

## **APPENDIX 5: EVOLUTION OF OUR DESIGN PRINCIPLES**

We engaged with over 200 stakeholders on the development of our Design Principles for IPA, and received over 20 written responses. A summary of the issues raised, and how we have taken these into account is presented, by stakeholder group, below.

### ***Engagement on our initial set of Design Principles***

#### ***Heathrow Community Noise Forum***

To ensure as full a discussion on the initial design principles as possible, we presented an overview of Independent Parallel Approaches to the HCNF at a Working Group meeting on 19 September 2018. We explained to the group that we would be following the CAA's CAP1616 airspace change proposal (ACP) process for the development of the design principles, and informed them of our intention to come to the next working group on 9 October to hear their views on our proposed initial design principles, to ask whether they had any further to add, and what priority we should give them.

At the Working Group on the 9 October, a more thorough presentation was given on the existing arrivals procedures and how these would be impacted by the introduction of IPA. HCNF members stated that they did not feel that there was a capacity or resilience issue currently at Heathrow, and hence did not see the need for IPA.

In terms of feedback on the design principles, a number of members were clear that the principle of "minimising the number of people newly affected by noise" should be deleted and they were fundamentally opposed to the concept of minimising the number of people newly overflown. This was because, by design, IPA will involve the creation of new arrival routes, and thus newly overflown people, resulting in the concentration of routes over a narrow area and providing little respite to those living underneath the new flight paths. This would mean that these newly overflow areas would see a concentration of routes and could be "adversely affected". Members stressed that the routes should be shared so as to limit or reduce the frequency of flights, and therefore mitigate or reduce any adverse or significance impacts from aircraft noise.

The HCNF were then given four weeks to provide written feedback.

In their written responses, the majority of HCNF members again expressed opposition to the principles of 'minimise the number of people newly affected by aircraft noise', and 'minimise the total number of people affected by aircraft noise'. Coupled with this, the principle of sharing noise was considered very important. It was noted that the proposed principle to provide predictable respite as it was initially presented did not adequately capture this, especially if the respite offered was incomplete or insufficient.

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A number of respondents also indicated their support for the principle of avoiding multiple flight paths over the same community.

A strong theme was the desire to ensure that the Design Principles consider the impact on health and quality of life. Related to this, a number of HCNF members placed high value on the NPS noise aims, and provided suggestions as to how these could be enhanced, in particular, by updating them to reflect the latest WHO guidance on community noise, issued in October 2018.

Finally, HCNF members raised concerns over the proposal to increase the ATM cap to release additional capacity and asked for further information on this and the opportunity to comment further.

### ***Heathrow Community Engagement Board***

Heathrow attended an HCEB Working Group meeting on 2 October. The group were given an overview of the IPA concept and our rationale for introducing it. The initial set of design principles was presented, and the group were asked to provide their initial feedback on the list, the relevant priority ordering, and whether there were any principles we had forgotten. The HCEB were given until the 9 November to provide their written feedback.

The HCEB's response raised a number of questions around the potential additional capacity enabled by IPA and how any additional movements would be scheduled. HCEB also asked how residents would be engaged in the consultation process, how IPA could be used to increase resilience of the airport, and for further information on the impact on late running flights.

The HCEB's comments on the design principles centred around the need for them to consider the wider impact on the natural environment around Heathrow, including the need to consider the importance of quality of life and respite in countryside areas, and the economic value of the countryside potentially affected by airspace change.

### ***Local Authorities***

Local Authorities were briefed on the IPA concept on 4 October. In addition, the slides were emailed to all members, and posted on the Heathrow Noise website ([here](#)), following the session so that those who did not attend were able to comment. At the meeting on the 4 October, the initial set of design principles was presented, and representatives were asked to provide their feedback on the list, the relevant priority ordering, and whether there were any other principles they wished to propose. Local Authorities were given until the 9 November to provide their written feedback.

Feedback from our Local Authorities was influenced by the extent to which these areas were currently overflown by Heathrow, and other airports' operations, with the recognition that the current noise impact is not equal across the different communities.

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The key theme of responses of this group was to minimise the number of people impacted by noise, but with a difference of view as to whether this should be through minimising people newly affected by noise, versus minimising the total number of people affected by noise. Where aircraft noise was already a factor in their areas, Local Authorities prioritised predictable respite, with a request to provide a better definition of respite and how this would be applied.

Finally a number of Local Authorities commented on the fact that they are currently overflowed by multiple routes from both Heathrow's arrivals and departures, and also those from other airports and commented on the desire to reduce this, or at least consider the interaction of the IPA routes with other flights.

### ***NATMAC and FASIIG***

NATMAC and FASIIG members were emailed a briefing pack on IPA on 5 October 2018, setting out an overview of the IPA concept and the reasons Heathrow were pursuing it. As with the other stakeholder groups, NATMAC and FASIIG were asked to provide their written comments by 9 November.

Airlines noted that Heathrow should be cognisant of the fact that, in order to use the new IPA routes, airlines may need to upgrade systems on their fleet to meet the required navigation technology and also train their flight crew on any new procedures, and that the timing for this be clearly signposted. Additional clarification was also sought on the proposal to potentially increase capacity at Heathrow, and the potential impact on resilience of the airport.

NATS supported the design principle to maximise operational efficiency, but did not provide a view on the environmental design principles, stating that these were for communities to answer.

Both the Ministry of Defence and the British Helicopter Association (BHA) requested that the design principles should strive to minimise the impact on other airspace users.

### ***Public Focus Groups***

Please refer to Annex 1 for the full report of the findings of the public focus groups.

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#### *How the engagement feedback informed the Design Principles*

Our community and industry stakeholders provided feedback on the design principles, both at the workshops held and in their written feedback. We have revised our draft design principles based on this feedback from the community focus groups and from feedback provided as part of the stakeholder engagement on our initial set of design principles. This enabled us to develop a final set of airspace design principles for IPA.

Design Principle	Summary of Discussion	Outcome	Final Design Principle
Must be safe	<p>BA strongly agrees that safety is a fundamental requirement of the industry and should never be compromised by other airspace design principles.</p> <p>The Heathrow airline community is broadly supportive of the 4 key principles for airspace design as outlined in the HAL presentation to the Airline Working Group on 22 June 18. These are safety, capacity, NPS noise tests, and air quality (LACC).</p>	Retain	Must be safe
Must meet Heathrow's capacity requirements	<p>BA strongly agrees that meeting Heathrow's capacity requirements should be a core requirement</p> <p>The Heathrow airline community is broadly supportive of the 4 key principles for airspace design as outlined in the HAL presentation to the Airline Working Group on 22 June 18. These are safety, capacity, NPS noise tests, and air quality (LACC).</p> <p>We also feel that the term 'capacity' could be misconstrued. Any early expansion at Heathrow would not reflect the positioning of the IPA flight path options however, their positioning does have to be such so that we can achieve an optimal landing rate during early morning team. (Heathrow)</p>	Reword to remove the word capacity and reflect the need for IPA to meet hourly movements but present below other mandatory design principles	Must meet Heathrow's hourly landing rate requirements
Must meet the three stated aims of the NPSe	<p>BA agrees in principles that meeting noise policy tests needs to be a core requirement</p> <p>The Heathrow airline community is broadly supportive of the 4 key principles for airspace design as outlined in the HAL presentation to the Airline Working Group on 22 June 18. These are safety, capacity, NPS noise tests, and air quality (LACC).</p> <p>The Council's view is that any change in exposure relative to the baseline (2012, before operational trials) is assessed and then mitigated in accordance with the requirements outlined in the Noise Policy Statement for England (Hounslow).</p> <p>We continue to support the NPS noise objective alongside the additional local noise objective, as described in the presentation (Richmond Heathrow Campaign).</p>	Retain	<p>Must meet the three aims of the NPSe:</p> <ul style="list-style-type: none"> <li>• avoid significant adverse impacts on health and quality of life</li> <li>• mitigate and minimise adverse</li> </ul>

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	With regard to the impact of the four design-related principles themselves; it is considered that these need to be closer aligned to the aims set out within DEFRA's Noise Policy Statement for England 2010 (NPSE) (Windsor & Maidenhead).		<p>impacts on health and quality of life</p> <ul style="list-style-type: none"> <li>• where possible, contribute to the improvement of health and quality of life</li> </ul>
Must meet local air quality requirements	<p>BA agrees in principle that meeting air quality requirements needs to be a core requirement</p> <p>The Heathrow airline community is broadly supportive of the 4 key principles for airspace design as outlined in the HAL presentation to the Airline Working Group on 22 June 18. These are safety, capacity, NPS noise tests, and air quality (LACC).</p> <p>Spelthorne Borough Council considers the impacts of noise and the impacts of aviation activities on air quality to be equally of the highest importance and priority, particularly when considering both have serious impacts on health and wellbeing.</p>	Retain	Must meet local air quality requirements
Must base our technology on the latest navigation technology widely available	<p>IPA requires the use of a high level of technical equipage RNP (AR).</p> <p>Airlines understand the rationale for this requirement. Community stakeholders expressed concerns over the implications of PBN concentrating flight paths over narrower areas</p>	Add	Must base our technology on the latest navigation technology widely available
Should minimise the impact of aircraft noise	<p>We agree that aircraft noise should be minimised and should be the overriding principle (AN3V).</p> <p>BA agrees that noise is the next highest priority after the core requirements. Our view is that minimising noise is the most important (HACAN). More important (Hounslow).</p> <p>Considering the options and 'trade-offs' presented it seems right that 'Minimising Noise' should be the top priority (LAANC).</p> <p>The airline community can support (1 - LACC).</p> <p>The highest priority for Slough is minimising the noise impact (Slough).</p> <p>Minimising the impact of aircraft noise emerged as the most important consideration (Public Focus Group).</p> <p>Spelthorne Borough Council considers the impacts of noise and the impacts of aviation activities on air quality to be equally of the highest importance and priority, particularly when considering both have serious impacts on health and wellbeing.</p>	Retain	Should limit, and where possible reduce, local noise effects from flights

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<p>Minimise the number of people newly affected by noise</p>	<p>BA also agrees with the priority of identified sub principles (BA).          We strongly disagree with the proposed principle of minimising the number of people newly affected by noise (AN3V).          Less important (Hounslow).          The airline community can broadly support the four noise design principles identified by HAL (LACC).          The most important priority for Slough is minimising the number of people newly affected by noise (Slough).          From the information presented it does not appear that design principle “minimising the number of people newly affected by noise” is an appropriate design principle given the nature of the way in which IPA will need to operate by avoiding the existing arrival swathes into Heathrow (Surrey CC).          Noise around Heathrow must be shared on a fair and equitable basis making best use of all available airspace around the airport to minimise noise levels over individual communities, so that all areas can be made as ‘liveable’ for as many people as possible (TAG).          With regard to the four noise-related principles that sit at the heart of this consultation, the Royal Borough would agree with their broad principles (1 Windsor &amp; Maidenhead).          For residents of Spelthorne who live close to the airport (i.e. residents in Stanwell Moor and Stanwell Village) none of the options (minimise new, provide predictable respite, minimise total overflown, avoid multiple flight paths) are particularly relevant.          This is the principle that participants related to most strongly (Public Focus Groups).</p>	<p>Retain, but reflect not the most important noise principle</p>	<p>6.d.Minimise the number of people newly overflown</p>
<p>Providing predictable respite from noise</p>	<p>It is impossible to comment on the principle of designing multiple flightpaths to provide predictable respite from noise (AN3V).          We would support (HACAN).          Most important (Hounslow).          The airline community can broadly support the four noise design principles identified by HAL (LACC).          Providing predictable respite is a high (2<sup>nd</sup>) priority for SBC and can only be achieved with structured flight routines (Slough).          Reduce[ing] the level of impact over individual communities by sharing noise as far as possible (TAG).          With regard to the four noise-related principles that sit at the heart of this consultation, the Royal Borough would agree with their broad principles (2 Windsor &amp; Maidenhead).          For residents of Spelthorne who live close to the airport (i.e. residents in Stanwell Moor and Stanwell Village) none of the options (minimise new, provide predictable respite, minimise total overflown, avoid multiple flight paths) are particularly relevant.          This principle was the second most prioritised. It seemed the fairest approach. It was the principle that helped to soften the blow for those who became newly affected. (Public Focus Groups).</p>	<p>Reword</p>	<p>6.b. Maximise sharing through predictable respite</p>

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<p>Minimise the total number of people affected by noise</p>	<p>We strongly disagree with minimising the total number of people affected by noise (AN3V). Our members are very clear: they would not support minimising the total number of people affected by noise (HACAN). Most important (Hounslow).  The downside to this is that 'minimising the total' is achieved by concentrating worse noise over the few unlucky people. Nobody would want to be there. Hence the low ranking is aimed at sharing the noise more fairly, which would sadly mean noise for more people (LAANC).  The airline community can broadly support the four noise design principles identified by HAL (LACC).  Minimising the total number of people affected by noise is an obvious priority, however it seems the most unlikely to be achieved because implementation of IPA will lead to a greater number of aircraft arrivals and therefore contributing to noise levels (Slough).  Surrey County Council generally supports the design of airspace to reduce the overall number of people experiencing significant adverse effects in terms of noise (Surrey CC).  Reduce[ing] the level of impact over individual communities by sharing noise as far as possible (TAG).  With regard to the four noise-related principles that sit at the heart of this consultation, the Royal Borough would agree with their broad principles (3 Windsor &amp; Maidenhead).  For residents of Spelthorne who live close to the airport (i.e. residents in Stanwell Moor and Stanwell Village) none of the options (minimise new, provide predictable respite, minimise total overflown, avoid multiple flight paths) are particularly relevant.  This was the least supported principle (Public Focus Groups).</p>	<p>Retain</p>	<p>6.e.Minimise total population overflown</p>
<p>Avoid multiple flight paths over the same community</p>	<p>We agree with the principle of avoiding multiple flightpaths over the same community (AN3V).  Clearly it would be totally unjust and a great increase in the burden of aircraft noise suffered in the Borough if arrivals were ever routed over Ealing on westerly operation, whether due to IPA or any other cause, and this is a move which should not be contemplated (EANAG).  We would support (HACAN).  Less important (Hounslow).  The meaning of this is not clear, and even less clear when viewing the graphic. It sounds good but what does it mean? (LAANC).  The airline community can broadly support the four noise design principles identified by HAL (LACC).  In assessing airspace design options, including the potential to use IPA, it will be important that Heathrow Airport gives consideration not only to the impact of flight paths on the immediate local area, but also on the wider area (Reigate &amp; Banstead).  The next (3<sup>rd</sup>) priority is avoiding multiple flight paths over the same community (Slough).</p>	<p>Retain but change wording to reflect impact of arriving and departing flights from other airports</p>	<p>6.c. Avoid overflying communities with multiple flight paths</p>

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	<p>With regard to the four noise-related principles that sit at the heart of this consultation, the Royal Borough would agree with their broad principles 4 (Windsor &amp; Maidenhead). For residents of Spelthorne who live close to the airport (i.e. residents in Stanwell Moor and Stanwell Village) none of the options (minimise new, provide predictable respite, minimise total overflow, avoid multiple flight paths) are particularly relevant. This principle was supported, as it is seen to be fair. (Public Focus Groups).</p>		
<p>Prioritise flight paths over rural areas, rather than over urban areas</p>	<p>We strongly disagree with the principle of prioritising flightpaths over rural areas rather than urban ones (AN3V). Neither should be prioritised (HACAN). Less important (Hounslow)</p> <p>Appear straightforward, in favour of flight paths which avoid the areas with the greatest concentration of people. But then we remember that many communities use their open space and rural areas for their respite, and many of the areas are designated as 'outstanding' and their tranquillity should be preserved (LAANC). Overflying rural areas over urban areas is the lowest priority, because residents living in rural areas are just as valued as those living in urban areas, and they should not be subjected to more frequent adverse noise events purely because they live in a less populated area (Slough). Spelthorne believes in the minimisation of noise across all environmental receptors. However, it would prioritise the safeguarding of residential, sensitive receptor premises, and parks and open spaces, over commercial and industrial areas. This principle divided participants. (Public Focus Groups).</p>	<p>Lowest ranking of "prioritise" design principle. Concept already captured elsewhere. Remove</p>	<p>N/a</p>
<p>Prioritise flight paths over parks and open spaces, rather than residential areas</p>	<p>The issue of flightpaths over open space and parks is a difficult one. We feel that it would be appropriate to prioritise IPA flightpaths over such areas between 6am and 7am when most people are asleep and not using these areas. However, during the day time, noise should be shared more equitably as people go to these spaces to relax and unwind and they are a vital resource for the health and wellbeing of residents (AN3V). Neither should be prioritised (HACAN). Important (Hounslow).</p> <p>Appear straightforward, in favour of flight paths which avoid the areas with the greatest concentration of people. But then we remember that many communities use their open space and rural areas for their respite, and many of the areas are designated as 'outstanding' and their tranquillity should be preserved (LAANC). Prioritising parks and open space over residential areas would reduce noise impact for those living in the Borough. However, large areas of open space is very limited (Slough). Spelthorne believes in the minimisation of noise across all environmental receptors. However, it would prioritise the safeguarding of residential, sensitive receptor premises, and parks and open spaces, over commercial and industrial areas.</p>	<p>Added wording to reflect HCEB's comments on value of countryside</p>	<p>6.g. Where appropriate, prioritise routing over parks and open spaces (rather than residential areas), but avoid overflight of Areas of Outstanding Natural Beauty (AONB) where possible</p>



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	Participants struggled with this principle on the grounds that they did not think there were enough parks and open spaces to justify changing flight paths to take them into account. (Public Focus Groups).		
Prioritise flight paths over commercial and industrial areas, rather than residential areas	<p>We agree that flightpaths should be prioritised over commercial and industrial areas rather than residential ones (AN3V).</p> <p>The priority should be to avoid residential areas (HACAN).</p> <p>More important (Hounslow).</p> <p>Seems more logical, that noise should where possible avoid residential areas, and fly over commercial instead but the opportunity for this around Heathrow would appear to be virtually non-existent (LAANC).</p> <p>Concentrating flight paths to over commercial and industrial areas will reduce the noise impact on some residential areas of Slough, however the majority of industrial activity is located in the centre of the Borough, so targeting this area will also impact residential areas surrounding the industrial estate (Slough).</p> <p>Spelthorne believes in the minimisation of noise across all environmental receptors. However, it would prioritise the safeguarding of residential, sensitive receptor premises, and parks and open spaces, over commercial and industrial areas.</p> <p>Participants living in Slough supported this principle....However, Ealing participants struggled to see how that could work in their area (Public Focus Groups).</p>	Highest ranking of the "prioritise" design principles	6.f. Design flight paths over commercial and industrial areas (rather than residential areas)
	While not explicitly produced as an initial design principle, number of stakeholders commented on the need to adopt noise efficient noise practices such as continuous descent approaches. This principle also captures the concerns raised by community members regarding the need to Hence this has been included as a new Design Principle.	New Design Principle	6.a. Use more noise efficient operational practices
Minimising impact on other airspace users	<p>Minimising the impact on other airspace users is not relevant as a principle in this case (AN3V).</p> <p>BA is comfortable with this principle (BA).</p> <p>Less important (Hounslow).</p> <p>The airline community can support (4 - LACC).</p> <p>The MOD is mostly focussed on the assurance that the design principles will continue to strive to minimise the impact to other airspace users (MOD).</p> <p>Minimising impact on other airspace users is the lowest priority for SBC (Slough).</p> <p>Little traction with any of the participants, largely as they did not feel it was necessarily relevant to them (Public Focus Groups).</p> <p>With regards to maximising operational efficiency and minimising the impacts on other airspace users, our only concern with these aspects is that HAL must ensure that public safety is ensured at all times (Spelthorne).</p>	Update wording to reflect requirement in Heathrow's SoN not to interrupt existing traffic flows	7. Should minimise impact on Heathrow's existing traffic patterns and other airspace users

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	<p>We felt we should expand this principle to cover our business requirement outlined in our Statement of Need i.e. 'Our business objective for IPA is limited to adding new routes within the existing route/flight path framework, leaving more fundamental change to the scope for the expansion' (Heathrow).</p>		
Should minimise fuel and CO <sub>2</sub>	<p>We agree with the principle of minimising fuel and greenhouse gas emissions but not at the expense of residents in the vicinity of Heathrow airport (AN3V). BA agrees that optimising network fuel performance and CO<sub>2</sub> emissions performance per flight should be a high priority (BA). More important (Hounslow). The airline community can support (2 - LACC). Minimising fuels and CO<sub>2</sub> emission is a lesser priority over noise, however CO<sub>2</sub> is still an important (3<sup>rd</sup>) priority for Slough. (Slough). This remains a key overriding issue for participants; it is not as immediately prevailing but people are concerned about the longer-term effects (Public Focus Group).</p>		8. Should minimise fuel and CO <sub>2</sub> greenhouse gases per flight
Maximising operational efficiency (air traffic control)	<p>BA agrees that this is an important principle (BA). Less important (Hounslow). The airline community can support (3 - LACC). As an air navigation service provider, NATS is particularly interested in [this] design principle (NATS). Operational efficiency is the next (2<sup>nd</sup>) highest priority (Slough). This principle received little support from participants (Public Focus Groups). With regards to maximising operational efficiency and minimising the impacts on other airspace users, our only concern with these aspects is that HAL must ensure that public safety is ensured at all times (Spelthorne).</p>	Update wording	9. Should be simple and efficient flight paths for operational efficiency

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#### *Prioritising the Design Principles*

Our Design Principles were prioritised based on the level and strength of Stakeholder feedback. Whilst there was a clear desire for respite and sharing to be placed above minimise new, the order of the other principles was less defined.

To assist in this exercise we reviewed the number of comments received on each of the design principles, and scored these as to whether stakeholders Strongly Agreed (1), Agreed (2), Neutral (3), Disagreed (4) or Strongly Disagreed (5) with the proposed design principle.

While not an exact science, this table was used to help us consider the final ordering of the Design Principles for IPA.

Stakeholder	Stakeholder Group	Noise Design Principles				Other Design Principles		
		Minimise new (e)	Predictable Respite (f)	Minimise total (g)	Avoid Multiple routes (h)	Rural over Urban (i)	Parks & open spaces over residential (j)	Commercial, industrial over residential (k)
AN3V	Community	5		5	2	5	2	2
BA	Industry	2	2	2	2			
BHA	Community							
EANAG	Community				2			
HACAN	Community		2	5	2			2
Hammersmith & Fulham	Community							
HCEB	Community						2	1
Hounslow	Community	2	1	1	2	3	2	1
LAANC	Community		1	4	2	2	2	1
LACC	Industry	2	2	2	2			
MOD	Industry							
NATS	Industry							
Reigate & Banstead	Community				1			
Richings Park	Community	4	2	4				
Richmond Heathrow Campaign	Community	5		5				
Slough BC	Community	1	2	2	2	3	2	2
Surrey CC	Community	4		2				
TAG	Community	4	2	4				
Virgin	Industry							
Windsor & Maidenhead	Community	2	2	2				

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<b>Spelthorne</b>	Community							1
<b>Public Focus Groups</b>	Focus Group	2	2				2	
<b>Total</b>		33	18	38	17	13	12	10
<b>Average</b>		3	1.8	3.2	1.9	3.25	2	1.4
<b>Rankings</b>		3	1	4	2	3	2	1