

Heathrow is responsible for airspace design to 7000ft.
ANG a 2017 prioritises noise up to 4000ft and between 4000 & 7000ft, unless there are demonstrated strong CO2 reasons not to so.
It is unacceptable to state Heathrow will use modern navigation technology to enable better aircraft performance, reduce delays, and manage traffic in ways that mitigate, 'WHERE POSSIBLE', the impact on local communities. These two words should be removed so that it reads, '——and reduce adverse impacts from aircraft noise'.
As stated 'PBN offers more flexible positioning of routes' and ' enables aircraft to fly more accurately'.
This technological introduction offers an opportunity to share noise intrusion by use of multiple routes in order to provide respite to all residents, not just 'noise sensitive areas. ALL overflown residents are noise sensitive.
The current 'MUST' design principles give priority to airline operations over those of the communities.
Fundamental to developing future airspace designs are the weighting given to the 12 Design Principles - ' The Blend of Design Principles'. Who decides the weighting and what are the weightings attributed to each in the blend used in developing the flight routings? The different stakeholders will have differing views on the weightings used on design priorities in producing a blend.
Overflown communities will have a very different view of the weightings to be applied to produce an acceptable blend to Airlines and Heathrow. What evidence will be used in support the weightings to be applied to a blend?

Q7

Do you have any feedback on Heathrow's potential concepts for delivering respite? (pages 49-51)

Definition of overflown is an area / population under a corridor defined by an elevation of 48.5 degrees from the horizontal to 7000ft. This equates to a ground corridor width of 15800 ft giving more concentrated flights compared to the current 3km SID corridor - 23400 ft. If this is used to 'minimise overflown' it means more concentrated flights for those overflown.
In reality the 48.5 degree definition gives a false picture, because noise impact in reality is NOT restricted to to 7900ft each side of the flight path up the 7000ft.
This definition, if applied, will lead to more concentration to those 'overflown', but not provide noise respite to those living outside this narrow corridor.
'Newly Overflown' defined as more that 20 times a day on average. Is this over a 24 hour period which is circa 1 per hour? If it excludes a night period of 11pm to 6 am it is still only circa 1 per hour. What research evidence has been used to support this definition?
Why is is it 20? Why not 40 / 60 /80 i.e. 2 /3 /4 per hour? Increasing the frequency used in this definition will enable a significant reduction in the concentration of flights over the persecuted / blighted residents in the 'overflown' corridor.
Why is 70db SEL the only noise metric and why only one aircraft type has been used. Noise intrusion is a function of Lmax and Frequency.
In overall numbers the 320 aircraft series may be the most frequent aircraft type currently using Heathrow but larger aircraft types are lower,heavier,noisier and more frequent at key time periods due to flight destination locations and flight timings on both departures and arrivals.
Minimum track miles to the 6 waypoints(DP4) will lead to concentrated flight paths within UK airspace, ignoring the total flight impact to the end destination.
ANG 2017 gives noise priority ' at or above 4000ft to below 7000ft, unless'Disproportionally'increases CO2 emissions. Who / What is the definition of 'disproportionally'? What evidence is going to be used to prove the impact of a particular flight track. Unrealistic, if based on a theoretical mathematical model It must be based on the operational reality of the actual plane / flight. Shorter track miles can require tighter turns at lower altitudes, requiring more thrust, causing more noise and air pollution.
THIS IS FUNDAMENTAL TO THE RELATIVE PRIORITY /WEIGHTING GIVEN TO NOISE POLLUTION COMPARED TO AIR POLLUTION, in producing a blend.
The use of curved descents, coupled to minimising track miles on arrivals, means that some communities will be subject to noise intrusion from both departures and arrivals, giving no respite and failing to meet DP7.
DP6 'provide predictable and meaningful respite'. Agree with the principle but use PBN to achieve by providing different tracks to give dispersion. Redefine the 'overflown' definition to reflect reality, not 48.5 degree elevation to 7000ft, which is misleading, and does not reflect the on the ground community experiences of noise disturbance, particularly with larger planes.
Use of operational procedures to minimise noise to 7000ft should be applied to Heathrow operations. This should include the adoption of NAPD1 take off procedure on all departures, rather than the mix of NAPD 1 &2 currently used.

Q8

Do you have any feedback on Heathrow's potential approach to night flights? (page 52)

Night flights should be banned. There should be NO flights after 11pm or before 6 am, unless in very exceptional circumstances such as those that impact on flight safety. Operational reasons due the late boarding, whether caused by delayed incoming or delayed boarding, as witnessed on many late Nigerian destination flights, should be cancelled or the
Airlines who transgress should be 'HEAVILY' financially penalised. Frequent offenders should have their slots removed.

Q9

Do you have any feedback on Heathrow's proposed approach to noise efficient operations? (page 53)

All operations should be subject to noise efficient operational procedures within the finalised dispersed flight routings to minimise the on the ground noise impact of Heathrow operations. This should include multiple routes, to give respite, coupled to use on NAPD1 for departures and steeper glide paths for approaches.

Q10

Do you have any feedback on Heathrow's overall approach to developing flight path options?

Multiple stakeholders are impacted by airspace All operations should be subject to noise efficient operational procedures within the finalised dispersed flight routings to minimise the on the ground noise impact of Heathrow operations. This should include multiple routes, to give respite, coupled to use on NAPD1 for departures and steeper glide paths for approaches.. It is important that all stakeholders have an effective input to the process. To date resident perceptions, based on the consultations to date, is that stakeholders linked to Heathrow's operations have a higher priority than local communities. The Design Principles, as presented, are perceived to reinforce this unbalanced approach. The resident group representatives have committed significant time and effort, with little professional support, to engage effectively with Heathrow in the airspace design process. Many feel frustrated that much of their input to the process is effectively ignored, with 'operational' stakeholders, utilising their greater resources and professional support, dominating the process.
Whilst the resident groups have reflected their wider community views, full community involvement will require detailed,understandable, presentations to the various impacted communities. These need to be easily understand enabling residents to offer effective feedback to any proposals. Based on the experiences of the community engagement process associated with the 3rd runway consultation, information needs to show the details of the flight path proposals in non technical, geographical form, so that residents can understand the proposal's impact on their particular home and lifestyle.

COMPLETE

Collector: Final (Web Link)
Started: Thursday, December 08, 2022 8:09:12 PM
Last Modified: Friday, December 09, 2022 4:57:23 PM
Time Spent: 20:48:11
IP Address: [redacted]

Page 1

Q1

Name

[redacted]

Q2

What is the name of the organisation or community group you represent?

[redacted]

Q4 **Yes**

Did you attend one of Heathrow's Stage 2A engagement workshops?

Q5 **I strongly disagree**

Thinking about the information that Heathrow has provided and/or presented to you, do you agree or disagree with the following statement about Heathrow's development of flight path options?"I am satisfied that Heathrow has taken into account the Design Principles when developing the comprehensive list of flight path options"

Q6

Please provide any feedback on your answer in the box below.

This report has been prepared for and behalf of Englefield Green Action Group

This CLOO has been developed by Heathrow in the context of Stage 1 published Design Principles.
Again community concerns were ignored or watered down in the design principles with woolly wording, such as ‘where possible’ in the context of noise. Words that can be interpreted to mean whatever the proposer chooses when developing the airspace modernisation. Offering no noise protection or benefits to communities, instead affording all or any benefits to the industry. The industry lets itself down, as with its almost omnipotent powers comes responsibility. Responsibility that in its DNA it is unable to contemplate, due to the regulatory vacuum it exists in.
Heathrow is responsible for airspace design to 7000ft, it has a moral duty to be a good neighbour. Unfortunately history shows that Heathrow sacrifices its moral duty on the altar of shareholder value.
As has been identified by ICCAN and the PEIR, what is needed for Heathrow to be a community player is the setting up a body equivalent to the Vienna Dialogue Forum, let’s call it the Heathrow Dialogue Forum, where meaningful dialogue and outcomes for all around the airport can be realised in an environment of democratic accountability.

The “Comprehensive List of Options” workshop was an insight into what has been considered so far, with ~ 176 powerpoint slide ‘blackbox’ presentation, in a 2.5 hour meeting.
This kind of workshop, although crucial, with this amount of content, can only scratch the surface of what has gone into Stage 2A.

As a retired CEng, who has worked in the development of large and complex systems, it is a fact that the “devil is always in the detail” and its full attention to that detail is essential to the outcome of a successful project.
‘The ‘blackbox’ presentation lacked visibility of that detail; given the time allocated to the workshop that is not surprising. For confidence that valid community concerns and expected community outcomes can and will be achieved, that detail must be shared, on an equal basis, with the communities, as no doubt it is with the industry. After all, there is little doubt that the industry’s goals will receive full attention, whereas as history has shown, communities have been less than a second class citizen in their dealings with the industry, in the past.
What is critical for community leads, on this project, in the wider context of full public consultation, is to ensure the success and avoid the potential of an enormously expensive, irreversible airspace change disaster of biblical proportions on the South-East of England.

Many community group leads have concluded that full community engagement can realistically only be achieved, in part, by the provision of the GIS data used to generate the CLOO flight path outputs, so that people can see the effects of the proposed changes and engage in making a success of AMS.
Please accept this as a formal request for the provision of said GIS data, for the promulgation to represented communities. Your response is eagerly awaited to help our/your affected communities, engage and contribute to the success of this Airspace Modernisation project, for all stakeholders.

Air Navigation Guidance 2017
What is fairly clear is that perils that ANG2017 is designed to avoid, has been disregarded - the CLOO appears to have the objective of doing exactly the opposite of what Section: “Assessing the noise implications of proposed airspace changes” subsection 3.5 tells them to do;
“For the purpose of assessing airspace changes, the government wishes the CAA to interpret this objective to mean that the total adverse effects on people as a result of aviation noise should be limited and, where possible, reduced, rather than the absolute number of people in any particular noise contour”.
Instead the CLOO, slavishly delivers outcomes purely to maximise shareholder value, by concentrating flight paths over the same, to be persicuted without a say or compensation, having only considered numbers affected within a contour, which leads to concentration and "noise sewers" a term coined by a former CAA CEO in 2017. Apart from that being potentially illegal the CLOO totally ignores at least three of Heathrow's own, flawed, Design Principles.
This is the biggest change to airspace ever, in the UK adopting the wholesale use of PBN, for the whole of the South East of England, despite the debacle that was the Heathrow 2014 PBN departure trial flights, which exploded above the heads of unsuspecting victims, living far and wide around the airport.
As is well known, but repeated for emphasis, the political fallout was loud and swift, with the trials halted three months early and

As is well known, but repeated for emphasis, the political fallout was loud and swift, with the trials halted three months early, and the (government) enforced setting up of the (tokenistic) Heathrow Community Noise Forum.
In spite of the pro bono community's good will, fully committed, sincere, well meaning considerable contributions to the HCNF, little has been achieved in terms of improving the noise environment around Heathrow.
However the community's eight year involvement with the HCNF, has resulted in the unintended consequence of spawning the self organised melding of the loosely organised HCNG (Heathrow Communities Noise Group), from communities all around the airport. The HCNG, working together, outside of the HCNF, to understand and challenge the myopic view of the industry, who have no genuine interest in outsider community stakeholder real engagement. Why should they?
This is not entirely the commercial aviation industry's fault, although its monopoly lobbying position creates the circumstances for the sorry state communities currently exist in. The fault lies with its regulatory bodies that govern the industry, the DfT and the CAA. The regulatory bodies discharge their duties, hand in glove with industry's powerful lobby, to ensure that few constraints apply, along with the virtual absence of noise regulation or duty of care, to hinder growth prospects.
Even with the backdrop of the climate emergency, the industry disingenuously positions itself as a champion of CO2 reduction, by pushing for further cost reductions and commercial advantage by using the AMS as a vehicle, further persecuting minorities, unwittingly in the case of the Heathrow 2014 PBN departure trials, but this time with full knowledge of consequences of those PBN trials, and its outcomes. Add to this the manifold failings of the USA's NextGen PBN airspace modernisation programme, brought to the attention of the HCNF, years back and repeatedly since, by the HCNG.
Repeating the same mistakes and expecting different results, as reportedly once said by Albert Einstein, is the definition of insanity. It will result in blighted communities, reduced property values, increased persecution of minorities across the south-east and subjecting them to the life threatening harmful health effects, - strokes, heart attacks and mental health problems, et. al. - associated with the incessant repeated noise from PBN concentrated flight paths. The resultant costs will be socialised, with an ever increasing burden on the NHS, already at breaking strain.
The industry purported benefits of Airspace Modernisation, as is already well documented reality of "NextGEN benefits" exaggeration, will most likely mirror the USA and be negligible, but the costs borne by communities will be incalculable - the unfettered abuse of privatising the profits and socialising the losses.
As is clearly evident from this CLOO, Heathrow's tokenistic community engagement, the resultant positive community contribution, given freely and sincerely in promoting the best outcome for communities affected by Heathrow's environmental harm, has been almost totally ignored, basically failing the Gunning principles on consultation.

In the interests of time and brevity we have left out the considerable valid detail and comments that TAG, MRA & Elmbridge and others have provided, which EGAG fully endorses.

How can the regulator stand by and support the replacement of the shared burden of amenity with the persecution of minorities (all over the south-east)?

The regulator would be abdicating their responsibility and duty of care, to allow this flawed proposal to see the light of day, as it stands.

Q7

Do you have any feedback on Heathrow's potential concepts for delivering respite? (pages 49-51)

This is covered by one of my EGAG colleges. I would like to raise many additional comments but time is not on my side.
One that I can fit in is the lamentable departure gradient, which is not much better than the arrivals gradient, in fact it is worse than the 3.25 degrees of Heathrow's CAA sanctioned arrivals Airspace Change. As has been repeated ad nauseam by HCNG members at the HCNF, the noise burden can be significantly reduced by the adoption of NADP1 flight procedures, but that can is repeatedly kicked down the road.

Q8

Do you have any feedback on Heathrow's potential approach to night flights? (page 52)

As in Frankfurt all night flights are banned, as it should be for Heathrow as the economic benefits are unproven.

Q9

Do you have any feedback on Heathrow's proposed approach to noise efficient operations? (page 53)

see 7 above re departure gradients

Q10

Do you have any feedback on Heathrow's overall approach to developing flight path options?

This is covered by one of my EGAG colleges.

COMPLETE

Collector: Final (Web Link)
Started: Friday, December 09, 2022 11:32:54 AM
Last Modified: Friday, December 09, 2022 12:13:12 PM
Time Spent: 00:40:18
IP Address: [redacted]

Page 1

Q1

Name

[redacted]

Q2

What is the name of the organisation or community group you represent?

Forest Hill Society

Q4 **Yes**

Did you attend one of Heathrow's Stage 2A engagement workshops?

Q5 **I am unsure**

Thinking about the information that Heathrow has provided and/or presented to you, do you agree or disagree with the following statement about Heathrow's development of flight path options?"I am satisfied that Heathrow has taken into account the Design Principles when developing the comprehensive list of flight path options"

Q6

Please provide any feedback on your answer in the box below.

It is very difficult to tell at this stage. For example I am unsure whether Heathrow has taken into account the requirement to avoid flight path crossing with other airports (represented by DP 7 and 11), specifically London City. I asked to what extent Heathrow had consulted with London City in 'allocating a small portion of airspace' to LCA and Northolt and was told this was not done in consultation. It is not at all clear, therefore, that Heathrow is truly determined to allow space for London City to introduce Continuous Descent operations on all of its arrivals paths without being constrained by Heathrow into flying too low over SE London communities as happens at present.
the concern is that collaborative efforts will only happen too late in the process when forced by ACOG, and by then it will be too late to do anything but unsatisfactory compromises that will leave some overflown SE London communities badly affected by both airports just as they are at present.
A concern is that Design Principles in the 'must' category may take too great a precedence over those in the 'should also' category. We would say those in the 'should also' category are by and large the ones that will deliver some respite or benefit from this process to overflown communities, while those in the 'must' category are by and large to the benefit of the industry and its profits.

Q7

Do you have any feedback on Heathrow's potential concepts for delivering respite? (pages 49-51)

We are concerned that most focus on pages 49-51 seems to be on departure respite, when there are huge areas of London, such as in SE London, where arrivals noise is far more relevant.

We are unsure at this stage what would actually be meant by meaningful respite. If it involves separation of alternating routes, then these will need to spaced widely apart to avoid communities situated between two routes not to be badly affected by both .

Q8

Do you have any feedback on Heathrow's potential approach to night flights? (page 52)

These options all seem to be an improvement on current vectoring of flights, particularly from 04.30 early morning over SE London.
This does not take away from our belief that a huge wellbeing/mental health opportunity will be missed for Londoners if Heathrow does not during this process voluntarily introduce a no-fly period from 11pm to 7 am.

Q9

Do you have any feedback on Heathrow's proposed approach to noise efficient operations? (page 53)

We are particularly pleased to see commitment to CCO and CDO. We would like to see further commitment from Heathrow to design its operations and routes in collaboration in such a way that all surrounding airports are also enabled to introduce CDO and CCO. In particular, we wish to see London City airspace vacated in order that they can introduce CDO across SE London in east wind conditions. This single act by Heathrow would provide at a stroke enormous noise relief to overflown communities from Dartford through to Dulwich, an area currently overflown at under 2000ft by all London City arrivals in east wind conditions.

Q10

Do you have any feedback on Heathrow's overall approach to developing flight path options?

We welcome the opportunity to contribute at this early stage.

COMPLETE

Collector: Final (Web Link)
Started: Friday, December 09, 2022 3:13:25 PM
Last Modified: Monday, December 12, 2022 4:25:41 PM
Time Spent: Over a day
IP Address: [redacted]

Page 1

Q1

Name

[redacted]

Q2

What is the name of the organisation or community group you represent?

HACAN

Q4 **Yes**

Did you attend one of Heathrow's Stage 2A engagement workshops?

Q5 **I disagree**

Thinking about the information that Heathrow has provided and/or presented to you, do you agree or disagree with the following statement about Heathrow's development of flight path options?"I am satisfied that Heathrow has taken into account the Design Principles when developing the comprehensive list of flight path options"

Q6

Please provide any feedback on your answer in the box below.

Firstly the phrase 'taken into account' is open to interpretation and it is not clear what the minimum consideration is that must be given to a Design Principle. Thus, is it makes it impossible to pass accurate judgement on the statement. Secondly, we have only been presented with a rough indication of flight path options so it is not possible to judge whether these all apply equally to different Design Principles nor whether there are flight paths options that have been excluded at this stage that may better satisfy some Design Principles.

The workshop provided very little in the way of specifics, for example in how different principles would be balanced and what the practical effects of this may be. Hence it is impossible to judge the impact of the proposed design principles or the likely resulting flight path options at this stage.

HACAN members remain concerned about the precision of the language that Heathrow use in the presentation. Key concepts such as ‘respite’, ‘limit’ or ‘reduction’ have not been defined, this should be done both generally and in the context of the statement.

For example,

- "increased noise"

Does this mean an increase of noise energy at the receiver or is this human perception? Will anything less than a 3dB increase be deemed irrelevant??

- What is meant by "adverse" and "meaningful"?

Neither terms are in the glossary. Failure to define will lead to all stakeholders talking at cross purposes.

- "Respite".

This is defined as "Scheduled relief from aircraft noise for a set period of time." However, relief is not defined. Given the importance of these terms it is crucial that all stakeholders understand what is meant by them.

- The use of "where possible".

Where possible according to who? This raises the risk of Heathrow or the CAA dismissing potential mitigating practices under the category of "just not possible" without a proper and detailed explanation to communities.

Q7

Do you have any feedback on Heathrow's potential concepts for delivering respite? (pages 49-51)

Genuine respite appears difficult to achieve given Heathrow's location and the airspace capacity constraints. The concern for many communities is that new flight paths may result in constant noise throughout the day with no or reduced benefit delivered by runway alternation.

What is definition of respite being used? Based on what metric? Will the objective be to deliver respite that achieves maximum health benefits/minimises newly affected communities or minimise the total number of people?

What assessment will be undertaken of the impact of combining departure flight paths, at a specific distance, on overflown communities? What impact would this have on respite?

It is essential that respite is not diminished from the current levels for overflown communities.

There appears to be a lack of clarity on any changes to the final joining point on arrivals. This will be a significant impact on local communities and may reduce or eliminate the benefit of any respite depending on position and whether curved approaches are utilised. Such approaches and joining points may only be possible with certain types of aircraft in specific conditions so we would welcome clarity on precisely what is being proposed and the impact it will have on overflown communities in terms of respite.

Our members remain highly concerned about the impact on local communities who will be under multiple flight paths – indeed Design Principle 7 appears to have been ignored in the work seen to date. This is not acceptable.

At the workshop on methods and metrics it became clear that the congested airspace and dense population around Heathrow means that that managed dispersion, based on previous flight path patterns, will not be achievable for PBN routes.

- Can Heathrow confirm this understanding is correct?
- Would managed dispersion be possible on non-PBN routes?
- How many routes for the ACP will be PBN?

We would welcome greater detail on the limitations of managed dispersal of PBN routes and whether this can deliver some respite to overflown communities.

Will the design options show how noise can be dispersed, how respite can be provided, and how multiple routes might be used to reduce noise impacts?

Q8

Do you have any feedback on Heathrow's potential approach to night flights? (page 52)

The position of HACAN regarding night flights is well documented. On the proposed Concept 1 we believe that there is a lack of clarity on how any route alternation may operate in practice.

Regarding Concept 2 we feel that there should be greater transparency about dispensations with information published in as close to real time as possible. Communities who are disturbed deserve to know why this is occurring as a minimum courtesy. There should also be a much stricter and enforced infringement regime and it is disappointing not to see options including in this initial design process.

We disagree with the approach proposed in Concept 3. Managing the operations efficiently is of course to be welcome but planning specific routes to be used post 11pm to cope with delays in the day appears to contradict such an approach to efficiency. It also risks alienating specific communities who will continuously bear the brunt of delays with late running operations disturbing their supposedly protected period of respite at night.

HACAN members support alternation of flight paths and maximum spread of flight paths to minimise the impact on any specific locations.

Q9

Do you have any feedback on Heathrow's proposed approach to noise efficient operations? (page 53)

It is clear to communities that adverse impacts occur at levels below 51dBLeq. Consequently, will Heathrow commit to publishing analysis of noise impacts below this level and to WHO (2018) guidance levels?

Will Heathrow be producing a base case and benchmarks (2019 levels to include a range of metrics by which the merits of their ACP can be assessed? How will the impacts of "conflicts" between the design principles be identified and quantified? Communities would benefit from more detail not less.

Design principles 11 and 12 do not appear to have been addressed from a community perspective, how the noise impact from airport operations will be minimised.

Page 22 describes the notional procedure being used to define the tracks i.e. A320, continuous climb at 5.5 percent. However, it is not clear how realistic this is? Can real world sensitivities be applied at the earliest opportunity alongside different aircraft types?

Can a statement be provided on the technical limitations of what may be possible within the ACP?

There are also a number of questions about aircraft height profiles, operations on arrivals and wider operational practices.

Aircraft Height Profiles
Aircraft height profiles should be part of the assessment. With such dramatic changes on the cards there is surely a role for the assessment of non-acoustic factors too?

Arrivals
Do Heathrow know if a continuous CDO/CDA curved arrival onto the ILS is possible? If so, could information be shared about this with stakeholders

Operational Practices
Page 53 indicates that Heathrow will test a combination of mitigating practices. Does this also include non-technical practices such as westerly preference or runway alternation?

Given these designs are for airspace up to 7000 feet will Air Traffic Control maintain the practice of "vectoring off" above 4000 feet on departure?

With the increasing effects of climate change comes increasing disruption of Heathrow's operations. Is it possible to produce a procedure and flight path design for the day time, to be deployed in adverse weather conditions, that are specifically designed to protect the more sensitive (night) time periods?

Q10

Do you have any feedback on Heathrow's overall approach to developing flight path options?

In our view any flight paths should be designed to minimise noise impact, with impacts assessed in line with international standards and supported by a reliable and verifiable evidence base. However, there remains a lack of an evidence-based policy framework in the UK, particularly in relation to the health impacts of repeated overflight. What plans does Heathrow have to commission research to understand the health impacts of concentrated flight paths?

We know that the CAA Environmental Panel is undertaking a new survey of noise attitudes, reflecting the need for SoNA (2017) to be updates. The DfT is broadly reviewing noise policy and the report on noise policies from Intergovernmental Panel on the Costs and Benefits of Noise (IGCBN) is expected this year. Can Heathrow advise on how this programme of work will be incorporated in the ACP option development and appraisal?

ICAO recognises that where there is high change metrics based on standard metrics should not be used to assess impacts. Consequently, what framework will be used to assess health impacts related to noise and flight path change?

A clear recommendation for UK Government & airspace change sponsors made by Taylor Airey in their PBN Implementation Benchmarking Report is that, "More meaningful metrics are needed, responsive to the needs of the affected community." Yet, no metrics have been developed to describe the environmental or health impacts of concentration under PBN flight paths. Is this something that Heathrow propose to rectify?

It is well documented that the use of average noise metrics disguises the real impact of noise in any given noise footprint. Use of SEL may lead to some confusion as it provides an impression of population number potentially impacted by noise that appears to contradict both Air Navigation Guidance (2017) and a couple of the Design Principles themselves.

There remains a lack of clarity about how the community and industry benefits of different flight path options are being assessed and compared.

Concerned about the modelling for only the A320 for noise impacts. Whilst we recognise this is the most common type of aircraft at Heathrow it does not capture the entirety of the noise modelling. Indeed, when similar work has been produced on behalf of local communities both Heathrow and the CAA have questioned its applicability across the whole airport. The same standard should surely apply to an airspace change proposal of this magnitude.

It remains unclear what benefits Heathrow's airspace change proposal will deliver, to which stakeholders and by what dates.

COMPLETE

Collector: Final (Web Link)
Started: Monday, November 14, 2022 1:14:48 PM
Last Modified: Monday, November 14, 2022 1:24:17 PM
Time Spent: 00:09:28
IP Address: [redacted]

Page 1

Q1

Name

[redacted]

Q2

What is the name of the organisation or community group you represent?

Iver Village Residents' Association

Q4 **Yes**

Did you attend one of Heathrow's Stage 2A engagement workshops?

Q5 **I strongly agree**

Thinking about the information that Heathrow has provided and/or presented to you, do you agree or disagree with the following statement about Heathrow's development of flight path options?"I am satisfied that Heathrow has taken into account the Design Principles when developing the comprehensive list of flight path options"

Q6

Please provide any feedback on your answer in the box below.

Very impressive and scientific presentation

Q7

Do you have any feedback on Heathrow's potential concepts for delivering respite? (pages 49-51)

They seem appropriate

Q8

Do you have any feedback on Heathrow's potential approach to night flights? (page 52)

Again,approach seems appropriate

Q9

Do you have any feedback on Heathrow's proposed approach to noise efficient operations? (page 53)

Again,approach seems appropriate

Q10

Do you have any feedback on Heathrow's overall approach to developing flight path options?

High technology and science involved are impressive

COMPLETE

Collector: Final (Web Link)
Started: Friday, December 09, 2022 4:09:35 PM
Last Modified: Friday, December 09, 2022 4:14:42 PM
Time Spent: 00:05:07
IP Address: [redacted]

Page 1

Q1

Name

[redacted]

Q2

What is the name of the organisation or community group you represent?

Local Authorities' Aircraft Noise Council (LAANC)

Q4 **Yes**

Did you attend one of Heathrow's Stage 2A engagement workshops?

Q5 **I disagree**

Thinking about the information that Heathrow has provided and/or presented to you, do you agree or disagree with the following statement about Heathrow's development of flight path options?"I am satisfied that Heathrow has taken into account the Design Principles when developing the comprehensive list of flight path options"

Q6

Please provide any feedback on your answer in the box below.

• LAANC did not agree the changes that were made to the final version (V2) of the Design Principles (DPs) and agreed by the CAA. We do not agree that the DPs correctly reflect the requirements of the Air Navigation Guidance (ANG 2017). This point has already been made to the CAA by others and it will be for the CAA to defend its decision at some point in the future in the event of a challenge.

• In terms of the options presented at the workshop we are concerned that noise is not being treated with sufficient attention. consultees to understand at the moment the extent to which any future changes will facilitate meaningful improvements in efficiency. We note that the base case will be included in the mix of every possible route option at Stage 2B but we remain of the view that this should have been presented at Stage 2A (now). This would have enabled claimed shortcomings of the current system to be studied and understood. Heathrow is the worst performing airport in Europe in terms of noise and it needs to be made quieter. The production of the base case now would have enabled work to start on delivering options for meaningful noise reductions alongside a search for improved airspace efficiency.

• Most of the attention given at this stage to noise seems to be weighted towards departures rather than arrivals. The impact of even a relatively small number of early morning arrivals over areas affected for the first time should not be underestimated. It is unclear how it will be possible to reconcile the DP 7 not to overfly areas by both arrivals and departures once PBN routes for arrivals facilitate arrivals permit joining points as close as 3 nautical miles to touchdown.

• We note the initial route and noise contour options have been based upon the performance of the A320 aircraft type (as it is the most commonly occurring at Heathrow). However the A320 only accounts for around 31% of current fleet mix and it can be expected that less numerous but noisier aircraft types will drive future noise contours. Comparison (sample) contours should be prepared at the next stage between aircraft types. Significant differences in SEL /LAMax between aircraft type could potentially lead to unreliable conclusions surrounding the provision of Respite.

Q7

Do you have any feedback on Heathrow's potential concepts for delivering respite? (pages 49-51)

Slide 49 refers to the Concept of Respite but does not define it either in terms of decibel reduction or other relevant components such as time / daily rotation etc.

The term relief is used but without any attempt to define it.

- Design Principle 6 is to provide predictable and meaningful respite but there seems to be some doubt about this being achievable with PBN in place? Instead "relief" appears to be brought in as a lesser offering.
- There needs be clarity about what is being considered here. At present there is no one metric that provides a robust accepted benchmark for respite. The only published study by Anderson Acoustics relevant to Heathrow found that from an analysis of subject responses a reduction of 9dBLAmax between single aircraft events was required before meaningful respite was reported. It now appears that there may now be some doubt in about these findings. If this is the case there is an urgent need for clarity on definitions before new routes can be planned with the aim of providing Respite. Clarity is also needed regarding over what period of time noise reductions are before Respite is reported as having been delivered. Also to answers to questions such as although a reduction of 9dBLAmax (or more) for just hour may not be appreciated as Respite it may bring Relief and is any such relief noticed and valued?

- The impact of change on communities unlucky enough to find themselves under a new PBN route needs to be understood and calculated into any new routeings.

- Subject to our comments above the three concepts have some promise but it will remain to be seen if there is in fact enough lateral airspace available to provide the dispersion need. For example to achieve about a halving of perceived noise around 3 km dispersion will be necessary for aircraft at 3000 ft

- Option 2 listed requires the reinstatement of planning permission to abandon the Cranford agreement – regular take offs from runway 09L are currently not permitted.

Q8

Do you have any feedback on Heathrow's potential approach to night flights? (page 52)

Night flights are damaging to the health of surrounding communities, we are opposed to all scheduled flights between 11pm and 7am. The design options should include a scenario in which no flights are scheduled to arrive until 7am or later.

- Option 1 for night flights appears to be no different to current and it is the only option on offer for arrivals. It is unclear what, if any, difference/improvement that this would provide for communities currently impacted.

- The consultation seems to suggest that new PBN based arrival routes will only be used during "less busy" times of the day. Does this refer to the time between 4:30am to 6am when there are around 15 arrivals? or / and some other period(s) such as the late evenings when there are many departures but arrivals are less numerous. The effect of new PBN arrivals on communities newly exposed to concentrated noise should not be underestimated in terms of annoyance and associated ill-health effects. It is unclear how it is proposed to deal with the historically very busy period for landings between 6 and 7am. Is it proposed that the concept of TEAM will continue either as part of a PBN system or through tactical manual intervention?

- Late running should not be permitted routinely but the concept of bespoke routes for late departures is supported in order to provide some relief for communities that have already been suffering take off noise from 3pm that day. In the absence of permission to use 09L for take offs, the amount of respite potentially available appears to be limited.

Q9

Do you have any feedback on Heathrow's proposed approach to noise efficient operations? (page 53)

There do not appear to be any new initiatives here. Why is there still no commitment to operate ICAO noise abatement procedures NAPD1 for departures? A 2020 study by To70 at Heathrow demonstrated how NAPD1 could result in meaningful noise reduction in terms of both LAmax and SEL noise metrics for communities under Heathrow's existing flight paths.

Q10

Do you have any feedback on Heathrow's overall approach to developing flight path options?

The design options must not create any more noise for any single community compared to pre-COVID- 19 levels
The approach on noise using single event metrics to enable the construction of noise contours is supported. However the 70SEL / 60dBLAmax cut off level is unlikely to reflect the point at which annoyance from aircraft can be regarded as trivial. At locations not impacted by other transportation noise sources, a 70 dB SEL / 60LAmax aircraft event will be clearly audible, being typically 15 - 20dB above background (LA90) levels. The impact of 20 or more events at these levels should not be underestimated and can be predicted to lead to adverse community response if repeated on a daily basis (as found in the 2014 "Compton" route trials).
SEL contours should be produced at 60 and 65dB alongside the proposed 70dB contours.
Several of the proposed options show routine take offs on runway 09L. Unless the airport is able to successfully reapply for planning permission to remove the Cranford agreement we cannot see how this can happen. By the next stage of stakeholder engagements clarity on this point is needed please.

COMPLETE

Collector: Final (Web Link)
Started: Friday, December 09, 2022 3:56:04 PM
Last Modified: Friday, December 09, 2022 4:01:17 PM
Time Spent: 00:05:13
IP Address: [redacted]

Page 1

Q1

Name

[redacted]

Q2

What is the name of the organisation or community group you represent?

London Borough of Ealing

Q4

Did you attend one of Heathrow's Stage 2A engagement workshops?

No

Q5

Thinking about the information that Heathrow has provided and/or presented to you, do you agree or disagree with the following statement about Heathrow's development of flight path options?"I am satisfied that Heathrow has taken into account the Design Principles when developing the comprehensive list of flight path options"

I disagree

Q6

Please provide any feedback on your answer in the box below.

Q6. Please provide any feedback on your answer in the box below.
As introduction of airspace change and PBN will more likely lead to concentrated flight paths and therefore, lead to increase in 'average noise' level (LAeq,t) and events' maximum noise level (LAmax), this poses increased risk of annoyance, sleep disturbance, elevated ambient background noise leading to potential systemic failure of compliance with the national regulatory standard, Guidance on sound insulation and noise reduction for buildings, BS8233:2014 for noise both inside dwelling rooms and external amenity areas within the new or proposed developments. Further, prolonged exposure to aircraft noise is likely to lead to significant observable adverse effect level (SOAEL), thereby leading to increased health burden on LA. Such a proposal would be unacceptable, without comprehensive understanding of outcomes associated with notional flight paths. Whilst the Air Navigation Guidance 2017 states, at section 3.9, that CAA should ensure that focus remains on minimising these impact, we interpret this to mean there will be no requirement or offer of mitigation (noise insulation, NI) between 4000 feet and 7000 feet, HAL makes little attempt to introduce use of alternative noise metrics such as LAfmax and continues to rely on 'average noise' principle by using sound exposure level (SEL), which is a function of average noise (LAeq,t) and exposure time. Again, any proposal that solely relies on noise metric/s based on 'average noise' is unacceptable. Given HAL says "At this stage we are required to engage with our stakeholders to ensure we have understood and accounted for stakeholder concerns specifically related to the design options", we simply ask how will HAL account and offset our concerns above, both in the context of land use planning as outlined in the International Civil Aviation Organisation (ICAO) Doc 9829, 'Guidance on the Balanced Approach to Aircraft Noise Management' and without risking further our ability to deliver "genuinely affordable homes" as set in Ealing's Council Plan ?
Although HAL has modelled a mammoth, 650 notional flight paths, there are little details about input parameters, assumptions, constraints and outcomes. Therefore, we seek clarity and further information, with greater granularity, and ask how would HAL take account of and address the following points?

1. What parameters, data sets and assumptions were used as inputs to generate notional flight paths within a given route?
2. What algorithms have been used to generate the notional flight paths? Missing data sets behind notional flight paths seems like a 'black box' solution to airspace modernisation, without exercising due diligence required to independently verify against relevant national/EU/international standards referred above.
3. It's not clear how/what notional flight paths would be combined to develop multiple routes, possibly optimised for competing priorities in managing noise, respite and climate change (CO2/GHG reductions) commitment?

Whilst Design Principles 4,5,9, 10 refer to reducing the contribution to climate change, enabling Heathrow to make the most operationally efficient and resilient use of its existing two runways, keeping the number of people who experience an increase in noise from the future airspace design to a minimum and keep the total number of people who experience noise from the future airspace design to a minimum, can Heathrow clarify and quantify as to what are the limits attached to the minima values referred above, in particular the number of people who would experience increase in noise, in Ealing? This important to us from points of views of runway alternation on easterly departures, including late runners, and spatial planning and potential health impact outcomes.

Q7

Do you have any feedback on Heathrow's potential concepts for delivering respite? (pages 49-51)

LA supports concept of respite in principle but given the nature of airspace change process (ACP) and performance-based navigation (PBN) proposed to achieve greater resilience through concentrated/dispersed flight paths and intensification through runway and operational alternation, our greatest concern is that 'respite' even fails to feature in the top five 'must have' design principles (DP). In our view, respite is even more critical when introduction of PBN and airspace modernisation will inevitably lead to an increased 'high rate change (HRC)' airport. According to International Journal of Environmental Research and Public Health, 'A Systematic Review of WHO's New Recommendation for Limiting Aircraft Noise Annoyance', Dec. 2018 , indicating the proposed airspace modernisation will likely lead to a threshold of community tolerance level (CTL) that is 9dB lower (Gelderblom et al) for Heathrow being even more HRC airport, due to increased sensitivity. How will HAL account for this unwanted change and what remedial action/s it will implement to address this situation? Given that airspace modernisation through PBN will result in even greater rate of air transport movements (ATMs), we ask what capacity does HAL have on both runways to accommodate these additional movements and what will be associated impact on noise levels (day/night)?
Whilst the departing aircraft needs to be kept below 6000' in order to accommodate the new arrivals mechanism without the option of relying on four 'stacks', we ask to what extent this would lead to degradation in 'predictable and meaningful respite' (requires a 9dB reduction) for those newly over flown or those communities that may experience noise increase of 3dB or more above the background?
As there is no demonstrable case where PBN may have been successful at a high rate change (HRC) airport, can HAL undertake further research into limited PBN trial, by planning to off-set adverse effects of concentrated flights paths resulting from PBN through (a) noise reduction at source (ICAO) and (b) providing noise insulation (NI) as a managed programme within an enhanced noise action plan (NAP) package? This could help reduce existing adverse effects, including those with night flights, potentially compounded by proposed implementation of the airspace modernisation/PBN.
Dispersion of PBN flight paths for all given routes should be adjusted such that noise break is significant to achieve predictable and meaningful respite, with the aim to (a) share burden of noise (and associated adverse health impacts) such that where there is a reduction in overall noise, the benefit be applied to those already most affected and where there is an increase in overall noise the dis-benefit be applied to those already least affected.

Q8

Do you have any feedback on Heathrow's potential approach to night flights? (page 52)

LA supports the proposed Design Principle 8 (DP8), to significantly reduce impacts (noise, health and quality of life) of night flights. However, DP8 should be prioritised as one of the top five 'must have' categories, making it as equally important as DP4, 'Reduce the contribution to climate change from CO2 emissions and other greenhouse gas emissions arising from Heathrow's aircraft activities'. This would be by far more a 'balanced and considerate' approach to Heathrow operations. This could be achieved by sharing benefit of implementing PBN and efficiencies resulting from modernising airspace, thereby enabling HAL to move some of the most disturbing night flights into daytime aircraft movements (ATMs) and allocate remaining time frame (operational efficiencies) to build greater resilience towards removal of flight stacks, a commitment towards climate change that is a long-term corporate goal for HAL.

Q9

Do you have any feedback on Heathrow's proposed approach to noise efficient operations? (page 53)

LA supports the proposed approach to noise efficient operations outlined (page 54), however, we ask as to the reason(s) why the noise efficient operational procedures have not been adopted to date? Noise Abatement Departure Procedure 2 (NADP2), Steeper Departures and Steeper Approaches are some of noise efficient procedures that are not employed consistently as it's lately evident that either there is poor regulatory control by the enforcement authorities, or the airlines have a relatively free hand to adopt and adhere to their chosen procedure, apparently without any regard to noise. Therefore, we ask what actions will HAL take to implement noise efficient operations and what actions will the regulators (CAA/NATS?) take to ensure that operations abatement procedures are enforced effectively?

Q10

Do you have any feedback on Heathrow's overall approach to developing flight path options?

Although HAL has considered two options for DP2, where ANG 2017 says noise is a priority up to 4,000ft, there also appears overlap in the ANG 2017 regulation that relates to the 4,000 to 7,000 ft range, where noise should be prioritised "unless the CAA is satisfied that the evidence presented by the sponsor demonstrates that this would disproportionately increase CO2 emissions". The inference being that the plan is to prioritise modelled CO2 reductions over the noise impact, given that no definition has been provided of what would constitute "sponsor demonstrates that this would disproportionately increase CO2 emissions". Again, there is a lack of clarity on what is the trade-off between noise and CO2. Overall, communities cannot possibly judge the noise vs CO2 trade-off without modelling data, inputs, outputs and algorithms used. Therefore, can HAL share this information?

LA support the development of notional flight path options but it would be helpful if HAL shared associated data with greater granularity, so LA and its stakeholders could better relate to outcomes. In a similar context, approach to developing flight path options need to be more outcomes focused, comparing and highlighting differences in current status and that in future, on LA/Ward basis?

From: [redacted]
Sent: 12 December 2022 10:31
To: DD - Airspace
Subject: HAL Stage 2 ACP Consultation Engagement
Attachments: Heathrow Stage 2A ACP & PBN Consultation Response_LBE_09.12.22_Sig.pdf

Caution: external email. Unless you recognise the sender and know the content is safe, do not click links or open attachments.

Dear HAL Consultation,

We noted that there was no opportunity to provide references to the relevant legislation to which Ealing's response referred to, therefore, please find our response in PDF format attached herewith.

Best Regards

[redacted]
Environmental Protection Manager
Environment Protection Team
Place Directorate
London Borough of Ealing

From: DD - Airspace
Sent: 13 December 2022 18:30
To: [redacted]
Subject: RE: HAL Stage 2 ACP Consultation Engagement

[redacted]

Dear [redacted]

Thank you for your email. We have added your attachment to your feedback response as supplementary information. It will be included in our stakeholder engagement evidence trail which will be submitted to the CAA for the Stage 2 Gateway.

Many thanks,

[redacted]

COMPLETE

Collector: Final (Web Link)
Started: Friday, December 09, 2022 11:12:01 AM
Last Modified: Friday, December 09, 2022 4:23:20 PM
Time Spent: 05:11:19
IP Address: [redacted]

Page 1

Q1

Name

[redacted]

Q2

What is the name of the organisation or community group you represent?

London Borough of Lewisham

Q4 **Yes**

Did you attend one of Heathrow's Stage 2A engagement workshops?

Q5 **I am unsure**

Thinking about the information that Heathrow has provided and/or presented to you, do you agree or disagree with the following statement about Heathrow's development of flight path options?"I am satisfied that Heathrow has taken into account the Design Principles when developing the comprehensive list of flight path options"

Q6

Please provide any feedback on your answer in the box below.

The workshop provided an overall view of the design principals but was not detailed enough to provide a more in-depth response to this question.

Q7

Do you have any feedback on Heathrow's potential concepts for delivering respite? (pages 49-51)

LB Lewisham supports the respite proposals but what is meant by meaningful?
It is mainly arrivals that have an impact on Lewisham residents and whilst runway alternation is a way of achieving this, consideration also needs to be given to London City Airport and the importance of crossing flight paths.
I would also like to register my concern that both Heathrow and LCA are not working closely together. Heathrow has left a small amount of airspace in which they say LCA can continue their operations.
All respite proposals would require the engagement of both airports, need to be agreed with community engagement and clearly publicised.

Q8

Do you have any feedback on Heathrow's potential approach to night flights? (page 52)

LB Lewisham would insist on a full night time flight ban (23:00-07:00) which has a detrimental effect on residents quality of life and health.
The alteration of flight paths is welcomed as this would minimise the impact on any specific location ensuring the same locations are not overflown daily.
Whilst we do support the "use" of extra departure routes during periods of disruption to minimise aircraft departing after 11pm.

Q9

Do you have any feedback on Heathrow's proposed approach to noise efficient operations? (page 53)

LB Lewisham supports the use of noise efficient operational practices but these need to be developed further and not solely relied upon.
The use of quieter aircraft, Continuous Climb Operations etc need to be considered along with too many flights over densely populated areas.

Q10

Do you have any feedback on Heathrow's overall approach to developing flight path options?

Heathrow's overall approach to developing flight path options is quite broad, it is difficult to comment in detail.

COMPLETE

Collector: Final (Web Link)
Started: Friday, December 09, 2022 12:35:39 PM
Last Modified: Friday, December 09, 2022 12:41:54 PM
Time Spent: 00:06:15
IP Address: [redacted]

Page 1

Q1

Name

[redacted]

Q2

What is the name of the organisation or community group you represent?

L.B Richmond Upon Thames

Q4 **Yes**

Did you attend one of Heathrow's Stage 2A engagement workshops?

Q5 **I strongly agree**

Thinking about the information that Heathrow has provided and/or presented to you, do you agree or disagree with the following statement about Heathrow's development of flight path options?"I am satisfied that Heathrow has taken into account the Design Principles when developing the comprehensive list of flight path options"

Q6

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We did not agree the changes that were made to the final version (V2) of the Design Principles (DPs) and agreed by the CAA. We do not agree that the DPs correctly reflect the requirements of the Air Navigation Guidance (ANG 2017). This point has already been made to the CAA by others and it will be for the CAA to defend its decision at some point in the future in the event of a challenge.

- In terms of the options presented at the workshop we are concerned that noise is not being treated with sufficient attention.

- The lack of a base case or "do nothing" option makes it impossible for consultees to understand at the moment the extent to which any future changes will facilitate meaningful improvements in efficiency. We note that the base case will be included in the mix of every possible route option at Stage 2B but we remain of the view that this should have been presented at Stage 2A (now). This would have enabled claimed shortcomings of the current system to be studied and understood. Heathrow is the worst performing airport in Europe in terms of noise and it needs to be made quieter. The production of the base case now would have enabled work to start on delivering options for meaningful noise reductions alongside a search for improved airspace efficiency.

- Most of the attention given at this stage to noise seems to be weighted towards departures rather than arrivals. The impact of even a relatively small number of early morning arrivals over areas affected for the first time should not be underestimated. It is unclear how it will be possible to reconcile the DP 7 not to overfly areas by both arrivals and departures once PBN routes for arrivals facilitate arrivals permit joining points as close as 3 nautical miles to touchdown.

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Q7

Do you have any feedback on Heathrow's potential concepts for delivering respite? (pages 49-51)

Slide 49 refers to the Concept of Respite but does not define it either in terms of decibel reduction or other relevant components such as time / daily rotation etc.

The term relief is used but without any attempt to define it.

- Design Principle 6 is to provide predictable and meaningful respite but there seems to be some doubt about this being achievable with PBN in place? Instead "relief" appears to be brought in as a lesser offering.
- There needs be clarity about what is being considered here.

- The impact of change on communities unlucky enough to find themselves under a new PBN route needs to be understood and calculated into any new routeings.

- Subject to our comments above the three concepts have some promise but it will remain to be seen if there is in fact enough lateral airspace available to provide the dispersion need. For example to achieve about a halving of perceived noise around 3 km dispersion will be necessary for aircraft at 3000 ft

- Option 2 listed requires the reinstatement of planning permission to abandon the Cranford agreement – regular take offs from runway 09L are currently not permitted.

Q8

Do you have any feedback on Heathrow's potential approach to night flights? (page 52)

Night flights are damaging to the health of surrounding communities, we are opposed to all scheduled flights between 11pm and 7am. The design options should include a scenario in which no flights are scheduled to arrive until 7am or later.

- Option 1 for night flights appears to be no different to current and it is the only option on offer for arrivals. It is unclear what, if any, difference/improvement that this would provide for communities currently impacted.

- The consultation seems to suggest that new PBN based arrival routes will only be used during "less busy" times of the day. Does this refer to the time between 4:30am to 6am when there are around 15 arrivals? or / and some other period(s) such as the late evenings when there are many departures but arrivals are less numerous. The effect of new PBN arrivals on communities newly exposed to concentrated noise should not be underestimated in terms of annoyance and associated ill-health effects. It is unclear how it is proposed to deal with the historically very busy period for landings between 6 and 7am. Is it proposed that the concept of TEAM will continue either as part of a PBN system or through tactical manual intervention?

- Late running should not be permitted routinely but the concept of bespoke routes for late departures is supported in order to provide some relief for communities that have already been suffering take off noise from 3pm that day. In the absence of permission to use 09L for take offs, the amount of respite potentially available appears to be limited.

Q9

Do you have any feedback on Heathrow's proposed approach to noise efficient operations? (page 53)

There do not appear to be any new initiatives here. Why is there still no commitment to operate ICAO noise abatement procedures NAPD1 for departures? A 2020 study by To70 at Heathrow demonstrated how NAPD1 could result in meaningful noise reduction in terms of both LAmax and SEL noise metrics for communities under Heathrow's existing flight paths.

Q10

Do you have any feedback on Heathrow's overall approach to developing flight path options?

The design options must not create any more noise for any single community compared to pre-COVID- 19 levels
The approach on noise using single event metrics to enable the construction of noise contours is supported. However the 70SEL / 60dBLAmax cut off level is unlikely to reflect the point at which annoyance from aircraft can be regarded as trivial. At locations not impacted by other transportation noise sources, a 70 dB SEL / 60LAmax aircraft event will be clearly audible, being typically 15 - 20dB above background (LA90) levels. The impact of 20 or more events at these levels should not be underestimated and can be predicted to lead to adverse community response if repeated on a daily basis (as found in the 2014 "Compton" route trials).
SEL contours should be produced at 60 and 65dB alongside the proposed 70dB contours.
Several of the proposed options show routine take offs on runway 09L. Unless the airport is able to successfully reapply for planning permission to remove the Cranford agreement we cannot see how this can happen. By the next stage of stakeholder engagements clarity on this point is needed please.

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Q1

Name

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Q2

What is the name of the organisation or community group you represent?

Molesey Residents' Association and appointed by Elmbridge Council

Q4

Did you attend one of Heathrow’s Stage 2A engagement workshops?

Yes

Q5

Thinking about the information that Heathrow has provided and/or presented to you, do you agree or disagree with the following statement about Heathrow’s development of flight path options?"I am satisfied that Heathrow has taken into account the Design Principles when developing the comprehensive list of flight path options”

I disagree

Q6

Please provide any feedback on your answer in the box below.

QUESTION 6 – ANSWER (Taking Account of Design Principles)

1. Overview

This is a complex topic, but many of the community members are reasonably knowledgeable about the challenges that airspace modernisation presents and understand many of the concepts that it should incorporate, based on WHO guidance, European legislation & UK policy documents and processes. We also understand about noise metrics and the pitfalls of some of the noise metrics and data that may be used as inputs to the airspace modernisation process.

Whilst the session I attended was useful in explaining a broad overview of the approach taken, it did not cover enough of the nitty gritty that I would have liked to have had explained. I came away from the session still in the dark about:

- the specific data sets and observations that have been used as input material to generate the theoretical routes;
- the type of algorithms and calculations that have been used to generate the theoretical routes, let alone the specific processes and calculations. I also have no confidence that any of the 'black box' calculations have been independently verified or checked.
- how the various combinations of theoretical routes would be combined to produce the 'best fit' scenarios of the next stages.

It is vital that the community groups have confidence in the precise methods and inputs that are being applied to the shortlisting of potential routes because we suspect from what we have seen so far that they are deeply flawed. If the consultation from the community on the shortlisted routes is left entirely to Stage 3, by that time it is too late to have a major input on how they are being calculated and examined. Once a system has been programmed in a particular way it often requires a re-write (re-code) to approach it in a different way and time and budgets would be against this. Therefore, we need a clearer exposition of exactly what has been done in appraising routes against the Design Principles and what is planned.

HAL has a huge responsibility to get the route design right because it affects the health and well being of hundreds of thousands of people living and working in the communities surrounding Heathrow. HAL has the power to blight communities. Our fear is that the financial health of HAL will be prioritised over the actual physical and mental health of the people who are in its environs.

2. The Design Principles

In terms of the specific Design Principles, several community representatives have had well documented reservations about the Design Principles themselves, aside from the methodology of assessing the route options against them. Understanding the full implications of the, somewhat slippery, Design Principle wordings is important in assessing whether the route option process has adequately taken them into account.

The Design Principles are split into two groups of 'must' – compulsory – and 'should also' – optional. Of the five in the 'must' category four are all ones which are essential for HAL's continued functioning (safety, complying with legislation and regulatory standards, reducing CO2 and using operationally efficient & resilient practices). Only one, mitigated by the words 'where possible' is directed at communities' well-being. This Design Principle says:

"Use noise efficient operational practices to limit and, where possible, reduce adverse impacts from aircraft noise."

The 'limit' is not defined and the wording puts no hard and fast obligation on HAL to reduce aircraft noise. This is important in the subsequent development of route options and appraisal of the process.

I also want to draw attention to the fifth Design Principle in this 'must' category, because it says

"Enable Heathrow to make the most operationally efficient and resilient use of its existing two runways, to maximise the benefits to the airport, airlines and cargo handlers, passengers, and local communities." [My bold]

The communities are last in this list and the wording is woolly enough to be able to be interpreted in different ways. I would argue that maximising the efficient and resilient use of the existing runways for communities would encompass:

- running operations effectively in the day so that they did not intrude unduly into shoulder periods and into night hours;
- that efficient route options are found that give capacity but allow proper respite and do not overfly the same communities with departures and arrivals.

Otherwise, what are the benefits of this Design Principle meant to be for the communities?

Seven Design Principles are in the optional 'should also' list. These are the ones where HAL can pick and choose whether they prioritise meeting them or not and these are the ones that are at the heart of community concerns and well-being. Against the lobbying of many community representatives, the wordings of two of these Design Principles are all about minimising the total number of people overflown. The implication underpinning these and, it could be argued many of the others in the complete list, is that route concentration is the answer. Communities have disputed the validity of this long and hard with evidence from ANG2017, from the outcome for communities of route concentration in other places in the world as well as at London City airport, and European and WHO guidance. Therefore, the assessment of route options against any pure volume-based Design Principles is naturally flawed

naturally flawed.

The problem with the Design Principles is that they take no account whatsoever of the potential change in noise for communities of implementing new routes, which is the well-recognised fundamental source of annoyance and health disbenefits. The 2014 trials that had to be stopped early because of community outcry were a classic example.

Whilst the Heathrow Airspace Modernisation consultation is currently based on the existing limit of 480,000 aircraft movements annually, none of the Design Principles nor the current route option analyses take account in their noise assessments of:

- the true mix of aircraft type that will be flown (heavier aircraft are noisier),
- nor the heights (heavier aircraft are typically lower)
- nor the volumes on any one route (even within existing aircraft movement limits).

They also ignore the potential increased noise from:

- communities being overflown by both departures and arrivals (these are looked at separately in HAL's analysis)
- any changes to respite patterns
- any changes in noise distribution in the day or into the night
- operational mode noise distributions (easterly and westerly operations driven by weather).

The whole point of the airspace reorganisation is to provide HAL with the potential for increased capacity and the routes set in this process will be set for years to come, even if HAL subsequently applies to raise it aircraft movement limits.

ANG17 requires adverse change effects in noise to be addressed as a first tier Design Principle. This is entirely missing from the current process.

3. Departures – Notional Tracks & Metrics

Slides 16 & 17

The 650,000 notional tracks generated by HAL used points in higher airspace where aircraft typically fly today, as its assumption was that destinations will remain similar in the future. The specific assumptions on height and joining location to generate these notional routes have not been defined to us. And given that airspace is being redesigned for all airports in the UK, might not these joining points change?

We do not know how the metrics calculated for each notional track were really generated:

- Which set of population data was used? Does it take account of population growth? If so, how?
- The newly overflown metric of '>20 times a day' – for each individual route would depend on the usage of that route – the volumes of planes sent down it. How has this been calculated?

The metric on noise uses a 70 decibel Sound Exposure Level (SEL) based on an A320 aircraft. As with the criticisms of the SoNA data, it is well documented that the use of average noise metrics disguises the real impact of noise in any given noise footprint. Noise is typically louder in the middle of a SID (Standard Instrument Departure) route and less towards the edges. Averages are also blind to the actual volume and frequency of specific noise events which are the things that cause disturbance and annoyance. Communities were not consulted on the noise metric to be used in route option appraisal. It is also misleading to use this metric if narrow concentrated routes are to be proposed.

The HAL selection of just the noise footprint of the A320 aircraft also takes no account of the true aircraft mix and level of noise disturbance that communities will encounter and encounter now. It is also true that many of the late-night flights in shoulder and night periods and very early mornings when they are much more noticeable and disturb far more (from 4.30am) are much bigger aircraft going to and from more far-flung destinations and they have a larger noise footprint and LAmax reading and are typically at lower level. None of the initial route assessments against Design Principles takes these factors into account because they are limited to the 70 dBel SEL of an A320. Though requested, HAL has not shared the input data for the A320 used in its modelling and we do not understand in any detail how their noise modelling has been done. Slide 22 on Notional Departure Tracks says different aircraft types will be input at the next stage, but that may be too late to give a clear picture of full options and impacts, as many routes are discarded at this stage.

Communities will not be able to understand nor assess the impact of potential route options if there is no understanding of how the proposed new design changes the noise burden and distribution for overflown communities.

Chart 20 says the number of options decreases as analysis, detail and data fidelity increases. It is not clear to us what has been used as data input at the first stage, let alone how it is planned for its fidelity to be increased.

If weightings have been applied to different criteria in the data we have no idea what these are. In slide 24 (Departure Options to meet Design Principle 2) it says options were designed 'to minimise the number of people ….whilst considering CO2 and AONBs (but to a lesser extent)'. Was this a subjective assessment or was it a mathematical one? If so, how are the weightings applied?

In Slide 25 two sets of Options to meet Design Principle 2 were created. ANG2017 says noise is a priority up to 4,000ft. In this slide the ANG2017 regulation quoted relates to the 4,000 to 7,000 ft range, where noise should be prioritised still "unless the CAA is satisfied that the evidence presented by the sponsor demonstrates that this would disproportionately increase CO2 emissions". The bold here is entirely HAL's emphasis - the underlying inference being that the plan is to prioritise theoretical CO2 reductions or lack of increase over the noise impact. The concern here is that neither HAL nor communities can possibly judge the noise v

CO2 trade-off without hard data. We do not know how CO2 is being modelled – input data or algorithms used. And the principle should be that apples need to be compared with apples. If CO2 emissions are being assessed by increases and decreases so should the absolute noise impacts and not just at the simplistic level of supposed numbers of people who may or may not be affected at all. It is in the intensity of change of both noise and CO2 as independent variables that makes a proper trade-off analysis possible.

Slide 27 - HAL has taken a simplistic approach to the assessment of Departure Routes against Design Principle 4 (CO2 reduction) by assuming that minimising track miles from departure to the relevant (undefined) upper airspace network will minimise emissions. That may help, though we have no data on Co2 emissions per nautical mile on which to judge this, and if it is modelled on the theoretical emissions of a factory released modern A320 that does not take into account the real emissions from an A320 in regular use. As with the VW scandal on emissions, the perfect factory settings are not what is experienced in real life. But there are many more factors at play in minimising CO2 emissions than just taking the shortest route from A - B. The intensity of use and volume of aircraft on a route is the primary one. Also key is the mix of aircraft type, the angles of their take-off and landing, whether they do continuous climb and descent and the age and maintenance regime of the specific aircraft, as well as how they are flown.

Slide 28 – Departure Options to Meet Design Principle 5 (operational efficiency of runways). This has been subjectively assessed and the methods to produce these routes are not clear. The only interpretation of this Design Principle has been to maximise departure rates. We are not sure of the day/night time period over which this has been assessed; whether there is a seasonal difference in assumptions (due to weather and light) and what the assumptions are of how many aircraft can be got away (of what type) on any one route from the different runways. How the community benefit is assessed here is a mystery.

Slide 29 – Departure Options to Meet Design Principle 9 – "Keeping the number of people who experience an increase in noise…to a minimum". This has been assessed simplistically by looking at population newly overflown at least 20 times a day on average (as stated above - we do not know how this frequency/population volume has been calculated) and using the disputed 70 dBel SEL insensitive metric. This ignores completely the real increase in noise to existing populations with existing regular aircraft noise. The true effect of noise blight and the change in aircraft noise for populations in projected PBN noise sewers must be realistically and openly analysed. That is the only way this Design Principle can be met in the route appraisal process.

Slide 30 – Design Principle 10 – minimising the total number of people experiencing noise – is the charter for noise sewers that the communities have hotly disputed. Any of their desired principles of noise sharing were rejected by Heathrow in the earlier stage. As before, there is lack of clarity on exactly how data has been used to produce these routes.

Slide 31 – the weighting methods applied in the combined picture to produce a weighted average have not been explained or verified.

Slide 32 – the combined comprehensive set of departure flight path options (routes overlaid on each other) has a very heavy southern emphasis. Under questioning, this was explained by saying that this is because of the destinations that Heathrow serves – more to the south. We would like to see a comparison with the existing route structures to put this in perspective.

4. Arrivals – Notional Tracks & Metrics

Slides 35 & 36 - PBN arrivals as well as PBN departures could have a double whammy disastrous effect on many communities. We understand that PBN arrivals are harder to manage than PBN departures because of weather and the various sizes and speeds of different aircraft and that some vectoring by air traffic controllers to ensure accurate spacing between aircraft may still be needed.

However, despite this, as with departures, only the A320 has been factored into the potential arrivals routes modelling. It may be that departures are more predictable to handle, but some of the same issues with differences in speed, payload/weight, average heights and manoeuvrability will hold good for both arrivals and departures, so the focus of modelling on the A320 is a serious limitation of the current route appraisal process. Modelling different types of aircraft at the next stage may be too late for a full set of viable options to be used, especially if noise metrics are to be taken into account properly.

Slide 36 & 37 - HAL has assumed a continuous descent gradient of 5.24% (3 degrees) in its the modelling of PBN arrivals. We need to understand more about why this gradient has been selected and if it holds good for other aircraft types. We know that the trial on slightly steeper approaches showed that a steeper approach (higher for longer to minimise noise) than this was possible. It is still not really clear (in detail) how the notional arrival tracks have been generated and what data points they have used.

Slide 38 – as with departures, the same reservations about the 70dBel SEL, population calculations and trade-off with CO2/AONBs apply.

Slides 40 - 44 – the same reservations apply as for departures in terms of the limitations of the metrics used. The overlaying of the arrivals combinations suffers from the same opaqueness in terms of how the weighting has been done. There is also lack of clarity, if PBN arrivals are only to be used during less busy times, on how the vectoring of flights at other times might deviate from these notional paths in detail – see below Respite.

Q7

Do you have any feedback on Heathrow's potential concepts for delivering respite? (pages 49-51)

QUESTION 7 – ANSWER (Respite)

Slide 48 – The intervention of air traffic control to vector arrivals by varying the point at which they join the final approach is presented as one method of providing 'predictable and meaningful' respite to communities (addressing Design Principle 6). No route detail is provided; the examples are illustrative. Variety in how aircraft join final approach is to be welcomed so that the same people do not have constant noise above them. However, it would depend on where these joining points were. If they are much closer in, then tighter turns may be necessary and this can have both a detrimental CO2/fuel and noise impact. We need to understand the realistic impact of this so it needs to be accurately modelled with a realistic variety of plane types and height/noise assumptions in specific likely locations. The concern is that closer in joining points will increase noise for those already hard hit by aircraft noise. Any increase in noise intensity for a short period would have to be more than off-set my really meaningful noise reductions and respite at other times to be considered.

Slide 49 – Potential concepts for respite: Dispersion. We know from the ACOG paper 'Technology options that support airspace modernisation' August 2022, that managed dispersion within PBN routes is possible. This is highly desirable to communities. This is not to say that it is a full respite technique in itself – we agree it is a 'relief' instead - but any variation in the trajectory of aircraft so that the same roofs are not overflown constantly is to be welcomed.

One of the main concerns of communities is that under a new design some of them may be overflown by both departures and arrivals and experience aircraft noise for longer periods of time and with more intensity (narrow sky corridor, more planes, closer time-based separation and lower height) within those periods. Currently, most communities are only overflown c. one third of the time largely due to the westerly preference and to runway alternation. Given that noise change is one of the main drivers of annoyance it is imperative that this share of aircraft noise is not exceeded by a new design. The potential for significant detrimental impacts through route concentration, in our view, is likely to far outweigh any small benefit felt from a slight reduction in noise elsewhere.

It is noted that the only Design Principle not properly addressed at all is number 7 (referenced later on slide 54) which is concerned with not overflying the same communities with multiple routes. In slide 54 it is set out to be considered only as part of ACOG's overview of the route overlap with other airports. However, at this stage nothing in Heathrow's own work on its airspace possible routes has properly addressed the potential for route overlap with departures and arrivals over the same communities. This is quite apart from any of the potential suggested emergency relief routes that it might want to implement to deal with a flight backlog and to prevent incursion into night hours (see later). Assessing the potential and likelihood of multiple route overflight resulting from the airspace modernisation process is a key part of airspace reorganisation and is not just about the interaction with other airports. It is very concerning that this aspect of the CAP1616 process and this Design Principle is not met at all in Stage 2.

Slide 50 – Respite: Runway Alternation. This should definitely be a part of the new route design that HAL commits to. It is a valued part of the current respite periods experienced and should be maintained in any new design. If different tracks can be followed for longer it is likely to be helpful but any analysis must be based on real data of the noise changes that this approach would bring. Only then can the size of the benefit be assessed versus any disadvantage.

Slide 51 – Respite: Route Alternation. Again, this is likely to be helpful but only if routes are sufficiently separated and the periods where the alternative routes operate are for sensible periods of time which don't swap back too soon.

The principle of Respite for the current route assessment process has been defined by HAL as a reduction of 9dBs. However, for respite to be meaningful it depends on the base from which the reduction is being made. This may represent a meaningful reduction on current noise levels, though it is not full respite as in 'no noise', but if the revised model puts an additional large noise burden on some communities in terms of the intensity and frequency of noise and/or the length of time noise is experienced for, this level of noise reduction is not going to be an adequate measure to represent meaningful respite.

Q8

Do you have any feedback on Heathrow's potential approach to night flights? (page 52)

QUESTION 8: ANSWER (Night Flights)
Slide 52 - Communities have been clear for years that we wish to preserve a genuine period of peace and quiet for sleep and this should be between 11pm and 7am. This is vital to the physical and mental health and well-being of all – children, those working and retirees & the elderly. The regular late running (low and noisy) flights we have increasingly experienced into the night shoulder period and sometimes after e.g. in my area to Johannesburg, Abuja and Lagos either wake up or prevent sleep in those who have gone to bed. Other areas suffer with early morning arrivals coming in from 4.30am. These hours of operation should not be normalised and need to be curbed in any new operational design.
Concept 1 - It is not acceptable to use PBN arrival paths for planned pre 6am flights as those underneath them will have an intolerable noise infringement on their right to sleep. The planned route alternation suggested is not defined – is it 14 different patterns of arrival? 2 for every day of the week? How would this repeat, every 7 days, every other day? How does this work with easterly and westerly operations? None of this is defined. What are the operational hours that are being planned for? Is it from 4.30am? Is it 24 hours a day? It still means that thousands of people will be disturbed by aircraft noise. Night flights should not be part of planned volumes of aircraft movements.
Concept 2 – Proper policing and application of penalties to airlines who infringe with late departures (especially if it is regular) should be the first line of action to minimise late running night flights. Use of bespoke departure routes for occasional late runners should only be used in emergency, not as a planned degree of latitude on behaviour. Rotation of these would also be essential but the ideal is that airlines are educated not to infringe and HAL gears up its operations so use of such routes is not needed. Again, no specific options are defined and the noise impact in terms of potential change needs to be assessed.
Concept 3 – Use of extra departure routes during or after periods of disruption (the example given is bad weather, but in practise it will be staffing levels, operational difficulties and perhaps industrial action) may be a way for HAL to recover some of its flight volumes but at the cost of additional noise disruption to communities. Being efficient to prevent departures after 11pm is to be encouraged, but any policy and route plans for how to make up for delayed flights should be governed by fines and dispensations (as now) and not part of planned programme of pre-11pm latitude on using additional routes that allow airlines to escape fines and avoid the need for dispensations (that can be refused). Just building in the capacity for more routes to be used would play havoc with respite and, in the current idea, no limit on how and when these could be used is proposed. It is the community being sacrificed so HAL and its airlines can get away with being inefficient. In the new design, if the spacing between planes is going to be based on shorter time-based separation (not distance) and therefore the potential for volumes on certain routes is increased, the space for normal recovery capacity will have been designed out of the normal route pattern. Therefore, it is obvious that HAL will want additional routes to be used in normal operating hours if the volumes of planes are to get away without either cutting flights or airlines paying fines and having to get dispensations. This is quite a dangerous option that will not encourage good behaviour by airlines or HAL.

Q9

Do you have any feedback on Heathrow's proposed approach to noise efficient operations? (page 53)

QUESTION 9: ANSWER: Noise Efficient Operations
Slide 53 - This defines the methods anticipated to use 'noise efficient operational practices to limit and, where possible, reduce adverse impacts of aircraft noise'.
As stated earlier, there are issues with this Design Principle wording as the 'limit' is not defined and it puts no hard and fast obligation on HAL to reduce aircraft noise at all.
The noise efficient practices anticipated by HAL and described on this chart include use of:

- continuous climb and descent
- noise abatement procedures (NADPs)
- steeper approaches and climbs
- later landing gear deployment, and
- low power, low drag.

The anticipated benefits of these practices are not quantified at all in terms of possible noise reductions. We do not know how these will be modelled and what assumptions will be used. Will there be a modelled trade- off between fuel use, CO2 emissions and noise impact? If so, how will this be done? They are currently down to be investigated at Stage 3 and applied to any of the route options. We need to understand in far more detail how this will be done.
Slide 54 – see p6
Slide 55 – Design Principles 11 & 12 – "Enable the efficiency of other airspace users' operations" & "Minimise the impact to all stakeholders from future changes to Heathrow's airspace". The focus of this slide is not on any detail of how this will be achieved but is a top-level acknowledgment that Heathrow will interact with other airspace users including NATS, Advanced Air Mobility Operators (drones, air taxis) and helicopter routes. Design Principle 12 is not really addressed at all from the perspective of Communities and the impact of airspace changes on them, though they represent by far the largest absolute number of stakeholders affected by airport activities. Nothing on this slide addresses how the impact on communities will be minimised.

Q10

Do you have any feedback on Heathrow's overall approach to developing flight path options?

QUESTION 10: ANSWER – Overall Approach Feedback
As stated before, communities need far more detail on the data inputs and modelling used to assess the options. We also need to be confident that it is correct and sufficiently scrutinised and checked. Handing over control of detailed work to consultants always runs the risk that full oversight and understanding by the client of the methods and detail can be compromised.
We need to understand in good time to have a constructive input, what the proposed approach is to combining route options and the overlaying of departure and arrival route options – not just at a high level but in detail.
The fundamental thing missing from the whole process and required by ANG2017 is the understanding of the noise change impacts on communities of the different proposed options. Accurate, non-averaged metrics need to be used to assess this, modelling realistic scenarios of aircraft mix and volumes on proposed routes so it accurately reflects what people might expect in terms of noise above their homes.
A Word copy of this document will be emailed separately to the airspace team at Heathrow as well as being cut and pasted into the official online form.

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Q1

Name

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Q2

What is the name of the organisation or community group you represent?

PHASE - Plane Hell Action (South East London), representing those under the arrivals paths to both Heathrow and London City Airports

Q4

Did you attend one of Heathrow's Stage 2A engagement workshops?

Yes

Q5

Thinking about the information that Heathrow has provided and/or presented to you, do you agree or disagree with the following statement about Heathrow's development of flight path options?"I am satisfied that Heathrow has taken into account the Design Principles when developing the comprehensive list of flight path options"

I am unsure

Q6

Please provide any feedback on your answer in the box below.

ANG17 requires adverse change effects in noise to be addressed as a first tier Design Principle. This is entirely missing from the current process.

Objectively viewed the incorporation of Design Principles 'should' and 'where possible' are tilted in such a way as to ignore Community stakeholder concerns or that they are considered less important than the requirements of other stakeholders: noise, respite, mitigation at distance from the airport. This matters since the currently affected communities run to hundreds of thousands of individuals; the new flightpaths, yet to be designed, are likely to affect many more hundreds of thousands of individuals, or the same communities already affected but at an increased level.

The balance between stakeholders is tilted to the financial benefits at the expense of the negative health impacts on communities.

Q7

Do you have any feedback on Heathrow's potential concepts for delivering respite? (pages 49-51)

It is not at all clear how respite is being considered by Heathrow's potential concepts. See responses to Q8 (night flights), Q9 (noise efficient operations) and Q10 (overall approach to developing flight path options)

Q8

Do you have any feedback on Heathrow's potential approach to night flights? (page 52)

There appears to be no consideration given to the impact of night flights on overflown communities. The interpretation of 'Minimise Impact' appears to be minimimising the numbers of people affected by concentrating operations. A healthier and fairer interpretation would be to spread the impact, a little from time-to-time, rather than 'hitting' the same communities.

Airspace Modernisation would be the perfect opportunity to give communities complete respite between the hours of 11pm and 7am. Sleep is vital to good health. Healthy people make a healthy contribution to the UK economy.

Q9

Do you have any feedback on Heathrow's proposed approach to noise efficient operations? (page 53)

Averaging noise over a period of time does not give a true picture of the effect of individual events, very often concentrated down narrow flight paths over extended hours of operation.

The interpretation of Government's 'Minimise Impact' appears to minimimise the numbers of people affected by concentrating operations. A healthier and fairer interpretation would be to spread the impact, a little from time-to-time, rather than 'hitting' the same communities all the time - as is the current practice for those too far from Heathrow to benefit from the half-day runway alternation in place for those closer to the airport.

Q10

Do you have any feedback on Heathrow's overall approach to developing flight path options?

Workshop slides have only shown 'indicative' flight paths but these are enough to cause concern.

It is not clear what data has been used to design the 'indicative' 650,000 flight paths under consideration but:

1 communities overflown currently by arrivals appear to be overflown by departures as well in the future;
2 communities overflown currently by departures appear to be overflown by arrivals as well in the future;
3 future arrivals flight paths show the greatest number planned for south, SE and SW of the airport. Yet destinations will be no different in the future from current destinations;
4 it was clear from the Workshop that I attended that HAL is not aware that LCY already has its own 'indicative' flight paths. HAL has guesstimated an area that will be used by LCY without any obvious discussions to ensure that the same communities will avoid being affected by operations to/from more than one airport.

While it is understood that HAL works within the framework provided by Government and CAA it would seem a mistake to base any designs on flawed data; I am concerned that at this stage flawed noise sensitivity data is being used to inform design decisions that will be operational for many years. Stage 3 of the Airspace Modernisation programme may be too late to influence the flight paths that will be consulted on.

For greater detail of the impact on communities that HAL's Workshop SA indicates I direct you to the responses submitted by Teddington Action Group and MRA & Elmington.

COMPLETE

Collector: Final (Web Link)
Started: Friday, December 09, 2022 2:15:40 PM
Last Modified: Friday, December 09, 2022 4:57:00 PM
Time Spent: 02:41:19
IP Address: [redacted]

Page 1

Q1

Name

[redacted] and [redacted]

Q2

What is the name of the organisation or community group you represent?

Richmond Heathorw Campaign (RHC)

Q4 **Yes**

Did you attend one of Heathrow's Stage 2A engagement workshops?

Q5 **I disagree**

Thinking about the information that Heathrow has provided and/or presented to you, do you agree or disagree with the following statement about Heathrow's development of flight path options?"I am satisfied that Heathrow has taken into account the Design Principles when developing the comprehensive list of flight path options"

Q6

Please provide any feedback on your answer in the box below.

The letters on Design Principles from the Community Noise Forum including Richmond Heathrow Campaign already on the CAA portal dated 8 December 2021, 4 January 2022 and 24 January 2022 set out our ongoing concerns with Heathrow's Design Principles.

In particular, we question the starting point for the design process:

1. Richmond Heathrow Campaign has consistently queried Heathrow's approach to Airspace Modernisation using the blank sheet design approach.

2. RHC believes starting with the legacy flight paths, which already link the eight or so fixed way-points between upper airspace and Heathrow Airport is a better approach than starting with a blank sheet.

3. There are noise hot spots and conflicts with the 15 airports sharing Heathrow's airspace but focussing on these limited number of issues should be the priority in order to avoid major changes to the allocation of flight paths and noise pollution over London and its surrounds.

4. The advance of technology, including PBN, is a reality but applying the emerging advances to the legacy flight paths and respite patterns is likely to be far more acceptable to Heathrow's communities than wholesale change from a blank sheet approach.

5. Heathrow is surrounded by dense population, so it is not a question of finding unpopulated areas to which flight paths might be switched. Parks and open spaces are surrounded by populations and are not appropriate for new flight paths.

Additionally, and to save response duplication, we endorse and support the responses submitted to this consultation by Teddington Action Group (TAG) on 2 December and by MRA & Elmbridge on 7 December.

Our letter to Heathrow dated 18 July 2022 with Heathrow's response of 3 October 2022 in square brackets can be found at the link below. We are concerned that the responses provide very little advance to our questions and requests and leave us with grave concerns as to the Airspace Modernisation process.

https://richmondheathrowcampaign.org/RHC-letter-to-HAL-18-July-2022.html

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Q7

Do you have any feedback on Heathrow's potential concepts for delivering respite? (pages 49-51)

Our research shows there is not enough airspace to create additional meaningful net respite for flights taking off from, and landing at Heathrow. Heathrow respite benefit - including late joining points and mixed mode - will always come at a cost to someone else.

In particular it is essential that respite across easterly and westerly operations is retained. Arrival paths and take-off paths should not overlap the same areas.

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Q8

Do you have any feedback on Heathrow's potential approach to night flights? (page 52)

We reiterate our opposition to all take-offs and landings at Heathrow during the full night period between 11pm and 7am. This position correlates with WHO guidelines. Our research shows that all flights before 7am could be moved into day with no net commercial cost.

Additionally, and to save response duplication, we endorse and support the responses submitted to this consultation by Teddington Action Group (TAG) on 2 December and by MRA & Elmbridge on 7 December.

Q9

Do you have any feedback on Heathrow's proposed approach to noise efficient operations? (page 53)

The potential carbon benefits of balancing noise emissions with carbon emissions between 4,000 and 7,000 feet are orders of magnitude lower than those of the carbon benefits that could and should be obtained in other areas of aviation. We believe that noise minimisation should be the main criterion for aircraft passing through this altitude in the Heathrow area. This is covered in more detail in our response to question 10.

Additionally, and to save response duplication, we endorse and support the responses submitted to this consultation by Teddington Action Group (TAG) on 2 December and by MRA & Elmbridge on 7 December.

Q10

Do you have any feedback on Heathrow's overall approach to developing flight path options?

As stated in our response to Question 9, the potential carbon benefits of balancing noise emissions with carbon emissions between 4,000 and 7,000 feet are orders of magnitude lower than those of the carbon benefits that could and should be obtained in other areas of aviation. We therefore believe that noise minimisation should be the main criterion for aircraft passing through this altitude in the Heathrow area.

1. In 2018 there were 292 million passengers (mppa) on arriving and departing flights within and to/from the UK. This activity produced 40 million tonnes of CO2 (Mt/yr) accounted on the basis of international departures and domestic arrivals and departures. Unconstrained demand is forecast by the aviation industry to grow at around 1.6% pa (2018-2050), resulting in cumulative growth of 64% to 478 mppa and 64 MT/yr CO2 in 2050 (before mitigation). These figures vary slightly depending on source (e.g. JetZero).

2. The UK Climate Change Committee's 6th Carbon Budget assumes a ceiling of 25% UK passenger growth over the 30 years for aviation to achieve Net Zero by 2050. With 25% maximum growth in mind the CCC says there should be no net expansion of UK airport capacity unless the sector is assessed as being on track to sufficiently outperform a net emissions trajectory that is compatible with achieving Net Zero.

3. The CCC budget restricts UK passenger growth to a far lower level than aimed for by the aviation industry. The CCC says that when tested by the CCC, public opinion found the CCC growth rate acceptable. The industry by comparison relies on mitigation from optimistic assumptions for bio fuels, efficiencies and zero carbon propulsion.

4. The industry is far too optimistic and Richmond Heathrow Campaign believes the costs of CO2 will have to be internalised, which will mean significant increases in the cost of flying with its impact on demand. We accept this is a global issue and that global aviation emitted around 1bn GT of CO2 in 2018 and is predicted to rise to 2.7GT in 2050 before mitigation. The matter is extremely serious given that the global remaining cumulative carbon budget is 400 Gt of CO2 to achieve maximum 1.5oC and based on around 42Mt of CO2 emitted globally in 2018 and straight line reduction to zero in 2050, 600MT would be emitted.

5. We summarise the above statistics to emphasise that in our view the aviation carbon issue can only be resolved by the aviation industry reversing its outright rejection of internalising carbon costs. The carbon saving from Airspace Modernisation by comparison is small. We have sought estimates from Heathrow without success. But in 2018 Heathrow's carbon emissions were 22 Mt/yr and we believe the carbon emitted on the ground and up to 7,000 ft was around 2Mt. It is hard to imagine that slightly different track mileage, acceleration and climb rate would save more than 0.2Mt/yr.

6. Under the circumstances outlined here RHC urges the UK industry to give exclusive priority to noise and air quality when designing flight paths up to 7,000 (notwithstanding Policy) and to get to grips with the elephant in the room, which is passenger growth when seeking to achieve Net Zero.

7. Three airports produce around 80% of UK aviation carbon, Heathrow (57%), Gatwick (13%) and Manchester (10%). RHC believes there should be an Airport Carbon Quota Scheme with Action Plans to manage efficiency, hybrids and sustainable aviation fuels. Fuel and hence carbon is at its most intense use on take off but still RHC believes potential carbon savings based on acceleration, climb rates and track miles are relatively small in rela

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From: [redacted]
Sent: 11 December 2022 15:26
To: DD - Airspace
Cc: [redacted]
Subject: Re: Final Reminder for feedback on Heathrow's Stage 2A Engagement: Deadline this Friday
Attachments: Heathrow Stage 2A Engagement Feedback FormResponse from RHC.pdf

Caution: external email. Unless you recognise the sender and know the content is safe, do not click links or open attachments.

Dear [redacted]

RHC submitted feedback digitally by the deadline on Friday 9 Dec and we attach here a PDF version of that feedback.

There are two points we would like to raise and on which we would welcome your response.

1. Question 10. RHC feedback Para 4. In haste we got Mt and Gt of CO2 a bit mixed up. (1 Gt = 1,000 Mt) This has been corrected in the PDF version attached. Para 4 starts "The industry is far too optimistic and Richmond Heathrow Campaign believes the costs of CO2 will have to be internalised,....." Should we re-submit the digital response with Para 4 replaced as we understand the feedback will be posted on the CAA portal?

2. Question 6. RHC feedback refers to the RHC letter to you dated 18 July 2022 and Heathrow's response of 3 October 2022. We had wanted to include both in our feedback but found the digital form would not accept the material - probably because of length. So we created a link to the letter and Heathrow's response on the RHC website and included the link in our digital feedback. However, we would like the letter and Heathrow's response included in RHC's feedback and placement on the CAA portal in it entirety rather than through a link. The PDF version here does have the letter and response included in full. Is there any way this can be achieved, please?

Kind regards

[redacted]

[redacted] Chair, Richmond Heathrow Campaign

cc [redacted] Richmond Heathrow Campaign

From: DD - Airspace
Sent: 13 December 2022 17:49
To: [redacted]
Cc:
Subject: RE: Final Reminder for feedback on Heathrow's Stage 2A Engagement: Deadline this Friday

[redacted]

Hi [redacted]

Please could you re-submit your feedback form if you wish to make a change to it? The link is still open here: https://www.research.net/r/HeathrowEngagementFeedback

We will include the pdf you attached to your email as supplementary information to your response. It will be included in our stakeholder engagement evidence trail which will be submitted to the CAA for the Stage 2 Gateway.

Many thanks,
[redacted]

From: [redacted]
Sent: 14 December 2022 09:56
To: DD - Airspace
Cc: [redacted]
Subject: Re: Final Reminder for feedback on Heathrow's Stage 2A Engagement: Deadline this Friday

Caution: external email. Unless you recognise the sender and know the content is safe, do not click links or open attachments.

Dear [redacted]

Thanks for replying promptly. RHC has today (14 Dec 2022) resubmitted its Feedback on Heathrow's digital portal with the typos in Q10 para 4 corrected. There are no other changes. We have noted on the revised Feedback Form that it replaces RHC's response of 9 Dec. Many thanks for enabling us to do this.

The PDF version of RHC's Feedback emailed to you had already been corrected when sent on 11 Dec.

Kind regards

[redacted]

[redacted] Chair Richmond Heathrow Campaign

COMPLETE

Collector: Final (Web Link)
Started: Wednesday, December 14, 2022 9:26:14 AM
Last Modified: Wednesday, December 14, 2022 9:49:19 AM
Time Spent: 00:23:04
IP Address: [redacted]

Page 1

Q1

Name

[redacted] and [redacted]

Q2

What is the name of the organisation or community group you represent?

Richmond Heathrow Campaign

Q4 **Yes**

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with Action Plans to manage efficiency, hybrids and sustainable aviation fuels. Fuel and hence carbon is at its most intense use on take off but still RHC believes potential carbon savings based on acceleration, climb rates and track miles are relatively small in relation to noise and air pollution harmful impacts.

Additionally, and to save response duplication, we endorse and support the responses submitted to this consultation by Teddington Action Group (TAG) on 2 December and by MRA & Elmbridge on 7 December.

PLEASE NOTE: THIS RHC REPONSE OF 14 DEC 2022 REPLACES THAT OF 9 DEC AS DISCUSSED WITH [redacted] (HAL) BY EMAIL SO AS TO CORRECT SOME TYPOS IN PARA 4 OF QUESTION 10. ALSO RHC SUBMITTED THE CORRECTED RESPONSE BY EMAIL TO HEATHROW ON 11 DEC WITH ITS LETTER OF 18 JULY 2022 (REFERRED TO IN Q6 ABOVE) AND HEATHROW'S RESPONSE OF 3 OCTOBER 2022 IN FULL IN PLACE OF A LINK.

COMPLETE

Collector: Final (Web Link)
Started: Monday, December 05, 2022 8:42:56 PM
Last Modified: Monday, December 05, 2022 8:54:45 PM
Time Spent: 00:11:49
IP Address: [redacted]

Page 1

Q1

Name

[redacted]

Q2

What is the name of the organisation or community group you represent?

Individual Response but member of TAG

Q4 **Yes**

Did you attend one of Heathrow's Stage 2A engagement workshops?

Q5 **I strongly disagree**

Thinking about the information that Heathrow has provided and/or presented to you, do you agree or disagree with the following statement about Heathrow's development of flight path options?"I am satisfied that Heathrow has taken into account the Design Principles when developing the comprehensive list of flight path options"

Q6

Please provide any feedback on your answer in the box below.

Please see reasons in TAG response being sent by [redacted]

Q7

Do you have any feedback on Heathrow's potential concepts for delivering respite? (pages 49-51)

Please see issues highlighted in TAG response on this subject

Q8

Do you have any feedback on Heathrow's potential approach to night flights? (page 52)

There should be no night flights between 11pm and 7am

Q9

Do you have any feedback on Heathrow's proposed approach to noise efficient operations? (page 53)

Please see previous TAG responses on this subject. For example, Heathrow should be designing in noise efficient departure operations using NADP1 (not the present climb rates) as the starting point, not latter in the process.

Q10

Do you have any feedback on Heathrow's overall approach to developing flight path options?

Please see full TAG response

COMPLETE

Collector: Final (Web Link)
Started: Thursday, December 08, 2022 4:53:05 PM
Last Modified: Thursday, December 08, 2022 5:14:38 PM
Time Spent: 00:21:33
IP Address: [redacted]

Page 1

Q1

Name

[redacted]

Q2

What is the name of the organisation or community group you represent?

TAG (Teddington Action Group)

Q4 **Yes**

Did you attend one of Heathrow's Stage 2A engagement workshops?

Q5 **I strongly disagree**

Thinking about the information that Heathrow has provided and/or presented to you, do you agree or disagree with the following statement about Heathrow's development of flight path options?"I am satisfied that Heathrow has taken into account the Design Principles when developing the comprehensive list of flight path options"

Q6

Please provide any feedback on your answer in the box below.

The context for considering the airport's CLOOs is that Heathrow (HR) generates one of the highest numbers of air traffic movements anywhere in the world, yet it is situated in the middle of a very densely populated area. This means that HR's ACP process is likely to impact the greatest number people in the most extreme way, unprecedented on a global scale.

Having regard to this it is essential for Airspace Modernisation (AM) around HR to be approached with the utmost care and consideration as so many lives will be adversely impacted. A precautionary and bespoke approach is required. The radical concepts set out in the CLOOs have the potential to cause enormous harm. HR will be aware of this based on the evidence of both its own 2014 PBN trials and international experience, particularly in the US, which has been raised on numerous occasions at the HCNF.

As stated in our response to the Stage 1 consultation, HR's Design Principles (DPs) are fundamentally flawed as many do not follow the requirements of Airspace Navigation Guidance 2017 (ANG), as well as being in conflict with each other.

ANG, which is legally binding, sets out three environmental objectives. One of these is to limit, and where possible reduce, the number of people in the UK significantly affected by adverse impacts from aviation noise. For the purpose of assessing airspace changes, the government instructs the CAA to interpret this objective is by reference to health impacts (interpreted by the WHO and ICAO to include annoyance) and specifically not by numbers of people in any particular noise contour. ANG also mandates altitude-based priorities, with noise being the overall priority up to 7000 ft, noise being the only priority below 4000 ft and trade offs with carbon savings only permissible between 4-7000 ft if this can be proven on a cost benefit basis.

HR has not correctly addressed these requirements in setting its DPs or in their interpretation for the purposes of producing CLOOs. There is no appropriate evidence base (local or national) for assessing the significant adverse effects generated by aviation flying to and from Heathrow airport. The DPs erroneously refer in a number of instances to numbers of people, not adverse effects and the CLOOs based on this approach are therefore open to challenge.

In particular, especially in the context of proposed radical flight path concepts, the impact of the 'change effect' needs to be fully understood and factored in to any assessment of adverse impacts. This is reflected in ICAO noise advice (which advises average metrics should not be used for high change proposals) and considered by international experts (some of whom co-authored the ICAO guidance) to add the equivalent of 6-9dBLaeq to those adversely impacted. This is ignored entirely in HR's CLOOs slide pack.

The assessment and analytic tools used to generate the CLOOs are opaque and not adequately explained in the slides. For example, how have higher noise levels, alternative metrics (e.g., N>65), heavier planes, fleet composition, route usage, modal change, respite and time of day) been factored in (perhaps they have not been)? The methodology set out in the slide pack cannot in any way be regarded as comprehensive robust or transparent. These are fundamental requirements for any public consultation and coming forward with the CLOOs on the basis presented in the slide pack is indicative of a prejudged, inherently biased and non-precautionary approach.

Critically HR, in producing its CLOO proposals, in addition to the fundamental flaws related to DP2 explained above, has ignored three of its own 'should' DPs, which actually go to the heart of the requirement to limit, and where possible reduce, the number of people in the UK significantly affected by adverse impacts from aviation noise. The implications of this are extremely important highly and are likely to rule out many (probably the majority) of the indicative flight paths. In particular DP7, to avoid overflying the same communities with multiple routes, taken with consideration of ANG, ICAO and WHO advice will preclude the majority of the arrival CLOO indicative flight paths.

The CLOO proposals also fundamentally impact on DP6 concerning respite and DP9, which requires minimisation of numbers of people experiencing an increase in noise from future airspace design to a minimum (although this DP refers to numbers rather than adverse impacts, any serious consideration of the implications of DP9 will require the 'change effect' to be factored in).

As noted earlier, the omission of flight path (CLOO) options responding to DPs 6, 7 and 9 appears indicative of a pre-judged (biased) approach, potentially legally challengeable and certainly unsupportable from a moral or Corporate Social Responsibility

(biased) approach, potentially legally challengeable and certainly unsupportable from a moral or Corporate Social Responsibility (CSR) perspective.

HR should now undertake and publish an assessment of additional CLOOs that specifically address DPs 6,7 and 9 as well as setting out details in how it will address and assess the baseline 'do nothing' option (an essential component of any environmental assessment with implications as far reaching, as Heathrow's ACP).

The implications of these DPs go to the heart of the requirements of ANG (in particular DP2), to minimise adverse impacts. The CLOOs presented by HR so far do not include flight path options that would enable these considerations to be addressed and compared against other options. It is not justifiable to rule out options (for example straight arrival paths which do not overfly areas under departures) at this stage which would enable these factors to be considered and addressed, particularly as aviation's adverse factors are dependent on a range of factors, including respite, the change effect, how the routes would be used in terms of flight numbers and fleet mix and critically how the different flight paths would work in combination.

Until this is done the CLOOs cannot be considered a comprehensive set of flight path options. On the basis presented, the CLOOs are incomplete, unacceptable and indicative of a pre-judged approach.

Q7

Do you have any feedback on Heathrow's potential concepts for delivering respite? (pages 49-51)

The response to Q 6 above sets out the general context for HR AM – including ATM numbers, density of catchment population, level of extent of its current noise impact, etc.

At present, the majority of overflown residential areas, especially at relatively high noise levels, experience respite for around two thirds of the (day) time. This is a massively important factor (apparently not considered in producing the CLOOs) in enabling co-existence between established residential communities and the airport currently possible.

The impact of change will be a massive factor in deciding the acceptability or otherwise of HR's ACP proposals. Any significant reduction in respite will constitute one of the most damaging change factors and will be an enormously important consideration in deciding the overall acceptability of the ACP proposals or otherwise.

Currently areas to the northeast and southeast of the airport are exposed to departures around one third of the time due to changes in the operation mode of the airport, dependent on wind direction and westerly preference. They are on occasion overflown all day but across the year, only on average, for one day in three.

Areas under arrivals to the east and west are overflown two thirds of days, but due to runway alternation only for half a day (8 hours). It is recognised that there are some areas further out, such as the southeast of London that do not benefit from respite from runway alternation at present. This causes great distress for these communities and AM should be used as an opportunity to provide meaningful respite for them (through equitable noise sharing with communities a similar distance from the airport).

The general respite principle that should apply for HR AM, if serious damage and significant adverse impacts are to be avoided, is that in every case possible at low altitude (i.e., below 4000 ft) communities should not be overflown for more than one third of the time.

It is very difficult to see from the CLOOs produced so far how this is to be achieved or even considered. It is essential (and probably a legal necessity) that a set of indicative flight paths should now be produced responding to DPs 2, 6, 7 and 9.

As note above as explained in response to para 6 without these the CLOOs are not comprehensive but they are indicative of a pre-judged process.

Q8

Do you have any feedback on Heathrow's potential approach to night flights? (page 52)

In order to minimise significant adverse noise impacts of flights to and from HR (which have very damaging health implications) in future under AM there should be a strict 8-hour night flight ban operating on the airport. This should have effect between 11.00pm and 7.00am, with far tighter conditions relating to late evening flights than at present. The night flight quiet period should prevent taxiing and aircraft loading times during the 8-hour night period. HR should not be cramming late evening flights into a schedule it cannot keep to, between 9 and 10.50pm. Significant penalty charges should be payable by Heathrow (recoverable from the airlines where they are at fault) for all breaches of the 8-hour night period, unless there are truly exceptional, unforeseen and uncontrollable circumstances. This would obviate the need for the night flight respite strategies as outlined on page 53 of the CLOOs pack.

Q9

Do you have any feedback on Heathrow's proposed approach to noise efficient operations? (page 53)

HR's mandatory DP3 requires the use of noise efficient operational practices to limit, and where possible reduce adverse impacts from aircraft noise. It is follows from ANG that this is essential at low altitude.

ACOG and the CAA recognise that significant noise benefits can be achievable from flying higher. The potential of this must be pursued to its full potential. Communities have worked with aviation consultants, TO70 and identified ways of achieving noise benefits from departures which should be implemented irrespective of AM. HR's slide pack refers to use of NADPs – it should be noted that ICAO advises that NADP2, which is commonly used out of Heathrow, should not be applied when overflying densely populated residential areas. The use of this procedure should cease entirely under HR's AM programme.

With the CLOOs as presented, there could be potential clashes between (and constraints caused by) departure and arrival routes, which could impede the ability to fly higher. This is why CLOO proposals that enable arrival and departure routes to be separated entirely need to be modelled, identified and assessed.

This reinforces the need to model other indicative flight path options to demonstrate compliance with DPs 2, 3, 6, 7 and 9 and ANG more generally.

Q10

Do you have any feedback on Heathrow's overall approach to developing flight path options?

TAG statement

Response to Heathrow ACP Stage 2A Community Engagement Workshop and Options

The points made after the initial workshop (see Appendix 1) have not been adequately addressed and remain significant and valid challenges. Heathrow as the airspace sponsor needs to confirm if it believes the DfT policy on noise, which ignores change effects is an adequate basis to design flight paths.

Feedback on latest information / options

Change

Heathrow are continuing to ignore the key issue in proposing different flight paths – the change effect.

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In particular it should be noted that ICAO recognises that where there is high change metrics based on standard metrics should not be used to assess impacts (see para 2.3 below).

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The majority of the CLOOs produced so far appear to envisage communities to the east of the airport falling under both arrivals and departures, the implication being that far less respite would be available to these areas. This would represent the most fundamental change in living conditions possible for the extensive and highly populated areas impacted and would be certain to result in highly blighted communities. Once such proposals become evident this is sure to result in a backlash from the impacted population (the 2014 trials, which had to be abandoned early are indicative of what is likely to occur).
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comparisons?

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Consultation

Communities who are aware of noise have attended workshops. However, the massive sphere of impact that Heathrow has over highly populated areas will mean if flight paths are changed many people will not be aware of the extent of the changes being envisaged.

The scale of the changes encompassed in the CLOOs (which arises apparently from the DPs and their interpretation) requires extensive and meaningful consultation of all the communities that could be impacted.

Overall, this shows how poorly situated Heathrow is next to high population density. Rather than make flightpath changes to save carbon it should cut flight numbers and encourage the latest highest efficiency planes to reduce its large carbon footprint.

Although consultation is necessary, if it is based on a poor understanding of impacts it will be useless in reducing annoyance and could magnify frustration and annoyance. To be effective consultation must be based on good metrics and thresholds that authorities have established in an open and trusted way. The present metrics, thresholds and change impact do not allow this.

Night Flight Approach

There should be no night flights between 11pm and 7am.

[redacted]
TAG, 2nd December 2022

Appendix 1

Heathrow Airspace Modernisation Methods and Metrics workshop, 5 July 2022 - TAG Community Feedback Response 5 November with Elaboration points in red

Introduction

This document sets out a record of elaboration issues which we consider HR has not provided an adequate response to within its composite document circulated on 19 October.

These areas are of key concern as it cannot be reasonable to progress flight path design development, and option assessment in the absence of a reliable and accepted evidence base.

Whilst a number of HR's initial responses were deflected to the DfT, the CAA and ACOG in the composite document, it is important that the airport, in its capacity as option generator, sets out its own views on these matters, which should be shared with

communities and other stakeholders. The elaboration issues referred to in this note have been raised with HR at numerous meetings of the Community Noise Forum over a number of years. On this basis it is expected that the airport should be able to respond in its own right at this stage of the airspace redesign process. If necessary, in order to achieve common ground, HR should highlight unresolved issues to the DfT, CAA and ACOG and arrange for a meeting between these organisations and representatives of Heathrow communities, as they will have a material impact on public health and wellbeing for millions living within the airport's noise footprint.

Heathrow is situated uniquely as a hub airport in the middle of densely populated and long-established residential areas. It already accounts for a third of all recognised aviation noise impacts across Europe. Given its role as principal applicant for its flight paths, Heathrow must take responsibility for the outcomes of all changes it promotes with a duty of care concerning matters that have implications for public health and wellbeing.

Against this background HR should clarify its position in relation to the elaboration points highlighted in red in the annotated document below.

Methods and Metrics workshop

TAG Community Feedback

Summary of major points arising

- The Design Principles (DP) and the proposed approach in some cases conflict with each other and ANG 17. It was recognised there is an absence of a credible health and annoyance impact evidence base. Of overriding importance, the DPs and resulting approach do not address the key concentration issue. Substantive point not addressed in HR's response. ANG sets out clear altitude-based priorities and the need for impacts to be assessed by reference to health. Unfortunately, there is an absence of a current and robust evidence base. HR's response recognises that PBN can lead to extreme concentration of flight paths but has not established the health and annoyance impact of these, despite knowing that many very highly populated residential communities will be overflown within its hinterland. This issue has been drawn to the attention of the HCNF on numerous occasions, with extensive reference to adverse international experience as well as its own 2014 PBN trials (which had to be abandoned early in the face of widespread public protest).
- The Heathrow (HR) flight path design team recognised that concentration using PBN would have significant adverse effects, which based on international experience will lead to blighted neighbourhoods. Whilst previously HR has commissioned research relating to the comparative process of airspace change, successful solutions to concentration over residential areas have not been identified or addressed. Does HR agree the premise that significant adverse impacts are likely to arise from highly concentrated flight paths and what steps will be taken to prevent these?
- The HR team considered managed dispersion, based on previous flight path patterns, would not be achievable under PBN. Does HR agree with this understanding of what was said at the meeting concerning managed dispersion? They did not see ways a limited number of highly concentrated routes could be avoided using PBN and recognised this would cause significant effects in the crowded airspace and high-density population around Heathrow airport. Does HR disagree that this statement reflects the discussion at the meeting?
- Whilst the HR team was considering the potential to mitigate the impact of PBN through respite they acknowledged this had severe limitations due to airspace capacity constraints and given Heathrow's location in the middle of very highly populated areas. Again, does HR disagree with this understanding of what was said at the meeting regarding constraints?
- HR airspace design was not addressing the reduction of noise impacts on the ground, nor was it taking account of internationally recognised change impacts as metrics based solely on a static survey were being applied. It was noted ICAO advised the use of overall average LAeq metrics only accounted for one third of aviation noise impacts. Not addressed in HR's comments. Does HR disagree with the above? How will alternative metrics be factored into decision making and option appraisal under CAA CAP guidance?

- Airspace redesign seems to be an exercise to investigate lower airmile routes and potentially at a cost of causing very significant adverse impacts over the high-density populations such as those around Heathrow. HR does not comment – does HR accept unequivocally the primacy and constraints set by ANG 17 regarding altitude priorities and health impacts?

Heathrow Business Case

- HR confirmed that this ACP assumes 480,000 ATMs pa. Communities noted this conflicts with assumptions being used by the DfT and ACOG.
- DfT assumptions also conflict with CCC limitations on UK aviation growth. What is HR's position on this and how will this issue be resolved?

Noise

- No study has been undertaken in relation to the environmental/health outcomes of implementing PBN/NextGen and the absolute priority of avoiding the creation of blighted communities living in 'noise sewers' resulting from extreme concentration. HR's agreement to consider the need for a health impact assessment in its response is appreciated, but this needs to be undertaken before flight path design development can be advanced and options appraised. When will a decision be made on undertaking a health impact assessment? This is despite evidence of international experience being provided to the HCNF on numerous occasions over many years.
- All parties accept that LAeq measures are not sufficient to describe annoyance. No metrics have been developed to describe impacts of concentration in the centre of PBN flight paths. HR seems to accept the point but deflects the issue back to the CAA, DfT and ACOG. Deficiencies of the current environmental noise evidence base (i.e., SoNA 14) are well known (and were accepted by ICCAN prior to its abolition). The DfT also implicitly accepts this as it agrees the need for a new SoNA and LOAEL review. As sponsor of an ACP of the magnitude currently under consideration does HR accept that it has responsibility for its decisions and a duty of care in relation to the outcomes of its

From: [redacted]
Sent: 08 December 2022 17:37
To: DD - Airspace
Cc: [redacted]
Subject: Re: Final Reminder for feedback on Heathrow's Stage 2A Engagement: Deadline this Friday
Attachments: CLOO pro forma response final 08 12 22.docx; CLOO Heathrow Airspace Modernisation Stage 2A Engagement Feedback (final).docx

Caution: external email. Unless you recognise the sender and know the content is safe, do not click links or open attachments.

Dear [redacted]

I have just submitted feedback in response to the CLOO feedback form. This is in a personal capacity as attendee at one of the 9 November workshops. I believe [redacted] also submitted in a personal capacity prior to his departure on holiday on Friday - I do not have a copy of this.

Prior to his departure [redacted] and I produced a Statement on behalf of TAG regarding the CLOOs. Our intent is that will be applicable to both of our individual responses. I have tried pasting this in response to Question 10 but the pro-forma system did not allow colours, inserts or pictures to be included and in fact also did not allow the full text to be included.

Having regard to this I attach two documents, first the TAG statement applicable to both submissions and secondly my individual response, which also contains the TAG Statement in response to Question 10. Please could you confirm safe receipt of both documents.

We have serious reservations concerning the CLOOs and the analysis that has been undertaken so far. Having attended both Airspace Modernisation workshops we would like a formal response to the points raised in our submissions, the TAG Statement and the Elaboration Note (which is appended.

Kind regards

[redacted]

TAG Statement

Response to Heathrow ACP Stage 2A Community Engagement Workshop and Options

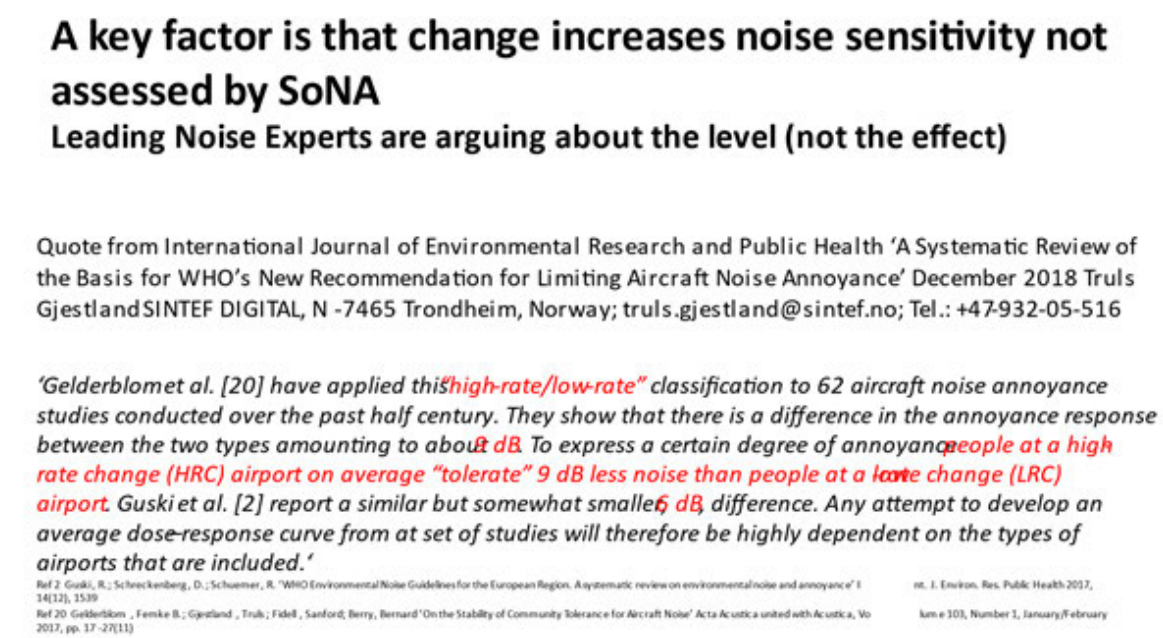
The points made after the initial workshop (see Appendix 1) have not been adequately addressed and remain significant and valid challenges. Heathrow as the airspace sponsor needs to confirm if it believes the DfT policy on noise, which ignores change effects is an adequate basis to design flight paths.

Feedback on latest information / options

Change

Heathrow are continuing to ignore the key issue in proposing different flight paths – the change effect.

Negative changes in a recipient's noise environment causes increased sensitivity and annoyance – this is a well-known fact and must be taken account of. Increased annoyance is of order 6-9dB in average sound energy levels (LAeq/LDEN). All evidence points to this effect lasting for very long periods (e.g., Schiphol specific annoyance studies over 2 years, Frankfurt expansion with 10yrs of protests, increased sensitivity after PBN trials at Heathrow now 8 years ago). This has been presented at Heathrow meetings many times for example;



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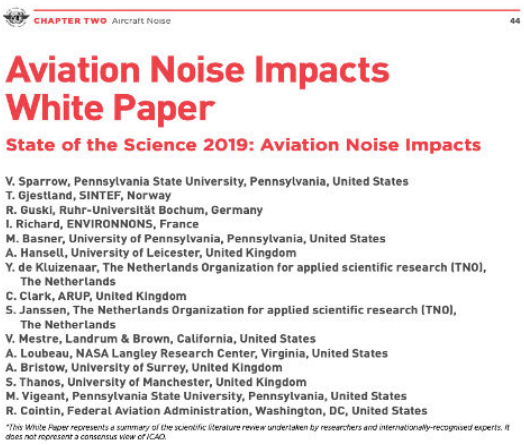
ICAO 2019 advice on change and metrics



CHAPTER TWO Aircraft Noise 44

Aviation Noise Impacts White Paper

State of the Science 2019: Aviation Noise Impacts

V. Sparrow, Pennsylvania State University, Pennsylvania, United States
T. Gjestland, SINTEF, Norway
R. Guski, Ruhr-Universität Bochum, Germany
I. Richard, ENVIRONNONS, France
M. Basner, University of Pennsylvania, Pennsylvania, United States
A. Hansell, University of Leicester, United Kingdom
Y. de Kluizenaar, The Netherlands Organization for applied scientific research (TNO), The Netherlands
C. Clark, ARUP, United Kingdom
S. Janssen, The Netherlands Organization for applied scientific research (TNO), The Netherlands
V. Mestre, Landrum & Brown, California, United States
A. Loubeau, NASA Langley Research Center, Virginia, United States
A. Bristow, University of Surrey, United Kingdom
S. Thanos, University of Manchester, United Kingdom
M. Vigeant, Pennsylvania State University, Pennsylvania, United States
R. Cointin, Federal Aviation Administration, Washington, DC, United States

*This White Paper represents a summary of the scientific literature review undertaken by researchers and internationally-recognised experts. It does not represent a consensus view of ICAO.

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other observers and guests in Montreal, Canada November 1–3, 2017. The purpose of this workshop was to lay the foundation for this white paper, and over 50 attendees participated. One specific topic requested by the CAEP was for ISG to address the non-technical environmental aspects of the public acceptability for supersonic aircraft noise, and ISG began to explore this topic. In addition, the authors found much material on supersonics that had not previously been summarized for CAEP, and these details are provided in a separate document[1]. Subsequent follow-up discussions led to additions to this white paper beyond those discussed at the workshop, and this includes urban air mobility (UAM) and unmanned aerial systems (UAS) noise. The basic of metrics for aircraft noise were defined in a Glossary which can be freely accessed at the ICAO public website[2] and those will not be repeated here.

2. COMMUNITY NOISE ANNOYANCE

2.1 Definition

Community noise annoyance refers to the average evaluation of the annoying aspects of a noise situation by a "community" or group of people. Annoyance, in this context, comprises a response that reflects negative experiences or feelings such as dissatisfaction, anger, disappointment, etc. due to interference with activities (e.g., communication or sleep) or simply an expression of being bothered by the noise.

level L_{dn}, or a similar indicator, e.g., day-evening-night average noise exposure level, L_{den}.[3,4] The standard ISO 1996: 2016 has tables with % HA as a function of L_{dn} and L_{den} for various transportation noise sources.[3] A review by Geiderblom et al.[5] confirms these data for aircraft noise. Another review suggests different relationships, particularly for aircraft noise annoyance.[3]

2.3 Generalized versus local exposure-response relationships

While exposure-response relationships have been recommended for assessing the expected annoyance response in a certain noise situation, they are not applicable to assess the effects of a change in the noise climate. Existing survey results reveal a higher annoyance response in situations with a high rate of change, for instance, where a new runway is opened.[1,2,3] Such heightened annoyance response seems to prevail.

Since airports and communities may differ greatly with respect to acoustic and non-acoustic variables, local exposure–response relationships, if available, may be preferred for predicting annoyance and describing the noise situation with desired accuracy. Still, generalized exposure-response relationships are desirable to allow assessment across communities and to establish recommended limit values for levels of aircraft noise.

2.4 Moderating variables

The DfT assertion that annoyance will return to 'static' levels lacks robust foundation, the only way this may happen is if residents are forced to move homes, which is clearly an unacceptable change impact. The DfT are not performing their duty of care in ignoring this issue with respect to aviation noise policy.

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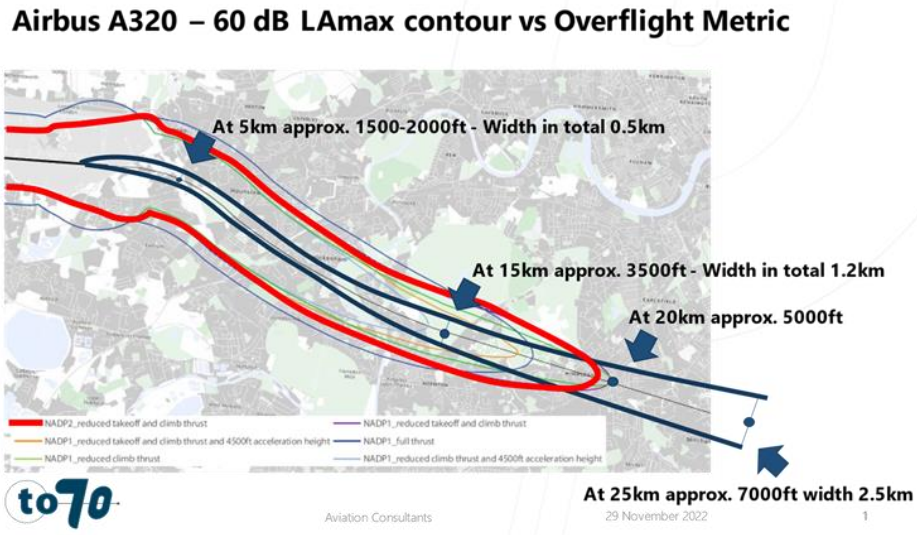

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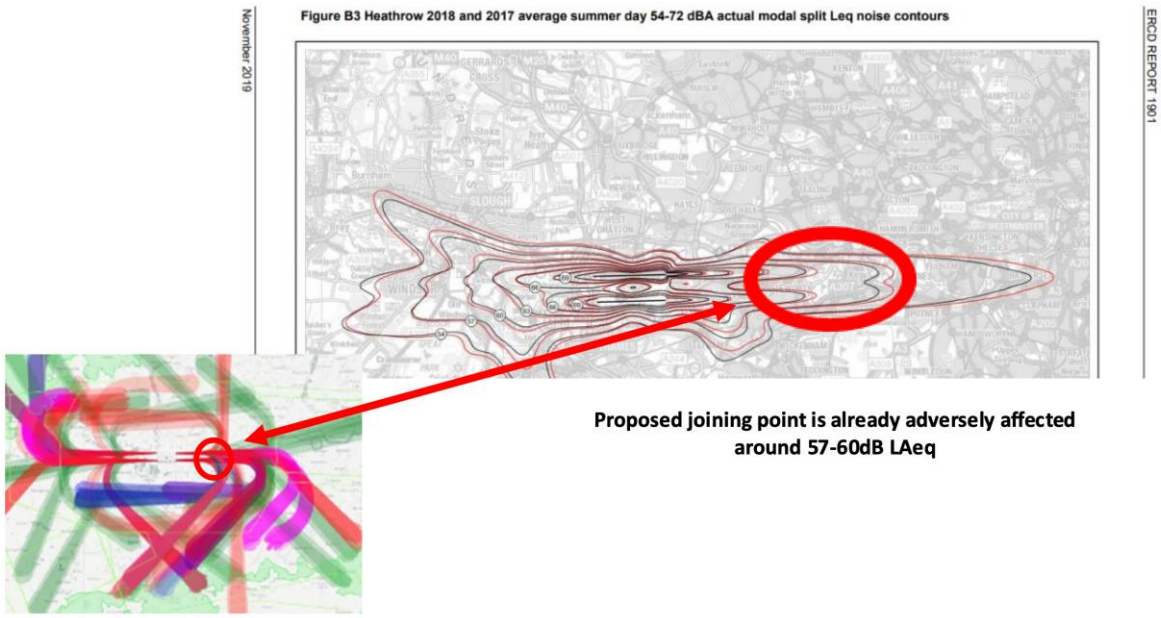

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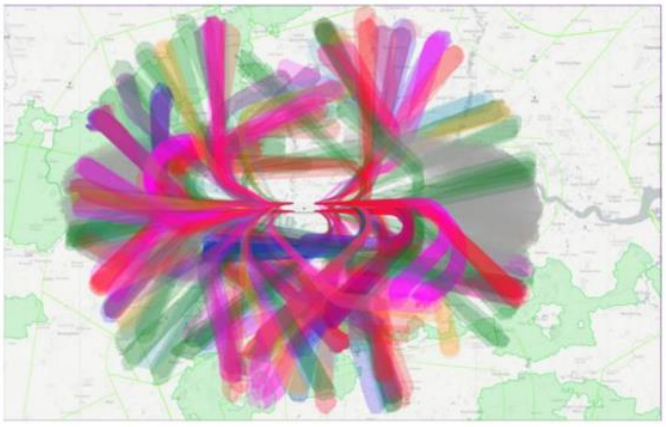
Communities who are aware of noise have attended workshops. However, the massive sphere of impact that Heathrow has over highly populated areas will mean if flight paths are changed many people will not be aware of the extent of the changes being envisaged.

The scale of the changes encompassed in the CLOOs (which arises apparently from the DPs and their interpretation) requires extensive and meaningful consultation of all the communities that could be impacted.

Overall, this shows how poorly situated Heathrow is next to high population density. Rather than make flightpath changes to save carbon it should cut flight numbers and encourage the latest highest efficiency planes to reduce its large carbon footprint.

All Arrival and Departure Options



Although consultation is necessary, if it is based on a poor understanding of impacts it will be useless in reducing annoyance and could magnify frustration and annoyance. To be effective consultation must be based on good metrics and thresholds that authorities have established in an open and trusted way. The present metrics, thresholds and change impact do not allow this.

Night Flight Approach

There should be no night flights between 11pm and 7am.

[redacted]
TAG, 2nd December 2022

Appendix 1

Heathrow Airspace Modernisation Methods and Metrics workshop, 5 July 2022 - TAG Community Feedback Response 5 November with Elaboration points in red

Introduction

This document sets out a record of elaboration issues which we consider HR has not provided an adequate response to within its composite document circulated on 19 October.

These areas are of key concern as it cannot be reasonable to progress flight path design development, and option assessment in the absence of a reliable and accepted evidence base.

Whilst a number of HR's initial responses were deflected to the DfT, the CAA and ACOG in the composite document, it is important that the airport, in its capacity as option generator, sets out its own views on these matters, which should be shared with communities and other stakeholders. The elaboration issues referred to in this note have been raised with HR at numerous meetings of the Community Noise Forum over a number of years. On this basis it is expected that the airport should be able to respond in its own right at this stage of the airspace redesign process. If necessary, in order to achieve common ground, HR should highlight unresolved issues to the DfT, CAA and ACOG and arrange for a meeting between these organisations and representatives of Heathrow communities, as they will have a material impact on public health and wellbeing for millions living within the airport's noise footprint.

Heathrow is situated uniquely as a hub airport in the middle of densely populated and long-established residential areas. It already accounts for a third of all recognised aviation noise impacts across Europe. Given its role as principal applicant for its flight paths, Heathrow must take responsibility for the outcomes of all changes it promotes with a duty of care concerning matters that have implications for public health and wellbeing.

Against this background HR should clarify its position in relation to the elaboration points highlighted in red in the annotated document below.

[redacted]

Methods and Metrics workshop

TAG Community Feedback

Summary of major points arising

- The Design Principles (DP) and the proposed approach in some cases conflict with each other and ANG 17. It was recognised there is an absence of a credible health and annoyance impact evidence base. Of overriding importance, the DPs and resulting approach do not address the key concentration issue. Substantive point not addressed in HR's response. ANG sets out clear altitude-based priorities and the need for impacts to be assessed by reference to health. Unfortunately, there is an absence of a current and robust evidence base. HR's response recognises that PBN can lead to extreme concentration of flight paths but has not established the health and annoyance impact of these, despite knowing that many very highly populated residential communities will be overflown within its hinterland. This issue has been drawn to the attention of the HCNF on numerous occasions, with extensive reference to adverse international experience as well as its own 2014 PBN trials (which had to be abandoned early in the face of widespread public protest).
- The Heathrow (HR) flight path design team recognised that concentration using PBN would have significant adverse effects, which based on international experience will lead to blighted neighbourhoods. Whilst previously HR has commissioned research relating to the comparative process of airspace change, successful solutions to concentration over residential areas have not been identified or addressed. Does HR agree the premise that significant adverse impacts are likely to arise from highly concentrated flight paths and what steps will be taken to prevent these?
- The HR team considered managed dispersion, based on previous flight path patterns, would not be achievable under PBN. Does HR agree with this understanding of what was said at the meeting concerning managed dispersion? They did not see ways a limited number of highly concentrated routes could be avoided using PBN and recognised this would cause significant effects in the crowded airspace and high-density population around Heathrow airport. Does HR disagree that this statement reflects the discussion at the meeting?
- Whilst the HR team was considering the potential to mitigate the impact of PBN through respite they acknowledged this had severe limitations due to airspace capacity constraints and given Heathrow's location in the middle of very highly populated areas. Again, does HR disagree with this understanding of what was said at the meeting regarding constraints?
- HR airspace design was not addressing the reduction of noise impacts on the ground, nor was it taking account of internationally recognised change impacts as metrics based solely on a static survey were being applied. It was noted ICAO advised the use of overall average LAeq metrics only accounted for one third of aviation noise impacts. Not addressed in HR's comments. Does HR disagree with the above? How will alternative metrics be factored into decision making and option appraisal under CAA CAP guidance?
- Airspace redesign seems to be an exercise to investigate lower airmile routes and potentially at a cost of causing very significant adverse impacts over the high-density populations such as those around Heathrow. HR does not comment – does HR accept unequivocally the primacy and constraints set by ANG 17 regarding altitude priorities and health impacts?

Heathrow Business Case

- HR confirmed that this ACP assumes 480,000 ATMs pa. Communities noted this conflicts with assumptions being used by the DfT and ACOG.
- DfT assumptions also conflict with CCC limitations on UK aviation growth. What is HR's position on this and how will this issue be resolved?

[redacted]

Noise

- No study has been undertaken in relation to the environmental/health outcomes of implementing PBN/NextGen and the absolute priority of avoiding the creation of blighted communities living in 'noise sewers' resulting from extreme concentration. HR's agreement to consider the need for a health impact assessment in its response is appreciated, but this needs to be undertaken before flight path design development can be advanced and options appraised. When will a decision be made on undertaking a health impact assessment? This is despite evidence of international experience being provided to the HCNF on numerous occasions over many years.
- All parties accept that LAeq measures are not sufficient to describe annoyance. No metrics have been developed to describe impacts of concentration in the centre of PBN flight paths. HR seems to accept the point but deflects the issue back to the CAA, DfT and ACOG. Deficiencies of the current environmental noise evidence base (i.e., SoNA 14) are well known (and were accepted by ICCAN prior to its abolition). The DfT also implicitly accepts this as it agrees the need for a new SoNA and LOAEL review. As sponsor of an ACP of the magnitude currently under consideration does HR accept that it has responsibility for its decisions and a duty of care in relation to the outcomes of its AM proposals to people living within its noise catchment?
- HR confirmed that its ACP will apply ANG policies. However as noted elsewhere this is not underpinned by a robust evidence base and further some DPs conflict with ANG17. See above
- ANG specifically defines impacts by reference to health (including annoyance) and requires altitude priorities to be applied (noise the priority up to 7000 ft with balancing with carbon only after 4000ft if a clear case can be made). HR should advise how this will be applied in practice. This point still needs to be answered in the context of the next stages of flight path design, option development and the appraisal process.
- No credible health study on the impact of aviation noise in relation to HR or the UK has been carried out. HR indicated at the meeting it was considering undertaking a local health impact study. HR should confirm whether it will be carrying out this work and if so the timing and how it will be taken forwards. This point also needs to be answered and in particular how it will be applied within the flight path design and option appraisal programme and process.
- DfT accepts that SoNA needs to be updated and is preparing for this work. This will entail a review of LOAEL, as well as a review of metrics, thresholds and presumably a recalibration of webTAG. HR should advise how this programme of work will be fed into its ACP option appraisal. In the absence of other evidence WHO Guidance should be used, in particular in relation to noise thresholds and the analysis of HR's ACP. It is understood that under CAA guidance the DfT TAG model (formerly webTAG) will not account for noise impacts below the current LOAEL (51 dBLAeq) or at night below 45dBLAeq. As Airspace Change sponsor what is HR's view on whether noise impacts occur at lower levels (for example in the light of complaints data and its experience of the 2014 Heathrow PBN trials)? What is HR's view on the applicability of WHO guidance in the light criticisms of SoNA and the consequent absence of an appropriate local study? If SoNA and LOAEL are to be reviewed how will the outcomes be factored into HR's flight path design development and decision-making programme?
- HR agreed that the CAA's noise cones do not correspond to noise impacts, for example in relation to larger, heavier aircraft. HR will be undertaking its own analysis based on SELs. Communities proposed additional metrics – see analysis section below. HR should clarify and confirm how it proposes to address this point.

Route usage assumptions

- HR stated 2019 would be its 'Base Case' year.
- The impacts of ACP options will be assessed against this using a 10-year projection in relation to fleet and route usage. This 10-year projection should also be applied to the 2019 base case 'do nothing' scenario.
- It is also essential that HR compares actual noise conditions experienced in 2019 and how assumptions regarding route usage and fleet transition will be factored in. HR should clarify its

projection methodologies. As well as confirming projection methodologies HR should confirm the basis on which its option appraisal will include a 2019 'do nothing' Base Case scenario?

- HR should also advise what control mechanisms and community protections will apply in future concerning increased noise impact resulting from changing commercial demand patterns and new technologies. HR's response does not directly address the point about future control mechanisms and community protections – HR should advise precisely what mechanisms will apply and how communities will be protected in future regarding significant changes in route usage, operational procedures, or new technologies under the CAA's framework? If incremental changes in flight path usage are permissible under the future governance system is there not a danger that decisions based on this ACP will become invalid?

Respite, dispersion, and the avoidance of creating blighted communities

- The importance of avoiding the worst impacts of concentration given worldwide experience was discussed. No response has been given by HR in relation to the numerous HCNF presentations on the well documented outcomes of implementing PBN/NextGen in the US. HR's response advises it will be incorporating lessons learned from international experience into its ACP process – can it be specific when and how will this be done?
- HR should provide a statement of the technical constraints it is working within in relation to flight path design, particularly concerning noise sharing and dispersion concerning PBN. Not covered in HR's response yet this is an essential consideration in relation to option development and appraisal.
- The treatment of important parks and open spaces, e.g., Richmond, Osterley, Windsor, Bushy and Home Parks needs to be clarified. HR's response refers to policy generalities – how in practice will this be applied to open spaces around HR used for recreation by millions of Londoners as well as visitors to the area?
- HR has committed to providing respite through easterly departure runway alternation following the expiry of the Cranford Agreement. If departure flight paths combine after a few km, then communities will only see a small benefit close in and real respite for those on departure flight paths will not be provided. A note of what the possibilities will be needs to be produced by HR. HR's response is appreciated although more information on what is achievable and how it will be incorporated in option development is needed.
- HR confirmed it was investigating respite – however this seemed to be based on an assumption that a reduction of 9 dBLAeq was needed to create meaningful respite. This is not the communities' understanding of the outcome of the Anderson study, which identified 8-9 dBLmax to be needed to achieve 'valued respite'. This may create a very different set of route design parameters and HR should confirm the basis on which they are progressing their ACP. 9 dBLAeq is a huge noise differential and self-evidently impossible to achieve in practice around HR. Can Andersen's confirmation of their advice on the metrics and thresholds be supplied?
- In their study of HR's 2014 PBN trials Anderson reported that the use of LAeq metrics could not explain or differentiate the impacts of concentration. The CAA advised the HCNF that health benefits of £640m over 10 years could be achieved by splitting a single PBN route. In addition, the CAA found as part of their work for the Airports Commission that 'maximum respite' created the lowest health impacts, compared to alternative flight path strategies (such as minimise total or minimise newly affected). Is any of this paragraph disputed?

Operations

- The design team said they would use CCO/CDOs for departures and arrivals.
- The communities said this needed further definition if they were to be considered noise efficient (for example higher ascent rates for departures). The design team said they would use the 2019 averages, the implication being 'no change with modernisation'. Achieving higher altitudes is a vital component of AM highlighted by the CAA to minimise aviation's noise impact. HR should confirm its position on this – one of the claimed noise benefits of AM was the ability to depart and land at higher gradients and generally fly higher?

- Communities noted that level flight at 6000ft under stacks requires lower thrust so causing lower noise over communities. Further down the flight path (after passing under the stacks) over lowly populated countryside wider dispersion is possible once climb thrust has to be reapplied
- HR confirmed that the work undertaken by TO70 in relation to departure procedures/climb rates would be considered in designing flight path and system options. HR needs to confirm the timing and how this will be factored in. Thank you for the clarifications and confirming that the TO 70 work will be addressed in HR's option development. It would be helpful if greater detail can be provided on the timing and how the findings will be applied as part of the ACP option development.
- Designing in noise abatement procedures is vital to communities for both departures and arrivals and should be part of modernisation

Design Principles

- HR was advised that DPs referred on slides 17 and 18 (which were based on notional cones and numbers of people) conflicted with ANG17, which requires the avoidance and minimisation of significant adverse impacts (assessed by health and wellbeing effects). Please confirm that ANG 17 altitude-based priorities and minimisation of health-based impacts will take priority over other DPs if these conflict.

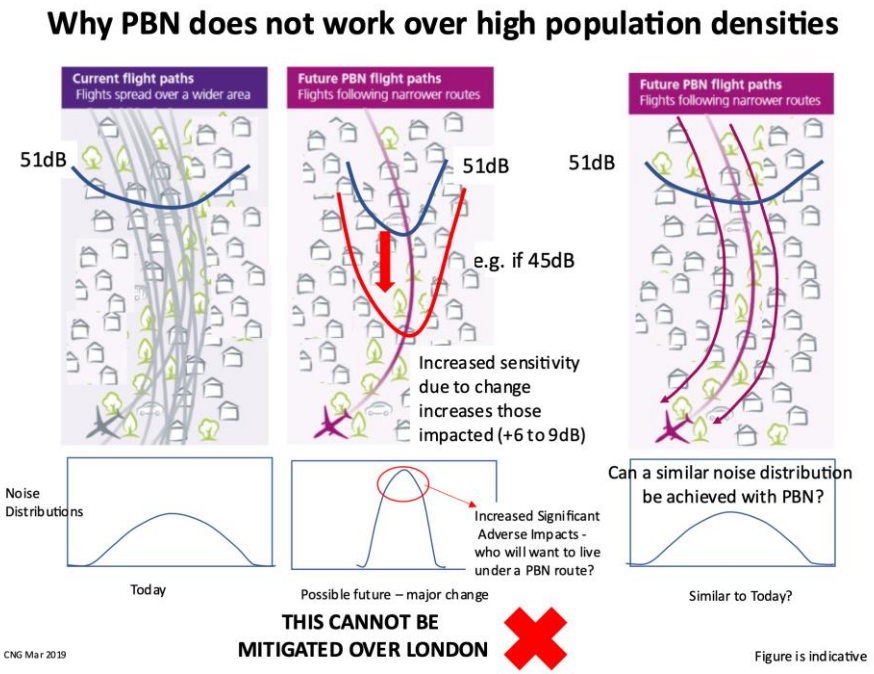
Option Appraisal and metrics

- The deficiencies of SoNA14 and webTAG were discussed. ICAO advises that only approx. one third of aviation noise impact is attributable to overall average noise metrics. This needs to be addressed – along with WHO guidance – in the forthcoming reviews of SoNA, LOAEL and Night Noise. In its capacity as Airspace Change promotor has HR considered ICAO noise guidance (including non-acoustic factors)? Is it in agreement concerning the limitations of LAeq and the importance of including a comprehensive range of additional metrics/considerations?
- HR needs to confirm how updated SoNA and LOAEL advice will be applied in the flight path option appraisal process. It is clear that adverse impacts occur at levels below 51dBLeq. Can HR advise how the timing of the planned review of SoNA/LOAEL will be factored into the ACP flight path design programme and option appraisal?
- Communities advised that notwithstanding CAP1616 reporting requirements, average metrics (whether Leq or SEL) do not reflect annoyance.
- Communities proposed the use of noise event N>60/65/70 and 70 dB Lmax contours and single mode metrics reflecting the impacts when communities were actually overflown (by day and hourly equivalent) making explicit assumed respite and time of day assumptions. Change diagrams based on single mode events should be provided. Although these metrics are required as a minimum it is not clear if even these measures pick up all the impacts of concentration as no research has been done in this area.
- HR should use 'gate analysis comparisons' (employed in previous work by PA Knowledge and Anderson) to explain and illustrate the changes that will be caused by concentration along with associated noise modelling. Is it agreed to use gate analysis comparisons as part of the assessment of concentration impacts?
- It is likely that the loudness and sound energy across a dispersed and concentrated flight path needs to be considered to understand changes and increased annoyance. These factors are concentrated beneath a plane so effects will be most severe under the centre of a flight path, more so if it is concentrated. As loudness and sound energy is logarithmic in nature these effects are not taken account of by looking at the edges of a SEL contour as suggested at 70dB for a single event (or around 60dB LAmax). In fact, by looking at the edges they are more likely to hide real impacts of concentration at the centre.
- All metrics being proposed are static. Whereas change (whether experienced by newly affected communities or residential areas who are more intensely overflown) is known to increase annoyance over many years. Average LAeq are not sensitive to describe these affects (e.g.,

[redacted]

Andersen report on PBN trials). Does HR as Airspace Change Sponsor accept the impact of change (including increased concentration? If so, how will this be assessed and factored into the appraisal of options?

A number of the issues identified are summarised in the following diagram;



S[redacted] TAG, 12/07/22

Appendix

TAG's original covering email following the methods and metrics workshop

Dear [redacted]

Last Tuesday's workshop covered a range of key areas going to the heart of implementation of Airspace Modernisation, noise impacts and community concerns. As discussed with you, in order that the points we raised are not lost we have produced a note, which is attached. It would be appreciated if the **Heathrow Design Team could provide a response indicating whether they disagree with the matters raised.** As part of the ongoing engagement process, we believe it would be helpful to meet again to explore further these concerns, along with other issues community groups may wish to raise.

Kind regards

[redacted]

[redacted] TAG, 5 November 2022

From: DD - Airspace
Sent: 13 December 2022 17:57
To: [redacted] DD - Airspace
Cc: [redacted]
Subject: RE: Final Reminder for feedback on Heathrow's Stage 2A Engagement: Deadline this Friday
Attachments: RE: Methods and Metrics workshop

Dear [redacted]

Thank you for your email. We have included both of your attached documents as supplementary information to your response via the feedback form. These documents will therefore be included in the stakeholder engagement evidence trail that we submit to the CAA for the Stage 2 Gateway.

Please note that we provided a written response to your elaboration points on 22 November. I have attached the email and the document that we sent you then.

Thanks,
[redacted]

COMPLETE

Collector: Final (Web Link)
Started: Thursday, December 08, 2022 8:43:35 AM
Last Modified: Thursday, December 08, 2022 9:00:44 AM
Time Spent: 00:17:09
IP Address: [redacted]

Page 1

Q1

Name

[redacted]

Q2

What is the name of the organisation or community group you represent?

The Windlesham Society

Q4 **Yes**

Did you attend one of Heathrow's Stage 2A engagement workshops?

Q5 **I disagree**

Thinking about the information that Heathrow has provided and/or presented to you, do you agree or disagree with the following statement about Heathrow's development of flight path options?"I am satisfied that Heathrow has taken into account the Design Principles when developing the comprehensive list of flight path options"

Q6

Please provide any feedback on your answer in the box below.

Design Principle 2: Remain in accordance with the CAA's published airspace modernisation strategy and any current or future plans associated with it and all other relevant UK policy, legislation and regulatory standards, for example air navigation guidance. This includes preventing any worsening of local air quality due to emissions from Heathrow's aircraft movements, to remain within local authorities' limits

ANG17 requires the minimisation of significant adverse noise impacts as the sole consideration (other than safety) up to 4000 feet. This remains the priority up to 7000 feet unless a convincing case can be made for trade off with carbon emissions. These adverse noise impacts are to be assessed by reference to health and associated annoyance criteria. We do not believe that Design Principle 2 achieves this as it takes a more simplistic approach based on numbers overflown.

It is difficult to know how Heathrow will be able to track changes regarding health and annoyance without a reliable baseline of current air quality and noise levels. This has never been satisfactorily measured by air quality and noise monitors in our area (Surrey Heath) and in many other areas. How will we know what the impact of changes will be if we have no measure of the current situation?

In addition, we have no reliable data on the impact of noise levels on health. SoNA was a poor survey, has never been updated and has largely been discredited. There is no justification for Heathrow not factoring WHO environmental noise guidance into this airspace modernisation evaluation.

Heathrow needs to make clear what evidence base, evaluation tools and air quality/noise metrics it will be using in this process. If this is not done, then it is impossible for Heathrow to be certain that the design principles have been taken into account when developing this suite of flightpath options.

Design Principle 7: Seek to avoid overflying the same communities with multiple routes including those to/from other airports

We do not feel that enough consideration has been given, at this stage, to Design Principle 7. Heathrow stated that individual communities should not be overflown by both PBN arrivals and departures from Heathrow airport. There is no mention of this anywhere in the two slide packs (69 and 108 slides respectively). The one slide which deals with this principle focuses entirely on avoiding overflight from multiple airports, rather than multiple flightpaths from Heathrow's own operations.

This is an incredibly important principle for communities as it creates respite from the change in operational mode between easterlies and westerlies. If this principle is not adhered to, it will result in severely blighted areas, with communities potentially overflown every day of the year.

This is illustrated in our area of Surrey Heath where there are proposed arrivals flightpath options (including the important blended one) in the same airspace as the various departure options (including the blended one) for what is currently the westerly Midhurst route. In our view, principle 7 ought, at this stage, to prevent the consideration of a new and low arrivals flightpath option in the same airspace as flightpath options for a major departure route to western Europe and Africa.

Design Principle 9: Keep the number of people who experience an increase in noise from the future airspace design to a minimum

The approach taken by Heathrow for this Design Principle is to design options which "minimise the number of people newly overflown". We do not believe that this is a correct interpretation of the principle or reflects the discussions behind the creation of this principle. After all, "Minimise the number of people newly overflown" could have been agreed as a Design Principle in its own right, but it wasn't.

In our view, the principle was intended to protect all communities, including those which are currently overflown, from unreasonable noise increases. Community groups have consistently supported the concepts of fairness and sharing the noise burden in an equitable manner. This principle requires a more subtle approach.

We all share the benefits of Heathrow so we need to evenly share the dis-benefits. If there is to be a change, it needs to be spread across all communities around London. This should also include communities that currently experience minimal overflight noise, ie noise from less than 20 flights per day. There should be NO protected communities or ALL should be protected.

Heathrow have interpreted this Design Principle in such a way that if an area is currently overflown at least 20 times a day on average, it is treated as "overflown". Their approach for the Design Principle is, therefore, to avoid, where possible, overflying areas which are currently overflown less than 20 times a day on average, on the basis that such overflight would make such areas "newly overflown".

Heathrow have confirmed that when they performed the "20 overflights on average per day calculation" to produce the flightpath options, they took into account both arrivals and departures in a particular area. Our area within Surrey Heath experiences both arrivals and departures.

A Heathrow departure flightpath can be used for in the region of 100 aircraft movements per day, sometimes more. It does not seem equitable to us (in terms of sharing noise fairly) that an area which might only experience 20 overflights per day, which could include arrivals on some days and departures on others, could be treated as "fair game" for having a whole PBN departure flightpath shifted onto it. Heathrow might regard such an area as "overflown", but it would still experience a massive increase in departure flights, which would be concentrated and therefore noisy, surely contravening this Design Principle.

Q7

Do you have any feedback on Heathrow's potential concepts for delivering respite? (pages 49-51)

We support all three concepts (dispersion, runway alternation and route alternation). In our view, the aim should be to achieve maximum dispersion. Any merging of routes should be as far out from the airport as possible to maximise respite. During the flightpath trials of 2014, which replicated a PBN environment, this area discovered that merged PBN departure routes at an altitude of around 5000-6000 feet created intense noise which resulted in community outrage and the subsequent formation of the HCNF. From our experience in 2014, we believe that any merging of routes would need to be significantly higher than 7000 feet to achieve acceptable levels of respite.

Q8

Do you have any feedback on Heathrow's potential approach to night flights? (page 52)

We oppose the use of Performance Based Navigation (PBN) for any night time and early morning arrivals. In our view, this would place an intolerable noise burden on the affected communities during the sensitive night time period when people are asleep. Surely this is the worst time of all to use PBN. This would still be the case with two alternating flightpaths as shown in the illustrative diagram. In fact, in our view, flights landing at and taking off from Heathrow between 11pm and 7am should be banned except in genuine emergencies.

Q9

Respondent skipped this question

Do you have any feedback on Heathrow's proposed approach to noise efficient operations? (page 53)

Q10

Do you have any feedback on Heathrow's overall approach to developing flight path options?

We are concerned that the Design Principles in general have been interpreted in such a manner as to support what seems to be an extensive redesign of the arrivals flightpaths. In particular, this includes new low curved approaches close to the airport. The change effect of these totally new, low level early morning flightpaths would have a massive impact on many areas including some not previously overflown and others previously overflown at a much higher altitude. Therefore, it is likely to result in significant opposition from affected communities as was seen in this area in 2014. These design options are very similar to those previously considered by Heathrow under its Independent Parallel Approaches project, which we strongly opposed. Such flightpaths would result in a massive increase in noise for many thousands of people, particularly early in the morning. The impact of such flightpaths would be so great that we would question whether these flightpath options really meet the following design principles:
Design Principle 2: Remain in accordance with the CAA's published airspace modernisation strategy and any current or future plans associated with it and all other relevant UK policy, legislation and regulatory standards, for example air navigation guidance. This includes preventing any worsening of local air quality due to emissions from Heathrow's aircraft movements, to remain within local authorities' limits
Design Principle 3: Use noise efficient operational practices to limit and, where possible, reduce adverse impacts from aircraft noise
Design Principle 9: Minimise number of people who experience an increase in noise and
Design Principle 10: Keep the total number of people who experience noise from the future airspace design to a minimum

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COMPLETE

Collector: Final (Web Link)
Started: Wednesday, December 07, 2022 7:14:02 PM
Last Modified: Wednesday, December 07, 2022 7:23:23 PM
Time Spent: 00:09:21
IP Address: [redacted]

Page 1

Q1

Name

[redacted]

Q2

What is the name of the organisation or community group you represent?

Windsor & Maidenhead Borough Council

Q4 **Yes**

Did you attend one of Heathrow's Stage 2A engagement workshops?

Q5 **I disagree**

Thinking about the information that Heathrow has provided and/or presented to you, do you agree or disagree with the following statement about Heathrow's development of flight path options?"I am satisfied that Heathrow has taken into account the Design Principles when developing the comprehensive list of flight path options"

Q6

Please provide any feedback on your answer in the box below.

Response to Heathrow ACP Stage 2A Community Engagement Workshop and Options
Aims
The aims of the strategy are reported to be;

- Make airspace more efficient,
- Reduce delays,
- Reduce CO2emissions,
- Reduce noise;
- Enhance safety; and
- Ensure there is capacity to meet future demand.

It is important to ask which of these aims which in many circumstances will be mutually exclusive will be given priority. The casual observer would not be surprised to find that in the final analysis, efficiency, reduced delays and capacity would be given priority over noise
In my experience, gained by being involved is a HCNF workshop with NATS on designing a new departure route, NATS always choose the shortest route and not necessarily the route that might cause least noise disturbance
Point 1; there is a requirement for HAL to explain their prioritisation process.

Departure options to meet Design Principle 2

These options were designed to minimise the number of people exposed to noise up to 7,000ft which is likely to increase the number of people significantly affected by the adverse impact of aircraft noise and is contrary to the ANG. This also applies to the proposals for Design Principle 9 and 10. This is concentration and will not deliver an acceptable solution for communities living around Heathrow. During the meeting I attended it was stated by a HAL representative that it would be possible to create some dispersion of aircraft on a single PBN departure route.
Point 2 HAL should explain the options for dispersal and how this would mitigate noise on the ground.

Options for Design Principle 2
Two options were created;

Minimise the number of people exposed to noise up to 7,000ft whilst also considering CO2 and AONBs but to a lesser extent than population; This option most closely follows ANG.

Minimise the number of people exposed to noise up to 4,000ft and then minimise track miles from 4,000ft. I assume that this is to reduce CO2 emissions but many other facts need to be taken into account one being climb rate.
Point 3; Why has HAL not chosen the first of these options which best meets the requirements of ANG? What would the additional cost in fuel burn be by selecting the first option.

Concept of providing meaningful Respite
The concept of departure routes from adjacent runways following different tracks for longer to increase the number of people who benefit from runway alternation is worthy of investigation. It seems fair to share aircraft noise which may have the benefit of fewer people being significantly affected.

Design Principle 8
The case for continuing night flights has not been made and it is difficult to accept night flights which can be damaging to health.

General.
I was privileged to chair the meeting held at Ascot Racecourse in 2014 for residents to ask questions of HAL, NATS and the CAA. This was in response to the 2014 Westerly Departure Trials and the numbers (estimate 1,100) that attended was greater than my expectations, particularly on a rainy evening.
This was a change in departure routing which the Aviation Noise Impacts White Paper suggests leads to more annoyance and as a consequence has a greater health impact. I share the view that SoNA needs to be updated which is very likely to entail a review

a consequence has a greater health impact. I share the view that SoNA needs to be updated which is very likely to entail a review of and a reduction in LOAEL. A reduction in LOAEL is a recognition that the health effects of noise are greater than it is thought to be today which will require a recalibration of webTAG and add to the monetarised negative impacts of PBN.
Point 4; How will HAL take this monetarised negative impact into account?

HAL should reflect upon the location of noise complaints during the 2014 PBN departure trials. The Westerly and Easterly Departure Trials 2014 -Noise Analysis and Community Response prepared by Andersons Acoustics and written [redacted] demonstrated annoyance occurs much below 51dBm LAeq. The following figure from the report shows complaints outside of a 48dBm LAeq contour that follow the PBN departure routes.
I was unable to include the figure from the report and ask that you refer to Figure 8.5: Complaints and average westerly day noise contours and noise level change (shown to the left) and noise event
(N65) change (shown to the right) between baseline and trial at postcode points . on Page 31.
This evidences the fact that the frequency of aircraft flying overhead, even above 6,000 ft can and does cause significant annoyance.
Point 4. How will HAL take this evidence into account?

[redacted]
Cabinet Members for Commercialisation, Asset management, Finance and Ascot.
Royal Borough of Windsor and Maidenhead.
7th December 2022

Q7

Do you have any feedback on Heathrow's potential concepts for delivering respite? (pages 49-51)

Respondent skipped this question

Q8

Do you have any feedback on Heathrow's potential approach to night flights? (page 52)

Respondent skipped this question

Q9

Do you have any feedback on Heathrow's proposed approach to noise efficient operations? (page 53)

Respondent skipped this question

Q10

Do you have any feedback on Heathrow's overall approach to developing flight path options?

Respondent skipped this question

COMPLETE

Collector: Final (Web Link)
Started: Sunday, December 04, 2022 4:53:56 PM
Last Modified: Sunday, December 04, 2022 5:12:39 PM
Time Spent: 00:18:43
IP Address: [redacted]

Page 1

Q1

Name

[redacted]

Q2

What is the name of the organisation or community group you represent?

[redacted]

Q4

Did you attend one of Heathrow's Stage 2A engagement workshops?

No

Q5

Thinking about the information that Heathrow has provided and/or presented to you, do you agree or disagree with the following statement about Heathrow's development of flight path options?"I am satisfied that Heathrow has taken into account the Design Principles when developing the comprehensive list of flight path options"

I agree

Q6

Please provide any feedback on your answer in the box below.

I write as the Transport Strategy Manager for Bracknell Forest and on behalf of Councillor [redacted] who attended the workshop and is the exec member for Planning and Transport in Bracknell. Whilst we agree with the principles of the Airspace modernisation we must stress that future rounds of consultation must be inclusive and accessible by all residents in a format that is understandable by all

Q7

Do you have any feedback on Heathrow's potential concepts for delivering respite? (pages 49-51)

More options should be explored to give more respite

Q8

Do you have any feedback on Heathrow's potential approach to night flights? (page 52)

every step should be made minimize impact on communities with night flights.

Q9

Do you have any feedback on Heathrow's proposed approach to noise efficient operations? (page 53)

There is some concern that steeper climbs means more thrust and an increase in noise.

Q10

Do you have any feedback on Heathrow's overall approach to developing flight path options?

Just to reinforce the fact that the consultation on flight path options must be accessible by all and easy to understand and respond for all residents.

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Collector: Final (Web Link)
Started: Friday, December 09, 2022 11:43:40 AM
Last Modified: Friday, December 09, 2022 12:12:55 PM
Time Spent: 00:29:15
IP Address: [redacted]

Page 1

Q1

Name

[redacted]

Q2

What is the name of the organisation or community group you represent?

Environmental Health and Licensing, Elmbridge BC.

Q4 **Yes**

Did you attend one of Heathrow's Stage 2A engagement workshops?

Q5 **I agree**

Thinking about the information that Heathrow has provided and/or presented to you, do you agree or disagree with the following statement about Heathrow's development of flight path options?"I am satisfied that Heathrow has taken into account the Design Principles when developing the comprehensive list of flight path options"

Q6

Please provide any feedback on your answer in the box below.

The provision of the comprehensive list of options Appendix document with the slide pack following the presentation was useful.

Q7

Do you have any feedback on Heathrow's potential concepts for delivering respite? (pages 49-51)

Predictable and meaningful respite will be essential to all affected by the noise of the aircraft. The view of the public regards the most suitable approach in regards design principle 6 is likely to be contentious if you as an individual did not select the finally decided outcome. Engagement of the communities will be essential in the decision making process.

Q8

Do you have any feedback on Heathrow's potential approach to night flights? (page 52)

All 3 approaches may potentially offer a varying level of assistance in reducing disturbance. However in reality the fewer night flights that occur, and ensuring the quietest aircraft are scheduled to arrive and depart during the night-time period the better.

Q9

Do you have any feedback on Heathrow's proposed approach to noise efficient operations? (page 53)

Greater clarity on what the individual operational practices will deliver and by how much that would improve noise levels would be beneficial to know. In addition, confirmation of the consequences that will deployed if operators fail to comply with the proposed operational proposals should be shared.

Q10

Do you have any feedback on Heathrow's overall approach to developing flight path options?

What ever decision that is ultimately taken regards the design principle(s) to be implemented, requires the involvement of the public in that decision making process. Also promoting the provision of quieter planes and penalising or deterring noisier / less energy efficient vehicles should occur.

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Collector: Final (Web Link)
Started: Monday, December 12, 2022 9:32:48 PM
Last Modified: Monday, December 12, 2022 9:50:51 PM
Time Spent: 00:18:03
IP Address: [redacted]

Page 1

Q1

Name

Cllr [redacted] (Deputy Leader of Hounslow Council)

Q2

What is the name of the organisation or community group you represent?

London Borough of Hounslow - hereby referred to as 'Hounslow Council'

Q4 **Yes**

Did you attend one of Heathrow's Stage 2A engagement workshops?

Q5 **I agree**

Thinking about the information that Heathrow has provided and/or presented to you, do you agree or disagree with the following statement about Heathrow's development of flight path options?"I am satisfied that Heathrow has taken into account the Design Principles when developing the comprehensive list of flight path options"

Q6

Please provide any feedback on your answer in the box below.

We acknowledge the CAP1616 process that the airport operator must follow when developing and taking forward the Airspace Change Process. The presentation material is informative but technical and sets out the approach that has been taken to develop the list of options based on the Design Principals set out in Stage 1. Whilst our communities welcome the opportunity to engage with the Airspace Change Process and are willing to work with the airport operator to inform the refinement of the 650,000 notional track options, it is evident to us, that at times the presentation material is to academic, difficult to comprehend and relate to as it is not clear whether the proposed approach considers the noise impacts experienced by our residents during the night flight period. Furthermore, the material makes reference to a number of studies which Heathrow aim to utilise to refine the list of options, however this evidence base has yet to be issued/published and we are not in a position to comment whether they would add any value and or support the Airspace Change Process. It would be valuable if Heathrow could share the evidence base with the council in order for us to understand the approach being proposed.

At the workshops, we were informed that an additional statutory consultation will be undertaken in early 2023, that would provide clarity on how the approach proposed has been applied and the notional tracks further refined into options (approximately 350). As well as applying the proposed approach set out in this engagement exercise, we would suggest that Heathrow also set out how they have considered and incorporated their own Sustainability 2.0 Strategy and the emerging Noise Action Plan when refining the options. This should be set out in a separate annex that informs the CAA submission requirements, as stated in our previous response to the Stage 1 consultation.

With regards to the Design Principles, we remain concerned that as proposed:

- they are too generic and not specific to Heathrow Airport and the surrounding environment. We believe Heathrow are being rather ambitious in developing an Airspace Change Process that takes into consideration a wide range of proposals that would otherwise be considered separately.

- they lack clear endpoint goals such as those expressed in Heathrow's Sustainability 2.0 and the former Noise Envelope Design that was proposed for the expansion plans. For example, if the overall aim is to reduce impacts by utilising Performance Based Navigation (PBN), for use of directional preference to better balance of Easterly and Westerly operations, the use of 09L departures to increase alternation and respite on Easterly operations, reduction of noise on the ground by use of electric tugs, one engine etc. then it is not clear if these have been captured.

- and most importantly, they do not tackle the importance of reducing noise for those currently most impacted by aircraft noise and annoyance and therefore for who health is most at risk. For example, slide 17 in the presentation material does not appear to take into account the number for who noise is reduced – which is a fundamental objective of the Aviation Policy Framework and Noise Policy for England.

We note the metrics that have been generated for each notional track to inform the design options. Whilst these are welcomed, we believe they do not go far enough when evaluating each option against each Design Principle. We are of the view that the following should also be taken into consideration:

- Additional thresholds in relation to the population exposed to noise at 70 decibel SEL level, to enable the impact and the choices considered to be better understood. These could be higher or lower thresholds.
- Consideration of the impact on the total population overflown between the runway and up to 4000ft as well as 7000ft
- Consideration of the impact of the total population newly overflown between the runway and up to 4000ft as well as 7000ft.
- The World Health Organisation guidance on noise when evaluating the options because at present no justification has been provided as to why it has not been considered or even factored in. The Independent Commission for Civil Aviation Noise (ICCAN) found the SONA (2014) study to be flawed and as a result the DfT have commissioned the ANNE Study (Aviation Night Noise Effects). We understand that the ANNE Study will examine the relationship of aviation noise on sleep disturbance and annoyance, and how this varies by different times of night. This is an issue that is of importance to our residence and as a result the Council is of the view that Heathrow should engage with the DfT and ensure that the findings from the ANNE study are considered before progressing to the next stage of the Airspace Change Process.

The council would recommend that Heathrow also:

- Consider the different aircraft types at this stage of the Airspace Change Process and not just rely on the A320 when developing the notional tracks.
- Undertake further research into best practice being applied at other airports to reduce the adverse impacts from noise.
- Focus on relieving the worst impacts experienced during more sensitive periods for example during the night time period between 06:00 – 07:00.
- Amend the Design Principles so that they aim to reduce the noise of those most impacted, and to keep the population number suffering an increase to a minimum. This may require a more balanced directional preference or the potential use of 09L departures.
- Ensure that air quality impacts during departures and arrivals is taken into consideration and not ignored when balancing the 'must' with the 'should'. At present it is not clear how the air quality impacts are addressed in the airspace change process.

Q7

Do you have any feedback on Heathrow's potential concepts for delivering respite? (pages 49-51)

The Council notes that Heathrow has commissioned a feasibility study to understand how the potential concepts for delivering respite can be considered and where viable taken forward. This is welcomed as it will enable our communities to understand the evidence taken into consideration by the airport operator when evaluating the options. However, we are of the view that in order to understand respite, specific qualitative engagement should be undertaken (alongside the technical studies) in order to understand what is valued as 'predictable' and 'meaningful respite' by the impacted local communities.

We note that the airport is also reviewing the Noise Action Plan and are of the view that this should align with the ACP in order to address key issues such as respite.

The engagement material highlights that use of Performance Based Navigation (PBN) enables more accurate flight tracks provides an opportunity to direct low flying aircraft more accurately to predictable alternate tracks within any route and between routes. However, this opportunity is entirely dependent on airlines compliance with this – if airlines are 'lazy' or unfamiliar with Heathrow Airport, they will likely fly the same GNNS 'default' / most direct track, and this will lead to unnecessary and avoidable over-concentration. Therefore the council would welcome more explanation as to how dispersal will be incentivised and in return provide relief to our communities.

Q8

Do you have any feedback on Heathrow's potential approach to night flights? (page 52)

It should be noted that communities impacted by noise from night flights are more concerned by the number of aircraft movements then the actual noise generated. The demands for and impacts of, night flying, and the operational tools and metrics are all to complex to understand and difficult to engage with. Far greater transparency and public trust needs to be built with a proper regard to local context. We would welcome the use of alternative routes, tracks and regime for the Night Quota period which would utilise PBN as proposed. However, the airport should explore the use of Independent Parallel Approaches (IPA) to offer respite to those under the final approach.

Q9

Do you have any feedback on Heathrow's proposed approach to noise efficient operations? (page 53)

We note that Continuous Climb Operations (CCO) and Continuous Descent Operations (CDO) will form the basis of all the design options at this stage, however we are of the view that applying all the noise efficient operational practices early on (as outlined on page 54) will result in improvements to the local environment as it will ultimately reduce the total noise energy, possibly the quality of noise, and annoyance.

Q10

Do you have any feedback on Heathrow's overall approach to developing flight path options?

Please see response to question 6 above.

RE: Stage 2A Engagement Feedback Form

[redacted]

Fri 16/12/2022 12:55

To: [redacted]

Cc: [redacted] DD - Airspace <airspace@heathrow.com>

2 attachments (243 KB)

Final - HSPG response to Stage 2A ACP Dec 2022_v4.docx; Final - HSPG response to Stage 2A ACP Dec 2022_v4.pdf;

Caution: external email. Unless you recognise the sender and know the content is safe, do not click links or open attachments.

Dear [redacted]

HSPG response to the engagement attached, thanks for the extension of time! Word doc responses ready to drop into the portal questions, plus pdf version.

I'd be grateful if you could upload the text into your online portal.

Merry Christmas!

[redacted]

[redacted]

Lead Advisor
Heathrow Strategic Planning Group

Heathrow ACP Engagement in late 2020 Stage 2A_v4

RESPONSE FROM HSPG MEMBERS TO THE STAGE 2A ENGAGEMENT

All questions are optional.

1. [redacted] – Lead Advisor

2. What is the name of the organisation or community group you represent?

Heathrow Strategic Planning Group

The role of the HSPG member and list of member bodies are given on the website:
http://www.heathrowstrategicplanninggroup.com/

The formulation of this response to the engagement exercise at Stage 2A led by the Environment and Airspace Group (E&AG) – list and website

3. Postcode

HSPG Secretariat
c/o
LB Hounslow
Hounslow House
TW3 3EB

4. Did you attend one of Heathrow's Stage 2A engagement workshops?

Yes – members attended several of the sessions

5. Thinking about the information that Heathrow has provided and/or presented to you, do you agree or disagree with the following statement about Heathrow's development of flight path options?

"I am satisfied that Heathrow has taken into account the Design Principles when developing the comprehensive list of flight path options"

Response:

I am unsure

6. Please provide any feedback on your answer in the box below.

Explanation for response to Q5.

- The engagement is helpful in that it lays out the method of generating and range of possible design options
- But at this stage the HSPG are **unsure** as to how and the degree to which the Principles are taken into account or are leading the development or selections of design options.

- Moreover, the engagement does not address the operational policies that will be applied to the use of the design option flight paths selected, so the impact on the ground cannot be assessed. For example, the overall intent to reduce the worst impacts of aircraft operations and noise by utilising PBN, directional preference and use of 09L departures. How will compliance with accurate flying requirements be incentivised? Overall, we are not given a holistic view of the intent nor impacts.

At this stage it is not possible to ascertain:

- The cumulative impact of flight operations at any place
- The Principles are not expressed in absolute terms – all rely on a judgement to be made by the promoter.
- The relative priority to be given to each of the Principles is not given. On the face of it appears 1 and then 2 are 'top' but these are not locally driven agenda's / principles, but simply reflect flight operation and national guidance.
- Principle 8 – contains no commitment to reduce the number or impact of night flights, this is an priority and health imperative.
- Principle 9 - only uses one metric which is to minimise the number of people *newly* overflown, but what about those currently overflown, potentially subject to very high levels of disturbance, that could experience even further increase in overflights and noise disturbance? This could apply to both areas under the constrained LTO phases and area further out overflown by one of more arrival and departure routes. The Principles fail to address this.

Other points

The presentations could be more straightforwardly worded to: acknowledge that AMS is intended to increase the airspace capacity for the number of flights in any period (see pg 4) as well as do it better (avoiding delays, cleaner, quieter). This reflects the balanced approach – sharing the benefits of technology between communities and industry.

Setting out 650,000 notional tracks for 350 options – leads to a rather baffling and unrelatable output – at this stage this feels a bit 'academic', although we understand the need to follow CAP 1616 process.

We welcome that an additional engagement in Q1/2023 may be more meaningful to understanding how this moves things towards measured achievement of the Principles and the straightforwardly stated holistic goals set out in the Heathrow 2.0 Sustainability Plan. We draw attention to our previous response, that how the Principles relate to these goals should be better explained as an additional piece of information to the CAA submission requirements.

In terms of the Principles, we remain concerned that:

- These are too generic and not locally (Heathrow and environs) specific enough.
- Lack clear absolute or endpoint goals such as those expressed in H2.0 and the former Noise Envelope Design for the expansion plans. i.e. Overall aim to reduce impacts by utilising: PBN, for use of directional preference to better balance of Easterly and Westerly operations, the use of 09L departures to increase alternation and respite on Easterly operations, reduction of noise on the ground by use of electric tugs, one engine etc.
- The Principles do not address the aim of reducing noise for those currently most seriously impacted by noise and annoyance (and therefore for who health is most at risk). e.g. Slide

P17 – does not appear to count number for who noise is reduced – which is a fundamental objective of the Aviation Policy Framework and Noise Policy for England.

- Principle 8 – contains no commitment to reduce the number or impact of night flights, this is an priority and health imperative.
- Principle 9 - only uses one metric which is to minimise the number of people newly overflown, but what about those currently overflown, potentially subject to very high levels of disturbance, that could experience even further increase in overflights and noise disturbance? This could apply to both areas under the constrained LTO phases and area further out overflown by one of more arrival and departure routes. The Principles fail to address this.

Some issues for the Evaluation Process – HSPG welcome the further engagement in Q1/23. Issues to discuss include:

- Population number for who exposure to 70SEL is reduced – add further thresholds (in particular higher but also lower) so that impact of design choices are made are better understood
- Pop. overflown below 7000ft. Why not consider 4000ft too?
- Newly overflown (>x20 below 7000ft. Why not consider 4000ft too?
- It is stated that at busy periods it will be necessary to fly vectored (non-PBN paths). i.e. conventional Final approach of some 8-18nm and generally 10-16nm – vectored by ATC, plus vectored departure routes. Even with PBN, departures tracks merge to one path regardless of the Runway in use. So PBN does relatively little for those most impacted in the LTO phases
- Some of the busy peaks periods are at especially sensitive periods, where more attention should be given to relieving worst impacts. (e.g. 06.00 – 07.00 within statutory definition of Night, on a straight Final descent path.
- Could we focus in on the worst impacted and what done for them i.e. Steep Continuous Descent on the Final, alternate departure tracks and routes, runway alternation, and using the efficiency gains to dramatically reduce the number late-runners and early-runners operating at Night (23:00-07:00) or in the Night Quota Period. And then, the wider geography / groups where we have more options with alternate tracks and PBN, especially outside of peak periods. (Looking for 'wins' for each group)
- CISHA new structure includes Working Group directly looking at AQ (mostly caused by surface access). But where does the necessary further research on attitudes to both day and night noise, most meaningful respite, attitudes to levels of annoyance, sleep disturbance etc lay?

7. Do you have any feedback on Heathrow's potential concepts for delivering respite? (pages 50-52)

What is most valued as 'predictable' and 'meaningful respite' by the impacted local communities needs to be fully understood – research required as well as technical work.

Be clearer that PBN enables more accurate flight tracks, bringing opportunity to use this to direct low flying aircraft more accurately to predictable **alternate** tracks within any route and between routes. However, this opportunity is <u>entirely dependent</u> on airlines compliance with this – if airlines

are 'lazy' or unfamiliar with LHR, they will likely fly the same 'default' / most direct track, and this will lead to unnecessary and avoidable over-concentration. More is explanation required as to how dispersal will be incentivised (push and pull factors)? This offers an example of why operational policy needs to be addressed alongside the flight track options to give a overall picture of the impact.

It is suggested that a spacing between flight paths and individual tracks within flightpaths will only be sought where it will deliver a difference of 9dB for the overflown – this may be 'too high a bar' (10dB represents a doubling / halving of number of flights). If 3dB is a doubling of noise energy – would 3 or even 6dB be a more useful / refined basis for separation of alternate paths?

In the coming years the fleets mix will increase with new aircraft types for short and long haul, some likely to offer very short eS/CTOL capability with steeper and/or shorter safe LTO requirements. How can this opportunity be used to reduce impacts on local communities at LHR? Could displaced landing thresholds be used for certain operations?

8. Do you have any feedback on Heathrow's potential approach to night flights? (page 53)

Overall we should be reducing the number of Night flights and sleep disturbance as a core principle. Proinciple 8 does not do this, only to "Contribute to minimising the negative impacts of night flights".

We welcome alternative routes and tracks and regime for the NQP and Night time, only using PBN (with low levels of traffic) to share the load. This should include exploration of use of IPA to offer respite to those under the long ILS Final approach?

Question Title

9. Do you have any feedback on Heathrow's proposed approach to noise efficient operations? (page 54)

Support - every little improvement combines and accumulates to reduce total noise energy, the 'quality' of noise, and annoyance. The suggested practices will all help those on LTO phases in particular. See above regarding displaced thresholds.

Question Title

10. Do you have any feedback on Heathrow's overall approach to developing flight path options?

Explanation for response to Q5.

- The engagement is helpful in that it lays out the method of generating and range of possible design options
- But at this stage the HSPG are **unsure** as to how and the degree to which the Principles are taken into account or are leading the development or selections of design options.
- Moreover, the engagement does not address the operational policies that will be applied to the use of the design option flight paths selected, so the impact on the ground cannot be assessed.

For example, the overall intent to reduce the worst impacts of aircraft operations and noise by utilising PBN, directional preference and use of 09L departures. How will compliance with accurate flying requirements be incentivised? Overall, we are not given a holistic view of the intent nor impacts.

At this stage:

- It is not possible to ascertain the cumulative impact of flight option and operations at any place
- The Principles are not expressed in absolute terms – all rely on a judgement to be made by the promoter.
- There is no relative priority given to each of the Principles – this should be made clear.
- Principle 8 – contains no commitment to reduce the number or impact of night flights

Fully informed assessment and decision on routes an operations should ultimately make clear:

- minima which will apply to all movements or types of movements;
- the wider envelopes or outcomes for impact which are the result of policy; and
- the distributional consequences i.e who and where bears the greatest impact.

The cumulative impact might be seen in the distributional analysis but it is a consequence of the first two. The current 'engagement' is silent on them.

Regarding the aim to "future proof our operations" – in relation to Principles 11 and 12.

Page 55 refers to the need to plan for the integration of future technologies into the ACP, specifically AAM and drones. HSPG believe an urgent and thorough approach to this is required, and a most suitable network then developed for the future (less than 5yers?) – rather than assume the existing helicopter routes are the most suitable.

The HSPG would wish to engage with HAL's team and other stakeholders to scope work to develop understanding of the issues so that integration of future flight can be allowed for. This might extend to improved integration / co-ordination of Land Use and Airspace planning.

Over the next 10years and well within the period of the new ACP's implementation, the likely form of AAM could:

- Include directly piloted eVTOL aircraft, seating perhaps 4 passengers over a relatively restricted range of some 50-100NM. At it's lowest, these might be few in number and little more than a replacement for some helicopter services for blue light and high net worth individuals. At its highest, it could be a far more accessible / affordable 'uber in the sky' – a mobility service transforming transport concepts and removing vehicles from the road. Volumes could be huge with the current leading promoters including Skyports and Ferrovial. If ATM 'slots' at the airfield are not to be given over to such small craft, then in all likelihood, small 'vertiports' and 'drone hubs' will be required in well-connected and close proximity to the LHR hub airport.
- A distinct concept within AAM is Regional Air Mobility (RAM) – aircraft currently being developed are eS/CTOL capable which could transform inter-regional connectivity and operate as both conventional aircraft and from additional shorter runways / new

destinations, potentially cleaner and cheaper to operate than conventional domestic operations with hydrocarbon powered aircraft, with perhaps 80plus passengers or freight. Again, should these be destined LHR or some well located alternative location well connected to LHR 'hub' airport? How will this be integrated into airspace modernisation?

- The term Drones (non-military) generally refers to remotely piloted and autonomous electrically powered vehicles, operating both within and beyond line of sight, many with eVTOL or eSTOL capability. Initial services and delivery systems are short range in the sub-25kg class but, some a little larger and now under test include Volcopter's VoloDrone, currently designed to carry a 200kg payload and is now under actual test in Germany, and apparently 'simulated' test use in busy airspace including at LHR has been conducted? (A further drone recently announced to be under test promises a 600kg payload). Furthermore, the emerging Project Skyway points to a an initial 164mile fully automated airspace route between places such as Cambridge and Oxford – claimed for operation from 2024? Will this soon extend to the LHR area too?
- The place for such operations at Heathrow and across West of London, if at all, will emerge in the timeframe of the ACP, and this should be addressed now. We understand that HAL are involved in several relevant Future Flight projects.

While 'good innovation' should be facilitated, a precautionary approach should be taken to the uncertain environmental impacts. This engagement (pg 55) indicates that AAM and Drones could operate along the lines of the existing Heathrow and City of London Helicopter Routes. However, the HSPG consider that the new impacts of a large number of AAM and Drones could be very different to the current relatively few helicopters, and the veracity of this approach and the impact of new types of flying machine and operation (and new 'qualities' of noise and other non-acoustic disturbance factors) on local communities annoyance, sleep disturbance and health must be properly evaluated.

It is relevant to note that the 1984 London Heliport Study found a perceived bias of 5dB against helicopters owing to their lack of social utility. What would this factor be for some forms of AAM?

ICAO identify that acoustic factors account for only some 33% of 'annoyance' caused by conventional aircraft operations; the nature of impact of 'quieter' and 'cleaner' electric fan aircraft requires bespoke study, and routes re-evaluated as well as landing sites considered. The issues for new forms of aircraft operation where 'social acceptance' is likely to be controversial are likely to be great regardless of relative quietness and greenness compared to conventional types. Without clear worthwhile 'Use Cases' being established, 'social acceptance' will be low for such new operations. A suitable network will then developed.

The HSPG would wish to engage with HAL's team and other stakeholders to scope work to develop understanding of the issues so that integration of future flight can be allowed for. The integration of land use, surface travel and airspace will need to be considered afresh.

NAP, Monitoring and Reporting , ACP

The last HACF received reports on all three of: Noise Action Plan, performance monitoring and Future ACP. These on different timescales, using different metrics, under different regimes at defra, DfT, HAL etc. It needs to be made clearer how the processes interact and inform one another and are coordinated? This was not clear at HACF.

Conventional aircraft flight path options

New types of power plant and fuel will lead to new types and qualities of noise, and different patterns of flight operation. Targeted work is needs to be undertaken to inform the ACP assessment process better.

The population an land uses beneath flight options needs to be well understood so that impacts can be assessed. For example, many green and urban open spaces are as sensitive and valued as AONB, although only the AONB designation is noted in the ACP. HSPG is willing to assist the targeting and collection of relevant data from LAs and others.

[redacted]

For

HSPG members

16/12/22

COMPLETE

Collector: Final (Web Link)
Started: Tuesday, December 06, 2022 12:39:09 PM
Last Modified: Tuesday, December 06, 2022 12:49:50 PM
Time Spent: 00:10:40
IP Address: [redacted]

Page 1

Q1

Name

[redacted]

Q2

What is the name of the organisation or community group you represent?

London Borough of Southwark

Q4

Did you attend one of Heathrow's Stage 2A engagement workshops?

Yes

Q5

Thinking about the information that Heathrow has provided and/or presented to you, do you agree or disagree with the following statement about Heathrow's development of flight path options?"I am satisfied that Heathrow has taken into account the Design Principles when developing the comprehensive list of flight path options"

I am unsure

Q6

Please provide any feedback on your answer in the box below.

The workshop provided very little in the way of specifics, for example in how different principles would be balanced and what the practical effects of this may be. Hence it is impossible to judge the impact of the proposed design principles or the likely resulting flight path options at this stage.

Q7

Do you have any feedback on Heathrow's potential concepts for delivering respite? (pages 49-51)

The Authority supports maximising respite and would support runway alternation as one way of achieving this. It is principally arrivals which impact on LBS residents. Respite must also include spread of flight paths to ensure it is not always the same residents who are routinely affected by overflight. All respite patterns must be agreed with community engagement, including from residents further from the runway, and must be predictable and clearly publicised to allow residents to plan.

Q8

Do you have any feedback on Heathrow's potential approach to night flights? (page 52)

The Authority fundamentally objects to night flights which have a disproportionate impact on residents' health and quality of life. A full night flight ban (23.00-07.00) should be implemented. The Authority supports alternation of flight paths and maximum spread of flight paths to minimise the impact on any specific locations, in particular those which are densely populated. The respite/alternation patterns must be agreed with community engagement, including from residents further from the runway, and must be predictable and clearly publicised to allow residents to plan.

Q9

Do you have any feedback on Heathrow's proposed approach to noise efficient operations? (page 53)

The Authority supports the use of the suggested noise efficient operations to minimise impacts. It is considered that noise efficient operations should be secondary to ensuring only best available technology (quieter aircraft) can use the airport and this should be incentivised and mandated. Efficient operations have a role to play but can never alone overcome the issue of too many flights at too high noise levels over densely populated areas.

Q10

Do you have any feedback on Heathrow's overall approach to developing flight path options?

The approaches are set out in such general terms it is not possible at this stage to understand the implications for specific areas or residents. We are unable to comment in detail on the overall approach without a better understanding of what it means in practice for residents in Southwark.

Councillor [redacted]
Deputy Leader and Cabinet Member for Climate and Air Quality

Waltham Forest

[redacted]
Waltham Forest Town Hall
Fellowship Square
Forest Road
London
E17 4JF
8th December 2022

To: [redacted]
Chief Executive Officer
Heathrow Airport Ltd
The Compass Centre
Nelson Road
Hounslow
Middlesex
TW6 2GW

Dear [redacted]

Consultation Response to Heathrow Airport Stage 2A Engagement

Thank you for the invitation for feedback on the proposed flightpath amendments as part of the UK Airspace Modernisation process.

The London Borough of Waltham Forest acknowledges the requirement for Heathrow Airport (LHR) to look at different options to alter existing flightpaths to and from the airport; however, the Council would strongly oppose any option taken forward that would have the potential to increase air traffic in the airspace above the borough or have greater impact on its residents due to the height of flights especially in the Leytonstone and Leyton areas.

Furthermore, the Council is keen to understand how the airport will address the important issue of reducing environmental impacts as the air industry contributes to tackling the Climate Emergency.

Flights over Waltham Forest

Prior to the pandemic, Waltham Forest was the third most overflown borough in London because of our proximity to flightpaths from Heathrow Airport and London City Airport. Therefore, any changes to routes above the borough that increase traffic above would be contrary to Design Principle 7 “Avoid overflying communities with multiple routes, including from other airports.”

While we acknowledge that this stage is prior to formal consultation on options, the Council requests that more detailed maps are provided that properly show the existing routes alongside proposed changes to routes above Waltham Forest at a local level alongside information that accurately quantifies the potential impacts on the borough for each option.

Cumulative impact of flights

The Council has previously responded to consultations requesting that LHR should work with London City Airport to raise the height of the LCY flightpath to reduce the impact on residents living underneath both flightpaths.

Specifically, LHR should work with LCY to prioritise the reduction of flights below 5,000ft across Waltham Forest. Flights from LCY are particularly impactful due to their low height and designing operations to allow flights from LCY to fly above 5,000ft should be a priority for both Heathrow and LCY.

Any systems that result in the intensification of flights across the borough would have significant environmental, social and health impacts on borough residents and have a negative impact on our ability to meet UK, London, and local climate change targets.

Formal consultation

We request the opportunity to discuss the proposed options in further detail supported by additional information that adequately demonstrates the potential impact on the borough and its residents. Notably there has been a lack of wider publicity for this consultation, with no advance notification, and only a short window for responses.

Furthermore, it is essential that residents living underneath flight paths impacted are fully engaged as proposals are developed, including with promotion of the consultation and events held in the borough.

We trust this initial feedback will be taken on board and that LHR will commit to providing the further information requested and continued engagement.

Yours faithfully,

[redacted]

[redacted]
Deputy Leader and Cabinet Member for Climate and Air Quality

From: DD - Airspace
Sent: 08 December 2022 14:16
To: [redacted]
Cc: DD - Airspace; [redacted]
Subject: RE: Consultation Response to Heathrow Airport Stage 2A Engagement

Dear [redacted]

Thank you for your feedback to our current engagement on our Airspace Change Proposal for Airspace Modernisation. We will consider your feedback as we progress through the CAA's CAP1616 Airspace Change Process.

We are currently at Stage 2A of that process and we have been engaging with Local Authorities, Community and Environmental Groups and Industry on our Comprehensive List of Options. A public consultation will be held at Stage 3, when we have fully assessed and shortlisted the options and have information on the potential impacts. At that stage we will need to engage all potentially affected residents via wider publicity. We currently expect to consult on our proposals in 2024/25.

I have added you to our stakeholder list to ensure that we keep you informed in the lead up to consultation.

Many thanks for your input to this process,

[redacted]

COMPLETE

Collector: Final (Web Link)
Started: Thursday, December 08, 2022 12:04:47 PM
Last Modified: Thursday, December 08, 2022 12:09:19 PM
Time Spent: 00:04:31
IP Address: [redacted]

Page 1

Q1

Name

[redacted]

Q2

What is the name of the organisation or community group you represent?

London Borough of Waltham Forest

Q4

Did you attend one of Heathrow's Stage 2A engagement workshops?

No

Q5

Thinking about the information that Heathrow has provided and/or presented to you, do you agree or disagree with the following statement about Heathrow's development of flight path options?"I am satisfied that Heathrow has taken into account the Design Principles when developing the comprehensive list of flight path options"

I disagree

Q6

Please provide any feedback on your answer in the box below.

Further clarity is sought on what is being done to meet design principle 7 that states that "Seek to avoid overflying the same communities with multiple routes including those to/from other airports".

The design approach of DP2b – to minimise the number of people exposed to noise up to 4,000ft and then minimise track miles from 4,000ft. The borough is concerned that whilst factoring the impacts of flights from Heathrow it does not include the consequences of flying over London City Airport flight paths, lowering these routes and therefore increasing the number of people exposed to noise up to 4,000ft from flights to LCY as a consequence of the LHR flight path.

Q7

Do you have any feedback on Heathrow's potential concepts for delivering respite? (pages 49-51)

Whilst each of the three options have their merits, the borough would be concerned that the alternation of flights may needlessly widen the area in which flights from other Airports would be impacted resulting in flights flying lower than necessary creating additional noise impacts for people living below the flight paths.

Q8

Do you have any feedback on Heathrow's potential approach to night flights? (page 52)

The Council would require further information on this approach before providing feedback.

Q9

Do you have any feedback on Heathrow's proposed approach to noise efficient operations? (page 53)

In respect of DP2b it is essential that calculations factor in those adversely impacted from noise not only from LHR flights but also from other airports including LCY. By diverting LHR flight paths away from routes overflown by other airports below 7,000 ft has the potential to deliver significant respite from existing noise issues.

Q10

Do you have any feedback on Heathrow's overall approach to developing flight path options?

Prior to the pandemic, Waltham Forest was the third most overflown borough in London because of our proximity to flightpaths from Heathrow Airport and London City Airport. Therefore, any changes to routes above the borough that increase traffic above would be contrary to Design Principle 7 "Avoid overflying communities with multiple routes, including from other airports.
The Council has previously responded to consultations requesting that LHR should work with London City Airport to raise the height of the LCY flightpath to reduce the impact on residents living underneath both flightpaths.
Specifically, LHR should work with LCY to prioritise the reduction of flights below 5,000ft across Waltham Forest.
Flights from LCY are particularly impactful due to their low height and designing operations to allow flights from LCY to fly above 5,000ft should be a priority for both Heathrow and LCY.
Any systems that result in the intensification of flights across the borough would have significant environmental, social and health impacts on borough residents and have a negative impact on our ability to meet UK, London, and local climate change targets.

COMPLETE

Collector: Final (Web Link)
Started: Tuesday, November 29, 2022 9:56:57 AM
Last Modified: Tuesday, November 29, 2022 11:06:24 AM
Time Spent: 01:09:27
IP Address: [redacted]

Page 1

Q1

Name

[redacted]

Q2

What is the name of the organisation or community group you represent?

Mole Valley District Council

Q4

Did you attend one of Heathrow's Stage 2A engagement workshops?

Yes

Q5

Thinking about the information that Heathrow has provided and/or presented to you, do you agree or disagree with the following statement about Heathrow's development of flight path options?"I am satisfied that Heathrow has taken into account the Design Principles when developing the comprehensive list of flight path options"

I am unsure

Q6

Please provide any feedback on your answer in the box below.

It is clear that on the surface, Heathrow has sought to embed the design principles within the options shown at the workshop. However, the options shown are confusing in many ways and a further breakdown would have assisted in this understanding.

Q7

Do you have any feedback on Heathrow's potential concepts for delivering respite? (pages 49-51)

It is unclear how Heathrow can, in reality, deliver meaningful respite, given the level of flights. While it is understood that providing alternative routes to give communities 'a break', is the intention, information at this stage is insufficient to be able to agree that this would work and 2 alternates may not be enough.

Q8

Do you have any feedback on Heathrow's potential approach to night flights? (page 52)

While it is understood that providing alternative routes to dissipate impacts during the night hours is the intention, information at this stage is insufficient to be able to agree that this would work.

Q9

Do you have any feedback on Heathrow's proposed approach to noise efficient operations? (page 53)

Information is too technical and lacks detail to be able to form a view on if these range of noise efficient measures are sufficient.

Q10

Do you have any feedback on Heathrow's overall approach to developing flight path options?

The Council understand that this is an early stage of option formation. We would implore HAL to ensure that the technical options are fully explained at the next stage and proper pro's and con's set out.

COMPLETE

Collector: Final (Web Link)
Started: Friday, December 09, 2022 10:16:16 AM
Last Modified: Friday, December 09, 2022 12:11:09 PM
Time Spent: 01:54:52
IP Address: [redacted]

Page 1

Q1

Name

[redacted] (Principal Aviation Officer)

Q2

What is the name of the organisation or community group you represent?

Newham Council

Q4

Did you attend one of Heathrow's Stage 2A engagement workshops?

No

Q5

Thinking about the information that Heathrow has provided and/or presented to you, do you agree or disagree with the following statement about Heathrow's development of flight path options?"I am satisfied that Heathrow has taken into account the Design Principles when developing the comprehensive list of flight path options"

I am unsure

Q6

Please provide any feedback on your answer in the box below.

Newham Council does not intend to comment on the totality of the airspace modernisation proposed in the consultation, but rather focuses on specific impacts on Newham and on interactions with London City Airport, which Newham is the host borough of.

Q7

Do you have any feedback on Heathrow's potential concepts for delivering respite? (pages 49-51)

The options presented for respite are considered to be good options. The introduction of Performance Based Navigation [PBN] at London City Airport in 2016 led to a marked concentration of flightpaths, which concentrated noise from aircraft over a narrower area, as aircraft flew to a much tighter track compared to more dispersed situation previously. The introduction of PBN at Heathrow therefore needs to be accompanied by some form of respite routes to mitigate this issue, even if this increases the amount of newly overflown residents.

Newham Council and London City Airport are aware of hotspots of complaints from areas overflown by London City Airport and Heathrow arrivals in South-East London. Identifying respite opportunities in these areas, when working in collaboration with other airports, would be welcomed.

Design Principle 6 could be amended slightly to read: "Provide predictable and meaningful respite to those affected by noise from Heathrow's movements and where flightpaths with other airports cross"

Q8

Do you have any feedback on Heathrow's potential approach to night flights? (page 52)

All three options are considered to have merit in mitigating against the impact of night flights.

Q9

Do you have any feedback on Heathrow's proposed approach to noise efficient operations? (page 53)

The noise efficient operations highlighted are all considered to have merit in terms of reducing noise, and also potentially having positive carbon emission benefits through lower fuel burn. The proposed use of steeper approaches and climbs is particularly significant in relation to the interrelationship between London City Airport's arrival routes and those at Heathrow, as it would potentially allow LCY arrivals over south-east London to descend later, which would give a significant noise benefit. Steeper descents can provide significant noise benefits for overflown communities, as planes are kept higher for later.

Q10

Do you have any feedback on Heathrow's overall approach to developing flight path options?

The interrelationship between Heathrow's airspace modernisation process and those of other airports should be a key focus of the process to maximise the benefits of airspace modernisation. Page 54 sets out Design Principle 7, which is that routes should ' "Seek to avoid overflying the same communities with multiple routes including those to/from other airports'"

It is clear that significant work needs to be done by Heathrow alongside other airports such as London City Airport in order to ensure that airspace modernisation is fully aligned and to reduce instances of communities being overflown by different airports simultaneously (as occurs currently over South-East London).

COMPLETE

Collector: Final (Web Link)
Started: Friday, December 09, 2022 9:32:07 AM
Last Modified: Friday, December 09, 2022 9:44:05 AM
Time Spent: 00:11:58
IP Address: [redacted]

Page 1

Q1

Name

[redacted]

Q2

What is the name of the organisation or community group you represent?

Royal Borough of Kingston and London Borough of Sutton (joint response)

Q4 **Yes**

Did you attend one of Heathrow's Stage 2A engagement workshops?

Q5 **I agree**

Thinking about the information that Heathrow has provided and/or presented to you, do you agree or disagree with the following statement about Heathrow's development of flight path options?"I am satisfied that Heathrow has taken into account the Design Principles when developing the comprehensive list of flight path options"

Q6

Please provide any feedback on your answer in the box below.

Both Kingston and Sutton Councils have responded fully to the consultations to date, and officers and members have helped shape the design principles now being focused on through discussion and attendance at the various workshops held. While it is clear that a considerable amount of work has been undertaken to accommodate the design principles and refine the various departure and arrival options, in particular the need to minimise overflights and meaningful respite, this latest consultation is not at a stage to provide any firm reassurances as to what these will mean in practice.

Both boroughs remain opposed to any proposals that increase noise and pollution for our residents, and while this latest consultation refines some of the overarching issues around flightpaths and runway capacity, only when we see the draft detailed navigation paths and respite arrangements (with associated noise and pollution modelling) in 2023-24 will we be in a position to give a more considered view.

Q7

Do you have any feedback on Heathrow's potential concepts for delivering respite? (pages 49-51)

As noted by both boroughs in previous consultation responses, respite must be both predictable and meaningful. The proposals for alternating departure and arrival paths are to be welcomed, however residents must have a clear idea of when they can expect potential disturbance due to noise and for how long. Should there be any operational need to depart from this then information about it must be published as widely as possible, in advance (where possible) and in a format that is easily understood.

Q8

Do you have any feedback on Heathrow's potential approach to night flights? (page 52)

Assuming the current ban on night flights and arrangements for early morning arrivals (between 5 and 6am) will be retained, as set out in previous consultations, both authorities will continue to support the use of the northern runway (27R/09L) for these purposes, and for predictable routes whether these be precision-based or bespoke. The continuation of westerly operations for both takeoff and landing remains the preferred choice for both councils, with the associated reduction in engine power and noise. Both councils also support tightening of restrictions on aircraft type for these operations so that only the quietest types are permitted to land or depart within the specified late/early periods.

Q9

Do you have any feedback on Heathrow's proposed approach to noise efficient operations? (page 53)

Both Sutton and Kingston Councils support the use of noise efficient operational practices and the use of continuous climb/descent operations. In our previous responses we have highlighted the benefits of steeper approaches and climbs to mitigate noise impact on residents, and other associated benefits such as late deployment of landing gear. Our comments in Question 8 above in respect of quiet aircraft types also apply to this approach.

Q10

Do you have any feedback on Heathrow's overall approach to developing flight path options?

We are encouraged that both Councils' inputs into the design principles consultations appear to have been recognised. Against this the level of interest from residents and members has been high, and the pace of the process has perhaps understandably not been sufficient to address many of the concerns we have seen raised. We await the more detailed proposals due in 2023 before commenting further.

COMPLETE

Collector: Final (Web Link)
Started: Friday, December 09, 2022 12:18:59 PM
Last Modified: Friday, December 09, 2022 2:42:52 PM
Time Spent: 02:23:53
IP Address: [redacted]

Page 1

Q1

Name

[redacted]

Q2

What is the name of the organisation or community group you represent?

Runnymede Borough Council

Q4 **No**

Did you attend one of Heathrow's Stage 2A engagement workshops?

Q5 **I agree**

Thinking about the information that Heathrow has provided and/or presented to you, do you agree or disagree with the following statement about Heathrow's development of flight path options?"I am satisfied that Heathrow has taken into account the Design Principles when developing the comprehensive list of flight path options"

Q6

Please provide any feedback on your answer in the box below.

- This submission is an 'Officers Response' on behalf of Runnymede Borough Council.

Our responses are based on the hardcopy information provided, our ongoing involvement with Heathrow over the last 4+ years including the 3R Expansion and the Heathrow Recovery and consultation through HSPG

- We agree that Heathrow has 'taken into account the Design Principles (DP) when developing the …. flightpath options.

RBC have consistently stated the Councils position in favour of dispersal of the negative impacts of overflying over concentration in smaller, even worse effected areas. DPs 9 & 10 are ambiguous in this context. The Council agrees that the number of people who experience an increase in noise and the number of people who experience noise should be kept to a minimum, but this must not create a worsening of the effects on fewer people by concentration in restricted areas – the creation of so called 'noise sewers'

Q7

Do you have any feedback on Heathrow's potential concepts for delivering respite? (pages 49-51)

- The Council welcomes the Heathrow study into the feasibility to enable dispersion within a PBN environment

- There needs to be a better definition of the intended terms of reference. What constitutes relief as opposed to respite in order enable a comparison of like for like within options when they become clear

- What is valued as 'predictable' and 'meaningful respite' by negatively impacted communities, together with longer and fewer periods of relief / respite compared with shorter and more frequent periods?

- There is a need for greater research into what respite means. The R3 and subsequent consultations established that there were options for longer less frequent periods of respite or more frequent shorter periods of respite, regular over irregular spacing, etc. It has never been established which strategy yields the most beneficial effect on the health and well-being of affected communities. This is essential to evaluate the options available

- The presentation accompanying this consultation identifies 'relief and respite' separately from 'concepts to be applied to minimise the negative effects of night flights'

As in the previous bullet, previous consultations have identified the need for greater research into the effects of respite from nightlights – not confined to the number of recorded awakenings but also sleep disturbance

- Clearly PBN enables more accurate flight tracks. It is also established that PBN enables more aircraft to be landed within a defined airspace by comparison with the existing system

DP 5 states: Enable Heathrow to make the most operationally efficient and resilient use of its existing two runways to maximise benefits to the airport, airlines and cargo holders, passengers, and local communities

With reference to DP 5 it is clear that Heathrow will seek to maximise the numbers of flights / benefits as stated. With an increased volume of flights within the existing airspace – how realistic is it that the capacity will exist now or in the future for this option to be realistic?

Q8

Do you have any feedback on Heathrow's potential approach to night flights? (page 52)

- RBC's position is that all night flights should be banned between 2230hrs and 0600hrs as a minimum in all but the most urgent and unforeseeable emergency situations

- It is difficult to understand why bringing in planes before 0600hrs is positive

- RBC is against the use of night flight departure slots or the caching of night flight slots during quieter traffic times (e.g., winter) for deployment in busy periods (e.g., the height of summer)

Q9

Do you have any feedback on Heathrow's proposed approach to noise efficient operations? (page 53)

- We require more information with a higher level of granularity to make a reasoned feedback response to Heathrow's proposals on 'noise efficiency'
  - Why are CCO / CDO operations more noise efficient that non-continuous CCO / CDO operations?
  - The overall measurement of efficiency in the presentation document is implicitly or explicitly focused on the Heathrow controlled airspace below 7,000 ft. What are the ramifications for noise under non-continuous CCO / CDO at other height levels below 7,000 ft and what is the comparison between the two
  - Steeper approaches / climbs: During the R3 consultation it was established that a faster rate of take-off and climb put more strain on the engines resulting in less efficiency, greater fuel consumption, higher emissions and higher noise levels as the engines are working harder
  - Ensuring that specific sensitivities are addressed e.g., areas of elevated land which may be subject to an enhanced noise impact

More information is required as to why steeper CCO / CDO enable noise efficient operations

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Q10

Do you have any feedback on Heathrow's overall approach to developing flight path options?

- The presentation document does not address the fact that the introduction of PBN enables an increase in the capacity for the number of flights possible in any period – more planes in a smaller volume of air space. This was identified in previous consultations on the 3R expansion, and the proposed 'early start' program in advance of grant of the DCO. The aspirational benefits of avoiding delays, cleaner and quieter operations, etc. may reasonably be expected to be offset by the increase in the volume of traffic – making the avoidance of negative impact through concentration in limited areas even more relevant.
- Accepting the CAP1616 process – outlining 650,000 notional tracks for 350 options is confusing and prevents us making any meaningful feedback regarding sensitivities in our area, preferences, etc.

- The information presented lacks any form of comparison between the current effects on communities already suffering the negative impacts of overflying and their future position in relation to the proposed future DPs. There is no statement regarding the reduction of noise because of the proposed DPs on those communities although this is a fundamental objective of the Aviation Policy Framework and Noise Policy for England

- The options as presented address specific factors independently of each other e.g., noise separately from night flights and carbon emissions. Accepting the methodology which we understand is a prescribed feature of the CAP1616 process – it is the compound effects which will ultimately be the criteria which we will require.

The Council requests further consultation when further progress is made, and a more relatable / relevant understanding of the DPs is possible as part of the CAA submission.

COMPLETE

Collector: Final (Web Link)
Started: Thursday, December 08, 2022 9:37:13 AM
Last Modified: Thursday, December 08, 2022 9:54:04 AM
Time Spent: 00:16:51
IP Address: [redacted]

Page 1

Q1

Name

[redacted]

Q2

What is the name of the organisation or community group you represent?

Sevenoaks District Council

Q4 **No**

Did you attend one of Heathrow's Stage 2A engagement workshops?

Q5 **I agree**

Thinking about the information that Heathrow has provided and/or presented to you, do you agree or disagree with the following statement about Heathrow's development of flight path options?"I am satisfied that Heathrow has taken into account the Design Principles when developing the comprehensive list of flight path options"

Q6

Please provide any feedback on your answer in the box below.

Design principle 10 is of particular interest to Sevenoaks District Council. It is encouraging to see that this has been clearly highlighted in the slide pack in the departure option approaches.

Q7

Do you have any feedback on Heathrow's potential concepts for delivering respite? (pages 49-51)

The alternation of flight paths to ensure the same communities are not overflown continuously in the early morning appears to be a sensible concept. It is however noted that new communities may be affected by this so Sevenoaks District Council will not be able to provide detailed comments on this until there is further information available.

Q8

Do you have any feedback on Heathrow's potential approach to night flights? (page 52)

The alternation of flight paths to ensure the same communities are not overflown continuously in the early morning appears to be a sensible concept. It is however noted that new communities may be affected by this so Sevenoaks District Council will not be able to provide detailed comments on this until there is further information available. Minimal aircraft departing after 11pm would be welcomed to ensure affected communities have the opportunity for peaceful respite during the night time.

Q9

Do you have any feedback on Heathrow's proposed approach to noise efficient operations? (page 53)

Sevenoaks District Council is supportive of the use of noise efficient operational practices, in order to limit and, where possible, reduce adverse impacts from aircraft noise. It is noted that our communities may be affected by this so we will not be able to provide detailed comments on this until there is further information available.

Q10

Do you have any feedback on Heathrow's overall approach to developing flight path options?

The overall approach to flight paths appears to be pragmatic. It is however noted that the information available is high level in nature. As such, Sevenoaks District Council welcomes the opportunity to comment further once more detailed information becomes available.

COMPLETE

Collector: Final (Web Link)
Started: Thursday, December 08, 2022 11:43:17 AM
Last Modified: Thursday, December 08, 2022 11:46:51 AM
Time Spent: 00:03:33
IP Address: [redacted]

Page 1

Q1

Name

[redacted]

Q2

What is the name of the organisation or community group you represent?

St Albans City and District Council

Q4 **No**

Did you attend one of Heathrow's Stage 2A engagement workshops?

Q5 **I disagree**

Thinking about the information that Heathrow has provided and/or presented to you, do you agree or disagree with the following statement about Heathrow's development of flight path options?"I am satisfied that Heathrow has taken into account the Design Principles when developing the comprehensive list of flight path options"

Q6

Please provide any feedback on your answer in the box below.

In the flight path options presented there is no way forward to address the issue of indirect impact of Heathrow aircraft on airspace used by Luton Airport (and other airports within the affected area). Consequently noise from aircraft using other airports but caused as a result of the need to account for Heathrow flight paths has not been addressed. St Albans District Council (SADC) on behalf of residents of St. Albans and surrounding towns considers that Heathrow operations have significant direct and indirect impacts on maintaining the tranquillity of the district, and urges that remedy be found in new designs.

As such, although there is acknowledgment of the issue on slides 54 and 55 in particular, it is not considered that it has been demonstrated that Heathrow has taken into account the following 8no. Design Principles when developing the comprehensive list of flight path options:
3. Use noise efficient operational practices to limit and, where possible, reduce adverse impacts from aircraft noise
6. Provide predictable and meaningful respite to those affected by noise from Heathrow's movements
7. Seek to avoid overflying the same communities with multiple routes including those to / from other airports
8. Contribute to minimising the negative impacts of night flights
9. Keep the number of people who experience an increase in noise from the future airspace design to a minimum
10. Keep the total number of people who experience noise from the future airspace design to a minimum
11. Enable the efficiency of other airspace users' operations
12. Minimise the impact to all stakeholders from future changes to Heathrow's airspace

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Q7

Do you have any feedback on Heathrow's potential concepts for delivering respite? (pages 49-51)

Further assessment is supported in this regard, as indicated in the consultation materials; however as set out elsewhere in this feedback form such assessment must take into account indirect effects of proposed flight paths; including consequential impacts of flights serving nearby airports that would be affected by Heathrow flight paths.

Q8

Do you have any feedback on Heathrow's potential approach to night flights? (page 52)

As above, further assessment is supported in this regard, as indicated in the consultation materials; however as set out elsewhere in this feedback form such assessment must take into account indirect effects of proposed flight paths; including consequential impacts of flights serving nearby airports that would be affected by Heathrow flight paths.

Q9

Do you have any feedback on Heathrow's proposed approach to noise efficient operations? (page 53)

Measures that effectively reduce adverse impacts from aircraft noise are supported, but evidence of their effectiveness would need to be provided. Furthermore, as set out elsewhere in this feedback form such assessment must take into account indirect effects of proposed flight paths; including consequential impacts of flights serving nearby airports that would be affected by Heathrow flight paths.

Q10

Do you have any feedback on Heathrow's overall approach to developing flight path options?

It is acknowledged that assessment of indirect impacts of Heathrow flight paths from consequential low flying of aircraft serving other airports may be beyond the scope of the current consultation; and that a co-ordinated way forward for airspace change in the region is subject of the Future Airspace Strategy Implementation South (FASI South) process overseen by ACOG. However, it is not considered that an informed view can be taken on Heathrow flight path options without assessment of these indirect impacts, primarily noise impacts.

The following comments provide an overview of the concerns of SADC:

St. Albans District is situated approximately 20 miles NNE of Heathrow Airport (LHR). St. Albans City and surrounding towns such as Harpenden are regularly overflown by LHR routes. These overflights create a direct and unwelcome noise intrusion on the City and surrounding areas.

LHR departure routes also create a significant indirect noise burden because they pass above current routes of Luton Airport (LTN), thus capping the altitude to which LTN flights can readily climb. As a result many LTN departures are constrained to low altitudes for a very extended track (some 15-20 miles, often as far as Welwyn Garden City). This creates significant low-level noise over the entire SADC area and it is hugely inefficient in fuel terms.

It is evidence of the need for urgent redesign of the airspace in this entire region to enable departing flights to climb to altitude in a noise-efficient way.

SACDC urge LHR designers to take into account the need to avoid constraining the departures from adjacent airports as new routes are designed.

LTN operators are being urged locally to mitigate noise impacts with maximum possible priority, and overflying LHR departures and the LHR Bovingdon stack are a significant impediment to achieving this. SACDC therefore regards redesigning LHR routes as a key enabler to restoring the tranquillity of the district.

Furthermore, the LTN operators have used the complexity of the airspace in general, and the existence of these Heathrow routes in particular, as reasons why their aircraft are prevented from climbing higher, sooner.

SACDC on behalf of residents of St. Albans and surrounding towns therefore considers that Heathrow operations have significant direct and indirect impacts on maintaining the tranquillity of the district, and urges that remedy be found in new designs. New designs should take into account the requirement of other airports to create routes which achieve altitude expeditiously. It is essential that there is adequate cooperation between airports, or oversight from the regulatory authorities, to ensure that the opportunities are maximised.

The following specific comments are also raised to the consultation material here presented:

- Consultees were given 11 days to comment on this material, it is suggested that a longer timeframe would be beneficial to ensure useful feedback.
- Query of constraints / assumptions listed on slide 22; specifically:
  - whether the 6 NATS waypoints should be considered 'fixed' or whether there may be flexibility in order to achieve reduced impacts
  - whether the climb gradient of 5.5% is unnecessarily low and thus leads to tracks that have aircraft staying lower for longer (thus increasing noise impacts)
- Query whether slide 25 implies that justification for lower flights may be being sought on grounds of lower C02 emissions, without evidence that a significant difference in emissions would result.

COMPLETE

Collector: Final (Web Link)
Started: Monday, December 05, 2022 8:43:55 AM
Last Modified: Monday, December 05, 2022 8:49:30 AM
Time Spent: 00:05:35
IP Address: [redacted]

Page 1

Q1 **Respondent skipped this question**

Name

Q2

What is the name of the organisation or community group you represent?

Waverley Borough Council

Q4 **No**

Did you attend one of Heathrow's Stage 2A engagement workshops?

Q5 **I agree**

Thinking about the information that Heathrow has provided and/or presented to you, do you agree or disagree with the following statement about Heathrow's development of flight path options?"I am satisfied that Heathrow has taken into account the Design Principles when developing the comprehensive list of flight path options"

Q6

Please provide any feedback on your answer in the box below.

The Council is pleased to see Design Principle 4 (reducing aircraft's impact on climate change and CO2 emissions) has been taken into account when developing the comprehensive list of flight path options. Waverley Borough Council declared a Climate Change Emergency in 2019. The reduction in carbon emissions is considered critical to tackling the impacts of climate change including within the aviation industry. However, airspace change and mitigation proposals alone cannot provide the level of carbon emissions required for a rapid trajectory to net zero – something which is essential, given the scale and scope of our climate crisis.

Q7

Do you have any feedback on Heathrow's potential concepts for delivering respite? (pages 49-51)

We welcome the provision of respite but consider arrivals and departures early in the morning and during the night should be avoided. It is not clear whether the respite refers to overflying communities and/or protected habitats or open space. At this stage exact routes and numbers of night flights have not been prepared. Without this information it is not possible for the Council to comment further.

Q8

Do you have any feedback on Heathrow's potential approach to night flights? (page 52)

Night flights should only occur in exceptional and defined circumstances and be focused over open spaces, whilst avoiding protected habitats, to avoid adversely affecting communities.

Q9

Do you have any feedback on Heathrow's proposed approach to noise efficient operations? (page 53)

The Council welcomes the principle of noise reduction for flights to minimise their adverse impacts on overflown communities and protected areas. Details of the noise reduction measures for specific flight paths has not been made available. It is also unclear what impact the measures described on page 53 of the consultation document will have on the reduction in carbon emissions.

Q10

Do you have any feedback on Heathrow's overall approach to developing flight path options?

The design principles on flight path options are broadly acceptable, but we are concerned about the potential for an increased volume and concentration of flights in areas of the borough, particularly at night, and it is not clear how a significant reduction in carbon emissions are to be achieved.

The plan of the comprehensive list of departure options shown on page 32 of the slides, it shows the notional aircraft routes which includes some overflying of the borough and it is unclear whether the routes will result in an increase in the frequency of aircraft overflying Waverley as the coloured lines stop short of many of the villages and towns in the Borough. Until this information is provided against a current baseline comparator, we are unable to agree with this approach. Further clarification at the next stage in the consultation process is essential.

COMPLETE

Collector: Final (Web Link)
Started: Thursday, December 08, 2022 10:26:00 PM
Last Modified: Thursday, December 08, 2022 10:32:31 PM
Time Spent: 00:06:30
IP Address: [redacted]

Page 1

Q1

Name

[redacted]

Q2

What is the name of the organisation or community group you represent?

Chiltern Society

Q4 **Yes**

Did you attend one of Heathrow's Stage 2A engagement workshops?

Q5 **I agree**

Thinking about the information that Heathrow has provided and/or presented to you, do you agree or disagree with the following statement about Heathrow's development of flight path options?"I am satisfied that Heathrow has taken into account the Design Principles when developing the comprehensive list of flight path options"

Q6

Please provide any feedback on your answer in the box below.

Q6: We note, and give due credit for, how you are seeking to apply national guidance re minimising overflight of AONBs where practicable within Principle 2. But it is vital that this is carried forward into later stages of the process, and not lost within other potentially competing considerations.

We would welcome a more detailed explanation, preferably now, or certainly at the next stage of engagement, about the weighting process applied to produce the "blended" options shown in slides 31 and 43 of the presentation material. You state there that "you have applied all weighting combinations": did these extend all the way from 0 to 100% for each of the inputs [which would have produced, theoretically, options entirely avoiding AONBs]? And then, how was the selection made of the "highest-performing" tracks? We observe, in passing, that Design Principles 2 and 4 are 'musts' whilst 9 and 10 are 'shoulds', so the former should arguably be given greater weightings in this blending exercise.

Q7

Do you have any feedback on Heathrow's potential concepts for delivering respite? (pages 49-51)

The concept of providing respite through route alternation (the third of the ideas, illustrated on Slide 51) may have potential application for routes affecting AONBs in the following two ways:
routes during daylight hours to avoid the most tranquil parts of the AONB where quiet recreation most likely to be taking place;
routes during hours of darkness to avoid the populated parts of the AONB, to avoid disturbance to residents;
similarly, there could be two variants of routes that run close to the edge of AONBs: the one that avoids the AONB to the greatest extent could be used during daytime, balanced by greater overflight of the AONB during dark hours so that any population centres outside AONBs are given respite at these times.

We request that these ideas are explored further with us.

Q8

Do you have any feedback on Heathrow's potential approach to night flights? (page 52)

These ideas all appear to have merit, but the impact of night flights from Heathrow is much greater for communities closer to Heathrow, so we do not feel it appropriate to express any firm views.

Q9

Do you have any feedback on Heathrow's proposed approach to noise efficient operations? (page 53)

We certainly support all route designs and other measures that allow for continuous climb and descent, and steeper profiles where possible, so that any aircraft that do traverse the AONB are as high as possible. The issue referred to under Q10 (the interface between Heathrow's and other airfields' local route design exercises, and between these and that of NATS) is relevant here, since, ideally, continuous climb and descent should extend to higher levels than the 7/8000ft mark.

Q10

Do you have any feedback on Heathrow's overall approach to developing flight path options?

We cannot fault the thoroughness of Heathrow's approach, and their willingness to go back almost to first principles. This understandably requires a longer period of development and refinement.

But, even taking this in to account, the overall timeline, extending over a further 5 to 7 years, does seem excessive, and it may be hard to maintain a continuity of approach.

Whilst recognising this is outside the control of Heathrow, the split between local route design, and the design by NATS of the wider network, would seem to be problematic in terms of achieving optimum solutions. We seek assurance that mechanisms for regular and close communication between the relevant parties is already in place, and that timelines are suitably aligned, so that each party can see and take account of the direction of travel of the other, and avoid mismatch issues at the end stage.

COMPLETE

Collector: Final (Web Link)
Started: Friday, November 18, 2022 9:27:27 AM
Last Modified: Friday, November 18, 2022 9:45:06 AM
Time Spent: 00:17:39
IP Address: [redacted]

Page 1

Q1

Name

[redacted]

Q2

What is the name of the organisation or community group you represent?

CPRE Oxfordshire

Q4

Did you attend one of Heathrow's Stage 2A engagement workshops?

Yes

Q5

Thinking about the information that Heathrow has provided and/or presented to you, do you agree or disagree with the following statement about Heathrow's development of flight path options?"I am satisfied that Heathrow has taken into account the Design Principles when developing the comprehensive list of flight path options"

I strongly disagree

Q6

Please provide any feedback on your answer in the box below.

Whilst the basic premise of avoiding population overflights might seem rational, they do incur more issues away from centres of habitation.

Q7

Do you have any feedback on Heathrow's potential concepts for delivering respite? (pages 49-51)

Respondent skipped this question

Q8

Do you have any feedback on Heathrow's potential approach to night flights? (page 52)

Respondent skipped this question

Q9

Do you have any feedback on Heathrow's proposed approach to noise efficient operations? (page 53)

Respondent skipped this question

Q10

Do you have any feedback on Heathrow's overall approach to developing flight path options?

Further to question 6. The theory of attempting to reduce the number of dense population areas overflown and to therefore move the flightpaths into more open countryside is actually the wrong way round. For example, overflying Reading urban area that is already fairly noisy would hardly be noticed whereas overflying open and quiet countryside will create a nuisance where the peace would be regularly interrupted by aircraft noise. Aircraft noise added to traffic and other noise in heavily populated conurbations would hardly be noticed; sound pressure suggestions of around 50 to 70 db would not add much to the ever present background noise. As the background noise in open countryside is relatively quiet, adding periods of intrusive sound up to 70 db will be objectionable to those using the countryside or in quiet villages that might be overflown. Obviously excellent to try to avoid areas of AONB for this same reason.

From: [redacted]
Sent: 09 December 2022 15:27
To: DD - Airspace
Subject: Re: Final Reminder for feedback on Heathrow's Stage 2A Engagement: Deadline this Friday

Caution: external email. Unless you recognise the sender and know the content is safe, do not click links or open attachments.

Dear [redacted]
well, I tried to add comments as instructed by your email below and the link just comes up with “you have already taken this survey” with no other options?!

Can you add the comments from CPRE Oxfordshire to the feedback form on our behalf please?

The flight paths were indicated to be over unpopular or lower populated areas, not over AONBs or other areas of interest and not over the built up areas. CPRE Oxfordshire considers this the wrong way round as aircraft noise pollution over the quieter countryside will be much more intrusive than over a relatively noisy environment of dense urban areas. It would therefore be more logical to pace the routings over the populated areas leaving the countryside as peaceful as practical.

Yours sincerely,
[redacted]

CPRE Oxfordshire

From: DD - Airspace
Sent: 09 December 2022 16:02
To: [redacted] DD - Airspace
Subject: RE: Final Reminder for feedback on Heathrow's Stage 2A Engagement: Deadline this Friday

Dear [redacted]

I just checked and we received a response from you on the 18th November. We didn't realise the survey wouldn't allow you to submit more than one response.
I will include your text below as further feedback from CPRE Oxfordshire.

Many thanks for your engagement in the process,
[redacted]

COMPLETE

Collector: Final (Web Link)
Started: Wednesday, November 16, 2022 6:03:29 PM
Last Modified: Wednesday, November 16, 2022 6:11:19 PM
Time Spent: 00:07:50
IP Address: [redacted]

Page 1

Q1

Name

[redacted]

Q2

What is the name of the organisation or community group you represent?

Kent Downs AONB Unit

Q4

Did you attend one of Heathrow's Stage 2A engagement workshops?

No

Q5

Thinking about the information that Heathrow has provided and/or presented to you, do you agree or disagree with the following statement about Heathrow's development of flight path options?"I am satisfied that Heathrow has taken into account the Design Principles when developing the comprehensive list of flight path options"

I agree

Q6

Please provide any feedback on your answer in the box below.

Respondent skipped this question

Q7

Do you have any feedback on Heathrow's potential concepts for delivering respite? (pages 49-51)

Respondent skipped this question

Q8

Do you have any feedback on Heathrow's potential approach to night flights? (page 52)

Respondent skipped this question

Q9

Respondent skipped this question

Do you have any feedback on Heathrow's proposed approach to noise efficient operations? (page 53)

Q10

Do you have any feedback on Heathrow's overall approach to developing flight path options?

The consideration of minimising overflying of AONBs in the approach is welcomed. Central Government policy looks to 'limit and where possible reduce the number of people in the UK significantly affected by aircraft noise'. This has resulted in the routing of air traffic away from over-flying conurbations where they may have historically flown and over onto less populated areas, which in many cases are over protected landscapes of our National Parks and Areas of Outstanding Natural Beauty, designated, visited and appreciated for their special qualities including tranquillity.
These areas are typically subject to much quieter background noise than existing urban areas, where the presence of overflying aircraft will therefore be more apparent than in areas where the existing ambient noise levels are higher. Increased concentration of flight paths, if overflying the AONB could negatively impact on tranquillity of the AONB.

COMPLETE

Collector: Final (Web Link)
Started: Thursday, December 08, 2022 10:44:53 AM
Last Modified: Thursday, December 08, 2022 11:09:29 AM
Time Spent: 00:24:35
IP Address: [redacted]

Page 1

Q1

Name

[redacted]

Q2

What is the name of the organisation or community group you represent?

The Chilterns Conservation Board (AONB Board)

Q4 **Yes**

Did you attend one of Heathrow's Stage 2A engagement workshops?

Q5 **I agree**

Thinking about the information that Heathrow has provided and/or presented to you, do you agree or disagree with the following statement about Heathrow's development of flight path options?"I am satisfied that Heathrow has taken into account the Design Principles when developing the comprehensive list of flight path options"

Q6

Please provide any feedback on your answer in the box below.

We note, and give due credit for, how you are seeking to apply national guidance re minimising overflight of Areas of Outstanding Natural Beauty (AONBs) where practicable within Principle 2. It is vital that this is carried forward into later stages of the process, and not lost within other potentially competing considerations.

We would welcome a more detailed explanation, preferably now, or certainly at the next stage of engagement, about the weighting process applied to produce the "blended" options shown in slides 31 and 43 of the presentation material. You state there that "you have applied all weighting combinations": did these extend all the way from 0 to 100% for each of the inputs [which would have produced, theoretically, options entirely avoiding AONBs]? And then, how was the selection made of the "highest-performing" tracks? We observe, in passing, that Design Principles 2 and 4 are 'musts' whilst 9 and 10 are 'shoulds', so the former should arguably be given greater weightings in this blending exercise.

Q7

Do you have any feedback on Heathrow's potential concepts for delivering respite? (pages 49-51)

The concept of providing respite through route alternation (the third of the ideas, illustrated on Slide 51) may have potential application for routes affecting AONBs in the following two ways: routes during daylight hours to avoid the most tranquil parts of the AONB where quiet recreation most likely to be taking place; routes during hours of darkness to avoid the populated parts of the AONB, to avoid disturbance to residents. Similarly, there could be two variants of routes that run close to the edge of AONBs: the one that avoids the AONB to the greatest extent could be used during daytime, balanced by greater overflight of the AONB during dark hours so that any population centres outside AONBs are given respite at these times. Tranquillity as a key feature / component of public benefit, is a matter of increasing emphasis in the planning system. DEFRAs/Natural England's consideration of the extension to the Chilterns AONB is a current project and may impact upon the spatial extent of AONB protected landscape and thus candidate areas for respite.

Q8

Do you have any feedback on Heathrow's potential approach to night flights? (page 52)

hese ideas all appear to have merit, but the impact of night flights from Heathrow is much greater for communities closer to Heathrow, so we do not feel it appropriate to express any firm views.

Q9

Do you have any feedback on Heathrow's proposed approach to noise efficient operations? (page 53)

We certainly support all route designs and other measures that allow for continuous climb and descents, and steeper profiles where possible, so that any aircraft that do traverse the AONB are as high as possible. The issue referred to under Q10 (the interface between Heathrow's and other airfields' local route design exercises, and between these and that of NATS) is relevant here, since, ideally, continuous climb and descent should extend to higher levels than the 7/8000ft mark.

Q10

Do you have any feedback on Heathrow's overall approach to developing flight path options?

We cannot fault the thoroughness of Heathrow's approach, and their willingness to go back almost to first principles. This understandably requires a longer period of development and refinement. But, even taking this in to account, the overall timeline, extending over a further 5 to 7 years, does seem excessive, and it may be hard to maintain a continuity of approach. The Heathrow design team will also want to be mindful of the boundary extension (project) for the AONB and this will impact on the flight path options and runs in parallel to this project, with decisions being made over the next 3/4 years. We recommend liaison with Natural England on this, as they take forward a selection of candidate areas for extension review.

Whilst recognising this is outside the control of Heathrow, the split between local route design, and the design by NATS of the wider network, would seem to be problematic in terms of achieving optimum solutions. We seek assurance that mechanisms for regular and close communication between the relevant parties is already in place, and that timelines are suitably aligned, so that each party can see and take account of the direction of travel of the other, and avoid mismatch issues at the end stage.

We welcome the design teams approach to guidance such as CAP 1616. The Countryside and Rights of Way Act 2000 at its section 85 is also relevant, as it establishes a 'duty of regard' to the delivery of AONB protection as applies to any public body (such as the CAA, local planning authorities and Government).

COMPLETE

Collector: Final (Web Link)
Started: Friday, December 09, 2022 9:58:43 AM
Last Modified: Friday, December 09, 2022 3:55:41 PM
Time Spent: 05:56:58
IP Address: [redacted]

Page 1

Q1

Name

[redacted] Chairman FRP

Q2

What is the name of the organisation or community group you represent?

The Friends of Richmond Park

Q4 **Yes**

Did you attend one of Heathrow's Stage 2A engagement workshops?

Q5 **I strongly disagree**

Thinking about the information that Heathrow has provided and/or presented to you, do you agree or disagree with the following statement about Heathrow's development of flight path options?"I am satisfied that Heathrow has taken into account the Design Principles when developing the comprehensive list of flight path options"

Q6

Please provide any feedback on your answer in the box below.

SUMMARY

1. The Friends of Richmond Park (FRP) are not satisfied that the design options are aligned with the design principles or that the change sponsor has properly understood and accounted for stakeholder concerns specifically related to the design options because:

a) The sponsor is using inappropriate metrics for the Design Principles:

- it ignores the instructions in CAP1616 [1] to apply the same approach as that for Areas of Outstanding Natural Beauty (AONBs) to other areas as identified through community engagement;
- it uses (resident) 'population' rather than 'people' (as worded in DPs 9 and 10 keeping to a minimum the total number of people who experience an increase in noise and the total number of people who experience noise) and thus ignores the impact on people in urban parks; Richmond Park has 5.5 million visitors a year;
- it has not taken into account or responded to feedback by stakeholders in the Methods and Metrics workshop; and
- there are other flaws in its metrics for DP2, 4 and 9.

b) The Comprehensive List Of Options is not "comprehensive" despite its large size, because it:

- uses too narrow set of metrics;
- fails to include the mandated "do nothing" option;
- has a disproportionate number of arrival options over the southern quadrants; and
- uses only two, close-in convergence points, rather than a range.

c) The sponsor has failed to meet the procedural requirements of CAP1616 for Stage 2A. There is no clear comprehensive list of options or well-defined flight paths, nor does it show how the metrics are being scored or weighted. It does not accept that stakeholder feedback at Stage2A must inform the way in which the sponsor conducts the DPE. These flaws should be corrected.

DETAILED ANALYSIS [2]

The function of, and process for, Stage 2A stakeholder engagement

2. Paras 125-126 read:

"Step 2A requires the change sponsor to develop a first comprehensive list of options…. that address the Statement of Need and that align with the design principles from Stage 1. The change sponsor preliminarily tests these with the same stakeholders it engaged with in Step 1B to ensure that they are satisfied that the design options are aligned with the design principles and that the change sponsor has properly understood and accounted for stakeholder concerns specifically related to the design options. The change sponsor then produces a design principle evaluation that sets out how its design options have responded to the design principles. The change sponsor must bear in mind that the option that is eventually chosen must be compliant with the relevant technical criteria…"

3. In other words:

- CAP1616 requires the comprehensive list of design options (CLOO) to be a comprehensive list of all the possible [3] design options that address the Statement of Need (SN) and are aligned with the design principles (DPs) (and are compliant with the relevant technical criteria) (paras 124 to 126).
- CAP1616 establishes the testing of options against the DPs as an iterative process. In the first iteration the sponsor creates the CLOO, including considering how the options align with the DPs - then the sponsor tests that preliminary attempt with stakeholders, takes feedback on its intended approach - and then evaluates its CLOO against the DPs via the design principle evaluation (DPE) (paras 125, 128 and C27).

Detailed response

(a) The sponsor is using inappropriate metrics for the DPs/illegitimately re-writing DPs developed at Stage 1

4. The sponsor correctly defines the CAP1616 CLOO requirement as "a comprehensive set of airspace design options that address the SN and align with the DPs set at Stage 1" [4].

5. Focussing on the last part of that definition, CAP1616 says that "The change sponsor must develop a clear list of criteria from its design principles in Stage 1 and apply these to the options list. The main purpose of this work is to understand each criterion from the design principles in Stage 1 that will inform the development of airspace design options." [5]

6. The sponsor has failed to do this in relation to DP2, DP4, DP9 and DP10 – its proposed metrics do not account for the stakeholder concerns that underpin the DPs:

Local areas similar to AONBs and Quiet Areas

6.1 The metrics for DP2 (Remain in accordance with the CAA's AMS and all other relevant UK policy, legislation and regulatory standards (e.g. Air Navigation Guidance) etc.) that are being proposed by the sponsor [6] are deficient because they look solely at overflown AONBs and overlook other requirements of UK policy and legislation. The sponsor is ignoring the instructions in CAP1616 [7] to apply the same approach as that for AONBs to other areas as identified through community engagement, community feedback on specific areas that should be avoided, and any local area with similar characteristics to a Quiet Area that has been identified via community engagement. That instruction is in turn derived from legally binding Government guidance on environmental objectives [8], which requires the CAA to take account of "community views on specific areas that should be avoided" where possible [9]. Richmond Park is at least equivalent to an AONB (or National Park) for this purpose. This is because of its significance for both biodiversity (being designated as a Special Area of Conservation (SAC), Site of Special Scientific Interest (SSSI) and National Nature Reserve (NNR)) and tranquillity (its NNR designation being expressly based, in part, on the fact that it is a "recreational resource for the London area", being unusually heavily visited compared with other NNRs because it is a green space surrounded by dense residential development, including social housing, which is free to enter and close to public transport links). FRP, on behalf of its 3,700 members, have repeatedly notified the sponsor that Richmond Park is such a specific area that, like an AONB, should be avoided where possible [10] but this has not been reflected in the CLOO DP2 metrics.

6.2 Assuming the sponsor takes on board the community views communicated by FRP, then the measure of significance being used by the sponsor for AONBs (km2) is inappropriate. As the ANG outlines in this context, the government's policy is to focus on limiting and, where possible, reducing the number of people in the UK adversely affected by aircraft noise and the impacts on health and quality of life associated with it [11] and, therefore, the metrics should look to visitor numbers, location and accessibility (not land area).

People rather than (resident) population

6.3 The metrics for DP10 (Keep the total number of people who experience noise from the future airspace design to a minimum) are also flawed. "Population" metrics are being used by the sponsor to measure an impact on 'people', which distorts the meaning of the design principle. DP10 was intended in part to address negative reaction from stakeholders at Stage 1 to the idea of deliberately routing paths over open spaces and stakeholder comments at Stage 1 stressing the value of quiet open space for human wellbeing. For example, DP10 is supposed to respond to a comment from a local authority: "Parks are crucial places of respite in particular for lower income groups less likely to have outside space. They should not be targeted for flight paths in the daytime" and another from an environmental stakeholder who was "concerned that the noise impacts on … open spaces/parks in and near London should not be of greater magnitude following the airspace modernisation" [12]. Relying solely on metrics about residential population, as proposed by the sponsor [13], ignores the genesis of DP10. To respond to the stakeholder concerns that led to DP10, "people" should include people enjoying the physical and mental health benefits of being out in green spaces away from their homes. Those benefits could be measured by metrics concerning visitor numbers and demographics and concerning the accessibility (in both logistical and financial terms) of the spaces.

6.4 Similarly, the sponsor's proposed metrics [14] for DP9 (Keep the total number of people who experience an increase in noise from the future airspace design to a minimum) fail to respect the choice of the word "people" in the DP, which was developed with stakeholders at Stage 1.

Stakeholder feedback on metrics

6.5 FRP made all the above comments to the sponsor 4 months ago (at a Methods and Metrics workshop with selected stakeholders on 5 July 2022 that was convened by the sponsor "to share the metrics we intend to use to evaluate options against the design principles" and for "stakeholders to share their views on Heathrow's proposed metrics" [15]). Despite promises to do so, the sponsor has not taken account of those comments, in breach of its CAP1616 obligation, and the CAA core principle, to engage in "a two-way conversation" [16].

6.6 Specifically, the minutes of the Methods and Metrics workshop prepared by the sponsor [17] record that the sponsor "noted that they are required to account for AONBs and SSSIs under DP2" but there is no reference to SSSIs in the proposed metrics for DP2 in the Stage 2A engagement material [18]. In fact, the DP2 metrics in the Stage 2A engagement material back-track on the metrics originally floated by the sponsor in its slide deck for the Methods and Metrics workshops [19]. Ahead of those workshops, the sponsor was promising to generate metrics relating to biodiversity and tranquillity, to develop and assess options in line with policy, and to identify any overflown SSSIs, Special Protection Area (SPAs), SACs, Ramsar sites and AONBs, whereas now the sponsor is only proposing to use a metric relating to overflown AONBs for DP2 [20].

6.7 Again, those minutes record, against DP10, that the sponsor "committed to identifying any options impacting areas of tranquillity and taking these additional factors into consideration" and "noted that they were able to look at certain datasets to see where people spend their time, which would allow for the impact on Richmond Park (for example) to be explored" [21]. However,

the metrics for DP10 specified in the Stage 2A engagement material do not fulfil those commitments [22].

Other flaws in the metrics

6.8 The metrics being used by the sponsor for DP2 (specifically, compliance with ANG) are flawed because they fail to reflect the Government's altitude-based priorities for airspace below 4,000ft set out in ANG 3.3a,b and 3.5. The sponsor is wrongly measuring the absolute headcount in any noise contour, which ANG 3.5 expressly says is not the right approach – rather, the Government says the objective must be to limit the total adverse effects on people as a result of aviation noise, adverse effects being those related to health and quality of life.

6.9 The sole metric proposed by the sponsor for DP4 (reduce CO2 and other greenhouse gas emissions) is to minimise track mileage flown. This appears unreasonably simplistic. There is no evidence that it takes account of the fuel burn involved in manoeuvring into tight convergence points.

6.10 The metrics proposed by the sponsor for DP9 wrongly treat the impact of noise on overflown populations as equal from planes at anything up to 7,000ft, regardless of the altitude, whereas there is clearly a much greater impact at lower levels of overflying (the greatest below 2,000ft with less adverse noise effects from overflying above, say, 4,000ft). The CLOO options should be overlaid with altitude data and aligned/evaluated against DP9, so as to clearly identify people newly overflown at less than 2,000ft.

(b) The CLOO is not comprehensive

7. The CLOO must be "comprehensive". CAP1616 refers to the CLOO as including "all the options open to [the change sponsor]" (para 119) and to the fact that, at the end of Stage 2, the CAA will have to consider whether the sponsor has "identified all the possible options" (para 128).

8. The proposed CLOO put forward by the sponsor is not comprehensive in a variety of respects:

8.1 Narrow set of metrics. HAL have used an arbitrary set of five metrics as a way of filtering out some of the original 650,000 notional tracks, with the result that the proposed CLOO is not "comprehensive"; the sponsor asserts that these five metrics are "relevant to our DPs" [23]; they may indeed be "relevant" but they are an unduly narrow measure of alignment with the DPs as a whole, with the consequence that the proposed CLOO omits some "possible" options, in contradiction of the CAP1616 guidance that "the criteria [developed from the DPs] should not be made overly restrictive, as to do so may remove a potentially suitable solution at too early a stage" (para E18).

8.2 No 'do nothing' option. The "do nothing/do minimum" option has not been included in the proposed CLOO; no supporting evidence has been given by the sponsor for its assertion that this is because "do nothing/do minimum" is not technically viable for utilising PBN at Heathrow. The sponsor has therefore failed to comply with E12 which states that the CLOO "must" include the 'do nothing / minimum' option. The inclusion of such option(s) in the CLOO is distinct from the use of the 'do nothing / minimum' as a baseline for analysis of impacts. Nor does testing other CLOO options against DP9 (Keep the number of people who experience an increase in noise to a minimum) satisfy the legal requirement for a 'do nothing/do minimum' option.

8.3 Few arrival options in northern quadrant. Given that three of the six arrival waypoints are north of Heathrow [24], and that half of Heathrow's current arrivals are from the north, the proposed CLOO contains disproportionately few PBN arrival options in the northern quadrants - the vast majority of the southern 27L runway arrival options and even the northern 27R runway arrival options in the proposed CLOO are to the south [25]. It is not credible that more arrival options in the northern quadrants (in line with current practice) do not merit a place in a comparatively large CLOO of over 300 options. This is particularly surprising given the bias towards existing routes that should arise out of DP9 (keep the number of people who experience an increase in noise to a minimum). It also undermines the sponsor's ability to satisfy the Government's altitude-based environmental priority - "where options for route design from the ground to below 4,000ft are similar in terms of the number of people affected by total adverse noise effects, preference should be given to that option which is most consistent with existing published airspace arrangements" [26] - if half the existing published airspace arrangements have already been discounted. The imbalance indicates that the proposed CLOO is not comprehensive.

8.4 No range of convergence points. In the proposed CLOO, PBN arrivals into 27R and 27L are based on only two convergence points (3nm and approximately 7nm), not the range of potential convergence points described by the sponsor at the Stage 2A stakeholder engagement workshop. This has unjustifiably restricted the number of arrival tracks under consideration in the CLOO. To be "comprehensive", more options should be included in the CLOO that use convergence points in the current operational range of 8-19nms (average 14nm) [27].

c) The sponsor has failed to meet the procedural requirements of CAP1616 for Stage 2A

9. To fulfil the purpose of the Stage 2A stakeholder engagement outlined above, the workshop and supporting materials should set out the result of the sponsor's first iteration of the CLOO and explain how it has sought to align the options with the DPs and its [illegible] DPE [illegible]

its intended DPE methodology.

10. The sponsor has not met these procedural requirements:

10.1 No clear 'list' of options. The materials provided by the sponsor to stakeholders by way of Stage 2A engagement fail to meet the "clear and accessible" standard set by CAP1616 (page 175). The information does not clearly identify a "list" of design options; for example, it is not clear whether all the options, or only the blended options, in the Appendix pack are included in the proposed CLOO [28].

10.2 Maps have unclear flight path options and lack performance data. Again, the maps provided to stakeholders by way of Stage 2A engagement [29] do not provide sufficiently "clear" well-defined flight path options, nor any supporting data at all to illustrate how evidence is being used to measure the performance of any option against any DP, such as would enable a stakeholder, on a sampling basis, to test the way in which the sponsor is using the DPs in developing options. This means that the information shared with stakeholders is not fit for purpose and falls short of the requirements for effective engagement in Appendix C of CAP1616. In consequence, it is not possible for a stakeholder to determine whether the sponsor has properly understood and accounted for stakeholder concerns as reflected in the DPs.

10.3 Unclear scoring and weighting of CLOO metrics. The materials do not set out how the proposed metrics are being scored and weighted in an objective manner to assemble the CLOO (consistent with the CAP1616 requirement to assemble and evaluate options against DPs in a "fair and consistent manner" [30]). The sponsor claims that it is using "all possible weighting combinations" [31] but it is not clear what this means. In addition, this approach does not appear to respect the Government's legally binding altitude-based priorities below 4,000ft [32]. Although the sponsor tells us that two sets of options were created in relation to DP2 [33], one of which does correctly focus on noise up to 4,000ft, it appears that the alternative DP2 variant which takes CO2 into account (as well as noise), coupled with the track miles metric being used for DP4, may have outweighed the noise priority, in breach of ANG 3.3a. It is impossible for stakeholders to be satisfied with the weighting without information from the sponsor as to what it has done.

10.4 No forward-looking stakeholder input allowed. The sponsor is taking the position that stakeholder input at Stage 2A is solely backward-looking (and not also forward-looking to the DPE) [34] and does not require the sponsor to share with stakeholders its current intention as to the detailed methods and metrics it will use for the DPE. We disagree. Para C27 says that "As the change sponsor is required to design options that meet the design principles developed during Stage 1b they must seek feedback from key stakeholders to test their hypotheses. The design principle evaluation should be signposted for stakeholders as this sets out how the design options have responded to the design principles." It is clear stakeholders should be given a chance to feed back an informed view as to whether the design options in the proposed CLOO are aligned with the DPs and to clarify the correct interpretation of the DPs, which interpretation will then govern the sponsor's work on the DPE.

10.5 Unclear scoring and weighting of DPE. The materials do not set out how the proposed metrics will be scored and weighted in an objective manner to evaluate the options under the DPE (consistent with the CAP1616 requirement to assemble and evaluate options against DPs in a "fair and consistent manner" [35] and with the Government's legally binding altitude-based priorities below 4,000ft [36]). In response to a commitment from the sponsor to consider our proposal [37], FRP put forward a draft scoring and weighting methodology for discussion on 10 July 2022 but, so far, have received no substantive reply from the sponsor.

Q7

Do you have any feedback on Heathrow's potential concepts for delivering respite? (pages 49-51)

'Respite' is usually taken to be met by actions such as runaway alternation, providing areas overflown with relief from air traffic for half the day. An additional form of "relief" is access to quiet green spaces that are not affected or not much affected by aircraft noise. Currently that includes Richmond Park. Its tranquillity is given by visitors as the number one reason for them visiting. It is inevitable that, in any future airspace arrangements some resident populations in the Heathrow areas will be overflown. That makes it all the more important to preserve some green spaces to which those people can go for relief from the noise.

Q8

Do you have any feedback on Heathrow's potential approach to night flights? (page 52)

The sponsor has indicated that, from the start of implementation at times when Heathrow airport arrivals are not yet at capacity, the most modern aircraft (having the most modern PBN equipment) would use the closest technically feasible convergence point (3nm). This, the sponsor has suggested, means that night flights and early morning flights (06:00 to 07:00) using PBN could be routed over Richmond Park from 2027. This ignores the importance of early morning for the park's wildlife; it is a particularly sensitive time of day for birds – the time of the "dawn chorus". It is also a time when, before traffic and visitors, the ambient noise levels are very low (around 25-30dB) and therefore the intrusion of aircraft noise at 68-83dB) will be at its greatest. The environmental assessment of options must include this consideration.

Q9

Do you have any feedback on Heathrow's proposed approach to noise efficient operations? (page 53)

Blank

Q10

Do you have any feedback on Heathrow's overall approach to developing flight path options?

SUMMMARY

1. Looking ahead to the Stage 2B Initial Options Appraisal, the sponsor must:

a) Carry out a proper Environmental Assessment (EA) at Stage 2B for green spaces of high environmental value (including Richmond Park), to at least the level illustrated in the preliminary environmental assessment for Richmond Park (pEA) that FRP submitted on 12 September 2022.

b) In carrying out its EA, comply with the ANG and take account of the fact that community views have identified Richmond Park as a specific area that, if possible, should not be overflown.

c) Take account of forecasts for traffic and use of PBN for at least 30 years from implementation, commensurate with the scale of the ACP.

DETAILED ANALYSIS

2. CAP1616 says:

"Step 2B – Options appraisal:

B8. The change sponsor will undertake environmental assessments (quantitative and/or qualitative, according to the scale of the change options and the nature of the potential environmental impacts) as part of this stage. This forms part of the Initial options appraisal whereby a comprehensive list of potential options are compared; further guidance on this can be found in Appendix E. The CAA will review the options appraisal, including the assessment of any environmental impacts for the options under consideration.

B9. The options appraisal (and therefore any environmental assessments undertaken as part of that appraisal) is to be included in the change sponsor's subsequent consultation material. The options appraisal will also enable the change sponsor to illustrate any trade-offs that are being made between environmental impacts….

B12. Depending on the Level of the airspace change proposal, the following elements must be assessed.....Level 1 or M1 • noise • CO2 emissions • local air quality (for any option that includes changes below 1,000 feet) • tranquillity • biodiversity"

Scale of change and nature of environmental impact.

3. The guidance in paragraph B8 is directly relevant to Richmond Park:

• The "scale of the change options" for Richmond Park is enormous. Today, the main arrival path for the southern runway (27L) is a mile to the north generating some intrusive noise in the northern part of the park; in addition about 7% of departures fly over the southern part. In the CLOO, about 37 of the design options would be directly over the park or its periphery with arrivals as frequently as every 75 seconds.

• The "nature of the potential environmental impacts" on Richmond Park is severe. The bursts of intense noise (68-83dB) from the arrivals will overwhelm the Park's very low ambient noise (23-40dB) and, for a variety of reasons (wide propagation across the open area, contrast to ambient noise, lack of buildings to escape to, visitor expectations of tranquillity) will affect people more than in residential areas. Richmond Park will suffer severe impact on four out of the five elements in paragraph B12 – noise, air quality, tranquillity and biodiversity. The value of these elements is recognised in Richmond Park's designation as a Special Area of Conservation (SAC), National Nature Reserve (NNR) and Site of Special Scientific Interest (SSSI) and its inclusion on the Nature Conservation Review), placing it amongst the top nature conservation sites in the country [38]. It is of international and national environmental importance. Applying the Department of Transport guidance on environmental impact appraisals, in WebTAG Unit A3, Chapter 6, Richmond Park scores highly against all four landscape indicators of "scale it matters", "rarity", "importance" and [lack of] "substitutability". For more detail see FRP's pEA.

Substantive EA required

4. Therefore, the sponsor should carry out a substantive EA at Stage 2B for Richmond Park (and any other area of similar extraordinary environmental importance potentially affected by the CLOO), covering all 5 elements listed in B12, quantitative as well as qualitative, along the lines of FRP's pEA. A few short unsupported comments would be inadequate. WebTAG and FRP's pEA suggest some detailed objective criteria. It is not compliant with CAP1616 to delay that level of assessment to Stage 3.

5. We do not consider the Luton and Glasgow environmental analyses to be suitable templates or precedents for Heathrow Airport in relation to Richmond Park. We note that both Luton and Glasgow Airports' environmental assessments at Stage 2B are limited to statistics of areas overflown by each option, rather than substantive assessments of environmental impact. Also, Luton drew a line at 3,000 ft and Glasgow at 2,000ft, above which they discounted biodiversity impacts. The arrival flight path options in the CLOO over or near Richmond Park are lower than 2,200ft. In addition, for those other airports, the new paths under

the CLOO over or near Richmond Park are lower than 2,200ft. In addition, for those other airports, the new paths under consideration were not radically different from the current situation as regards overflying sensitive open space, whereas most of the 37 paths in the CLOO that affect Richmond Park are radically different from existing arrangements in terms of overflight of Richmond Park. A much more substantive in-depth EA than the environmental analyses by Glasgow or Luton Airports must be produced by Heathrow for Richmond Park at Stage 2B.

Areas identified by community engagement

6. We remind the sponsor that, when it carries out its tranquillity assessment as part of the EA, the instruction in CAP1616 is to apply the same approach as that for AONBs to any local area with similar characteristics to a Quiet Area that has been identified via community engagement [39]. That instruction is in turn derived from legally binding Government guidance on environmental objectives, which requires the CAA to take account of "community views on specific areas that should be avoided" [40]. FRP, on behalf of its 3,700 members, have repeatedly notified the sponsor that Richmond Park is such a specific area that, like an AONB, should be avoided where possible [41].

7. Richmond Park is at least equivalent to an AONB (or National Park (NP)) for this purpose. This is because of its significance for both biodiversity (being designated as an SAC, SSSI and National Nature Reserve) and tranquillity (one of the reasons for its NNR designation being the fact that it is a "recreational resource for the London area").

8. Indeed, Richmond Park deserves to be protected from overflying to an even greater extent than many AONBs or NPs. To quote ANG 3.32:

"Given the finite amount of airspace available, it will not always be possible to avoid overflying National Parks or AONB, and there are no legislative requirements to do so as this would be impractical. The government's policy continues to focus on limiting and, where possible, reducing the number of people in the UK adversely affected by aircraft noise and the impacts on health and quality of life associated with it. As a consequence, this is likely to mean that one of the key principles involved in airspace design will require avoiding over-flight of more densely populated areas below 7,000 feet. However, when airspace changes are being considered, it is important that local circumstances, including community views on specific areas that should be avoided, are taken into account where possible."

9. The underlying assumption here is that AONBs and NPs are usually comparatively empty of people. However, Richmond Park is unusually heavily visited [42] compared with any AONB or NP, being a green space surrounded by dense residential development, including social housing, which is free to enter and close to public transport links. The extraordinary extent to which Richmond Park is used by Londoners means that, in this very special case, the Government's priority policy goal, of minimising the number of people significantly affected by adverse impacts of aircraft noise, is best served by avoiding overflight of Richmond Park, even though it is not a residential area.

Forecasts for at least 30 years

10. In bilateral conversation, the sponsor has responded to some of the concerns raised by FRP with references to the fact that PBN routes will not be fully utilised in the near term and hinted that its EA may consider traffic forecasts for a period of only 10 years from the intended year of implementation, relying, presumably, on para B31. However, B31 says "for a period of at least 10 years" (emphasis added). The relevant forecasts must surely be proportionate to the airspace change proposal in question - CAP1616 is general guidance applicable to any proposal. Given the scale of the needs outlined in the SN and the fact that this is a once-in-a-lifetime and total reconfiguration of airspace design, expressly intended to address the growing use of PBN, a mere 10 year time horizon would ignore the real impact of a transition to full PBN over future decades and fail to comply with CAP1616 requirements. All estimates of the impacts of options should include the transition from the base year 2019, the period to implementation in 2027, through the transition period when a varying mix of vectored arrivals and PBN options, to the end-state of all-PBN including a stabilisation period. Therefore, the EA must take account of traffic forecasts for at least 30 years from implementation, commensurate with the scale of the ACP.

References

1. Paras B76-B78 and Footnote 73
2. Unless otherwise stated, all paragraph references are to CAP1616 4th edition March 2021, and all references to the Main and Appendix pack are to the two slide packs distributed by the sponsor to stakeholders following the Stage 2A stakeholder engagement workshops
3. Paras 128 and E16
4. Main deck slide 62
5. Para E18
6. Main deck slides 24 and 38
7. Paras B76-B78 and Footnote 73

8. Section 70(2) of the Transport Act 2000
9. Air Navigation Guidance (ANG) 3.32
10. As formally notified by FRP at Stage 2A stakeholder engagement workshops on 1 and 9 November 2022 and at a bilateral meeting between FRP and the sponsor on 23 November 2022, citing ANG17 3.32, CAP1616 B76 & B77 and footnote 73
11. ANG 3.32
12. Heathrow Design Principles Engagement: Phase 2 Workshop slide 21
13. Main pack slides 30 and 42
14. Main pack slides 29 and 41
15. M&M slide deck, slide 3
16. Para C9
17. 2207 Heathrow MM workshop Meeting Note vF 10.5
18. Main pack slides 24 and 38
19. M&M slide deck, slide 21
20. Main pack slides 24 and 38
21. 2207 Heathrow MM workshop Meeting Note vF 10.5
22. Main pack slides 30 and 42
23. Main pack slide 17
24. Main pack slide 22: waypoints TNT, CLN, and CP
25. Appendix pack slide 102
26. ANG 3.3b
27. Heathrow - Joining Point Analysis 2018
28. The sponsor has since confirmed to FRP in a bilateral meeting on 23 November 2022 that all the 300 plus PBN swathes together with the vectors constitute the CLOO but it should not have been necessary to ask the question and the engagement with stakeholders as a whole (who may not all have benefited from a similar clarification) falls short of CAP1616 standards
29. Appendix pack
30. Para 128
31. Main pack slides 31 and 43
32. ANG 3.3a and b
33. Main pack slide 25
34. In a bilateral meeting on 23 November 2022
35. Para 128
36. ANG 3.3a and b
37. Methods & Metrics Workshop on 5 July 2022 Minutes para 0.12
38. Richmond Park Management Plan 2019-2029, page 67
39. Paras B76-B78 and footnote 73
40. ANG 3.32
41. As formally notified by FRP at Stage 2A stakeholder engagement workshops on 1 and 9 November 2022 and at a bilateral meeting between FRP and the sponsor on 23 November 2022, citing ANG 3.32, CAP1616 B76 & B77 and footnote 73
42. Richmond Park's 5.5m visitors matches the number of visitors to all 163 NNRs managed directly by Natural England – despite being less than 2% of the matching area. Richmond Park Management Plan 2019-2029 p18

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Q1

Name

[redacted]

Q2

What is the name of the organisation or community group you represent?

The National Trust

Q4

Did you attend one of Heathrow's Stage 2A engagement workshops?

Yes

Q5

Thinking about the information that Heathrow has provided and/or presented to you, do you agree or disagree with the following statement about Heathrow's development of flight path options?"I am satisfied that Heathrow has taken into account the Design Principles when developing the comprehensive list of flight path options"

I strongly agree

Q6

Please provide any feedback on your answer in the box below.

Respondent skipped this question

Q7

Do you have any feedback on Heathrow's potential concepts for delivering respite? (pages 49-51)

The National Trust has no comments to make on the potential concepts for delivering respite.

Q8

Do you have any feedback on Heathrow's potential approach to night flights? (page 52)

The National Trust has no comments to make on the potential approach to night flights.

Q9

Do you have any feedback on Heathrow's proposed approach to noise efficient operations? (page 53)

The National Trust has no comments to make on the proposed approach to noise efficient operations.

Q10

Do you have any feedback on Heathrow's overall approach to developing flight path options?

Whilst the overall approach to developing flight path options appears to be comprehensive and robust The National Trust does not have the expertise to evaluate the validity of the technical studies which are being undertaken by Heathrow. The Trust remains concerned about the need to safeguard its properties from increases in aircraft noise and looks forward to the opportunity of reviewing the likely impact of short-listed options in due course.

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Page 1

Q1

Name

[redacted] and [redacted]

Q2

What is the name of the organisation or community group you represent?

Clean Air Bayswater (campaigning against air and noise pollution)

Q4

Did you attend one of Heathrow's Stage 2A engagement workshops?

Yes

Q5

Thinking about the information that Heathrow has provided and/or presented to you, do you agree or disagree with the following statement about Heathrow's development of flight path options?"I am satisfied that Heathrow has taken into account the Design Principles when developing the comprehensive list of flight path options"

I strongly disagree

Q6

Please provide any feedback on your answer in the box below.

QUESTION 6- Please provide any feedback on your answer in the box below.

-

No, we strongly disagree with the following statement
'Do you agree with 'I am satisfied that Heathrow has taken into account the Design Principles when developing the comprehensive list of flight path options'

Summary Feedback
The focus groups were small and did not include communities which could be newly overflown (6A). Assessments of noise impact must address the actual impact including that from aircraft making a turn; the numbers within a certain 'noise contour' are insufficient. The harmful effect of change in noise levels has not been addressed, nor the duration of the new noise event (6B).

6.A. The Design Principles which the list of flight path options are based on are deeply flawed. This is because the design principles were based on feedback from only four community focus groups with only 22 people in total across the four focus groups. Crucially, none of the 22 Community focus group participants represented potentially newly overflown communities in central, north and west London to the east of Heathrow (see our concern in 10.A). We are therefore formally questioning the validity of the output of the focus group and the actual Design Principles. As a consequence of the omission of any representative from central and newly overflown London areas, we strongly disagree with the statement that that we are satisfied the approach that Heathrow has taken when developing the comprehensive list of flight path options.

6.B. Noise impact assessment-

We e are deeply concerned about Heathrow Airport's proposed approach to estimating the noise impact on the communities impacted, as it underestimates the actual adverse impacts on central London communities, using noise exposure numbers within a contour, and not actual noise impacts.

6.B.1 All flight path options considered must be assessed using models that look into noise levels below 51 dBLAeq, adopting the World Health Organisation (WHO) guidance levels.

6.B.2 Heathrow must not proceed with its second and non-mandatory tier of its Design Principles, which is based on noise exposure numbers, rather than noise impacts.

- The ANG 17 clearly states that any assessment must take into account the significant adverse impacts, rather than using an inappropriate simplistic approach based on numbers within a noise contour.

- Before proceeding with assessing the flight path options, Heathrow must inform the 2A group about what evidence base and evaluation tools it proposes to use when reviewing the flight path options, and explain how its proposed tools/ methodologies will correctly and fully present the full adverse impacts for each of its flight path options. Heathrow must also explain to the community representatives what tools and algorithms it plans to use and how they will be independently validated and verified.

6.B.3 The government and Heathrow need to identify a way to correctly estimate the change effect.

- We are concerned that the current approach does not take into account the potential change effect on a community of introducing new flights over or adjacent to them. The 2019 ICAO Environmental Symposium concluded that LAeq (long term average) metrics only account for one third of aviation annoyance.

- Change is one of the most significant 'non acoustic' factors. Other recognised non acoustic factors include numbers of flights, time of day/night, peak noise and trust in authorities. The Heathrow Airspace Modernisation programme will introduce vast change that will adversely change London communities forever. International research shows the change impact adds 6-9 dBLAeq to the base LAeq levels.

• What makes London unique and inclusive is that central London benefits from pockets of quiet areas, which benefits people with particular sensitivity to noise. The change impact and the social and health impact of Heathrow's airspace modernisation programme, which is proposed to affect all areas of London including these quiet areas, will be immense and will deeply affect the most vulnerable people who have purposely sought refuge in these more quiet areas and who have an equal right to live and prosper in London. Due to the geographic location of Heathrow airport and the proposed air space changes directly over the city, the lives of Londoners and the fabric of London will be changed irreversibly for the worse. Please also refer to answer to Q8.

6.B.4 At the 2A workshop when questioned about noise assumptions for turning aircraft, a representative for Heathrow stated that Heathrow and its advisors do not have information on the noise impacts of turning aircraft. This is wholly unacceptable for an airspace modernisation programme with proposals for multiple flight paths options directly over a major city, with proposals for aircraft turning over newly affected densely populated areas. The noise impacts of turning aircraft must be identified, specified and fully incorporated in all the impact assessments, using the noise impact assumptions for the aircraft models that produce the most noise when turning, including large long-haul aircraft.

• Heathrow must commit to urgently identify, specify and incorporate the actual noise impacts of turning aircrafts over a community in its assessments, as it is proposing flight paths including turning flights over densely populated areas, potentially not previously overflown, and share these with the 2A community groups before the assessment of flight path options is carried out

6.B.5 In its 2018 'Departure Noise Mitigation: Main Report' the CAA states that using LAmax is the simplest measure of a noise event such as the overflight of an aircraft and relatively straightforward for the public to understand, since it is simply the maximum sound level recorded during the aircraft fly-by. However, using LAmax does not take account of the duration of the noise event (which is influenced by the speed of the aircraft) and hence is possibly less representative of the disturbance the aircraft may cause. In the report the CAA suggested to complement the LAMax with Sound Exposure Level (SEL), which accounts for the duration of the noise event as well as its intensity.

6.B.6. The noise impact assessment on communities must also fully incorporate the increase in LAmax at either side of a flight path. This is because depending on the departure procedures chosen, there can be a very significant adverse noise impact due to the way that noise propagates to the side of a flight path as aircraft height increases. This is particularly relevant for the Heathrow airport as the aircraft depart over densely populated areas over central London.

6.B.7 Heathrow should insist on including a full sensitivity analysis (reflecting the potential change effects) within its Airspace Change Proposal (ACP)

QUESTION 6- Please provide any feedback on your answer in the box below.

-

No, we strongly disagree with the following statement

'Do you agree with 'I am satisfied that Heathrow has taken into account the Design Principles when developing the comprehensive list of flight path options'

Summary Feedback

The focus groups were small and did not include communities which could be newly overflown (6A). Assessments of noise impact must address the actual impact including that from aircraft making a turn; the numbers within a certain 'noise contour' are insufficient. The harmful effect of change in noise levels has not been addressed, nor the duration of the new noise event (6B).

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6.B. Noise impact assessment-

We e are deeply concerned about Heathrow Airport's proposed approach to estimating the noise impact on the communities impacted, as it underestimates the actual adverse impacts on central London communities, using noise exposure numbers within a contour, and not actual noise impacts.

6.B.1 All flight path options considered must be assessed using models that look into noise levels below 51 dBLAeq, adopting the World Health Organisation (WHO) guidance levels.

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- Change is one of the most significant 'non acoustic' factors. Other recognised non acoustic factors include numbers of flights, time of day/night, peak noise and trust in authorities. The Heathrow Airspace Modernisation programme will introduce vast change that will adversely change London communities forever. International research shows the change impact adds 6-9 dBLAeq to the base LAeq levels.

- What makes London unique and inclusive is that central London benefits from pockets of quiet areas, which benefits people

with particular sensitivity to noise. The change impact and the social and health impact of Heathrow's airspace modernisation programme, which is proposed to affect all areas of London including these quiet areas, will be immense and will deeply affect the most vulnerable people who have purposely sought refuge in these more quiet areas and who have an equal right to live and prosper in London. Due to the geographic location of Heathrow airport and the proposed air space changes directly over the city, the lives of Londoners and the fabric of London will be changed irreversibly for the worse. Please also refer to answer to Q8.

6.B.4 At the 2A workshop when questioned about noise assumptions for turning aircraft, a representative for Heathrow stated that Heathrow and its advisors do not have information on the noise impacts of turning aircraft. This is wholly unacceptable for an airspace modernisation programme with proposals for multiple flight paths options directly over a major city, with proposals for aircraft turning over newly affected densely populated areas. The noise impacts of turning aircraft must be identified, specified and fully incorporated in all the impact assessments, using the noise impact assumptions for the aircraft models that produce the most noise when turning, including large long-haul aircraft.

- Heathrow must commit to urgently identify, specify and incorporate the actual noise impacts of turning aircrafts over a community in its assessments, as it is proposing flight paths including turning flights over densely populated areas, potentially not previously overflown, and share these with the 2A community groups before the assessment of flight path options is carried out

6.B.5 In its 2018 'Departure Noise Mitigation: Main Report' the CAA states that using LAmax is the simplest measure of a noise event such as the overflight of an aircraft and relatively straightforward for the public to understand, since it is simply the maximum sound level recorded during the aircraft fly-by. However, using LAmax does not take account of the duration of the noise event (which is influenced by the speed of the aircraft) and hence is possibly less representative of the disturbance the aircraft may cause. In the report the CAA suggest

Q7

Do you have any feedback on Heathrow's potential concepts for delivering respite? (pages 49-51)

Summary Feedback
Respite of itself cannot mitigate the harmful effects of any expansion of, or change in, the number of flights over London's communities (7A). The primary objective therefore should be to maintain or reduce the existing cap on aircraft movements, and introduce a ban on night time flights, 'ghost' flights and cargo only flights. Certain short-haul flights should also be removed (7B). Modelling of the noise impact of routes must achieve full acoustic separation between routes in regard to their impact upon the communities beneath (7C/D).

- 7.A. Due to the location of Heathrow airport and the prevailing western wind, the only objective of Heathrow Airspace Modernisation programme must be to reduce the current adverse impact of the airport on Central London. The Heathrow Airspace Modernisation progreamme must under no circumstance be used as a justification to increase any aspect of Heathrow's airport operations.

- 7.B. We agree with the principle of Respite but not with the vague idea of partial respite. Full respite at points on the ground normally affected by noise from arriving or departing aircraft, is when such noise can no longer be heard. But full respite is no substitute for the following vital objectives for the airspace modernisation programme. It should significantly reduce the current adverse environmental and health impacts of Heathrow aircraft over London, by Heathrow Airport committing to constrain any incremental growth in aircraft in and out of Heathrow Airport (aircraft volumes, size and load) and ban night flights.

- These objectives comprise:

7.B.1. Keeping the existing cap on Heathrow annual Aircraft Movements (ATMs) of 480,000

7.B.2 Ban night flights in and out of Heathrow airport between 11pm and 7 am.

7.B.3 Ban all cargo only flights arriving and departing Heathrow

7.B.4 Ban supersonic aircrafts from arriving and departing the airport.

7.B.5. The introduction of aviation demand reducing initiatives

7.B.6. The introduction of a ban on national short-haul flights in and out of the airport for lights less than 2.5 hours (following the French Government's example)

7.B.8 Ban ghost flights in and out of Heathrow Airport

- 7.C. All respite must be absolute and effective, and implemented in a manner that ensures full a acoustic separation:
  - 7.C.1 the flight path proposal must ensure that during every agreed respite period for a particular community, there is absolutely no occurrence of noise impacts from:

7.C.1.1 any other Heathrow arrival and/or departure routes
7.C.1.2 any other City Airport arrival and/or departure routes

7.C.2 The respite planning calculations must incorporate noise from flight paths directly over as well as adjacent to a community, as some arrival and departure procedures result in very significant noise adjacent to rather than under a flight path. This can distort the respite plans unless properly estimated and implemented.

- 7.D. Heathrow and the government must demonstrate to all London communities in its flight path modelling including the PBN proposals, that there is enough airspace capacity around Heathrow Airport to create full acoustic separation between routes, and how far out the full 'acoustic separation' will be achieved.

- This is particularly important for flights flying over Central London, as the noise is likely to be higher as the aircraft ascends

- This is particularly important for flights flying over Central London, as the noise is likely to be higher as the aircraft ascends directly over the city.

- This is likely to constitute a major challenge for Heathrow and the government considering the number of flight paths Heathrow is proposing over central London in each design envelope.

- In it 2018 report the CAA concludes ‘As aircraft height increases (at more distant locations from an airport) then the route spacing required to achieve a particular degree of noise mitigation also increases, which may not always be feasible from an airspace design perspective. (noise is attenuated more rapidly at lower angles of elevation).

Q8

Do you have any feedback on Heathrow's potential approach to night flights? (page 52)

Summary Feedback

There should be no night flights, because of their especially adverse effect on public health (8A/C). The WHO recommendation of an impact not above 40 dB is not achievable for communities close to the airport or newly overflown. The primary and secondary adverse health outcomes of aviation noise are listed, with further reference to increases in blood pressure, potentially leading on to coronary disease, based on Swiss studies (8D).

- 8.A. We strongly disagree with Heathrow's proposal for night flights.

8.B. This is due to Heathrow's geographic location in West London and the prevailing wind pattern which result in Heathrow overflying densely populated residential areas. It is, therefore, paramount that Government and Heathrow formally factors in the World Health Organisation (WHO) recommended noise levels, and clearly present the population impact assessments for the population using these recommended noise levels for all of the Heathrow's Air Space Modernisation flight path options.

8.C Noise is an important public health issue. Aviation noise has a direct negative impacts on human health and well-being and is a growing concern. Aviation noise also has an indirect impact on learning capacity and earning potential. Covid has shown that population health is critical to the success of the national economy, and that health and annoyance impacts must be accurately and comprehensively represented in all flight path impact assessments.

- 8.D. Heathrow Airport must adopt the WHO recommended noise levels in it impact assessments

8.D.1 The WHO recommended noise levels (2018) are as follows:

- Day noise of 45 dBLden (equivalent to 43 dBLAeq)
- Night noise impacts begin at 40 dBLAeq
- There is a growing evidence base on the serious adverse health impacts of night flights

8.D.2 The health impacts of aviation noise are:

- Primary Health outcomes:
  - Cardiovascular disease (hypertension, myocardial infarction, stroke)
  - Sleep disturbance
  - Annoyance (stress)
  - Cognitive impairment
- Secondary health outcomes:
  - Diabetes and metabolic outcomes
  - Adverse birth outcomes
  - Quality of life, well-being and mental -ill health

- Aircraft noise is linked to high blood pressure and has a link to coronary heart disease too. A 2021 Swiss study found that night-time aircraft noise can trigger acute cardiovascular mortality. The association was similar to that previously observed for long-term aircraft noise exposure. Zurich airport bans night flights.
- Exposure to aircraft overflights at night, during sleep, has been related to transient elevation of blood pressure (increase in SBP 6.2mmHg (0.63-12) and DBP 7.5mmHg (3.1-12) when aircraft noise events occurred) Haralabids et all 2008)
- People regularly exposed to aviation noise may become psychologically adapted to it and stop noticing it, but physiologically it is still having an effect on a person's pulse, heart rate, blood pressure. Noise entering a person's ears even while they sleep can be "passed on to the cortex", causing "arousals that may not result in full awakening, but may nevertheless cause increases in heart rate and blood pressure, disturbing normal circadian rhythms and fragmenting sleep.

Q9

Do you have any feedback on Heathrow's proposed approach to noise efficient operations? (page 53)

Summary feedback

As the location of Heathrow airport requires more overflights of communities than other UK airports, the scope for designing noise efficient operations for Heathrow is limited. Furthermore, an overall policy is lacking for addressing the opposition between fuel efficiency/emissions reduction versus reducing adverse noise impacts (9A/B). Modelling of flight paths must accept that full mitigation of adverse impacts on the ground is not possible and that the scope for partial mitigation is reduced by the permitted differences between airlines in their own noise abatement procedures, particularly after take off. There will be a trade-off between CO2 efficient and noise efficient operations, which means that noise efficient operations are likely to be given lesser priority (9C).

9.A The Heathrow Airspace modernization programme, needs to be treated differently from other UK airport airspace modernization programmes. This is due to the geographic location of Heathrow Airport to the West of London and the prevailing western wind, which leads to Heathrow Aircraft arriving and departing directly over the city and millions of Londoners being directly impacted by the noise of Heathrow aircraft.

- The government needs to accept that the Air traffic control improvements and efficiencies at airports are likely to play only a very small part in delivering net zero carbon from aviation (the industry group Sustainable Aviation claims a potential reduction of 3.1 Mt by 2050 from this 'lever' compared with a 'business as usual' scenario – a 4% reduction on its projection of 71 Mt CO2).

- In contrast, the introduction of new flight paths across all of London and the resulting adverse noise impact will in contrast have a seriously negative impact on the health and well-being of the London population

9.B. The current process for assessing the noise impact of airspace change is delivered by the CAA but without any meaningful policy underpinning from the Government in terms of appropriate targets for reducing community noise exposure. The reality is that the need to address noise concerns may constrain the ability to fully optimise the system for emissions reduction and fuel efficiencies.

9.C. The modelling that will lead to the proposed new flight paths over London needs to fully take into account the following:

9.C.1 Noise efficient operations move relief from noise to different locations, rather than actually reduce overall noise. In some cases the changes may increase overall noise e.g. new procedures could be introduced that reduce engine power and noise at 6.5 km from the start of the runway to such an extent that engine power would need to be increased at some point beyond 6.5 km, potentially leading to higher noise levels than at the 6.5 km point.

9.C.2 That Heathrow airport has a greater number of long-haul services that tend to operate using larger, heavier and slower climbing aircraft. The airport has had departure height requirements in place for decades but they have never been enforced.

9.C.3 It is impossible to shelter overflown communities from aviation noise- Heathrow has in the past compared Aviation noise with road and rail noise. The critical and major difference is that some measures can be taken to mitigate for road and rail noise around noisy highways and rail lines by introducing noise sheltering walls, but it is impossible to implement glass ceilings to shelter communities from aviation noise from noisy super highways in the sky over the communities.

9.C.4 Heathrow's modelling of aviation noise must take into account that the airport is unable to fully control the implementation of noise efficient operations, this is due to individual airlines using their own noise abatement departure procedures. This is due to individual airlines using their own noise abatement departure procedures. This procedure defines the height at which the flight crew will reduce engine power after take-off and the height at which acceleration from the take-off speed commences. ICAO guidance, mandated in Europe, requires that an airline has no more than two departure procedures for each aircraft type it operates, no matter where in the world that aircraft type is flown. An airline's departure procedures are based on their Central hub airport, and not based on the airspace environment around Heathrow.

It is widely accepted that no single departure and arrival procedure minimises overall noise, emissions and engine maintenance costs simultaneously. It is up to airlines to decide how best to balance the requirements of all three elements in their operations whilst maintaining consistency across their operations for safety reasons. Noise efficient operations will often be less of a priority. Foreign airlines do not currently need to inform the CAA of changes in their departure procedures, nor does the CAA have oversight of adherence of foreign airlines to their departure procedures. It is imperative that:

the CAA takes on the responsibility for oversight of adherence of foreign airlines to their departure procedures.

Modelling for the Heathrow airspace modernization programme modelling takes into account that for routes involving early turns, aircraft heights may be lower than for straight-out routes, due to the reduced climb performance of an aircraft in a turn

turns, aircraft heights may be lower than for straight out routes, due to the reduced climb performance of an aircraft in a turn.

Until a complete ban on night flights in and out of Heathrow is implemented, the government must commit to and factor in the introduction of stricter measures to reduce noise impacts, namely introduce upper noise levels for night flights, which align to the WHO guidance (And the same for daytime flights). The government must also replace the existing ineffective monetary penalties for non-adherence to rules with other more effective punitive measures.

9.C.5. There will be a trade-off between CO2 efficient and noise efficient operations, which means that noise efficient operations are likely to be down prioritised against reduction in CO2. If this is allowed, this would mean that the overall benefit of noise efficient operations will be marginal.

Equally important, if Heathrow were to propose an increase in annual flight volumes, any benefits to the environment, human health and well-being through noise efficient operations, or obtained from other improvements in its methods of operation, could well be lost. Further, changes in the intensity of operations at particular times of day would limit or eliminate such benefits. For instance, the introduction of independent parallel approaches (IPA) in the early morning would cause harm through loss of respite, even if the additional capacity (25,000 additional air traffic movements a year) were not used.

Q10

Do you have any feedback on Heathrow's overall approach to developing flight path options?

Summary Feedback

The airspace modernisation programme should be presented for consultation and decision in its entirety, rather than by taking partial decisions which could well preempt the options for later ones (10A). The option not to proceed with modernisation because of unavoidable adverse health impacts in the case of Heathrow should not be excluded (10B/C). The use of focus groups should be expanded to include people living in central London (10D). To date the Heathrow air space modernization programme has focused on benefits for airlines and for the airport, but has not demonstrated any regard for its likely adverse impact on the London communities. Air Pollution effects have not been addressed (10F).

We are deeply concerned that the Government's Aviation National Strategy of 2019 is out of date, being published before issuing the target to reduce carbon emissions to net zero by 2050 and the associated decision to include aviation's share in the necessary reductions in the carbon budget. Also, later research has clarified the nature of the adverse impacts on communities of overflights upon communities living near airports, from both noise and carbon emissions (10D-J).

The Government's overall objective on aircraft noise is to limit and, where possible, reduce the number of people in the UK significantly affected by adverse impacts from aircraft noise. We firmly believe that this objective is at risk.

10.A The proposed flight paths options and the proposed PBNs which constitute the Heathrow Airspace modernisation programme must be comprehensively and clearly presented to Londoners in one document for consultation on the Airspace modernisation programme. Heathrow must not be allowed to take the salami slice approach and present the proposed new flight paths and the PBN in two separate and sequential consultations.

10.B. Efficiency improvements are frequently cited as a reason for airspace change but it is also being driven by a desire to increase airspace capacity. Efficiency improvements, both operational and technological, have not historically been sufficient even to offset the adverse environmental and health effects of growth from aviation. Due to Heathrow's geographic location and the prevailing western wind, the objective of the London Airspace modernisation programme and its proposed flight path options must be to reduce the overall adverse impact of the airport's current operations and it must under no circumstance be used as a reason for an increase in Heathrow Airport's operations at any time in the future.

10.C. The set of proposed options is not complete without these following two options, which must be included in the formal public consultation:

- A. An option that bans flight paths over central London
- B. An Option that the Airspace Modernisation Programme should not proceed due to the London population health impact, which are unique to Heathrow due to its geographic location and prevailing Western wind.

10.D. We believe that the lack of pursuing and ensuring participation from communities in Central and North and West London in the Heathrow's Design Principles 'Community Focus Groups' means that the community focus group output which Heathrow based the Design principles is flawed and not representative.

- In Heathrow's formal 'Design Principles submission', Heathrow refers to the output from the 'Community Focus Groups'. However, Heathrow omits clearly stating that the outcome it refers to as output from its 'Community Focus Groups' is in fact based on interviews with a total of only 22 interviewees in across the 4 community focus groups.
  - All of these interviews were online interviews
  - interviewees were paid £50
  - Importantly none of the interviewees represented central London communities newly overflown at low height

10.E. Heathrow and the government's approach to developing flight paths is lacking and negligent in failing to demonstrate a commitment of both Heathrow and the Government to safeguarding the health and well-being of London communities in proximity and under Heathrow flight paths. The Heathrow air space modernization programme focuses on benefits for airlines (supposed fuel savings, reduced engine maintenance costs) and for the airport, but demonstrates no regard to the adverse impact on the London communities.

To demonstrate its commitment to safeguarding the health and well-being of Londoners, we therefore request the following formal commitment from Heathrow and the government that the Heathrow Air Space Modernisation Consultation flight path options are based on the below assumptions:

- The existing cap on Heathrow annual Aircraft Movements (ATMs) of 480,000 is maintained
- Night flights in and out of Heathrow airport are banned between 11pm and 7am.
- All cargo only flights arriving and departing Heathrow are banned
- Supersonic aircrafts are banned from arriving and departing the airport
- The introduction of aviation demand reducing initiatives
- The introduction of a ban on national short-haul flights in and out of the airport for flights less than 2.5 hours (following the French Government's example)
- Ban ghost flights in and out of Heathrow Airport

10.F. Air pollution. In its modelling and in its wording in its consultation on new flight paths, Heathrow must correctly refer to the air pollution impact on communities overflown including central London, from particles produced by arriving and departing aircraft that are dispersed downwind into Central London, due to the prevailing Western Wind.

To date, Heathrow has incorrectly downplayed the air pollution impacts on communities overflown by aircraft e.g. in its 2011-2020 Air Quality Strategy. In this Heathrow states that it is mainly its ground based operations that generate particle and NO2 air pollution, and incorrectly leaves out air pollution impact from its arriving and departing aircraft in its analysis, documentation and consultation. This is incorrect and misleading, as multiple UK and international research reports have confirmed that ultrafine particles from arriving and departing flights are dispersed over up to 20 miles downwind from airports. A 2020 research project found that ultrafine particles from Heathrow are blown 20 km into central London
https://www.sciencedirect.com/science/article/pii/S016041201931832X.
The focus must be on reducing all adverse impact of Heathrow Aircraft arriving and departing Heathrow, and Heathrow Airport must include air pollution impacts from arriving and departing aircraft in addition to air pollution from ground operations.

10.G. There is a need for the Heathrow Airspace Modernisation programme to share with the 2A community group both its key assumptions relating to the Airspace Modernisation Programme and the key risks associated with these assumptions.

10.H. The government need to need to withdraw and replace the current Aviation National Strategy. The Aviation National Strategy was published:

- before the UK government's commitment in 2019 to the Climate Change CO2 targets
- before the government's agreement to incorporate the UK's share of international aviation and shipping emissions in its carbon budget; and
- before the significant recent research which illustrates the significant health and well-being impacts of aviation on populations living under flight paths or near to them.

10.I. Heathrow and the UK government should commit to ensure that the total CO2 emissions from Heathrow airport operations is reduced in absolute terms, and that due to Heathrow Airport's geographic location it prioritises reducing noise impacts on communities impacted up to 7,000 ft.

10.J. The government must commit to update the DfT TAG to correctly reflect the full health and annoyance impacts of aviation identified in up-to-date and independently verified research. The DfT TAG must also be updated to include the 2018 WHO guidance for aviation noise exposure using 45 dB Lden and 40 dB Lnight.

[redacted] Westbourne Park Road East Residents Association (WPRERA)

[redacted] Westbourne Park Road East Residents Association (WPRERA)

[redacted] Clean Air Bayswater

[redacted] Clean Air Bayswater

From: [redacted]
Sent: 25 November 2022 09:04
To: DD - Airspace
Subject: Response to Heathrow FASIS
Attachments: CAGNE response to the Heathrow FASIS Stage 2 A-1.pdf

Caution: external email. Unless you recognise the sender and know the content is safe, do not click links or open attachments.

Please find attached the response from CAGNE to the Heathrow FASIS consultation.

Thank you

CAGNE Committee

CAGNE
Communities Against Gatwick Noise and Emissions

The umbrella aviation community and environment group for Sussex, Surrey and Kent

November 2022

CAGNE response to the Heathrow FASIS Stage 2 A

The CAGNE committee welcomes Heathrow Airport for consulting the umbrella aviation community and environment group for Sussex, Surrey, and Kent, as Heathrow airspace impacts Gatwick Airport operations.

Much of what is offered by airspace change is aspirational and not mandatory, so therefore leaves a level of uncertainty for residents on the ground, at both Gatwick and Heathrow Airports.

If Heathrow airspace could be higher, it would benefit Gatwick's operations.

- ACOG is an industry body headed up by an ex-CAA officer who signed off PBN: concentrated flight paths on departures. As such, we see ACOG as a biased industry body that offers little understanding of the noise impacts of airport operations.

- Continuous Climb Operations (CCO) is reliant upon the state of other airspace. We question the emissions from such a procedure and the increase in noise. These operations will benefit those further out from the airport and allow for greater heights to be reached at a much quicker pace and enable aircraft to fly over new communities above 7,000ft. We would be very concerned if planes were vectored in a PBN fashion at 4,000ft.

- Continuous Decent Operations (CDO) again is aspirational and not mandatory with specific airlines operating their own landing procedure to save fuel and engine wear. As such this is not a given that it will actually reduce noise for all but may reduce noise for those further away from the airport. This procedure initiating at 7,000ft will allow airlines to drop at will so offering a level flight that can increase noise. We would ask that a decent procedure be in place to keep planes higher for longer on approach and reduce speed gradually from further out.

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- Wheels Down Early/ increased drag – this is known to increase noise by 3-5dBs. A recent study at Gatwick Airport (in an urban area) saw an increase in noise from this operation by 2dB. Once again, there is no mandatory instruction to pilots to prevent this procedure to reduce speed of a plane coming into land – this can only be influenced by educating pilots about the noise impacts of such a procedure. We believe this should be mandatory, as Heathrow operate a greater number of larger planes than at Gatwick.

  Joining the ILS closer to the runway considerably increases noise for those on the ground, with wheels down early, and increased drag as pilots seek to take speed off quickly with less distance to go. Planes are so much lower, often vectoring, which again increases noise.

  Gatwick undertook a study on this subject and proved this to be true '*there was a significant increase in noise by joining the ILS at less than 8nm*'.

- The Gatwick Fair and Equitable Distribution (FED) study being undertaken by Anderson Acoustics and Manchester University: CAGNE do not support this study as it seeks to benefit aviation whilst giving little consideration to those that could be newly impacted, to provide greater efficiency of the airspace and saving CO2.

  If aviation only consults noise group that are currently overflown, then the FASIS process and FED is flawed and biased in favour of sharing noise, whilst ignoring the ramifications it would have on new communities.

- Noise metrics – Low noise metrics could help with understanding the impact of Heathrow noise further out. N65 and N60 that capture noise events should be included in any assessment of airspace impacts. We offer the potential for a suite of metrics to enable greater understanding of noise, instead of being reliant upon Leq. As below -

  CAGNE do not support primary and secondary noise metrics, as all noise measurements would give certainty of accurate recording of noise being experienced by communities.

- **Leq**
  - Leq 16 hour day 51dB contour
  - Leq 8 hour night 45dB contour

- **Single mode metric** – noise measured over a house/area and uniformity.

- **EPNdB** – (Effective perceived noise in decibels – a measure of the relative noisiness of an individual aircraft pass-by event).

  This should be taken from factual data obtained via commercial flying, not from test certification.

  N65 Day
  N60 Night
  Overflight (<7,000 ft) >48.5 degrees to the horizontal (CAA, 2017b)

- **Lden or CNEL**
  The Lden (Day Evening Night Sound Level) /or CNEL (Community Noise Equivalent Level) is the average sound level over a 24-hour period, with added penalties of:
  - **10dB** (5dB) for the evening hours of 19:00 to 22:00
  - **20dB** (10dB) for the night-time hours of 22:00 to 07:00

- We would also propose a total night ban at Heathrow from 11pm-7am to enable residents to sleep that are impacted by Heathrow and Gatwick.

- Dispersal of departures – Noise Preferential Routes have given assurances to residents when buying a home (one of the most expensive purchases most people will ever make). The removal of these is seen to benefit aviation over residents (taxpayers), so we cannot support this action.

  Offering dispersal, as it used to be, is limited with new technology, as seen with Gatwick's attempt to undertake this with Route 4. The wind plays a role in moving planes outside of the NPR and the number of routes a plane can fly (store) with PBN operations. Different fleets of planes will fly differently to the same coordinates, so giving some dispersal naturally. Dispersal outside of the NPR must be discussed with those that could be newly impacted.

- Night movements – we offer a true night ban at Heathrow, with a substantial increase in landing fees for any planes entering the set night period (8 hours) due to delays, etc.

- Holding Stacks – if holding stacks could be moved out to sea or removed thanks to time-based arrivals (TBA), this could free up airspace for Gatwick Airport to the north, where it has significant issues with Routes 3 and 4 as they conflict with Heathrow.

  We offer concern however that new routes for arrivals would be seeking to use this airspace, which could impact Gatwick FASIS as well as new departure routes.

- The totality of the airspace is a concern, as much of Gatwick airspace is congested; desires for growth at Heathrow could impact the use of CCO and CDO in the Gatwick airspace, bringing multiple routes from Heathrow over residents of Surrey and Sussex.

- Airspace changes at City Airport could have ramifications for Kent residents.

- Respite is a concern as, with the desire for growth and efficient usage of the airspace, many new communities could be newly-impacted with no compensation for loss of house value.

- New routes would also impact new communities with no compensation.

CAGNE does not accept insulation as compensation but full house-devaluation payments to those suffering below 7,000ft new flight paths.

To conclude unless Heathrow Airport seeks full 'buy in' from all communities we see flying over new people, Stage 3, would have serious ramifications and create more noise groups as such pitching communities against each other. Heathrow needs to consult all communities and not just those currently overflown.

Any saving of CO2 must be reflected in compensation offered for an increase in noise, especially those newly-overflown. Noise and saving of CO2 should be an equal consideration in the debate for FASIS progress, as noise equals health decline, both mental and physical, house-value decline, and increase in poor relations with your neighbours.

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Page 1

Q1

Name

[redacted]

Q2

What is the name of the organisation or community group you represent?

Local Resident. Walton-on-Thames, Surrey. (Elmbridge)

Q4

Did you attend one of Heathrow's Stage 2A engagement workshops?

Yes

Q5

Thinking about the information that Heathrow has provided and/or presented to you, do you agree or disagree with the following statement about Heathrow's development of flight path options?"I am satisfied that Heathrow has taken into account the Design Principles when developing the comprehensive list of flight path options"

I disagree

Q6

Please provide any feedback on your answer in the box below.

I am not yet fully satisfied and I disagree for the reasons I have outlined below. At this point in time it is fair to state that the Design Principles are well thought out statements reflecting both the requirements to develop aircraft efficiency and protect communities impacted by noise.
They are cross referenced to the proposed flight paths clearly within the presentation so clearly considered but they are weighted in favour of design principles 2,4,5,9 and 10.
Going forward this needs to be balanced with the implementation of design principles 3,6,7,8,11 and 12.
The implementation of design principles 3,6 to 12 relating to noise disturbance need more emphasis in flight path design and much greater clarification as is outlined below.
I am looking forward to receiving the Design Principle Evaluation (DPE)that will demonstrate how each option from this comprehensive list responds to each Design Principle in turn.

The positives with regard the implementation of the design principles to date include:
Integration with other airports; working with other airports to avoid overflying the same areas is a positive step forward though clarifying key objectives with “where possible” is a concern and this clarification needs unpicking.
Everything has been put into the mix and fresh perspective given to possible flight path options against the design principles.This is progressive as long as these open ended options are considered equitably with regards to the impact of noise as well as airspace efficiency.

There are major challenges ahead and far reaching decisions have yet to be made
It is very early days within this consultation and that changes are inevitable has been made clear during the presentation.
For this reason it is vital consultation remains open, flexible and effective and that the progress towards achieving the design principles remains rigorous and balanced to all the design principles and is research and data lead.
Along with more specific flight path information, there also needs to be clarification and more detail assigned to the design principles and the key words within them so effective monitoring can be evidenced.

“NATS is responsible for designing the arrivals mechanism that will replace today's holding stacks. Today's departures can be "held down" at 6,000ft until clear of our arriving aircraft. Therefore, the position and format of the new arrivals mechanism will impact the position of our future flight paths for both arrivals and departures.”
This aspect alone will have a major impact as presently departures and arrivals do vie for airspace over us consequently departures are”held down”. This aspect alone will impact enormously on flight path design. This could markedly improve disturbance through streamlining and improving the arrival flight paths but equally if not carefully implemented this could have devastating impact.
Will new flight paths be trialled so the design principle implementation can be assessed in practice?
Will there be a trial period for PBN over the proposed flight paths with effective feedback from those impacted?
What consideration will be given to flight concentration?

A key issue emerging from the Option 2A consultation is the weighting within the design principle implementation. The success of noise management will depend on balance.
When it comes to decisions between the efficiency of operational practices versus respite and noise impact where will the weighting lie?
The division of the options into “must meet” 1to 5 and “should meet” 6 to12 is a concern re noise impact on local communities.
How will the balance in this delivery be measured and evidenced in flight path design? Noise design principles are weighted within the “should meet” list, 6 to 12.
Inevitably it is the weighting of this delivery that will have impact on outcomes for local residents. This weighting needs clarification to ensure that the balance between efficiency and noise impact on communities is fair and transparent.

Clarity of key words within the design principles needs further development. The glossary does not help here.
For example in the use of these terms:
Safe: this needs to include references to well being as well as aviation safety standards referring to research on the impact of aviation noise to health. What levels of noise are safe for those overflown? What mitigations will be in place to prevent negative impacts on health? Design principle 3 is clarified with the term “where possible”. This is concerning with regard to this outcome

impacts on health? Design principle 3 is clarified with the term "where possible". This is concerning with regard to this outcome.

The same applies to "Seek to overfly the same communities with multiple routes". How many routes does this mean? The frequency of flights, concentration of aircraft, acceptable noise measurements and height of flights for overflown communities all need to be data linked and evidenced in the flight path design proposals.

Again "Keep the number of people impacted to a minimum"... How many people? What size of area? Data for those presently impacted compared to post modernisation needs to be benchmarked and quantified ?

The statement "minimise the impact to all stakeholders impacted from future changes" needs clarification with listed success criteria to measure that this design principle has been achieved.
What is the definition of the negative impacts of night flights? Are these impacts research based? What data is used to evidence these negative impacts? Certainly there are no positive impacts for overflown communities from night flights.

Research into the impact of aviation on the environment such as the Aviation Environment Federation document referenced below, needs to be analysed to fulfil Design Principle 4 effectively and avoid greenwashing.

https://www.aef.org.uk/2022/10/28/the-truth-about-flying-greenwashing-in-the-aviation-industry

Similarly there needs to be transparency on the noise impact of the new generation aircraft.

Q7

Do you have any feedback on Heathrow's potential concepts for delivering respite? (pages 49-51)

Design Principle 6 with regard to respite was not considered within the flight path proposals though obviously is difficult to address this until the proposed flight paths are more clearly defined.
Respite term requires much greater definition and clarification than is presently apparent in the glossary. What success criteria define predictable and meaningful respite for impacted communities? What length of time is defined as respite?

Whilst it is acknowledged that runway alternation has no impact on many areas impacted by Heathrow operations day or night, will relief via flight dispersion be trialled to assess its viability in providing relief? How effective will this be? We need evidence to support this as a viable respite strategy. Will PBN relieve or accentuate noise ?
Noise abatement departure procedures could well prove beneficial to reducing noise.

Q8

Do you have any feedback on Heathrow's potential approach to night flights? (page 52)

Night Flights
Given the unequivocal research into the impact on aviation noise and sleep disturbance, policy here needs to be harsh and effective.
Heathrow's own operational data evidences the increase in night movements. This is unacceptable.
How will airspace modernisation implement positive change here?
Will delayed departures after 23:00 be prevented from flying?
Flight concentration after 21:00 needs to be addressed.
Presently Heathrow's policy statements regarding noise are open to abuse.
Heathrow states that there are no scheduled departures after 22:50.
Yet delayed scheduled departures are common after this time with the same airlines/flights granted permission by Heathrow to depart regularly.
This abuse in practice is common between the hours of 23:00 and 23:30.
What consideration is given to aircraft type and associated noise omissions?
It is the long haul flights and the A380, Boeing 777 and 767 that fly over communities low and loud interrupting sleep.
This is impacting on sleep for residents who can then been awoken by early arrivals circling especially American flights. This curtails the sleep window. Impacting on wellbeing, the adverse effects on sleep are well documented.
Flights are packed in from mid evening onwards concentrated over the same path, inadequately spaced, low and high decibel.
The Swiss model of Geneva Airport that has a blanket ban on flights within the night time window should be explored further to ensure respite and protect wellbeing.
Night disturbance needs to be an inherent consideration in airspace modernisation especially given the location and noise impact of Heathrow.
On paper it is hard to assess whether the proposals outlined re PBN, bespoke paths and alternating flight paths will improve the present experience of residents. What is the evidence for these options having a positive impact? Sleep will continue to be impacted. Wellbeing needs to carry more weight given the research into aviation and sleep.
A blanket ban on flights between 23:00 and 6pm should be explored further to fulfil design principle 6,8,10 and 12
Whilst noise efficient operational practices mitigate noise the negative health impact of night flights as defined in research will not be removed.

Q9

Do you have any feedback on Heathrow's proposed approach to noise efficient operations? (page 53)

Working with other airports is a positive step as is the desire to prevent local communities being impacted by traffic from multiple airports, as is the case presently especially at night, but it is disappointing that this is clarified with "where possible". This is a concern and this clarification needs unpicking.

Benchmarking against the current impact of noise for each strategy against that modelled for the new flights is essential and presently lacking. An analysis is required against each type of operation listed: How effective are the present noise efficient operations?
What does the data evidence for each of these strategies presently in its noise mitigation on local communities ? Which of these strategies is most effective in providing relief for departures and arrivals? Data needs to be shared as flight path options are clarified for each of these:

- Continuous Climb Operations (CCO)
- Continuous Descent Operations (CDO)
- Noise Abatement Departure Procedures (NADPs)
- Steeper Approaches
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- Landing Gear Deployment
- Low Power Low Drag

Aircraft type needs to be discussed and evidenced. What about the link between aircraft type and the reduction of contribution to climate change from CO2 and other greenhouse gas emissions? Design principle 4
Data for the new generation fleet of aircraft is not impressive with regard to noise.

As flights turn after departure, the noise screeches and impacts for minutes low over communities. This is presently both on the edge of the NPR and out of it below 4000 feet on easterly operations. What noise mitigation strategies alleviate this impact?
Is the PBN technology within aircraft already causing flight concentration and noise over same flight paths and communities?

Geneva Airport also states: "Genève Aéroport established in 2003 a concept of soundproofing of nearby housings and takes over the related cost."

Q10

Do you have any feedback on Heathrow's overall approach to developing flight path options?

The most important aspect for residents is noise and the fact that WHO, following extensive and respected research has stated that anything above 45 dBs of noise is annoying and therefore damaging to people. The fact that Heathrow is not able to measure noise in many areas accurately is very concerning. Indeed in my own area I have measured aeroplanes flying over at over 80 dBs. Noise monitors must be widely installed to get a better picture. The taking of average decibel readings is of course highly contentious and misleading. The damage from one plane at 80 dBs is damaging in itself and incredibly annoying. Aeroplanes also must stick to their NPRs as at present there clearly is some sort of a licence for individual planes to decide for themselves their flight paths and heights.

Heathrow has the greatest impact from noise and noise pollution of any airport in the UK and Europe on the largest number of people due to its location.

https://www.desmog.com/2021/09/28/heathrow-found-to-be-worlds-second-most-polluting-airport-in-new-report/

This disturbance comes from flights between 4000 and 7000 feet over us, noise therefore that falls within Heathrow's remit yet it's complaints procedure and data on noise metrics impacting local communities is woefully inadequate.
An understanding of noise annoyance must be prioritised if these design principles 3, 6-12 are to be implemented successfully. This needs to be done through benchmarking
data to understand the impact and type of annoyance associated with current noise levels and extending research to understand annoyance from noise. Presently this is a key omission at both Government policy level and in Heathrow's response.

The consultation states, "The development of the options are data driven to creating a comprehensive list of options.The basis of which was shared." Whilst this is so there are crucial omissions to data that needs to be included in creating this list of options.

Effective noise data must be collected to act as a baseline if Heathrow is to evidence the implementation of design principles 3 and 6 to 12.
Heathrow's own operational data evidences the growth in complainants and complaints.
Heathrow should start with an effective analysis of complaints surrounding noise by Heathrow to improve an understanding of noise annoyance and reduce the adverse impact from aviation noise (design principle 3).
Presently complaints are not analysed for trends and do not feed into policy.
An independent body should oversee the complaints procedures and this should be built into Heathrow's complaints procedure immediately. If you do not understand the impact of noise from Heathrow operations you cannot effectively plan for the future and implementation of these design principles.

Resources need to be expanded to understand noise attitudes. Yet, at Heathrow the community noise team has been reduced in size and noise monitor roll out stalled at a time when this review of airspace is underway. This is unacceptable.
This is indicative of the emphasis Heathrow places on noise mitigation for residents. This needs addressing as part of the airspace modernisation process to build trust between Heathrow and the local communities. Noise mitigation must be a primary aim.

Effective noise monitoring must be a prioritised. This is not happening.
Heathrow fails to provide noise metrics for areas such as Walton On Thames. We are overflown by the Westerly departure route from Heathrow towards Chertsey, Weybridge and Cobham and the Easterly departure routes of CPT and MID.
It is inequitable that this data is not being collected for these areas. Current noise metrics are baselines to measure progress towards design principle implementation so must be available for all impacted areas to make the process fair and fulfil the design principles.
The roll out of noise monitoring is stalled yet imperative to the delivery leaving Weybridge, Walton, Shepperton and Hersham devoid of noise monitoring. Other areas will be in similar position.

Another aspect that needs to be considered is Flight Concentration. Where in the design principles is this considered? Complaint

Another aspect that needs to be considered is Flight Concentration. Where in the design principles is this considered? Complaint data analysis will evidence the impact of this on residents. Eleven flights within an hour just now as reported to Heathrow on 6 December between 2 and 3pm all at or below 4000 feet. Relentless disturbance.

This is a key issue. Noise disturbance impact is accentuated by the concentration of flights which can be continuous impacting every few minutes at high decibel level. This has a profound impact on wellbeing. There needs to be a limit to the number of flights over the same flight path within a certain period.
What data is used to benchmark the present impact on overflown communities of concentrated flights?

Transparency and trust in the data used to measure noise is imperative. I question the use of the A320 for noise data modelling at this stage.
It is aircraft such as the A380, Boeing 777 and 767 that cause disturbance over us yet the A320 is being used to model noise metrics at this stage. This isn't an accurate gauge for disturbance for our area even as a starting point. I acknowledge this will change later in the process but the A320 is 9dB quieter than the aircraft impacting on us. Is this already an inherent flaw in the process given that the aircraft commonly causing a disturbance and registering 9dB louder are not being used for noise modelling? These assumptions may have trust consequences later in the consultation.

Major issues essential for planning airspace reform are being avoided. These are outside Heathrow's remit and fall within government policy yet impact on the effectiveness and implementation of the design principles.

The government cannot be allowed to shirk its responsibility for being the catalyst behind airspace modernisation. The role out of airspace modernisation lacks strategic direction from the government providing neither backing for a strategic research project into the impact of airspace modernisation on the welfare of overflown communities nor effective voice for those impacted to feed into government policy. This is undemocratic.

It would appear that changing the location of Heathrow has not be reviewed as part of airspace modernisation. Other countries in the world have relocated airports because of their impact on the health and wellness of the population.Is it the right location for an airport given its impact on and wellness. Should we as a country settle for noise mitigation? This question should have been addressed.

Having failed in this positional aspect, Government policy lacks clarity in the protections it affords to communities impacted by aviation noise within its aviation policy passing the buck to private bodies too easily and without defining goals to protect the public.
This is a major flaw in airspace modernisation.

There must be an independent monitoring body designed to protect public welfare from aviation noise. CAA does not fulfill this role. Another government failing.

Government policy on aviation has no stance on the balance between protecting welfare and economic considerations. To deliver the 'Be Safe' design aspect they need to understand what are the economic impacts of noise? How is the impact of noise measured and balanced against efficiency?
What protection is given to the basic right to enjoy peace and quiet, to protect children's health and learning and our enjoyment of parks and riverside areas?
Where are these factors protected and valued in government policy?

Indecision by the government is evident over extending the hours permitted for night flights or by banning night flights altogether. This despite consultation favouring the later and overwhelming research demonstrating the impact of night disturbance.

Failure by the government to investigate good practice internationally is evident. Examples include that of the Netherlands where flight numbers are being reduced. Geneva airport which has strict night period policies. Such practices should be investigated further.

Such flaws in government policy impact on Heathrow's ability to effectively deliver the design principles.

Research on noise impact and attitudes to noise must run parallel to airspace change. This is a grave omission to flight path design.

Heathrow must nevertheless acknowledge the importance of this research and insist on this or conducts its own research if it is to have the trust and confidence of local communities. Airspace modernisation needs to improves lives and wellbeing as well as economic prosperity.

The government have opted to back the CAA's flawed SONA study. This is incomprehensible at this time of profound and far reaching change. The government needs to address the question of how it is monitoring the impact of airspace modernisation on the public welfare. Research into the health impacts of aviation noise are clear yet no policy statement nor research project reflects this.

There are no effective channels for residents voices to feed into aviation policy at this time of profound change. Heathrow have backed the NACF and provides funding to it. Yet this role is limited as the government have a closed attitude to residents and community voices. This was all to prevalent at the NACF meeting in November when there appeared no opportunities for the work of the NACF to feed into government policy presently according to DfT representatives present.

Heathrow as a leading sponsor of airspace modernisation should pressurise the Government to fund research and listen to the NACF holding the government to account in the interests of local communities impacted by its operations thereby giving the implementation of these design principles greater chance of success.

Useful links referred to:
SONA https://www.heathrow.com/content/dam/heathrow/web/common/documents/company/local-community/noise/heathrow-community-noise-forum/forum-meeting-notes/2019/24-july/Community_presentation_SoNA_Jul_2019.pdf

https://www.aef.org.uk/2022/10/28/the-truth-about-flying-greenwashing-in-the-aviation-industry%EF%BF%BC/

https://www.aef.org.uk/what-we-do/climate/

COMPLETE

Collector: Final (Web Link)
Started: Wednesday, December 07, 2022 2:56:50 PM
Last Modified: Wednesday, December 07, 2022 3:43:52 PM
Time Spent: 00:47:02
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Page 1

Q1

Name

[redacted]

Q2

What is the name of the organisation or community group you represent?

Local resident, Walton On Thames, Surrey. Elmbridge Borough

Q4 **Yes**

Did you attend one of Heathrow's Stage 2A engagement workshops?

Q5 **I disagree**

Thinking about the information that Heathrow has provided and/or presented to you, do you agree or disagree with the following statement about Heathrow's development of flight path options?"I am satisfied that Heathrow has taken into account the Design Principles when developing the comprehensive list of flight path options"

Q6

Please provide any feedback on your answer in the box below.

Section 6:
I am not yet fully satisfied that Heathrow have taken into account the Design Principles when designing their comprehensive list of flight options for following reasons:
At this point in time it is fair to state that the Design Principles are well thought out statements reflecting both the requirements to develop aircraft efficiency and protect communities impacted by noise.
They are cross referenced to the proposed flight paths clearly within the presentation so clearly considered but they are weighted in favour of Design Principles 2,4,5,9 and 10.
Going forward this needs to be balanced with the implementation of Design Principles 3,6,7,8,11 and 12.
The implementation of Design Principles 3,6 to 12 relating to noise disturbance need more emphasis in flight path design and much greater clarification as is outlined below. This is crucial for the well being of communities impacted by Heathrow operations.
I am looking forward to receiving the Design Principle Evaluation (DPE)that will demonstrate how each option from this comprehensive list responds to each Design Principle in turn.

The positives with regard the implementation of the Design Principles to date include:
Integration with other airports; working with other airports to avoid overflying the same areas is a positive step forward though clarifying key objectives with “where possible” is a concern and this clarification needs unpicking.
Everything has been put into the mix and fresh perspective given to possible flight path options against the design principles. This is progressive as long as these open ended options are considered equitably with regards to the impact of noise as well as airspace efficiency.

There are major challenges ahead and far reaching decisions have yet to be made
It is very early days within this consultation and that changes are inevitable has been made clear during the presentation.
For this reason it is vital consultation remains open, flexible and effective and that the progress towards achieving the design principles remains rigorous and balanced to all the design principles and is research and data lead.
Along with more specific flight path information, there also needs to be clarification and more detail assigned to the Design Principles and the key words within them so effective monitoring can be evidenced.

“NATS is responsible for designing the arrivals mechanism that will replace today's holding stacks. Today's departures can be "held down" at 6,000ft until clear of our arriving aircraft. Therefore, the position and format of the new arrivals mechanism will impact the position of our future flight paths for both arrivals and departures.”
This aspect alone will have a major impact as presently departures and arrivals do vie for airspace over us consequently departures are”held down”. This aspect alone will impact enormously on flight path design. This could markedly improve disturbance through streamlining and improving the arrival flight paths but equally if not carefully implemented this could have devastating impact.
Will new flight paths be trialled so the design principle implementation can be assessed in practice?
Will there be a trial period for PBN over the proposed flight paths with effective feedback from those impacted?
What consideration will be given to flight concentration?

A key issue emerging from the Option 2A consultation is the weighting within the Design Principle implementation. The success of noise management will depend on balance.
When it comes to decisions between the efficiency of operational practices versus respite and noise impact where will the weighting lie?
The division of the Design Principles into “must meet” 1 to 5 and “should meet” 6 to12 is a concern re noise impact on local communities. How will the balance in this delivery be measured and evidenced in flight path design? Noise design principles are weighted within the “should meet” list, 6 to 12.
Inevitably it is the weighting of this delivery that will have impact on outcomes for local residents. This weighting needs clarification to ensure that the balance between efficiency and noise impact on communities is fair and transparent.

Clarity of key words within the design principles needs further development. The glossary does not help here.
For example in the use of these terms:
Safe: this needs to include references to well being as well as aviation safety standards referring to research on the impact of

Safe: this needs to include references to well being as well as aviation safety standards referring to research on the impact of aviation noise to health. What levels of noise are safe for those overflown? What mitigations will be in place to prevent negative impacts on health? Design Principle 3 is clarified with the term “where possible”. This is concerning with regard to this outcome.

The same applies to “Seek to overfly the same communities with multiple routes”. How many routes does this mean? The frequency of flights, concentration of aircraft, acceptable noise measurements and height of flights for overflown communities all need to be data linked and evidenced in the flight path design proposals.

Again “Keep the number of people impacted to a minimum”… How many people? What size of area? Data for those presently impacted compared to post modernisation needs to be benchmarked and quantified ?

The statement “minimise the impact to all stakeholders impacted from future changes” needs clarification with listed success criteria to measure that this Design Principle has been achieved.
What is the definition of the negative impacts of night flights? Are these impacts research based? What data is used to evidence these negative impacts? Certainly there are no positive impacts for overflown communities from night flights.

Research into the impact of aviation on the environment such as the Aviation Environment Federation document referenced below, needs to be analysed to fulfil Design Principle 4 effectively and avoid greenwashing.

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Similarly there needs to be transparency on the noise impact and average noise readings of the new generation aircraft.

Q7

Do you have any feedback on Heathrow’s potential concepts for delivering respite? (pages 49-51)

There is still much more clarity required for Design Principle 6 with regard to respite. Obviously is difficult to address this until the proposed flight paths are more clearly defined but it is a key consideration. The presentation acknowledges further clarification will be presented by Option 3 but there is much work to be done in fulfilling this Design Principle.
Respite as a term requires much greater definition and clarification than is presently apparent in the glossary. What success criteria will define predictable and meaningful respite for impacted communities? What length of time is defined as respite?

Whilst it is acknowledged that runway alternation has no impact on many areas impacted by Heathrow operations day or night, will relief via flight dispersion be trialled to assess its viability in providing meaningful relief? How effective will this be? We need evidence to support this as a viable respite strategy. Will PBN relieve or accentuate noise ?
Trials are needed to evidence the benefits of both runway and route alternation for respite.

Q8

Do you have any feedback on Heathrow's potential approach to night flights? (page 52)

Night Flights
Given the unequivocal research into the impact on aviation noise and sleep disturbance, policy here needs to be harsh and effective.
Heathrow's own operational data evidences the increase in night movements. This is unacceptable. There are no reassurances in this presentation that the increase in night movements will be curtailed. The use of terms such as "occasional late running departures" does not acknowledge the extent of present night disturbance and the reality of late night disturbance. The proposals are not reassuring enough.
How will airspace modernisation implement positive change here?
Will delayed departures after 23:00 be prevented from flying?
Flight concentration after 21:00 needs to be addressed.
Presently Heathrow's policy statements regarding noise are open to abuse.
Heathrow states that there are no scheduled departures after 22:50.
Yet delayed scheduled departures are common after this time with the same airlines/flights granted permission by Heathrow to depart regularly.
This abuse in practice is common between the hours of 23:00 and 23:30.
What consideration is given to aircraft type and associated noise omissions?
It is the long haul flights and the A380, Boeing 777 and 767 that fly over communities low and loud interrupting sleep.
This is impacting on sleep for residents who can then been awoken by early arrivals circling especially American flights. This curtails the sleep window. Impacting on wellbeing, the adverse effects on sleep are well documented.
Flights are packed in from mid evening onwards concentrated over the same path, inadequately spaced, low and high decibel.
The Swiss model of Geneva Airport that has a blanket ban on flights within the night time window should be explored further to ensure respite and protect wellbeing.
Night disturbance needs to be an inherent consideration in airspace modernisation especially given the location and noise impact of Heathrow.
On paper it is hard to assess whether the proposals outlined re PBN, bespoke paths and alternating flight paths will improve the present experience of residents. What is the evidence for these options having a positive impact? Sleep will continue to be impacted. Wellbeing needs to carry more weight given the research into aviation and sleep.
A blanket ban on flights between 23:00 and 6pm should be explored further to fulfil design principle 6,8,10 and 12
Whilst noise efficient operational practices mitigate noise the negative health impact of night flights as defined in research will not be removed.

Q9

Do you have any feedback on Heathrow's proposed approach to noise efficient operations? (page 53)

9: Noise Efficient Operations

Working with other airports is a positive step as is the desire to prevent local communities being impacted by traffic from multiple airports, as is the case presently especially at night, but it is disappointing that this is clarified with "where possible". This is a concern and this clarification needs unpicking.

Benchmarking against the current impact of noise for each strategy against that modelled for the new flights is essential and presently lacking. An analysis is required against each type of operation listed: How effective are the present noise efficient operations?
What does the data evidence for each of these strategies presently in its noise mitigation on local communities ? Which of these strategies is most effective in providing relief for departures and arrivals? Data needs to be shared as flight path options are clarified for each of these:
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Aircraft type needs to be discussed and evidenced. What about the link between aircraft type and the reduction of contribution to climate change from CO2 and other greenhouse gas emissions? Design Principle 4
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As flights turn after departure, the noise screeches and impacts for minutes low over communities. This is presently both on the edge of the NPR and out of it below 4000 feet on easterly operations. What noise mitigation strategies will alleviate this impact on take off?
Is the PBN technology within aircraft already causing flight concentration and noise over same flight paths and communities?

Q10

Do you have any feedback on Heathrow's overall approach to developing flight path options?

10 Heathrow's overall approach to developing flight path options:
Heathrow has the greatest impact from noise and pollution of any airport in the UK and Europe on the largest number of people due to its location.

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This disturbance comes from flights between 4000 and 7000 feet over us, noise therefore that falls within Heathrow's remit yet it's complaints procedure and data on noise metrics impacting local communities is woefully inadequate.
An understanding of noise annoyance must be prioritised if these design principles 3, 6-12 are to be implemented successfully. This needs to be done through benchmarking
data to understand the impact and type of annoyance associated with current noise levels and extending research to understand annoyance from noise. Presently this is a key omission at both Government policy level and in Heathrow's response.

The consultation states, "The development of the options are data driven to creating a comprehensive list of options.The basis of which was shared." Whilst this is so there are crucial omissions to data that needs to be included in defining flight path options.
Effective noise data must be collected to act as a baseline if Heathrow is to evidence the implementation of design principles 3 and 6 to 12.
Heathrow's own operational data evidences the growth in complainants and complaints.
Heathrow should start with an effective analysis of complaints surrounding noise by Heathrow to improve an understanding of noise annoyance and reduce the adverse impact from aviation noise (design principle 3).
Presently complaints are not analysed for trends and do not feed into policy.
An independent body should oversee the complaints procedures and this should be built into Heathrow's complaints procedure immediately. If you do not understand the impact of noise from Heathrow operations you cannot effectively plan for the future and the implementation of these Design Principles.

Resources need to be expanded to understand noise attitudes. Yet, at Heathrow the community noise team has been reduced in size and noise monitor roll out stalled at a time when this review of airspace is underway. This is unacceptable.
This is indicative of the emphasis Heathrow places on noise mitigation for residents. This needs addressing as part of the airspace modernisation process to build trust between Heathrow and the local communities. Noise mitigation must be a primary aim.

Effective noise monitoring must be a prioritised. This is not happening.
Heathrow fails to provide noise metrics for areas such as Walton On Thames. We are overflown by the Westerly departure route from Heathrow towards Chertsey, Weybridge and Cobham and the Easterly departure routes of CPT and MID. Noise from arrivals especially early morning impact too.
It is inequitable that this data is not being collected for these areas. Current noise metrics are baselines to measure progress towards design principle implementation so must be available for all impacted areas to make the process fair and fulfil the Design Principles.
The roll out of noise monitoring is stalled yet imperative to the delivery leaving Weybridge, Walton, Shepperton and Hersham devoid of noise monitoring. Other areas will be in similar position.

Another aspect that needs to be considered is Flight Concentration. Where in the Design Principles is this considered? Complaint data analysis will evidence the impact of this on residents. Eleven flights within an hour just now as reported to Heathrow on 6 December between 2 and 3pm all at or below 4000 feet. Relentless disturbance.

This is a key issue. Noise disturbance impact is accentuated by the concentration of flights which can be continuous impacting every few minutes at high decibel level. This has a profound impact on wellbeing. There needs to be a limit to the number of flights over the same flight path within a certain period.
What data is used to benchmark the present impact on overflown communities of concentrated flights?

Transparency and trust in the data used to measure noise is imperative. I question the use of the A320 for noise data modelling at this stage.
It is aircraft such as the A380, Boeing 777 and 767 that cause disturbance over us yet the A320 is being used to model noise metrics at this stage. This isn't an accurate gauge for disturbance for our area even as a starting point. I acknowledge this will change later in the process but the A320 is 9dB quieter than the aircraft impacting on us. Is this already an inherent flaw in the process given that the aircraft commonly causing a disturbance and registering 9dB louder are not being used for noise modelling? These assumptions may have trust consequences later in the consultation.

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The government cannot be allowed to shirk its responsibility for being the catalyst behind airspace modernisation. The role out of airspace modernisation lacks strategic direction from the government providing neither backing for a strategic research project into the impact of airspace modernisation on the welfare of overflown communities nor effective voice for those impacted to feed into government policy. This is undemocratic.

It would appear that changing the location of Heathrow has not be reviewed as part of airspace modernisation. Other countries in the world have relocated airports because of their impact on the health and wellness of the population.Is it the right location for an airport given its impact on and wellness? Should we as a country settle for noise mitigation? This question should have been addressed.

Having failed in this positional aspect, Government policy lacks clarity in the protections it affords to communities impacted by aviation noise within its aviation policy passing the buck to private bodies too easily and without defining goals to protect the public.
This is a major flaw in airspace modernisation.

There must be an independent monitoring body designed to protect public welfare from aviation noise. CAA does not fulfill this role. Another government failing.

Government policy on aviation has no stance on the balance between protecting welfare and economic considerations. To deliver the 'Be Safe' design aspect they need to understand what are the economic impacts of noise? How is the impact of noise measured and balanced against efficiency?
What protection is given to the basic right to enjoy peace and quiet, to protect children's health and learning and our enjoyment of parks and riverside areas?
Where are these factors protected and valued in government policy?

Indecision by the government is evident over extending the hours permitted for night flights or by banning night flights altogether. This despite consultation favouring the later and overwhelming research demonstrating the impact of night disturbance.

Failure by the government to investigate good practice internationally is evident. Examples include that of the Netherlands where flight numbers are being reduced. Geneva airport which has strict night period policies. Such practices should be investigated further.

Such flaws in government policy impact on Heathrow's ability to effectively deliver the Design Principles.

Research on noise impact and attitudes to noise must run parallel to airspace change. This is a grave omission to flight path design.

Heathrow must nevertheless acknowledge the importance of this research and insist on this or conducts its own research if it is to have the trust and confidence of local communities. Airspace modernisation needs to improves lives and wellbeing as well as

economic prosperity.

The government have opted to back the CAA's flawed SONA study. This is incomprehensible at this time of profound and far reaching change. The government needs to address the question of how it is monitoring the impact of airspace modernisation on the public welfare. Research into the health impacts of aviation noise are clear yet no policy statement nor research project reflects this.

There are no effective channels for residents voices to feed into aviation policy at this time of profound change. Heathrow have backed the NACF and provides funding to it. Yet this role is limited as the government have a closed attitude to residents and community voices. This was all to prevalent at the NACF meeting in November when there appeared no opportunities for the work of the NACF to feed into government policy presently according to DfT representatives present.

Heathrow as a leading sponsor of airspace modernisation should pressurise the Government to fund research and listen to the NACF holding the government to account in the interests of local communities impacted by its operations thereby giving the implementation of these Design Principles greater chance of success.

Useful links referred to:
SONA https://www.heathrow.com/content/dam/heathrow/web/common/documents/company/local-community/noise/heathrow-community-noise-forum/forum-meeting-notes/2019/24-july/Community_presentation_SoNA_Jul_2019.pdf

https://www.aef.org.uk/2022/10/28/the-truth-about-flying-greenwashing-in-the-aviation-industry%EF%BF%BC/

https://www.aef.org.uk/what-we-do/climate/

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Collector: Final (Web Link)
Started: Thursday, December 08, 2022 9:47:58 AM
Last Modified: Thursday, December 08, 2022 10:39:23 AM
Time Spent: 00:51:24
IP Address: [redacted]

Page 1

Q1

Name

[redacted]

Q2

What is the name of the organisation or community group you represent?

LADACAN (Luton and District Association for the Control of Aircraft Noise)

Q4 **No**

Did you attend one of Heathrow's Stage 2A engagement workshops?

Q5 **I am unsure**

Thinking about the information that Heathrow has provided and/or presented to you, do you agree or disagree with the following statement about Heathrow's development of flight path options?"I am satisfied that Heathrow has taken into account the Design Principles when developing the comprehensive list of flight path options"

Q6

Please provide any feedback on your answer in the box below.

With reference to the Comprehensive List of Options (vF):
Slide 17: You've used a track-based assessment and noise metrics based on 70dB SEL from the most common A320 type, but without evidencing the spread of noisiness of the Heathrow fleet. The noise impact assessment should take account of the noisiest types.

Slide 18:
row 3 - how are you going to evidence this: for example in selecting between NADP procedures?
row 6 - have you defined "meaningful respite" and is this evidenced by research into harmful effects of aviation noise, especially at night?
row 9 - since airspace modernisation will lead to increased capacity, policy requires noise reduction, not minimising the increase
rows 11 and 12 - a purely track-based approach may not be adequate to resolve route conflicts at intersections: time-based coordinated scheduling may also be required (for example to avoid Luton departures being held low as at present in the vicinity of St Albans)

Slide 22 - a climb gradient of 5.5% will not match all the aircraft in the fleet and is low for an A320 (8% would be typical). How are you going to ensure continuous climb can occur at different gradients depending on aircraft performance, and still connect to upper airspace airways?

Slide 23: you say "taking account of aircraft capability" but not all aircraft are equally capable: are you offering or considering different options for high performance and low performance aircraft (bearing in mind the proportions between the two may change in future)?

Slide 25: It's very important to focus on noise reduction below 7,000ft - the CO2 impact between 4,000 and 7,000ft will be a negligible fraction of the overall CO2 emissions of a typical flight.

Slide 27: Minimising track miles is not the only way to minimise CO2 - what account are you taking of modernisation of the fleet and how will this be targeted, incentivised and used to regulate capacity expansion?

Slide 29: It's hard to see how the criteria have actually been applied in generating these options. For example would there not be a difference between day (people at work) and night (many people at home)?

Slide 30: Ditto - also one would expect less overlap with 29.

Same comments can broadly be applied to arrivals slides, so are not repeated here.

Q7

Do you have any feedback on Heathrow's potential concepts for delivering respite? (pages 49-51)

Slide 48 and elsewhere: unlikely to deliver "meaningful" respite due to the proximity of the track options - the "overflight cone" is too narrow to be applied in this case since meaningful respite would be not hearing aircraft at all, rather than hearing them slightly less noisily.

Concentration is not necessarily better than dispersion - it can lead to a situation in which people perceive more flights because they hear all of them, rather than only those closest.

Slide 53: to what extent can Heathrow or any airport mandate operational practices - our perception is that airlines not only dictate these but resist any transparency over what practices they use in order to protect commercial advantage. You need to be open about this.

Slides 54 and 55: see comments above re the possibility of time-based synchronisation for this as well as deconfliction.

Q8

Do you have any feedback on Heathrow's potential approach to night flights? (page 52)

How are you going to assess the responses from consultation on these options, bearing in mind nobody is likely to support having night flights over their home?

Q9

Do you have any feedback on Heathrow's proposed approach to noise efficient operations? (page 53)

These need to be backed up with open, transparent and competent research and analysis into the noise effects of different options, which requires proper experimental design given that noisiness varies depending on many factors from flight-to-flight and day-to-day and season-to-season.

Q10

Do you have any feedback on Heathrow's overall approach to developing flight path options?

Do it competently, don't just think of lines on the ground think of rates of climb and descent and the factors which affect these, and think of the time dimension in deconfliction. Above all, be competent and transparent,

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Started: Friday, December 09, 2022 3:01:56 PM
Last Modified: Friday, December 09, 2022 4:13:01 PM
Time Spent: 01:11:05
IP Address: [redacted]

Page 1

Q1

Name

[redacted] Director of Estates & Projects, The Royal Parks

Q2

What is the name of the organisation or community group you represent?

The Royal Parks, The Old Police House, Hyde Park, London W2 2UH

Q4 **Yes**

Did you attend one of Heathrow's Stage 2A engagement workshops?

Q5 **I agree**

Thinking about the information that Heathrow has provided and/or presented to you, do you agree or disagree with the following statement about Heathrow's development of flight path options?"I am satisfied that Heathrow has taken into account the Design Principles when developing the comprehensive list of flight path options"

Q6

Please provide any feedback on your answer in the box below.

The Royal Parks (TRP) believes that the Design Principles, as they stand, have been considered at this stage of the iterative process, in as far as they go. We feel strongly however that the Design Principles should go further in certain areas in considering flight path options. We are disappointed that the CAA did not fully and proactively engage with The Royal Parks in settling on these principles.

Richmond and Bushy Parks are public open spaces enjoyed by millions of park visitors for their beauty and tranquillity. We would strongly argue that these parks share characteristics with the National Parks and with AONBs which should afford them the same consideration and similar protection from further encroachment. For these reasons we feel they should have been considered within the Design Principles.

Both Richmond and Bushy Parks are historic listed landscapes, include rare habitats, are sanctuaries for wildlife and enjoy important protective designations. Richmond Park has the greatest footfall of any National Nature Reserve (NNR) and is London's largest Site of Special Scientific Interest (SSSI); it is also a European Special Area of Conservation (SAC) and subject to specific statutory requirements for the assessment of projects that could impact the interest features of its SAC designation. Bushy Park is a Site of Special Scientific Interest.

We consider that the characteristics set out above put Richmond and Bushy Parks on a par with the National Parks and AONBs for the purposes of this consultation and specifically under the criteria set out in CAP1616 (Appendix B, paras B76, B77 and B78), including being similar in nature to a designated Quiet Area. We were assured by CAA representatives during the consultation session attended by TRP officials (on 1 November 2022 at the Holiday Inn, Heathrow) that these characteristics will be taken fully into consideration at the next stage (stage 2B) of the consultation process.

Richmond and Bushy Parks have been increasingly and significantly affected for decades by the proximity and development of Heathrow Airport, and we feel strongly that consideration must be given to the status and value of these special public spaces during this process.

At the next stage we would hope and expect to see detailed refinements to the list of options which fully assess and take into account the impact (in terms of noise, visual intrusion and potential detriment to biodiversity) on public open spaces other than those that fall into the categories of National Parks and Areas of Outstanding Natural Beauty (AONBs).

Q7

Do you have any feedback on Heathrow's potential concepts for delivering respite? (pages 49-51)

The basic concept of seeking to mitigate the impact of flight paths is understood. Where people are unavoidably affected, we understand that there is a trade-off between intensity of potential impact versus numbers of people to some extent affected.

Q8

Do you have any feedback on Heathrow's potential approach to night flights? (page 52)

The approach to night flights is understood and noted. We would not wish to see any negative impact on Richmond and Bushy Parks in this regard.

Q9

Do you have any feedback on Heathrow's proposed approach to noise efficient operations? (page 53)

We note that the approach is to ".. use noise efficient operational practices to limit and, where possible, reduce adverse impacts from aircraft noise". We would expect this principle to be applied specifically to ensure no adverse impact on Richmond or Bushy Parks.

Q10

Do you have any feedback on Heathrow's overall approach to developing flight path options?

The Royal Parks would strongly argue that the following factors should be taken into account in further developing flight path options:

- That Richmond and Bushy Parks share characteristics with National Parks and AONBs, and should therefore be afforded the same consideration at the next stage of the process.

- That the potential impact of the flight path options on "people", as distinct from residential populations, must be acknowledged and taken into account. And doing so must include taking into account the millions of Richmond and Bushy Park visitors seeking quiet enjoyment of the open air, free from excess audible or visual intrusion.

- We would expect a comprehensive Environmental Impact Assessment to be carried out and made public of any flight path options which might change frequency, direction or number of flights affecting Richmond and Bushy Parks.

- The Royal Parks are historic hunting grounds. They were passed from the Crown to government under the 1851 Crown Lands Act to be managed as public open space and they should be regarded as national assets. They are now managed under contract by The Royal Parks Charity, but their protection as public open space remains a statutory responsibility of central government.

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Collector: Final (Web Link)
Started: Thursday, December 08, 2022 4:54:56 PM
Last Modified: Friday, December 09, 2022 3:17:10 PM
Time Spent: 22:22:13
IP Address: [redacted]

Page 1

Q1

Name

[redacted] & [redacted]

Q2

What is the name of the organisation or community group you represent?

WPRERA (Westbourne Park Road East Resident's Association)

Q4 **Yes**

Did you attend one of Heathrow's Stage 2A engagement workshops?

Q5 **I strongly disagree**

Thinking about the information that Heathrow has provided and/or presented to you, do you agree or disagree with the following statement about Heathrow's development of flight path options?"I am satisfied that Heathrow has taken into account the Design Principles when developing the comprehensive list of flight path options"

Q6

Please provide any feedback on your answer in the box below.

No, we strongly disagree with the following statement
'Do you agree with 'I am satisfied that Heathrow has taken into account the Design Principles when developing the comprehensive list of flight path options'

Summary Feedback
The focus groups were small and did not include communities which could be newly overflown (6A). Assessments of noise impact must address the actual impact including that from aircraft making a turn; the numbers within a certain 'noise contour' are insufficient. The harmful effect of change in noise levels has not been addressed, nor the duration of the new noise event (6B).

6.A. The Design Principles which the list of flight path options are based on are deeply flawed. This is because the design principles were based on feedback from only four community focus groups with only 22 people in total across the four focus groups. Crucially, none of the 22 Community focus group participants represented potentially newly overflown communities in central, north and west London to the east of Heathrow (see our concern in 10.A). We are therefore formally questioning the validity of the output of the focus group and the actual Design Principles. As a consequence of the omission of any representative from central and newly overflown London areas, we strongly disagree with the statement that that we are satisfied the approach that Heathrow has taken when developing the comprehensive list of flight path options.

6.B. Noise impact assessment-

We are deeply concerned about Heathrow Airport's proposed approach to estimating the noise impact on the communities impacted, as it underestimates the actual adverse impacts on central London communities, using noise exposure numbers within a contour, and not actual noise impacts.

6.B.1 All flight path options considered must be assessed using models that look into noise levels below 51 dBLAeq, adopting the World Health Organisation (WHO) guidance levels.

6.B.2 Heathrow must not proceed with its second and non-mandatory tier of its Design Principles, which is based on noise exposure numbers, rather than noise impacts.

- The ANG 17 clearly states that any assessment must take into account the significant adverse impacts, rather than using an inappropriate simplistic approach based on numbers within a noise contour.

- Before proceeding with assessing the flight path options, Heathrow must inform the 2A group about what evidence base and evaluation tools it proposes to use when reviewing the flight path options, and explain how its proposed tools/ methodologies will correctly and fully present the full adverse impacts for each of its flight path options. Heathrow must also explain to the community representatives what tools and algorithms it plans to use and how they will be independently validated and verified.

6.B.3 The government and Heathrow need to identify a way to correctly estimate the change effect.

- We are concerned that the current approach does not take into account the potential change effect on a community of introducing new flights over or adjacent to them. The 2019 ICAO Environmental Symposium concluded that LAeq (long term average) metrics only account for one third of aviation annoyance.

- Change is one of the most significant 'non acoustic' factors. Other recognised non acoustic factors include numbers of flights, time of day/night, peak noise and trust in authorities. The Heathrow Airspace Modernisation programme will introduce vast change that will adversely change London communities forever. International research shows the change impact adds 6-9 dBLAeq to the base LAeq levels.

- What makes London unique and inclusive is that central London benefits from pockets of quiet areas, which benefits people with particular sensitivity to noise. The change impact and the social and health impact of Heathrow's airspace modernisation programme, which is proposed to affect all areas of London including these quiet areas, will be immense and will deeply affect the

programme, which is proposed to affect all areas of London including these quiet areas, will be immense and will deeply affect the most vulnerable people who have purposely sought refuge in these more quiet areas and who have an equal right to live and prosper in London. Due to the geographic location of Heathrow airport and the proposed air space changes directly over the city, the lives of Londoners and the fabric of London will be changed irreversibly for the worse. Please also refer to answer to Q8.

6.B.4 At the 2A workshop when questioned about noise assumptions for turning aircraft, a representative for Heathrow stated that Heathrow and its advisors do not have information on the noise impacts of turning aircraft. This is wholly unacceptable for an airspace modernisation programme with proposals for multiple flight paths options directly over a major city, with proposals for aircraft turning over newly affected densely populated areas. The noise impacts of turning aircraft must be identified, specified and fully incorporated in all the impact assessments, using the noise impact assumptions for the aircraft models that produce the most noise when turning, including large long-haul aircraft.

- Heathrow must commit to urgently identify, specify and incorporate the actual noise impacts of turning aircrafts over a community in its assessments, as it is proposing flight paths including turning flights over densely populated areas, potentially not previously overflown, and share these with the 2A community groups before the assessment of flight path options is carried out

6.B.5 In its 2018 'Departure Noise Mitigation: Main Report' the CAA states that using LAmax is the simplest measure of a noise event such as the overflight of an aircraft and relatively straightforward for the public to understand, since it is simply the maximum sound level recorded during the aircraft fly-by. However, using LAmax does not take account of the duration of the noise event (which is influenced by the speed of the aircraft) and hence is possibly less representative of the disturbance the aircraft may cause. In the report the CAA suggested to complement the LAMax with Sound Exposure Level (SEL), which accounts for the duration of the noise event as well as its intensity.

6.B.6. The noise impact assessment on communities must also fully incorporate the increase in LAmax at either side of a flight path. This is because depending on the departure procedures chosen, there can be a very significant adverse noise impact due to the way that noise propagates to the side of a flight path as aircraft height increases. This is particularly relevant for the Heathrow airport as the aircraft depart over densely populated areas over central London.

6.B.7 Heathrow should insist on including a full sensitivity analysis (reflecting the potential change effects) within its Airspace Change Proposal (ACP)

Q7

Do you have any feedback on Heathrow's potential concepts for delivering respite? (pages 49-51)

Summary Feedback
Respite of itself cannot mitigate the harmful effects of any expansion of, or change in, the number of flights over London's communities (7A). The primary objective therefore should be to maintain or reduce the existing cap on aircraft movements, and introduce a ban on night time flights, 'ghost' flights and cargo only flights. Certain short-haul flights should also be removed (7B). Modelling of the noise impact of routes must achieve full acoustic separation between routes in regard to their impact upon the communities beneath (7C/D).

- 7.A. Due to the location of Heathrow airport and the prevailing western wind, the only objective of Heathrow Airspace Modernisation programme must be to reduce the current adverse impact of the airport on Central London. The Heathrow Airspace Modernisation progreamme must under no circumstance be used as a justification to increase any aspect of Heathrow's airport operations.

- 7.B. We agree with the principle of Respite but not with the vague idea of partial respite. Full respite at points on the ground normally affected by noise from arriving or departing aircraft, is when such noise can no longer be heard. But full respite is no substitute for the following vital objectives for the airspace modernisation programme. It should significantly reduce the current adverse environmental and health impacts of Heathrow aircraft over London, by Heathrow Airport committing to constrain any incremental growth in aircraft in and out of Heathrow Airport (aircraft volumes, size and load) and ban night flights.

- These objectives comprise:

7.B.1. Keeping the existing cap on Heathrow annual Aircraft Movements (ATMs) of 480,000

7.B.2 Ban night flights in and out of Heathrow airport between 11pm and 7 am.

7.B.3 Ban all cargo only flights arriving and departing Heathrow

7.B.4 Ban supersonic aircrafts from arriving and departing the airport.

7.B.5. The introduction of aviation demand reducing initiatives

7.B.6. The introduction of a ban on national short-haul flights in and out of the airport for lights less than 2.5 hours (following the French Government's example)

7.B.8 Ban ghost flights in and out of Heathrow Airport

- 7.C. All respite must be absolute and effective, and implemented in a manner that ensures full a acoustic separation:
  - 7.C.1 the flight path proposal must ensure that during every agreed respite period for a particular community, there is absolutely no occurrence of noise impacts from:

7.C.1.1 any other Heathrow arrival and/or departure routes
7.C.1.2 any other City Airport arrival and/or departure routes

7.C.2 The respite planning calculations must incorporate noise from flight paths directly over as well as adjacent to a community, as some arrival and departure procedures result in very significant noise adjacent to rather than under a flight path. This can distort the respite plans unless properly estimated and implemented.

- 7.D. Heathrow and the government must demonstrate to all London communities in its flight path modelling including the PBN proposals, that there is enough airspace capacity around Heathrow Airport to create full acoustic separation between routes, and how far out the full 'acoustic separation' will be achieved.

- This is particularly important for flights flying over Central London, as the noise is likely to be higher as the aircraft ascends

• This is particularly important for flights flying over Central London, as the noise is likely to be higher as the aircraft ascends directly over the city.

• This is likely to constitute a major challenge for Heathrow and the government considering the number of flight paths Heathrow is proposing over central London in each design envelope.

• In it 2018 report the CAA concludes ‘As aircraft height increases (at more distant locations from an airport) then the route spacing required to achieve a particular degree of noise mitigation also increases, which may not always be feasible from an airspace design perspective. (noise is attenuated more rapidly at lower angles of elevation).

• 7.A. Due to the location of Heathrow airport and the prevailing western wind, the only objective of Heathrow Airspace Modernisation programme must be to reduce the current adverse impact of the airport on Central London. The Heathrow Airspace Modernisation progreamme must under no circumstance be used as a justification to increase any aspect of Heathrow’s airport operations.

• 7.B. We agree with the principle of Respite but not with the vague idea of partial respite. Full respite at points on the ground normally affected by noise from arriving or departing aircraft, is when such noise can no longer be heard. But full respite is no substitute for the following vital objectives for the airspace modernisation programme. It should significantly reduce the current adverse environmental and health impacts of Heathrow aircraft over London, by Heathrow Airport committing to constrain any incremental growth in aircraft in and out of Heathrow Airport (aircraft volumes, size and load) and ban night flights.

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• 7.D. Heathrow and the government must demonstrate to all London communities in its flight path modelling including the PBN proposals, that there is enough airspace capacity around Heathrow Airport to create full acoustic separation between routes, and how far out the full ‘acoustic separation’ will be achieved.

• This is particularly important for flights flying over Central London, as the noise is likely to be higher as the aircraft ascends directly over the city.

• This is likely to constitute a major challenge for Heathrow and the government considering the number of flight paths

Heathrow is proposing over central London in each design envelope.

- In it 2018 report the CAA concludes ‘As aircraft height increases (at more distant locations from an airport) then the route spacing required to achieve a particular degree of noise mitigation also increases, which may not always be feasible from an airspace design perspective. (noise is attenuated more rapidly at lower angles of elevation).

Q8

Do you have any feedback on Heathrow's potential approach to night flights? (page 52)

Summary Feedback

There should be no night flights, because of their especially adverse effect on public health (8A/C). The WHO recommendation of an impact not above 40 dB is not achievable for communities close to the airport or newly overflown. The primary and secondary adverse health outcomes of aviation noise are listed, with further reference to increases in blood pressure, potentially leading on to coronary disease, based on Swiss studies (8D).

- 8.A. We strongly disagree with Heathrow's proposal for night flights.

8.B. This is due to Heathrow's geographic location in West London and the prevailing wind pattern which result in Heathrow overflying densely populated residential areas. It is, therefore, paramount that Government and Heathrow formally factors in the World Health Organisation (WHO) recommended noise levels, and clearly present the population impact assessments for the population using these recommended noise levels for all of the Heathrow's Air Space Modernisation flight path options.

8.C Noise is an important public health issue. Aviation noise has a direct negative impacts on human health and well-being and is a growing concern. Aviation noise also has an indirect impact on learning capacity and earning potential. Covid has shown that population health is critical to the success of the national economy, and that health and annoyance impacts must be accurately and comprehensively represented in all flight path impact assessments.

- 8.D. Heathrow Airport must adopt the WHO recommended noise levels in its impact assessments

8.D.1 The WHO recommended noise levels (2018) are as follows:

- Day noise of 45 dBLden (equivalent to 43 dBLAeq)
- Night noise impacts begin at 40 dBLAeq
- There is a growing evidence base on the serious adverse health impacts of night flights

8.D.2 The health impacts of aviation noise are:

- Primary Health outcomes:
  Cardiovascular disease (hypertension, myocardial infarction, stroke)
  Sleep disturbance
  Annoyance (stress)
  Cognitive impairment
- Secondary health outcomes:
  Diabetes and metabolic outcomes
  Adverse birth outcomes
  Quality of life, well-being and mental -ill health

- Aircraft noise is linked to high blood pressure and has a link to coronary heart disease too. A 2021 Swiss study found that night-time aircraft noise can trigger acute cardiovascular mortality. The association was similar to that previously observed for long-term aircraft noise exposure. Zurich airport bans night flights.
- Exposure to aircraft overflights at night, during sleep, has been related to transient elevation of blood pressure (increase in SBP 6.2mmHg (0.63-12) and DBP 7.5mmHg (3.1-12) when aircraft noise events occurred) Haralabids et all 2008)
- People regularly exposed to aviation noise may become psychologically adapted to it and stop noticing it, but physiologically it is still having an effect on a person's pulse, heart rate, blood pressure. Noise entering a person's ears even while they sleep can be "passed on to the cortex", causing "arousals that may not result in full awakening, but may nevertheless cause increases in heart rate and blood pressure, disturbing normal circadian rhythms and fragmenting sleep.

Q9

Do you have any feedback on Heathrow's proposed approach to noise efficient operations? (page 53)

Summary feedback

As the location of Heathrow airport requires more overflights of communities than other UK airports, the scope for designing noise efficient operations for Heathrow is limited. Furthermore, an overall policy is lacking for addressing the opposition between fuel efficiency/emissions reduction versus reducing adverse noise impacts (9A/B). Modelling of flight paths must accept that full mitigation of adverse impacts on the ground is not possible and that the scope for partial mitigation is reduced by the permitted differences between airlines in their own noise abatement procedures, particularly after take off. There will be a trade-off between CO2 efficient and noise efficient operations, which means that noise efficient operations are likely to be given lesser priority (9C).

9.A The Heathrow Airspace modernization programme, needs to be treated differently from other UK airport airspace modernization programmes. This is due to the geographic location of Heathrow Airport to the West of London and the prevailing western wind, which leads to Heathrow Aircraft arriving and departing directly over the city and millions of Londoners being directly impacted by the noise of Heathrow aircraft.

- The government needs to accept that the Air traffic control improvements and efficiencies at airports are likely to play only a very small part in delivering net zero carbon from aviation (the industry group Sustainable Aviation claims a potential reduction of 3.1 Mt by 2050 from this 'lever' compared with a 'business as usual' scenario – a 4% reduction on its projection of 71 Mt CO2).

- In contrast, the introduction of new flight paths across all of London and the resulting adverse noise impact will in contrast have a seriously negative impact on the health and well-being of the London population

9.B. The current process for assessing the noise impact of airspace change is delivered by the CAA but without any meaningful policy underpinning from the Government in terms of appropriate targets for reducing community noise exposure. The reality is that the need to address noise concerns may constrain the ability to fully optimise the system for emissions reduction and fuel efficiencies.

9.C. The modelling that will lead to the proposed new flight paths over London needs to fully take into account the following:

9.C.1 Noise efficient operations move relief from noise to different locations, rather than actually reduce overall noise. In some cases the changes may increase overall noise e.g. new procedures could be introduced that reduce engine power and noise at 6.5 km from the start of the runway to such an extent that engine power would need to be increased at some point beyond 6.5 km, potentially leading to higher noise levels than at the 6.5 km point.

9.C.2 That Heathrow airport has a greater number of long-haul services that tend to operate using larger, heavier and slower climbing aircraft. The airport has had departure height requirements in place for decades but they have never been enforced.

9.C.3 It is impossible to shelter overflown communities from aviation noise- Heathrow has in the past compared Aviation noise with road and rail noise. The critical and major difference is that some measures can be taken to mitigate for road and rail noise around noisy highways and rail lines by introducing noise sheltering walls, but it is impossible to implement glass ceilings to shelter communities from aviation noise from noisy super highways in the sky over the communities.

9.C.4 Heathrow's modelling of aviation noise must take into account that the airport is unable to fully control the implementation of noise efficient operations, this is due to individual airlines using their own noise abatement departure procedures. This is due to individual airlines using their own noise abatement departure procedures. This procedure defines the height at which the flight crew will reduce engine power after take-off and the height at which acceleration from the take-off speed commences. ICAO guidance, mandated in Europe, requires that an airline has no more than two departure procedures for each aircraft type it operates, no matter where in the world that aircraft type is flown. An airline's departure procedures are based on their Central hub airport, and not based on the airspace environment around Heathrow.

It is widely accepted that no single departure and arrival procedure minimises overall noise, emissions and engine maintenance costs simultaneously. It is up to airlines to decide how best to balance the requirements of all three elements in their operations whilst maintaining consistency across their operations for safety reasons. Noise efficient operations will often be less of a priority. Foreign airlines do not currently need to inform the CAA of changes in their departure procedures, nor does the CAA have oversight of adherence of foreign airlines to their departure procedures. It is imperative that:

the CAA takes on the responsibility for oversight of adherence of foreign airlines to their departure procedures.

Modelling for the Heathrow airspace modernization programme modelling takes into account that for routes involving early turns, aircraft heights may be lower than for straight out routes, due to the reduced climb performance of an aircraft in a turn

turns, aircraft heights may be lower than for straight out routes, due to the reduced climb performance of an aircraft in a turn.

Until a complete ban on night flights in and out of Heathrow is implemented, the government must commit to and factor in the introduction of stricter measures to reduce noise impacts, namely introduce upper noise levels for night flights, which align to the WHO guidance (And the same for daytime flights). The government must also replace the existing ineffective monetary penalties for non-adherence to rules with other more effective punitive measures.

9.C.5. There will be a trade-off between CO2 efficient and noise efficient operations, which means that noise efficient operations are likely to be down prioritised against reduction in CO2. If this is allowed, this would mean that the overall benefit of noise efficient operations will be marginal.

Equally important, if Heathrow were to propose an increase in annual flight volumes, any benefits to the environment, human health and well-being through noise efficient operations, or obtained from other improvements in its methods of operation, could well be lost. Further, changes in the intensity of operations at particular times of day would limit or eliminate such benefits. For instance, the introduction of independent parallel approaches (IPA) in the early morning would cause harm through loss of respite, even if the additional capacity (25,000 additional air traffic movements a year) were not used.

Q10

Do you have any feedback on Heathrow's overall approach to developing flight path options?

Summary Feedback

The airspace modernisation programme should be presented for consultation and decision in its entirety, rather than by taking partial decisions which could well preempt the options for later ones (10A). The option not to proceed with modernisation because of unavoidable adverse health impacts in the case of Heathrow should not be excluded (10B/C). The use of focus groups should be expanded to include people living in central London (10D). To date the Heathrow air space modernization programme has focused on benefits for airlines and for the airport, but has not demonstrated any regard for its likely adverse impact on the London communities. Air Pollution effects have not been addressed (10F).

We are deeply concerned that the Government's Aviation National Strategy of 2019 is out of date, being published before issuing the target to reduce carbon emissions to net zero by 2050 and the associated decision to include aviation's share in the necessary reductions in the carbon budget. Also, later research has clarified the nature of the adverse impacts on communities of overflights upon communities living near airports, from both noise and carbon emissions (10D-J).

The Government's overall objective on aircraft noise is to limit and, where possible, reduce the number of people in the UK significantly affected by adverse impacts from aircraft noise. We firmly believe that this objective is at risk.

10.A The proposed flight paths options and the proposed PBNs which constitute the Heathrow Airspace modernisation programme must be comprehensively and clearly presented to Londoners in one document for consultation on the Airspace modernisation programme. Heathrow must not be allowed to take the salami slice approach and present the proposed new flight paths and the PBN in two separate and sequential consultations.

10.B. Efficiency improvements are frequently cited as a reason for airspace change but it is also being driven by a desire to increase airspace capacity. Efficiency improvements, both operational and technological, have not historically been sufficient even to offset the adverse environmental and health effects of growth from aviation. Due to Heathrow's geographic location and the prevailing western wind, the objective of the London Airspace modernisation programme and its proposed flight path options must be to reduce the overall adverse impact of the airport's current operations and it must under no circumstance be used as a reason for an increase in Heathrow Airport's operations at any time in the future.

10.C. The set of proposed options is not complete without these following two options, which must be included in the formal public consultation:

- A. An option that bans flight paths over central London
- B. An Option that the Airspace Modernisation Programme should not proceed due to the London population health impact, which are unique to Heathrow due to its geographic location and prevailing Western wind.

10.D. We believe that the lack of pursuing and ensuring participation from communities in Central and North and West London in the Heathrow's Design Principles 'Community Focus Groups' means that the community focus group output which Heathrow based the Design principles is flawed and not representative.

- In Heathrow's formal 'Design Principles submission', Heathrow refers to the output from the 'Community Focus Groups'. However, Heathrow omits clearly stating that the outcome it refers to as output from its 'Community Focus Groups' is in fact based on interviews with a total of only 22 interviewees in across the 4 community focus groups.
  - All of these interviews were online interviews
  - interviewees were paid £50
  - Importantly none of the interviewees represented central London communities newly overflown at low height

10.E. Heathrow and the government's approach to developing flight paths is lacking and negligent in failing to demonstrate a commitment of both Heathrow and the Government to safeguarding the health and well-being of London communities in proximity and under Heathrow flight paths. The Heathrow air space modernization programme focuses on benefits for airlines (supposed fuel savings, reduced engine maintenance costs) and for the airport, but demonstrates no regard to the adverse impact on the London communities.

To demonstrate its commitment to safeguarding the health and well-being of Londoners, we therefore request the following formal commitment from Heathrow and the government that the Heathrow Air Space Modernisation Consultation flight path options are based on the below assumptions:

- The existing cap on Heathrow annual Aircraft Movements (ATMs) of 480,000 is maintained
- Night flights in and out of Heathrow airport are banned between 11pm and 7am.
- All cargo only flights arriving and departing Heathrow are banned
- Supersonic aircrafts are banned from arriving and departing the airport
- The introduction of aviation demand reducing initiatives
- The introduction of a ban on national short-haul flights in and out of the airport for flights less than 2.5 hours (following the French Government's example)
- Ban ghost flights in and out of Heathrow Airport

10.F. Air pollution. In its modelling and in its wording in its consultation on new flight paths, Heathrow must correctly refer to the air pollution impact on communities overflown including central London, from particles produced by arriving and departing aircraft that are dispersed downwind into Central London, due to the prevailing Western Wind.

To date, Heathrow has incorrectly downplayed the air pollution impacts on communities overflown by aircraft e.g. in its 2011-2020 Air Quality Strategy. In this Heathrow states that it is mainly its ground based operations that generate particle and NO2 air pollution, and incorrectly leaves out air pollution impact from its arriving and departing aircraft in its analysis, documentation and consultation. This is incorrect and misleading, as multiple UK and international research reports have confirmed that ultrafine particles from arriving and departing flights are dispersed over up to 20 miles downwind from airports. A 2020 research project found that ultrafine particles from Heathrow are blown 20 km into central London
https://www.sciencedirect.com/science/article/pii/S016041201931832X.
The focus must be on reducing all adverse impact of Heathrow Aircraft arriving and departing Heathrow, and Heathrow Airport must include air pollution impacts from arriving and departing aircraft in addition to air pollution from ground operations.

10.G. There is a need for the Heathrow Airspace Modernisation programme to share with the 2A community group both its key assumptions relating to the Airspace Modernisation Programme and the key risks associated with these assumptions.

10.H. The government need to need to withdraw and replace the current Aviation National Strategy. The Aviation National Strategy was published:

- before the UK government's commitment in 2019 to the Climate Change CO2 targets
- before the government's agreement to incorporate the UK's share of international aviation and shipping emissions in its carbon budget; and
- before the significant recent research which illustrates the significant health and well-being impacts of aviation on populations living under flight paths or near to them.

10.I. Heathrow and the UK government should commit to ensure that the total CO2 emissions from Heathrow airport operations is reduced in absolute terms, and that due to Heathrow Airport's geographic location it prioritises reducing noise impacts on communities impacted up to 7,000 ft.

10.J. The government must commit to update the DfT TAG to correctly reflect the full health and annoyance impacts of aviation identified in up-to-date and independently verified research. The DfT TAG must also be updated to include the 2018 WHO guidance for aviation noise exposure using 45 dB Lden and 40 dB Lnight.

COMPLETE

Collector:	Final (Web Link)
Started:	Wednesday, November 23, 2022 10:24:07 AM
Last Modified:	Wednesday, November 23, 2022 10:27:32 AM
Time Spent:	00:03:25
IP Address:	[redacted]

Page 1

Q1

Name

Biggin Hill Airport

Q2

What is the name of the organisation or community group you represent?

Biggin Hill Airport

Q4

Did you attend one of Heathrow's Stage 2A engagement workshops?

Yes

Q5

Thinking about the information that Heathrow has provided and/or presented to you, do you agree or disagree with the following statement about Heathrow's development of flight path options?"I am satisfied that Heathrow has taken into account the Design Principles when developing the comprehensive list of flight path options"

I agree

Q6

Please provide any feedback on your answer in the box below.

At this stage, Heathrow have not taken specific account for a westerly arrival/departure route to/from Biggin Hill Airport

Q7

Do you have any feedback on Heathrow's potential concepts for delivering respite? (pages 49-51)

No

Q8

Do you have any feedback on Heathrow's potential approach to night flights? (page 52)

No

Q9

Do you have any feedback on Heathrow's proposed approach to noise efficient operations? (page 53)

No

Q10

Do you have any feedback on Heathrow's overall approach to developing flight path options?

No

COMPLETE

Collector: Final (Web Link)
Started: Monday, November 21, 2022 8:22:15 AM
Last Modified: Monday, November 21, 2022 8:37:24 AM
Time Spent: 00:15:09
IP Address: [redacted]

Page 1

Q1

Name

[redacted]

Q2

What is the name of the organisation or community group you represent?

Farnborough Airport Limited

Q4

Did you attend one of Heathrow's Stage 2A engagement workshops?

Yes

Q5

Thinking about the information that Heathrow has provided and/or presented to you, do you agree or disagree with the following statement about Heathrow's development of flight path options?"I am satisfied that Heathrow has taken into account the Design Principles when developing the comprehensive list of flight path options"

I strongly agree

Q6

Please provide any feedback on your answer in the box below.

Clear and concise presentation explaining how the DP's were translated into the options shown. Excellent visuals.

Q7

Do you have any feedback on Heathrow's potential concepts for delivering respite? (pages 49-51)

While FAL is fully supportive of this concept for the Heathrow operation; it should be managed so that the extra airspace take required does not force other airports into sub optimal routings.

Q8

Respondent skipped this question

Do you have any feedback on Heathrow's potential approach to night flights? (page 52)

Q9

Do you have any feedback on Heathrow's proposed approach to noise efficient operations? (page 53)

Extremely important aspect and one that FAL fully supports. The ability for the aircraft performance to be utilised in design should not be missed.

Q10

Respondent skipped this question

Do you have any feedback on Heathrow's overall approach to developing flight path options?

LONDON GATWICK

[redacted]

Airspace Change Manager

London Gatwick

28 April 2023

[redacted]

Airspace, Noise and ATM Specialist

Heathrow Airport Ltd

Heathrow FASI-South Comprehensive List of Options Feedback

Dear [redacted]

Please receive London Gatwick's feedback on Heathrow's FASI-South Comprehensive List of options.

Heathrow Question	**Gatwick Response**
"I am satisfied that Heathrow has taken into account the Design Principles when developing the Comprehensive List of Flight Path Options". Answer options: I agree	Gatwick agree the options have been developed taking into account the design principles, however we question if the fundamental approach of designing to 5.5% climb profile meets the ambitions of the airspace modernisation strategy and is representative of fleet performance potential in 2028 and beyond. Has this climb profile choice constrained potential options when developing options to meet Design Principles 2, 3, 4, 10, 11 and 12? Has Heathrow considered how the data outcomes (and subsequent options) would vary if a more ambitious climb profile is applied; this would offer benefits to HAL (in terms of noise, potentially CO2 etc) but would also benefit the wider LTMA? Given the departures are dependent on arrivals, and both have knock-ons in the wider LTMA airspace, at what point in the CAP1616 process do Heathrow plan to integrate their arrival options with departures?

Heathrow Question	Gatwick Response
Do you have any feedback on Heathrow's potential concepts for: - Delivering respite - Heathrow approach to night flights Heathrow approach to noise efficient operations	GAL recognise the need to explore respite and night flight concepts however it should be noted that they have the potential to impact other airports within the LTMA with regards to noise, environment, complexity and capacity in following ways: o Relief via dispersion has the potential to have cumulative impacts for those communities overflown by HAL traffic as well as traffic from other LTMA airports as well as impacting route separation. o Respite via runway alternation and via route alternation have greater potential to impact designs within the LTMA, particularly if CAP1385 route spacing is applied. This could create trade-offs in terms of noise, CO2 and capacity and introduce complexity that may also have safety implications. Gatwick agree that it is proportionate to explore these concepts in further detail once a shortlist of options is known and we are committed to working collaboratively with HAL to understand the concepts and their benefits/impacts in more detail. It would be useful to understand timeframes and HAL's planned approach to developing these and will comment further as and when further details are available.
Do you have any feedback on Heathrow's overall approach to developing flight path options?	None

Do not hesitate to contact us should you have questions or wish to discuss any of the points above further.

Kind regards

X

[redacted]
Airspace Change Manager

COMPLETE

Collector: Final (Web Link)
Started: Tuesday, December 06, 2022 3:20:29 PM
Last Modified: Tuesday, December 06, 2022 3:24:46 PM
Time Spent: 00:04:16
IP Address: [redacted]

Page 1

Q1

Name

[redacted]

Q2

What is the name of the organisation or community group you represent?

London City Airport Ltd.

Q4

Did you attend one of Heathrow's Stage 2A engagement workshops?

Yes

Q5

Thinking about the information that Heathrow has provided and/or presented to you, do you agree or disagree with the following statement about Heathrow's development of flight path options?"I am satisfied that Heathrow has taken into account the Design Principles when developing the comprehensive list of flight path options"

I agree

Q6

Please provide any feedback on your answer in the box below.

Respondent skipped this question

Q7

Do you have any feedback on Heathrow's potential concepts for delivering respite? (pages 49-51)

Respondent skipped this question

Q8

Do you have any feedback on Heathrow's potential approach to night flights? (page 52)

Respondent skipped this question

Q9

Respondent skipped this question

Do you have any feedback on Heathrow's proposed approach to noise efficient operations? (page 53)

Q10

Do you have any feedback on Heathrow's overall approach to developing flight path options?

London City Airport have no comments on the approach Heathrow are taking to develop design options. It's unclear at this stage how the proposed design options will impact upon London City Airport's flight routes and proposed design options through the airspace modernisation programme. We look forward to working with Heathrow on this in more detail in order to optimise airspace design in the South-East.

COMPLETE

Collector: Final (Web Link)
Started: Wednesday, November 30, 2022 12:57:58 PM
Last Modified: Wednesday, November 30, 2022 1:27:02 PM
Time Spent: 00:29:03
IP Address: [redacted]

Page 1

Q1

Name

[redacted]

Q2

What is the name of the organisation or community group you represent?

London Luton Airport Operations Ltd

Q4

Did you attend one of Heathrow's Stage 2A engagement workshops?

Yes

Q5

Thinking about the information that Heathrow has provided and/or presented to you, do you agree or disagree with the following statement about Heathrow's development of flight path options?"I am satisfied that Heathrow has taken into account the Design Principles when developing the comprehensive list of flight path options"

I am unsure

Q6

Please provide any feedback on your answer in the box below.

From the presentation it was understood that some design principles have been taken into account, for example DP's 2, 4,5,9 and 10. However other DP's such as 7 or 11 have not been considered in as much detail. It would have been helpful to have those airports route designs which have already passed Stage 2 on the maps, to help take consideration of these designs that Heathrow is aware of. We understand this would not have been possible for each airport, but where the detail is available this should have been provided for clarity and context.

Q7

Do you have any feedback on Heathrow's potential concepts for delivering respite? (pages 49-51)

This looks ok from a Luton perspective, although should note that typically respite routes increase the airspace needed and therefore Heathrow should balance this against other airport users.

Q8

Do you have any feedback on Heathrow's potential approach to night flights? (page 52)

This looks ok from a Luton perspective, although should note that typically respite routes or extra routes (even at night) increase the airspace needed and therefore Heathrow should balance this against other airport users.

Q9

Do you have any feedback on Heathrow's proposed approach to noise efficient operations? (page 53)

LLA agrees that all FASI-S ACP's should be aiming for CCO and CDO, but this should be balanced against the impacts this could have on other airspace users including neighbouring airports.

Q10

Do you have any feedback on Heathrow's overall approach to developing flight path options?

Respondent skipped this question

COMPLETE

Collector: Final (Web Link)
Started: Thursday, December 08, 2022 10:56:57 AM
Last Modified: Thursday, December 08, 2022 11:16:00 AM
Time Spent: 00:19:02
IP Address: [redacted]

Page 1

Q1

Name

[redacted]

Q2

What is the name of the organisation or community group you represent?

London Southend Airport

Q4

Did you attend one of Heathrow's Stage 2A engagement workshops?

Yes

Q5

Thinking about the information that Heathrow has provided and/or presented to you, do you agree or disagree with the following statement about Heathrow's development of flight path options?"I am satisfied that Heathrow has taken into account the Design Principles when developing the comprehensive list of flight path options"

I strongly agree

Q6

Please provide any feedback on your answer in the box below.

Respondent skipped this question

Q7

Do you have any feedback on Heathrow's potential concepts for delivering respite? (pages 49-51)

Delivering respite by varying the point at which aircraft join final approach appears a viable technical solution; whilst the concepts explored for departures would technically provide respite, they would add increased complexity into the network which will require additional work through the CAF process. If the additional complexity could be accommodated for all London airports wishing to adopt similar concepts without dis-benefit to the network as a whole LSA is supportive of this.

Q8

Do you have any feedback on Heathrow's potential approach to night flights? (page 52)

Bespoke routes for the night and early morning periods would ensure a fair and equitable dispersal of noise but again would add increased complexity into the network which will require additional work through the CAF process. If the additional complexity could be accommodated for all London airports wishing to adopt similar concepts without dis-benefit to the network as a whole LSA is supportive of this.

Q9

Do you have any feedback on Heathrow's proposed approach to noise efficient operations? (page 53)

LSA is supportive of all the noise efficient operational practices described on page 53.

Q10

Do you have any feedback on Heathrow's overall approach to developing flight path options?

Respondent skipped this question

COMPLETE

Collector: Final (Web Link)
Started: Friday, December 09, 2022 1:16:36 PM
Last Modified: Friday, December 09, 2022 1:53:40 PM
Time Spent: 00:37:04
IP Address: [redacted]

Page 1

Q1 **Respondent skipped this question**

Name

Q2

What is the name of the organisation or community group you represent?

MAG Stansted Airport

Q4 **Yes**

Did you attend one of Heathrow's Stage 2A engagement workshops?

Q5 **I agree**

Thinking about the information that Heathrow has provided and/or presented to you, do you agree or disagree with the following statement about Heathrow's development of flight path options?"I am satisfied that Heathrow has taken into account the Design Principles when developing the comprehensive list of flight path options"

Q6

Please provide any feedback on your answer in the box below.

London Stansted Airport (STN) broadly agrees with the process used by Heathrow (LHR), when creating the comprehensive list of route options by comparing against a wide range of the design principles. However, we feel that more clarity on which route options are to be carried forward would be useful as outlined below.
Design Principles (DP's) 1-5 are all "must have" and a range of departure 'cones' have been created to align to them. However, there are also cones based on (for example) minimising new noise impacts under DP 9 which is only a "should", and the application of this DP creates different cones to those created under the "must have's". Can it be assumed that if these cones do not overlap, the non-overlapping element based on DP 9 would be eliminated due to its failure to align to the "must have" DPs? If this is not the case it could be argued that the route options list being considered at this stage is artificially long and may result in sub-optimal route options being carried forward and evaluated, even though they do not align to a "must have" requirement .
We note that the departure route options have been designed at an angle of climb lower than other airports within the LTMA. We are concerned that the reduced climb gradient is not consistent with the CAA and DfT objective "use the minimum volume of controlled airspace consistent with safe and efficient air traffic operations" as stated in the Airspace Modernisation Strategy. It also appears to be inconsistent with DP 3, which requires the use of noise efficient operational practices; by allowing aircraft to climb slower it may preclude some relevant noise abatement procedures.

Q7

Do you have any feedback on Heathrow's potential concepts for delivering respite? (pages 49-51)

Relief via the use of waypoints and design standards has low impact on other airports within the LTMA and we would not expect any adverse impact on the routes for adjacent airports.
Respite via runway alternation (with different separate tracks for longer) has greater potential for interaction with options for adjacent airports, especially if the route spacing outlined in CAP1385 is applied within the LTMA. The wider area of protection required for the extended two parallel routes in your example may impact the viability of route options to and from other airports, or result in restrictions to these routes being applied.
Respite via route alternation appears to offer the best potential for noticeable respite for many airports and will require coordination with the NATS network and integration and agreement with other airport respite schemes to ensure safety and capacity are assured for all. As one of those adjacent airports we are committed to working to collaboratively with LHR and NATS to enable this concept.

Q8

Do you have any feedback on Heathrow's potential approach to night flights? (page 52)

As a general comment, we note your engagement has covered operating modes and "how" routes may be used rather than just "where". Given the potential impacts on other airport stakeholders, are you able to clarify how this process will be followed through in Stage 3 to ensure that the needs of adjacent airports are considered.
Whilst Option 1 is a regular occurrence the volume of flights associated with this and Option 2 suggest it is unlikely to severely impact operations at adjacent airports.
However Option 3 (extra departure routes after disruption) suggests this may be used when adjacent airports are also seeking to recover from the effects of bad weather. Because the capacity of the LTMA airspace is limited, the use of additional departure routes for Heathrow gives preference and may result in flow control measures being applied to other airports. The result could be passengers from theses airports being impacted by the effects of disruption for longer, and the knock on impact to the schedule may result in more night time slots being used.
In short, Heathrow's recovery may be quicker but other airports may be slower and face the impact of additional night movements and an increase in noise infringements. Our preference would be to work with LHR and the NATS network to develop a balanced means of disruption recovery.

Q9

Do you have any feedback on Heathrow's proposed approach to noise efficient operations? (page 53)

STN fully supports the Heathrow investigation into alternative operational practices.

Q10

Do you have any feedback on Heathrow's overall approach to developing flight path options?

Slide 22: As noted in the previous comment, other airports in the LTMA have adopted a minimum departure climb gradient of 6% or greater. We think it would be helpful to set out the rationale to explain why LHR is seeking to adopt a lower climb profile than other airports, including which aircraft movements are the determining factor, their number and characteristics. We are concerned this decision is creating route options that are inconsistent with DP 2 and 3. Given the current LTMA congestion, a climb gradient consistent with other airports has the potential to reduce the areas of interaction (cumulative impact).
P36: For arrivals, there is an assumption that aircraft will establish onto final approach by 3nm. To help avoid confusion and aid stakeholder understanding it would be helpful if you can clarify which design standard is being applied as this appears to be lower than the normal ICAO minimum and airline SOPs for stabilisation. Also is there a range of FAF assumptions for the joining point for PBN (non-vectored) approaches?

COMPLETE

Collector: Final (Web Link)
Started: Tuesday, November 22, 2022 9:36:49 AM
Last Modified: Tuesday, November 22, 2022 10:45:51 AM
Time Spent: 01:09:02
IP Address: [redacted]

Page 1

Q1

Name

[redacted]

Q2

What is the name of the organisation or community group you represent?

RAF Northolt

Q4 **Yes**

Did you attend one of Heathrow's Stage 2A engagement workshops?

Q5 **I agree**

Thinking about the information that Heathrow has provided and/or presented to you, do you agree or disagree with the following statement about Heathrow's development of flight path options?"I am satisfied that Heathrow has taken into account the Design Principles when developing the comprehensive list of flight path options"

Q6

Please provide any feedback on your answer in the box below.

It is agreed that Heathrow have developed options that meet some DPs and that other DPs have been considered. RAF Northolt is keen to understand how the DPs that were taken into consideration rather than specifically used to develop options will be applied throughout Heathrow's design process.

Q7

Do you have any feedback on Heathrow's potential concepts for delivering respite? (pages 49-51)

The potential development of multiple departure options to meet respite requirements will need to consider the impact on RAF Northolt operations.

Q8

Do you have any feedback on Heathrow’s potential approach to night flights? (page 52)

See question 7 response.

Q9

Do you have any feedback on Heathrow’s proposed approach to noise efficient operations? (page 53)

No

Q10

Do you have any feedback on Heathrow’s overall approach to developing flight path options?

It is pleasing to see that RAF Northolt operations have been considered during this process so far and we look forward to continued engagement throughout our respective ACPs. RAF Northolt's SON highlights an ambition for independent operations and RAF Northolt are keen to work with Heathrow to enable this.

COMPLETE

Collector: Final (Web Link)
Started: Friday, December 09, 2022 2:30:01 PM
Last Modified: Friday, December 09, 2022 3:57:41 PM
Time Spent: 01:27:39
IP Address: [redacted]

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Q1

Name

[redacted]

Q2

What is the name of the organisation or community group you represent?

American Airlines

Q4 **Yes**

Did you attend one of Heathrow’s Stage 2A engagement workshops?

Q5 **I agree**

Thinking about the information that Heathrow has provided and/or presented to you, do you agree or disagree with the following statement about Heathrow’s development of flight path options?"I am satisfied that Heathrow has taken into account the Design Principles when developing the comprehensive list of flight path options”

Q6

Please provide any feedback on your answer in the box below.

I believe you are correctly considering all options given the desires of the differing organizations involved in this work. Safety is always first and with that the capabilities of aircraft and flight crews to conduct those operations. Noise is the most challenging condition to mitigate since, for now, all aircraft make some type of noise. Even distribution of that noise footprint seems the most equitable while allowing the aircraft to climb to 7000ft or above in the shortest amount of time minimizing noise and carbon footprint. Easy to design theoretically but hard to convince non-aviation interests of the global benefit as most folks just don't want anything in their "backyard", but it's okay if it's over someone else's backyard. I do applaud this detailed effort. I do hope we can find a final design that can do as much for communities as possible yet also provide the most efficient or at least cost neutral option for the operator to ensure continued appropriately priced air travel options that will promote current and future growth at Heathrow.

Q7

Do you have any feedback on Heathrow's potential concepts for delivering respite? (pages 49-51)

Dispersion on departure works well and is being used more in the US unless terrain or airspace restrictions otherwise limit. Use of differing runways can also help in this noise dispersion. More people may be overflown as described but with less repetition. Route alternation is an interesting concept, but it also adds to the total number of procedures that the FMS has to hold and flight crews would have to page through to find the one in use. Potential confusion or incorrect selection possible if last minute changes are made to departure clearance.

Q8

Do you have any feedback on Heathrow's potential approach to night flights? (page 52)

These are interesting principles and I have seen them used at other European destinations. Again, if this results in a multitude of procedures for a crew to keep up with and it can provide opportunities for confusion or errors. If the same numbers of aircraft leaving at night or arriving early are generally low then this may be, in a slower operational environment, acceptable. Simplicity is always the better option for Flight Crews especially if arriving given the long duty times international crews have already spent getting to Heathrow.

Q9

Do you have any feedback on Heathrow's proposed approach to noise efficient operations? (page 53)

CCO: is nice but only if it does not disbenefit arrival procedures. Departure Leveling (tunneling) in flight has become acceptable in the US as in most all cases the need to stop the aircraft is only required when there is an arrival they must pass underneath (level segments are usually very short). We do not see a one for one interaction (a departure met by an arrival at a cross out point) such that in the majority of cases the departure still gets an unrestricted climb. Trying to guarantee that a departure heavy aircraft has the performance to always go over an arrival usually results in the departing heavy being unable to regularly comply unless you procedurally were to push the arrival down much lower all the time, farther out (not desirable).
CDO: is always desirable but has to be balanced with how the final approaches are managed to the runway and how that can affect the runway capacity/throughput during operations.
NADPs: tend to benefit those very close to the airport but disbenefits those further out. It delays the takeoff phase which keeps the a/c at lower overall altitudes and higher thrust settings further from the airport which can produce an increased noise footprint overall and a greater carbon footprint as well. The current takeoff profiles we use in the US give us the best times (lowest) to 10,000ft which results in moving aircraft away from the airport laterally and vertically as quickly as possible.
STEEPER APPROACHES: These can be more challenging for meeting stabilized approach parameters that we use. Normal 3-degree approach paths generally give the flight crew more margin (descent rate 700-800ft/min) to work with without violating the rule of no greater than a 1000ft/min descent rate. Use of higher approach angles usually have to be compared to what aircraft automation can accept for autopilot coupled approaches or Autoland systems and how the operator addresses these types of approaches where the room for error is less than is what is experienced most other airports.
STEEPER CLIMBS: This has to work in concert with the lowest performing aircraft you will see. If the numbers are small, then ATC can mitigate this with other aircraft if higher climb rates are needed. If the numbers of these low performing aircraft grow this might not be as operationally easy. As I have mentioned before, the growth in new (Heavy) narrowbody aircraft will complicate this design goal. The A-321 XLR can see climb performance degraded on a hot day when flying back to US destinations. Its max takeoff weight will necessitate flaps up clean climb speed requirements in excess of 250kts in addition to slow climb outs and since US operators are looking to fly this aircraft to international destinations, this may prove for challenging departure scenarios. It is still unclear how the new B-737 MAX10 will perform as it will have its own challenges with a further lengthened fuselage, higher approach speeds and slower climb rates and how that will all work out with the goals of steeper approach and departure design paths
LANDING GEAR DEPLOYMENT: This one should be coordinated with the operators as it pertains to their standardized configuration procedures. Proper energy management is what is important here and it can be different for differing airframes.
LOW POWER DRAG: Term I am not familiar with and would require some additional thought.

Q10

Do you have any feedback on Heathrow's overall approach to developing flight path options?

Again, I like that the team is considering ALL options and having this discussion with the operators to find the overall best fit for things being considered. What we all would not want is a design that favors conditions that aircraft and flight crews find really difficult to do on a repetitive basis and would push the aircraft to the edge of its operating envelope and leave little to no room for error. Simplicity is always preferred over complexity for any airspace design project we work on in the US.

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Collector: Final (Web Link)
Started: Friday, December 09, 2022 10:16:07 AM
Last Modified: Friday, December 09, 2022 11:17:25 AM
Time Spent: 01:01:17
IP Address: [redacted]

Page 1

Q1

Name

[redacted]

Q2

What is the name of the organisation or community group you represent?

British Airways

Q4 **No**

Did you attend one of Heathrow's Stage 2A engagement workshops?

Q5 **I agree**

Thinking about the information that Heathrow has provided and/or presented to you, do you agree or disagree with the following statement about Heathrow's development of flight path options?"I am satisfied that Heathrow has taken into account the Design Principles when developing the comprehensive list of flight path options"

Q6

Please provide any feedback on your answer in the box below.

For Departures:
DP2 - Should only consider option 2 where noise is considered up to 4000ft with minimal track miles
DP10 - must be in coordination with Council planning departments. There is no point in developing routes which minimise the population exposed to noise and then a new housing development is approved post implementation.
Arrivals:
Agree that vectoring will still be required to maintain throughput. This will also provide dispersion and hence respite.

Q7

Do you have any feedback on Heathrow's potential concepts for delivering respite? (pages 49-51)

All proposed options for respite are fair and reasonable within DP6. However, we need to be mindful that multiple routes will take additional memory capacity with the Flight Management Computer. Memory capacity is already stretched and therefore the different options in departure/arrival routes must be carefully managed.

Q8

Do you have any feedback on Heathrow's potential approach to night flights? (page 52)

Certain night flights (pre-6am) are essential for the UK to remain competitive in the global market. The three concepts within DP8 are all workable from an operational point of view.

Q9

Do you have any feedback on Heathrow's proposed approach to noise efficient operations? (page 53)

Some of the operational procedures suggested within DP3, will be beneficial in both noise and CO2 reduction. However, some promote an increase in CO2 emissions and cannot reduce noise, but simply move it around. Specifically this is relating to NADPs and steeper climb gradients. Many modern aircraft types are much quieter than the aircraft they replace (A350/B787) but are designed to have shallower climb gradients. To force these aircraft to fly a steeper climb gradient goes against how the aircraft was designed to be flown.

Q10

Do you have any feedback on Heathrow's overall approach to developing flight path options?

Not specifically, although they must be flyable, both operationally and considering database capacity restrictions too.

COMPLETE

Collector: Final (Web Link)
Started: Friday, November 18, 2022 7:52:26 PM
Last Modified: Friday, November 18, 2022 8:50:17 PM
Time Spent: 00:57:51
IP Address: [redacted]

Page 1

Q1 **Respondent skipped this question**

Name

Q2

What is the name of the organisation or community group you represent?

Delta AirLInes

Q4 **Yes**

Did you attend one of Heathrow's Stage 2A engagement workshops?

Q5 **I agree**

Thinking about the information that Heathrow has provided and/or presented to you, do you agree or disagree with the following statement about Heathrow's development of flight path options?"I am satisfied that Heathrow has taken into account the Design Principles when developing the comprehensive list of flight path options"

Q6

Please provide any feedback on your answer in the box below.

Appreciate the opportunity to provide feedback to the design principles and look forward to Stage 3.

Q7

Do you have any feedback on Heathrow's potential concepts for delivering respite? (pages 49-51)

While I agree with the concept of respite, it does add complexity to the system. Also, there is a finite number of potential RNAV waypoints and Nav DB storage. Having multiple departures from the same runway erodes margins needed for a world-wide DB. Using as much of a common path as possible would be preferred.

Q8

Do you have any feedback on Heathrow's potential approach to night flights? (page 52)

Agree CCO and CDO are the preferred noise abatement principles. Some of the other propositions, require operational tradeoffs, especially for heavy departures.

Q9

Do you have any feedback on Heathrow's proposed approach to noise efficient operations? (page 53)

Our position is noise mitigation must not come at the expense of flight safety. Raising climb gradients required may be fine for most traffic, but perhaps we could consider a method for heavy widebody traffic to depart using faster speeds and lower climb gradients?

Q10

Do you have any feedback on Heathrow's overall approach to developing flight path options?

No, it seems comprehensive and thorough. We appreciate the ability to participate.

COMPLETE

Collector: Final (Web Link)
Started: Tuesday, December 06, 2022 11:30:18 AM
Last Modified: Tuesday, December 06, 2022 11:31:43 AM
Time Spent: 00:01:24
IP Address: [redacted]

Page 1

Q1

Name

[redacted]

Q2

What is the name of the organisation or community group you represent?

Lufthansa Group

Q4 **Yes**

Did you attend one of Heathrow's Stage 2A engagement workshops?

Q5 **I agree**

Thinking about the information that Heathrow has provided and/or presented to you, do you agree or disagree with the following statement about Heathrow's development of flight path options?"I am satisfied that Heathrow has taken into account the Design Principles when developing the comprehensive list of flight path options"

Q6

Please provide any feedback on your answer in the box below.

-

Q7

Do you have any feedback on Heathrow's potential concepts for delivering respite? (pages 49-51)

In case of respite via RWY and route alternation. Please provide information during which times which RWY/route may be expected. Final decision which RWY/route to be flown by a specific crew needs to be communicated as much in advance as possible. Latest 40 minutes prior scheduled off block or landing. In case the fuel required differs significant depending on the route chosen, we always need to carry the higher fuel required. This can lead to more fuel burn/ CO2 over the whole flight. Final fuel decision is made latest 2hours prior departure.

Q8

Do you have any feedback on Heathrow's potential approach to night flights? (page 52)

Same considerations apply as for route alternation in point 7.

Q9

Do you have any feedback on Heathrow's proposed approach to noise efficient operations? (page 53)

CDO and CCO are most requested from operator's point of view. Steeper approaches might make adherence to "160 to D4" more difficult as speed reduction takes more time.

Q10

Do you have any feedback on Heathrow's overall approach to developing flight path options?

Continuous climb and 3° descent patterns are highly requested.

COMPLETE

Collector: Final (Web Link)
Started: Wednesday, December 07, 2022 12:52:05 PM
Last Modified: Wednesday, December 07, 2022 1:16:32 PM
Time Spent: 00:24:26
IP Address: [redacted]

Page 1

Q1

Name

[redacted]

Q2

What is the name of the organisation or community group you represent?

United Airlines

Q4 **Yes**

Did you attend one of Heathrow's Stage 2A engagement workshops?

Q5 **I agree**

Thinking about the information that Heathrow has provided and/or presented to you, do you agree or disagree with the following statement about Heathrow's development of flight path options?"I am satisfied that Heathrow has taken into account the Design Principles when developing the comprehensive list of flight path options"

Q6 **Respondent skipped this question**

Please provide any feedback on your answer in the box below.

Q7 **Respondent skipped this question**

Do you have any feedback on Heathrow's potential concepts for delivering respite? (pages 49-51)

Q8 **Respondent skipped this question**

Do you have any feedback on Heathrow's potential approach to night flights? (page 52)

Q9

Respondent skipped this question

Do you have any feedback on Heathrow's proposed approach to noise efficient operations? (page 53)

Q10

Do you have any feedback on Heathrow's overall approach to developing flight path options?

I would like to have NATS represented in the individual discussions with the operators if possible. This would allow for a more complete discussion from ground level thru to cruise and back down again.

COMPLETE

Collector: Final (Web Link)
Started: Monday, December 05, 2022 8:30:28 PM
Last Modified: Monday, December 05, 2022 8:44:35 PM
Time Spent: 00:14:06
IP Address: [redacted]

Page 1

Q1

Name

[redacted]

Q2

What is the name of the organisation or community group you represent?

WestJet Airlines

Q4

Did you attend one of Heathrow's Stage 2A engagement workshops?

No

Q5

Thinking about the information that Heathrow has provided and/or presented to you, do you agree or disagree with the following statement about Heathrow's development of flight path options?"I am satisfied that Heathrow has taken into account the Design Principles when developing the comprehensive list of flight path options"

I agree

Q6

Please provide any feedback on your answer in the box below.

Respondent skipped this question

Q7

Do you have any feedback on Heathrow's potential concepts for delivering respite? (pages 49-51)

Respite is a good concept provided the impact on track miles is minimal, otherwise one environmental impact (noise) is being traded for another (fuel burn/emissions).

Q8

Do you have any feedback on Heathrow's potential approach to night flights? (page 52)

Similar 7, the approach to night flights spreads the noise impact to give communities a reprieve from overflight but potentially impacts fuel burn and emissions.

Q9

Do you have any feedback on Heathrow's proposed approach to noise efficient operations? (page 53)

With the densely populated area, the airport community has to work together as a cohesive unit in order for success.

Q10

Do you have any feedback on Heathrow's overall approach to developing flight path options?

The adoption of RNP-AR procedures in Canada has resulted in a very positive effect on arrival noise - flight can fly a predictable route and gradient path to the threshold resulting in extended time at idle thrust. Similar concepts can be applied to departures where the route can include radius to fix turns in order to maximize time over less populated areas. Predictable routing can also allow for continuous climb by removing the need for low altitude level segments due to arrival corridors and traffic to adjacent airports.

COMPLETE

Collector: Final (Web Link)
Started: Sunday, November 27, 2022 6:41:12 PM
Last Modified: Sunday, November 27, 2022 7:27:49 PM
Time Spent: 00:46:37
IP Address: [redacted]

Page 1

Q1

Name

[redacted]

Q2

What is the name of the organisation or community group you represent?

BALPA

Q4

Did you attend one of Heathrow's Stage 2A engagement workshops?

No

Q5

Thinking about the information that Heathrow has provided and/or presented to you, do you agree or disagree with the following statement about Heathrow's development of flight path options?"I am satisfied that Heathrow has taken into account the Design Principles when developing the comprehensive list of flight path options"

I disagree

Q6

Please provide any feedback on your answer in the box below.

It is mentioned that some areas of airspace are given to other airports when considering the flight path options. Was this not to be the case, how would they differ. Given the primacy of the number of flight by LHR, the principle of prioritisation will need to be considered. Will 09L be used equally for departures as 09R, by adding extra ground capability (e.g. Taxiways)

Q7

Do you have any feedback on Heathrow's potential concepts for delivering respite? (pages 49-51)

No

Q8

Do you have any feedback on Heathrow's potential approach to night flights? (page 52)

No

Q9

Do you have any feedback on Heathrow's proposed approach to noise efficient operations? (page 53)

The use of intersection takeoffs could be viewed as reducing the increased Climb gradient, so would be one to consider.

Q10

Do you have any feedback on Heathrow's overall approach to developing flight path options?

Respondent skipped this question

COMPLETE

Collector: Final (Web Link)
Started: Monday, November 28, 2022 10:26:17 AM
Last Modified: Monday, November 28, 2022 10:27:54 AM
Time Spent: 00:01:37
IP Address: [redacted]

Page 1

Q1

Name

[redacted]

Q2

What is the name of the organisation or community group you represent?

BHA

Q4

Did you attend one of Heathrow's Stage 2A engagement workshops?

Yes

Q5

Thinking about the information that Heathrow has provided and/or presented to you, do you agree or disagree with the following statement about Heathrow's development of flight path options?"I am satisfied that Heathrow has taken into account the Design Principles when developing the comprehensive list of flight path options"

I agree

Q6

Please provide any feedback on your answer in the box below.

Respondent skipped this question

Q7

Do you have any feedback on Heathrow's potential concepts for delivering respite? (pages 49-51)

No

Q8

Do you have any feedback on Heathrow’s potential approach to night flights? (page 52)

No appears logical

Q9

Do you have any feedback on Heathrow’s proposed approach to noise efficient operations? (page 53)

No

Q10

Do you have any feedback on Heathrow’s overall approach to developing flight path options?

No

COMPLETE

Collector: Final (Web Link)
Started: Thursday, November 17, 2022 11:29:54 AM
Last Modified: Thursday, November 17, 2022 12:07:35 PM
Time Spent: 00:37:41
IP Address: [redacted]

Page 1

Q1

Name

[redacted]

Q2

What is the name of the organisation or community group you represent?

MOD

Q4

Did you attend one of Heathrow's Stage 2A engagement workshops?

Yes

Q5

Thinking about the information that Heathrow has provided and/or presented to you, do you agree or disagree with the following statement about Heathrow's development of flight path options?"I am satisfied that Heathrow has taken into account the Design Principles when developing the comprehensive list of flight path options"

I strongly agree

Q6

Please provide any feedback on your answer in the box below.

Respondent skipped this question

Q7

Do you have any feedback on Heathrow's potential concepts for delivering respite? (pages 49-51)

No comments

Q8

Do you have any feedback on Heathrow’s potential approach to night flights? (page 52)

No comments

Q9

Do you have any feedback on Heathrow’s proposed approach to noise efficient operations? (page 53)

No comments

Q10

Do you have any feedback on Heathrow’s overall approach to developing flight path options?

Well explained and presented methodology

COMPLETE

Collector: Final (Web Link)
Started: Friday, December 02, 2022 12:50:51 PM
Last Modified: Friday, December 02, 2022 12:53:37 PM
Time Spent: 00:02:45
IP Address: [redacted]

Page 1

Q1

Name

[redacted]

Q2

What is the name of the organisation or community group you represent?

NATS (NERL)

Q4

Did you attend one of Heathrow's Stage 2A engagement workshops?

Yes

Q5

Thinking about the information that Heathrow has provided and/or presented to you, do you agree or disagree with the following statement about Heathrow's development of flight path options?"I am satisfied that Heathrow has taken into account the Design Principles when developing the comprehensive list of flight path options"

I strongly agree

Q6

Please provide any feedback on your answer in the box below.

The presentation and the accompanying slide packs are well compiled. There is clarity on which design meets which design principle. It includes blended options and the information used to create the designs is transparent and, we believe, suitable for a wide audience.

Q7

Do you have any feedback on Heathrow's potential concepts for delivering respite? (pages 49-51)

Note: Feedback form stipulates slides 50-52. NERL believes that this question relates to slides 49-51.
NERL recognises the aspiration to provide meaningful respite to communities.
In regard to any route and its respite alternate, they must join the network at the same point.
Further collaborative work will be required to address Safety and HF implications, in order to provide robust mitigation and satisfy NERL's Safety Assurance needs.
Respite routes may also offer a degree of resilience to disruption.

Q8

Do you have any feedback on Heathrow's potential approach to night flights? (page 52)

Note: Feedback form stipulates slide 53. NERL believes that this question relates to slide 52.
Consistent route connectivity to the network is generally less critical during night time operations. Aircraft could join the network at much higher levels.

Q9

Do you have any feedback on Heathrow's proposed approach to noise efficient operations? (page 53)

NERL considers that this is highly aspirational however this will inform the Cumulative Assessment Framework/Route Separation Workshop series.

Q10

Do you have any feedback on Heathrow's overall approach to developing flight path options?

Some additional feedback from NERL:
Slide 35 – This slide suggests to stakeholders that "aircraft on arrival routes could still be "vectored" by controllers" and that "It is likely that we will still need Air Traffic Controllers to "vector" some aircraft onto final approach". At the moment we do not know with any certainty how many aircraft will be vectored onto final approach or how many will be able to receive PBN short cuts. Given the potential legal connotations of such language NERL suggests that could and some might later be considered to have been disadvantageous.
Slide 44 – NERL asks whether there is an arrival swathe missing from the comprehensive list of options. A gap exists to the NE (which could facilitate a 'tighter' LAM arrival), which we would like you to give further consideration.
Slide 44 – Though the development of the design options is clear, NERL has some concern that there has been limited consideration of the operational practicalities of some of the routes, specifically the red routes due north and south for Rwy27. It is difficult to understand how/where these would connect to an arrival structure and if they do, why are there no equivalent routes for Rwy09.

From: [redacted]
Sent: 19 December 2022 08:58
To: DD - Airspace
Cc: [redacted]
Subject: NERL amendment to feedback

Caution: external email. Unless you recognise the sender and know the content is safe, do not click links or open attachments.

Good morning,

NERL would like to make a formal amendment to our feedback which we provided in response to the Heathrow Stage 2 presentation, specifically our response to question nine and the first paragraph of our response to question ten. We feel that this better reflects the NERL position.

9. Do you have any feedback on Heathrow's proposed approach to noise efficient operations? (page 54)
NERL supports the aspiration to mitigate the noise impact for local communities. This will inform the Cumulative Assessment Framework/Route Separation Workshop series to understand the impact of any detailed options proposed by sponsors.

10.
Slide 35 – This slide suggests to stakeholders that "aircraft on arrival routes ***could*** *still be "vectored" by controllers" and that "It is likely that we will still need Air Traffic Controllers to "vector"* ***some*** *aircraft onto final approach". At this stage we do not know with any certainty how many aircraft will be vectored onto final approach or how many will be able to receive PBN short cuts.*

Many thanks

[redacted]

NATS

[redacted]
Airspace Engagement Manager

Heathrow Stage 2A Engagement Feedback Form
Response from Richmond Heathrow Campaign (RHC)
9 December 2022

The following is a PDF version of the Feedback Form submitted by RHC to Heathrow on 9 December 2022 in digital format at https://www.research.net/r/HeathrowEngagementFeedback . This PDF version is being submitted to Heathrow at airspace@heathrow.com .

Question 5 of RHC's digital Feedback included the link below to a letter from RHC to Heathrow dated 18 July 2022 with Heathrow's response of 3 October interjected with each point in the letter. https://richmondheathrowcampaign.org/RHC-letter-to-HAL-18-July-2022.html

RHC request its letter of 18 July 2022 with Heathrow's response be placed on record with the Feedback on 9 December. The letter was too long to include in the digital Feedback Form and so a link was provided. The RHC letter with Heathrow's response is included verbatum in this PDF version of RHC's Feedback.

Text in italics is Heathrow's in the Feedback Form.

Feedback Form

1. Name
[redacted]

2. What is the name of the organisation or community group you represent?
Richmond Heathrow Campaign (RHC)

3. Postcode
[redacted]

4. Did you attend one of Heathrow's Stage 2A engagement workshops?
Yes

5. ***Thinking about the information that Heathrow has provided and/or presented to you, do you agree or disagree with the following statement about Heathrow's development of flight path options? "I am satisfied that Heathrow has taken into account the Design Principles when developing the comprehensive list of flight path options"***

Disagree

6. ***Please provide any feedback on your answer in the box below.***

The letters on Design Principles from the Community Noise Forum including Richmond Heathrow Campaign already on the CAA portal dated 8 December 2021, 4 January 2022 and 24 January 2022 set out our ongoing concerns with Heathrow's Design Principles.

In particular, we question the starting point for the design process:

1. Richmond Heathrow Campaign has consistently queried Heathrow's approach to Airspace Modernisation using the blank sheet design approach.

2. RHC believes starting with the legacy flight paths, which already link the eight or so fixed way-points between upper airspace and Heathrow Airport is a better approach than starting with a blank sheet.

3. There are noise hot spots and conflicts with the 15 airports sharing Heathrow's airspace but focussing on these limited number of issues should be the priority in order to avoid major changes to the allocation of flight paths and noise pollution over London and its surrounds.

4. The advance of technology, including PBN, is a reality but applying the emerging advances to the legacy flight paths and respite patterns is likely to be far more acceptable to Heathrow's communities than wholesale change from a blank sheet approach.

5. Heathrow is surrounded by dense population, so it is not a question of finding unpopulated areas to which flight paths might be switched. Parks and open spaces are surrounded by populations and are not appropriate for new flight paths.

Additionally, and to save response duplication, we endorse and support the responses submitted to this consultation by Teddington Action Group (TAG) on 2 December and by MRA & Elmbridge on 7 December.

Our letter to Heathrow dated 18 July 2022 with Heathrow's response of 3 October 2022 in square brackets can be found at the link below. We are concerned that the responses provide very little advance to our questions and requests and leave us with grave concerns as to the Airspace Modernisation process.
https://richmondheathrowcampaign.org/RHC-letter-to-HAL-18-July-2022.html

The RHC letter of 18 July 2022 with Heathrow's response of 3 October 2022 is as follows:

Letter to Heathrow Airport Limited
from Richmond Heathrow Campaign, 18 July 2022

To [redacted]

Dear [redacted]

Ref: Heathrow Airspace Modernisation (FASI South) (ACP-2021-056)
Sponsor: Heathrow; Stage 2, Design and Assess

INTRODUCTION

1. The purpose of the letter is to record issues that we consider need to be addressed and to seek clarifications and assurances from Heathrow on the preparation and implementation of Heathrow's Airspace Change Proposal - Stage 2 Plan and the Engagement Process. Stage 2 started in February 2022 and is planned to complete in Q3 2023. We are concerned that the

issues be addressed early in Stage 2. This letter focusses on the CAA's CAP 1616 Guidance on the airspace change process as applied to Heathrow's airspace modernisation.

2. We look forward to receiving Heathrow's draft Plan for Stage 2/Engagement Strategy as soon as possible. We have seen a summary timetable but we believe a comprehensive Plan is required, in which a grid sets out the gathering of evidence and the decisions, their inter-relationship and critical-path timing. We thank Heathrow for the arranging a technical workshop on 5 July, which started the process by focussing on the methods and metrics.

[HEATHROW: We will continue to share regular updates on our stakeholder engagement plans for this ACP. We found our workshop on Methods & Metrics to be valuable and we will continue to offer opportunities for technical engagement where appropriate. We will also include a body of evidence for decisions taken on the ACP at each CAA Gateway, and this will be available on the CAA's Airspace Change Portal.]

3. It would help to extend the grid to the 'Full Appraisal' in Stage 3a, ahead of the Public Consultation and to include a Needs analysis in the form of a 'Do-Nothing' scenario and an upfront Project Scoping Study to establish the potential costs and benefits from modernisation.

[HEATHROW: Our Stage 3 engagement plan and proposed timeline will be shared with you when available, but we need to confirm the process for Stage 3 public consultations with surrounding airports before we can provide a more detailed longer-term timeline. This is being coordinated by ACOG through their Masterplan. The costs and benefits of Airspace Modernisation across the UK are set out in the Government's Airspace Modernisation Strategy. Heathrow's Statement of Need sets out our rationale for the project. We are required to modernise our airspace so "do nothing" is not a viable option. However, in accordance with CAP1616, we will compare airspace design options with a 2019 baseline to show the impacts of the proposed changes at Heathrow]

4. Communities around Heathrow approach Airspace Modernisation with great concern. We already experience very significant adverse health impacts from noise and air pollution from the airport's operations (increasingly so with incremental concentration of flight paths and lower flying). We believe there is a very real possibility of conditions worsening significantly for many communities around Heathrow and the wider area as a result of this process and we seek to engage with Heathrow in avoiding environmental harm.

5. We would like to engage constructively in a process that is transparent, open (i.e. not pre-determined), is evidence based, with time allowed for our consideration and with our contribution being given due consideration by Heathrow. We trust that Heathrow will be open to our raising concerns and differences (both residual and new) during option development and evaluation and that we can work together constructively through Stage 2.

[HEATHROW: Heathrow is keen to engage constructively with interested stakeholder representatives throughout the airspace design process. We have developed a comprehensive programme of engagement, including the recent Methods & Metrics workshop which was set up to ensure constructive and collaborative engagement with our most technically-minded community stakeholders. We have also set up a dedicated email address (airspace@heathrow.com) for stakeholders to share feedback, suggestions and concerns with us.]

6. The CAA's CAP 1616 Guidance (CAP 1616) and the DfT's Air Navigation Guidance 17 (ANG 17), et al, encompass issues that are essential to the Plan and Engagement Process. Communities have collectively expressed concerns regarding both the Design Principles and the initial Engagement Process leading up to the Design Principles submission to the CAA in Stage 1. These concerns are significant because some of the Design Principles are capable of different interpretation and inherent conflicts, which could impact on how they will be applied during Stage 2 of option development. (The Communities' letter of 24 January 2022 sets out these concerns).

7. In places, several relevant policies and guidelines overlap, which raises issues of primacy. Also, roles and responsibilities for the evidence and decisions sometimes overlap. We would welcome assistance from Heathrow in mapping the overlaps so that we are better able to engage with the CAA, DfT, NATS and ACOG, as well as with Heathrow. This should also help identify gaps in policies and guidelines and ownership of the decisions.

[HEATHROW: Our 12 design principles for airspace modernisation were developed to address the varied objectives and priorities of our broad range of stakeholders. CAP1616 recognises that some of the principles may contradict with one another, and at Stage 2A we are developing a comprehensive list of options to meet each of the varied design principles. Later in Stage 2 we will undertake a Design Principle Evaluation and we will engage with key stakeholders at this point. We will be explicit about how the design principles have been interpreted and the metrics we have used to assess design options against them. The full results of the Design Principle Evaluation will be shared on the CAA's Airspace Change Portal and there will be an opportunity for interested stakeholders to give feedback. Design principles 1-5 have primacy over the other principles since these are requirements that our airspace design "must" meet, including all relevant policy. We will seek to develop options that meet all of the design principles as far as possible.]

8. Having regard to this, we would welcome responses from Heathrow on the Stage 2 Plan and Engagement Process.

STAGE 2 PLAN

<u>The Need for Modernisation</u>.

9. We appreciate that Heathrow has already provided some material to the CAA on the Need for airspace modernisation around Heathrow, including at Stage 1a of CAP 1616, as has the Airspace Change Organising Group (ACOG) in its UK Airspace Modernisation Masterplan.

10. However, at the current stage we would like a greater understanding of the existing problems that modernisation may help to solve and the opportunities for improvement. Heathrow's letter of 14 January 2022 to the CNG states 'There would be a separate process required if Heathrow were to introduce mixed mode or to increase capacity above 480,000 flights (ATMs) per year.' Can Heathrow therefore share information (based on the no expansion scenario) on the following specific and wider issues, for example:

(i) What are the projections of lost time and cost due to lack of punctuality and resilience?
(ii) To what extent do existing flight paths deviate from operationally efficient paths

from start to finish?
(iii) What specific conflicts and constraints are there with flights from other airports, General Aviation and new entrants such as drones and air taxis?
(iv) What are the issues with Air Traffic Control and how can technology help?
(v) What are the opportunities for noise, air pollution and CO2 emission reductions that could be delivered by airspace change at Heathrow?

Practically, it would assist to have these issues expressed in the context of a Base Year (say 2019) and a 'Do-Nothing' (Baseline) scenario.

[HEATHROW: Heathrow is introducing airspace modernisation in line with Government Policy and the primary objective of this ACP is to meet our commitments to the Airspace Modernisation Strategy (AMS). We recognise the benefits set out in the AMS and we are required to undertake this ACP as part of our commitment to the AMS. We have not therefore undertaken our own assessment of specific benefits to Heathrow at this stage. We will assess airspace design options against a 2019 baseline at the Initial Options Appraisal. Where possible we will share information on how the potential design options compare to today's operation from an operational perspective as well as from community and environmental perspectives.]

11. We assume that Heathrow will return to pre-covid numbers of flights which were near to the planning limit of 480,000 ATMs a year. The scheduling of these flights varies according to the summer and winter seasons and time of day. In responding to point (i) above on resilience, it would help to understand what airspace headroom capacity there is above the scheduled usage (a) for resilience and (b) for additional flights. Also, it would be helpful to see the projections for passenger numbers in the light of trends for larger aircraft and higher load factors.

[HEATHROW: Future traffic forecasts will be shared at public consultation at Stage 3 and will inform the assessment of impacts of the proposed airspace change. Forecasts will take account of anticipated technological change as well as trends in aircraft types and passenger load factors.]

12.Can Heathrow assist in seeking an update to NATS' (2017) estimated UK Need in its feasibility study supporting the Airspace Modernisation Strategy. We are concerned that based on an average 2.0% pa demand growth by UK aviation this is now significantly overstated compared to the Climate Change Committee's 6th Carbon Budget, which in turn leads to a significantly overstated 'Do-Nothing' scenario.

[HEATHROW: We are investigating this and will come back to you in due course.
Upfront Airspace Modernisation Project Scoping.]

13. We also believe a normal requirement of any option appraisal process, would be the establishment at the outset of targets and a framework for evaluating the potential costs and benefits, measured against the 'Do-Nothing' scenario (such a scoping study should reflect the update referred to in para 12 above). We realise final conclusions and decisions can only be arrived at the end of the design process when flight paths have been finalised, but this does not obviate the need for an upfront project scoping study. If this is to be left to the 'Initial Appraisal' at the end of Stage 2 or the 'Full Appraisal' in Stage 3, it will be far too late for meaningful community engagement.

[HEATHROW: Heathrow is introducing airspace modernisation in line with Government Policy

and the primary objective of this ACP is to meet our commitments to the Airspace Modernisation Strategy (AMS). We recognise the benefits set out in the AMS but, given we are required to undertake this ACP, we have not undertaken our own assessment of specific costs or benefits to Heathrow. All options will be compared against a 2019 baseline at the Initial Options Appraisal stage. The public consultation at Stage 3 is intended to allow for meaningful community engagement on the proposed flight path options and the relative costs and benefits of them.]

14. We believe that as part of an outline business case it is essential to understand the range of cost-benefit estimates that Heathrow expect as outcomes of modernisation, as this will be fundamental to the identification and assessment of options. The sharing of extant or newly prepared cost-benefit estimates will be invaluable to all stakeholders so that they can understand better how these expectations inform the modelling and other processes needed to develop modernisation proposals.

15. As part of the Scoping Study can Heathrow also assist in reconciling and co-ordinating ACOG's Airspace Modernisation Masterplan and Heathrow's Business Plan that include Heathrow expansion with the Heathrow's Airspace Change Proposal that excludes expansion? The process of integration with the ACOG Masterplan is not clear at the moment and we would welcome an early discussion on the subject. If Heathrow's proposal includes adding airspace capacity for resilience or potentially additional flights (notwithstanding the proposal is based on usage by 480,000 ATMs a year) it would help for these capacity changes to be identified.

[HEATHROW: This airspace modernisation ACP will propose a new airspace design for the current cap of 480,000 ATMs. Any plans to increase the ATM cap at Heathrow would require planning permission via a separate process. A lot has happened since we were last working on Expansion, however, we still have the policy framework of the ANPS in place. It's been a challenging couple of years for the business with the pandemic, so we are currently going through a process to make sure that we've got everything lined up before we move forward again. The pandemic has demonstrated that there is significant pent-up demand from passengers and new airlines to operate out of Heathrow. Meeting that demand at the UK's hub airport will be essential to a country that has global and levelling up ambitions. This must be achieved within strict environmental limits and the industry is committed to decarbonisation. We appreciate uncertainty about Heathrow expansion is difficult for the communities around the airport and we will keep local communities informed and engaged as and when any plans change.]

16. Also, we are not clear whether it is Heathrow's intention to follow the recommendation in the policies for the 6th Carbon Budget that 'there should be no net expansion of UK airport capacity unless the sector is assessed as being on track to sufficiently outperform a net emissions trajectory that is compatible with achieving Net Zero'. Can Heathrow explain their position on this, please.

<u>Early Collection of Robust Evidence</u>.

17. In a project of this scale and impact it is fundamental that the appraisal and project decisions are supported by a robust evidence base. We believe an early audit of the evidence needed to make rational design decisions is essential and that steps are then taken to address knowledge gaps in a timely manner so as to properly feed into the relevant decisions. In particular, the following will be essential to inform accurate flight path appraisals:

(i) A new social survey of day and night noise, to remedy the acknowledged deficiencies of the previous SoNA survey.
(ii) A decision on the application of WHO Guidance values on noise and/or the rationale behind the choice of other metrics or thresholds.
(iii) Impact evidence on PBN use (in the light of Heathrow's 2014 PBN trials, London City Airport and US experience) and related solutions for the inherent concentration of noise impact.
(iv) Evidence on the mitigation of concentrated noise by use of multiple flight paths and/or respite.
(v) Up-to-date air pollution evidence (NOX and particulates) of the impact of the proposed changes, as increasingly the harm on peoples' health and life expectancy is shown to be more serious than previously thought.
(vi) Current population density and projected growth across the Heathrow Study Area.
(vii) Location of noise sensitive hospitals, schools and parks.
(viii) Assumptions regarding potential aviation fleet change (and the economic, operational and environmental consequences) and its timing.
(ix) Evidence on the reduction of CO2 and timely pathway to Net Zero.

[HEATHROW: Where possible we will consider each of the matters raised here and will undertake sensitivity tests where appropriate. We recognise community groups have some concerns regarding SoNA and comparisons with WHO. However, these are issues for Government and whilst these remain Government Policy, Heathrow needs to take account of them in this ACP]

Uncertainty and Risk.

18. We would like to understand how uncertainty and risk and sensitivity analysis will be addressed and factored into the project appraisal and decisions, and what risk assessment, management and mitigation steps Heathrow might take. We note that in the US the AM 'NextGen' project has failed to deliver the projected benefits as well as causing very adverse environmental impacts on some communities and it will be important to understand how these outcomes will be avoided in the case of Heathrow.

[HEATHROW: As part of the CAA's airspace change process the CAA will conduct a post-implementation review (PIR), usually 12 months after implementation. The purpose of the review is to evaluate whether the anticipated impacts and benefits in the original proposal and published decision are as expected. Where there are differences, the review would identify the reasons for these and any steps required to be taken. The PIR is intended to give confidence to local communities that the airspace change will not deliver unanticipated impacts.]

Design Tools.

19. Heathrow will need to employ design tools in its project decisions and appraisal, such as the ANCON, AEDT and INM noise models and the government's TAG transport model (presumably updated to reflect the latest evidence). We would welcome early engagement with Heathrow on the use of these tools and models and the decision criteria, as well as the use of Environment and Economic Impact Assessments. We would like to understand what factors can be controlled by Heathrow and those that cannot, and which ones can be quantified and monetised and those where decisions will need to be based on qualitative assessment. We

suggest that the Eurocontrol Standard Inputs for Economic Analyses, Edition 9.0, December 2020 (and updates and the Aviation Intelligence portal) could be a useful data sources for modelling.

[HEATHROW: We recognise that some of our community stakeholders are highly engaged and technically-minded and we are keen to work collaboratively with you. Our recent Methods & Metrics workshop was set up to initiate constructive engagement on the approach we will take to Stage 2 of the ACP and further technical workshops will be held if appropriate. Our intention at Stage 2 is to use a model developed for AEDT. This model will be the subject of a validation exercise in line with CAA CAP2091 guidance which sets out the parameters and describes the various inputs and their origin. In addition to the validation exercise, we will undertake comparative work with the ANCON model. This work will be reported at the end of Stage 2 to establish relative uncertainty in the modelling at this stage. The outputs from the modelling will be fed into the Government's TAG models.]

Optimisation Decision Process.

20. Generating options. We would like to continue the process started with the 5 July workshop of understanding how flight paths will be modelled in terms of lateral, vertical and time descriptors (4D) and how they will be operated in future in terms of frequency of flights, aircraft types and passenger loads and passenger kms including periods of respite. We seek to understand the efficiency rating and the noise, air pollution and CO2 emissions and the environmental impact of each flight path option as well for the system as a whole.

[HEATHROW: Where available, this information will be shared at either Stage 2 or at Stage 3 public consultation, in accordance with the CAP1616 process. We will share more detailed technical information, and seek feedback on it, at a future Methods & Metrics session if appropriate.]

21. Short-listing options. We would like to understand the process of elimination of flight paths in short listing and the choice of a final set of flight paths and how the options will be assessed against the Design Principles and Policies. It will be important to show how ANG 17 has been applied in relation to noise, altitude-based priorities, CO2, and air pollution and to other factors while ensuring safety. It will be important to extend the population numbers affected to the health impacts and to assess the impact of PBN and concentration versus dispersion.

[HEATHROW: This information will be presented when we engage with you on the Initial Options Appraisal during Stage 2 engagement sessions.]

22. Fairness. We would anticipate the option design process to be one of re-allocating legacy flight paths to improve efficiency and environmental impact. Fairness will be an important consideration and we hope the impact of change (recognised by ICAO) can be addressed.

[HEATHROW: "Fairness" is subjective and previous engagement on airspace topics has clearly demonstrated that one person's idea of a "fair" airspace design can be very different to another person's view. We are not aware of an ICAO position on "impact of change" so please could you share any source with us.]

23. On-going proposals by communities and others. Over time a number of proposals have been

made to reduce noise and air pollution by the CNGs, Heathrow and others - for example:take-off procedures, reducing night flights and solutions for particular noise hot spots. We would like to see how these improvements and ICAO's Balanced Approach have been incorporated in the Airspace Change Proposal and the Stage 2 Plan.

[HEATHROW: ICAO's balanced approach is considered in the development of our Noise Action Plan, which is reviewed every 5 years. Our ACP will need to deliver outcomes that align with our Noise Action Plan.]

ENGAGEMENT

24 To help ensure the engagement process for Stage 2 is robust we would welcome assurances from Heathrow regarding the following:

(i) Timely Information. Heathrow should circulate reports an appropriate and reasonable period ahead of meetings to discuss the documents and well ahead of deadlines for community responses.
(ii) Hierarchy of decisions. As part of a grid for the Stage 2 Plan we wish to understand the hierarchy of decisions which influence route options and what criteria and evidence underpins them.
(iii) Stakeholder Input. We also wish to understand how stakeholder input will be used and what genuine influence it may have in the formation of the new airspace design. We seek to avoid pre-determined decisions.
(iv) Consultations. When Heathrow gathers evidence from consultations and focus groups we would like to be advised how these groups have been chosen, what briefing material has been provided and have access to the response data, where necessary in redacted or statistical form. Differences in interpretation may arise but it is important for Heathrow, ourselves and others to understand where we differ.
(v) Views of other Stakeholders. Clearly, there are other stakeholders and it is appreciated they may have different views to ourselves; it will be important to us to understand these and how they have influenced the design outcomes.
(vi) Monitoring the Plan. It will be important for communities to engage with Heathrow as the Stage 2 Plan progresses and for there to be the opportunity to identify gaps in the process and engagement and the remedial action needed to ensure the process and engagement are working to Plan.

[HEATHROW: Our plans for engagement have been developed to ensure we share information with, and collect feedback from, stakeholders at key points throughout the airspace change process. Our engagement plans go beyond the requirements of the CAP1616 process to include opportunities for more collaborative technical discussions with our most highly engaged community representatives, such as at the recent Methods & Metrics workshop.]

NEXT STEPS

25. This letter stems from potentially being impacted and wishing to understand and participate as fully as we can in the process by which flight path options will be designed and assessed. We see this letter as a starting point for positive engagement with Heathrow and would welcome your consideration of the issues raised on preparation and implementation of a Plan for Stage 2 and the Engagement Process. It would be appreciated if the letter could be circulated to the

appropriate colleagues at Heathrow.

Yours Sincerely,

[redacted]

Chair, Richmond Heathrow Campaign: www.richmondheathrowcampaign.org

Richmond Heathrow Campaign represents three amenity groups in the London Borough of Richmond upon Thames: The Richmond Society, The Friends of Richmond Green, and the Kew Society, which together have over 2000 members.

End of RHC letter of 18 July 2022

7. Do you have any feedback on Heathrow's potential concepts for delivering respite? (pages 49-51)

Our research shows there is not enough airspace to create additional meaningful net respite for flights taking off from, and landing at Heathrow. Heathrow respite benefit - including late joining points and mixed mode - will always come at a cost to someone else.

In particular it is essential that respite across easterly and westerly operations is retained. Arrival paths and take-off paths should not overlap the same areas.

Additionally, and to save response duplication, we endorse and support the responses submitted to this consultation by Teddington Action Group (TAG) on 2 December and by MRA & Elmbridge on 7 December.

8. ***Do you have any feedback on Heathrow's potential approach to night flights? (page 52)***

We reiterate our opposition to all take-offs and landings at Heathrow during the full night period between 11pm and 7am. This position correlates with WHO guidelines. Our research shows that all flights before 7am could be moved into day with no net commercial cost.

Additionally, and to save response duplication, we endorse and support the responses submitted to this consultation by Teddington Action Group (TAG) on 2 December and by MRA & Elmbridge on 7 December.

9. ***Do you have any feedback on Heathrow's proposed approach to noise efficient operations? (page 53)***

The potential carbon benefits of balancing noise emissions with carbon emissions between 4,000 and 7,000 feet are orders of magnitude lower than those of the carbon benefits that could and should be obtained in other areas of aviation. We believe that noise minimisation should be the main criterion for aircraft passing through this altitude in the Heathrow area. This is covered in more detail in our response to question 10.

Additionally, and to save response duplication, we endorse and support the responses submitted to this consultation by Teddington Action Group (TAG) on 2 December and by MRA & Elmbridge on 7 December.

10. ***Do you have any feedback on Heathrow's overall approach to developing flight path options?***

As stated in our response to Question 9, the potential carbon benefits of balancing noise emissions with carbon emissions between 4,000 and 7,000 feet are orders of magnitude lower than those of the carbon benefits that could and should be obtained in other areas of aviation. We therefore believe that noise minimisation should be the main criterion for aircraft passing through this altitude in the Heathrow area.

1. In 2018 there were 292 million passengers (mppa) on arriving and departing flights within and to/from the UK. This activity produced 40 million tonnes of CO2 (Mt/yr) accounted on the basis of international departures and domestic arrivals and departures. Unconstrained demand is forecast by the aviation industry to grow at around 1.6% pa (2018-2050), resulting in cumulative growth of 64% to 478 mppa and 64 Mt/yr CO2 in 2050 (before mitigation). These figures vary slightly depending on source (e.g. JetZero).

2. The UK Climate Change Committee's 6th Carbon Budget assumes a ceiling of 25% UK passenger growth over the 30 years for aviation to achieve Net Zero by 2050. With 25% maximum growth in mind the CCC says there should be no net expansion of UK airport capacity unless the sector is assessed as being on track to sufficiently outperform a net emissions trajectory that is compatible with achieving Net Zero.

3. The CCC budget restricts UK passenger growth to a far lower level than aimed for by the aviation industry. The CCC says that when tested by the CCC, public opinion found the CCC growth rate acceptable. The industry by comparison relies on mitigation from optimistic assumptions for bio fuels, efficiencies and zero carbon propulsion.

4. The industry is far too optimistic and Richmond Heathrow Campaign believes the costs of CO2 will have to be internalised, which will mean significant increases in the cost of flying with its impact on demand. We accept this is a global issue and that global aviation emitted around 1 Gt of CO2 in 2018 and is predicted to rise to 2.7 Gt in 2050 before mitigation. The matter is extremely serious given that the global remaining cumulative carbon budget is 400 Gt of CO2 to achieve maximum 1.5^{o}C and based on around 42 Gt of CO2 emitted globally in 2018 and straight line reduction to zero in 2050, 600 Gt would be emitted.

5. We summarise the above statistics to emphasise that in our view the aviation carbon issue can only be resolved by the aviation industry reversing its outright rejection of internalising carbon costs. The carbon saving from Airspace Modernisation by comparison is small. We have sought estimates from Heathrow without success. But in 2018 Heathrow's carbon emissions were 22 Mt/yr and we believe the carbon emitted on the ground and up to 7,000 ft was around 2 Mt. It is hard to imagine that slightly different track mileage, acceleration and climb rate would save more than 0.2 Mt/yr.

6. Under the circumstances outlined here RHC urges the UK industry to give exclusive priority to noise and air quality when designing flight paths up to 7,000 (notwithstanding Policy) and to get to grips with the elephant in the room, which is passenger growth when seeking to achieve Net Zero.

7. Three airports produce around 80% of UK aviation carbon, Heathrow (57%), Gatwick (13%) and Manchester (10%). RHC believes there should be an Airport Carbon Quota Scheme

with Action Plans to manage efficiency, hybrids and sustainable aviation fuels. Fuel and hence carbon is at its most intense use on take off but still RHC believes potential carbon savings based on acceleration, climb rates and track miles are relatively small in relation to noise and air pollution harmful impacts.

Additionally, and to save response duplication, we endorse and support the responses submitted to this consultation by Teddington Action Group (TAG) on 2 December and by MRA & Elmbridge on 7 December.

END

Ealing Council

Ealing Council
Perceval House
14-16 Uxbridge Road
London W5 2HL
[redacted]

Date: 9th December, 2022

Re. Heathrow Stage 2A Airspace Modernisation Consultation Feedback

Q5. Thinking about the information that Heathrow has provided and/or presented to you, do you agree or disagree with the following statement about Heathrow's development of flight path options?

"I am satisfied that Heathrow has taken into account the Design Principles when developing the comprehensive list of flight path options"

- I disagree

Q6. Please provide any feedback on your answer in the box below.

As introduction of airspace change and PBN will more likely lead to concentrated flight paths and therefore, lead to increase in 'average noise' level (LAeq,t) and events' maximum noise level (LAmax), this poses increased risk of annoyance, sleep disturbance, elevated ambient background noise leading to potential systemic failure of compliance with the national regulatory standard, Guidance on sound insulation and noise reduction for buildings, BS8233:2014[1] for noise both inside dwelling rooms and external amenity areas within the new or proposed developments. Further, prolonged exposure to aircraft noise is likely to lead to significant observable adverse effect level (SOAEL), thereby leading to increased health burden on LA. Such a proposal would be unacceptable, without comprehensive understanding of outcomes associated with notional flight paths. Whilst the Air Navigation Guidance 2017[2] states, at section 3.9, that *CAA should ensure that focus remains on minimising these impact*, we interpret this to mean there will be no requirement or offer of mitigation (noise insulation, NI) between 4000 feet and 7000 feet, HAL makes little attempt to introduce use of alternative noise metrics such as LAfmax and continues to rely on 'average noise' principle by using sound exposure level (SEL), which is a function of average noise

[1] cd4-51-bs-8233-2014-guidance-on-sound-insulation.pdf
[2] Air navigation guidance 2017 (publishing.service.gov.uk)

(LAeq,t) and exposure time. Again, any proposal that solely relies on noise metric/s based on 'average noise' is unacceptable. Given HAL says "*At this stage we are required to engage with our stakeholders to ensure we have understood and accounted for stakeholder concerns specifically related to the design options"*, we simply ask how will HAL account and offset our concerns above, both in the context of land use planning as outlined in the International Civil Aviation Organisation (ICAO) Doc 9829, 'Guidance on the Balanced Approach to Aircraft Noise Management'[3] and without risking further our ability to deliver "genuinely affordable homes" as set in Ealing's Council Plan[4]?
Although HAL has modelled a mammoth, 650 notional flight paths, there are little details about input parameters, assumptions, constraints and outcomes. Therefore, we seek clarity and further information, with greater granularity, and ask how would HAL take account of and address the following points?

1. What parameters, data sets and assumptions were used as inputs to generate notional flight paths within a given route?
2. What algorithms have been used to generate the notional flight paths? Missing data sets behind notional flight paths seems like a 'black box' solution to airspace modernisation, without exercising due diligence required to independently verify against relevant national/EU/international standards referred above.
3. It's not clear how/what notional flight paths would be combined to develop multiple routes, possibly optimised for competing priorities in managing noise, respite and climate change (CO2/GHG reductions) commitment?

Whilst Design Principles 4,5,9, 10 refer to reducing the contribution to climate change, enabling Heathrow to make the most operationally efficient and resilient use of its existing two runways, keeping the number of people who experience an increase in noise from the future airspace design to a minimum and keep the total number of people who experience noise from the future airspace design to a minimum, can Heathrow clarify and quantify as to what are the limits attached to the minima values referred above, in particular the number of people who would experience increase in noise, in Ealing? This important to us from points of views of runway alternation on easterly departures, including late runners, and spatial planning and potential health impact outcomes.

7. *Do you have any feedback on Heathrow's potential concepts for delivering respite? (pages 50-52)*
LA supports concept of respite in principle but given the nature of airspace change process (ACP) and performance-based navigation (PBN) proposed to achieve greater resilience through concentrated/dispersed flight paths and intensification through runway and operational alternation, our greatest concern is that 'respite' even fails to feature in the top five 'must have' design principles (DP). In our view, respite is even more critical when introduction of PBN and airspace modernisation will inevitably lead to an increased 'high rate change (HRC)' airport. According to International Journal of Environmental Research and Public

[3] Aircraft Noise (icao.int)
[4] LBE_Council Plan_v10.pdf

Health, 'A Systematic Review of WHO's New Recommendation for Limiting Aircraft Noise Annoyance', Dec. 2018[5], indicating the proposed airspace modernisation will likely lead to a threshold of community tolerance level (CTL) that is 9dB lower (Gelderblom et al[6]) for Heathrow being even more HRC airport, due to increased sensitivity. How will HAL account for this unwanted change and what remedial action/s it will implement to address this situation? Given that airspace modernisation through PBN will result in even greater rate of air transport movements (ATMs), we ask what capacity does HAL have on both runways to accommodate these additional movements and what will be associated impact on noise levels (day/night)?

Whilst the departing aircraft needs to be kept below 6000' in order to accommodate the new arrivals mechanism without the option of relying on four 'stacks', we ask to what extent this would lead to degradation in 'predictable and meaningful respite' (requires a 9dB reduction) for those newly over flown or those communities that may experience noise increase of 3dB or more above the background?

As there is no demonstrable case where PBN may have been successful at a high rate change (HRC) airport, can HAL undertake further research into limited PBN trial, by planning to off-set adverse effects of concentrated flights paths resulting from PBN through (a) noise reduction at source (ICAO) and (b) providing noise insulation (NI) as a managed programme within an enhanced noise action plan (NAP) package? This could help reduce existing adverse effects, including those with night flights, potentially compounded by proposed implementation of the airspace modernisation/PBN.

Dispersion of PBN flight paths for all given routes should be adjusted such that noise break is significant to achieve predictable and meaningful respite, with the aim to (a) share burden of noise (and associated adverse health impacts) such that where there is a reduction in overall noise, the benefit be applied to those already most affected and where there is an increase in overall noise the dis-benefit be applied to those already least affected.

8. *Do you have any feedback on Heathrow's potential approach to night flights? (page 53)*

LA supports the proposed Design Principle 8 (DP8), to significantly reduce impacts (noise, health and quality of life) of night flights. However, DP8 should be prioritised as one of the top five 'must have' categories, making it as equally important as DP4, '*Reduce the contribution to climate change from CO2 emissions and other greenhouse gas emissions arising from Heathrow's aircraft activities'*. This would be by far more a 'balanced and considerate' approach to Heathrow operations. This could be achieved by sharing benefit of implementing PBN and efficiencies resulting from modernising airspace, thereby enabling HAL to move some of the most disturbing night flights into daytime aircraft movements (ATMs) and allocate remaining time frame (operational efficiencies) to build greater resilience towards removal of flight stacks, a commitment towards climate change that is a long-term corporate goal for HAL.

9. *Do you have any feedback on Heathrow's proposed approach to noise efficient operations? (page 54)*

[5] A Systematic Review of the Basis for WHO's New Recommendation for Limiting Aircraft Noise Annoyance - PMC (nih.gov)
[6] On the Stability of Community Tolerance for Aircraft Noise: Ingenta Connect

LA supports the proposed approach to noise efficient operations outlined (page 54), however, we ask as to the reason(s) why the noise efficient operational procedures have not been adopted to date? Noise Abatement Departure Procedure 2 (NADP2), Steeper Departures and Steeper Approaches are some of noise efficient procedures that are not employed consistently as it's lately evident that either there is poor regulatory control by the enforcement authorities, or the airlines have a relatively free hand to adopt and adhere to their chosen procedure, apparently without any regard to noise. Therefore, we ask what actions will HAL take to implement noise efficient operations and what actions will the regulators (CAA/NATS?) take to ensure that operations abatement procedures are enforced effectively?

10. Do you have any feedback on Heathrow's overall approach to developing flight path options?

Although HAL has considered two options for DP2, where ANG 2017 says noise is a priority up to 4,000ft, there also appears overlap in the ANG 2017 regulation that relates to the 4,000 to 7,000 ft range, where noise should be prioritised "***unless the CAA is satisfied that the evidence presented by the sponsor demonstrates that this would disproportionately increase CO2 emissions***". The inference being that the plan is to prioritise modelled CO2 reductions over the noise impact, given that no definition has been provided of what would constitute "*sponsor demonstrates that this would disproportionately increase CO2 emissions"*. Again, there is a lack of clarity on what is the trade-off between noise and CO2. Overall, communities cannot possibly judge the noise vs CO2 trade-off without modelling data, inputs, outputs and algorithms used. Therefore, can HAL share this information?

LA support the development of notional flight path options but it would be helpful if HAL shared associated data with greater granularity, so LA and its stakeholders could better relate to outcomes. In a similar context, approach to developing flight path options need to be more outcomes focused, comparing and highlighting differences in current status and that in future, on LA/Ward basis?

[redacted]

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