

**Heathrow Airspace**

Heathrow's Design Principles for Independent Parallel Approaches

## **ANNEX 1: STONEHAVEN REPORT ON PUBLIC FOCUS GROUP**

# IPA AIRSPACE STRATEGY | STAKEHOLDER ENGAGEMENT

Report of public focus groups  
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## 1. Objectives

As part of its stakeholder engagement on IPA airspace design, Heathrow sought to hear from residents in areas which are representative of those likely to be impacted by the proposals.

The goal was to present information on the design principles to an audience which is yet to engage in debates on airspace design, and seek to understand which of the design principles they would prioritise, and why.

Stonehaven was asked to support this work. In consultation with Heathrow, Stonehaven made a recommendation on the research methodology, conducted four focus groups (moderated by an Association of Qualitative Research-qualified moderator), and wrote this report of the research findings.

## 2. Methodology

Four focus groups were held on 9 and 15 October 2018, each lasting 90 minutes and attended by up to eight participants (two groups with eight participants each and two groups with seven participants each). Participants were recruited by independent qualitative fieldwork agency Leftfield International, and were each incentivised with a £50 cash payment.

Participants were recruited using a recruitment screening questionnaire. In each group there were equal number of men and women, from a mix of socio-economic backgrounds. Two of the four groups were younger (25-45 years old) and two older (45-65 years old). This division was implemented because group dynamics are most efficient when a relatively homogenous group of participants is convened, creating a comfortable environment in which honest views are likely to be expressed. Participants were screened to exclude those with strong views in favour or against the third runway expansion at Heathrow. Participants working in (or with close family members working in) advertising, journalism, public relations and market research were excluded. Those working at Heathrow or for an airline were also excluded.

The groups were held in locations east and west of the airport, and slightly north of the current approach paths, in areas that could plausibly be affected by new IPA routes. Participants were recruited from the surrounding areas:

- Two groups in Slough, to the west of Heathrow
- Two groups in Ealing, to the east of Heathrow

### 3. Structured discussion

Every discussion followed the following structure:

- Introduction
- Associations with Heathrow
- Exploration of why airspace modernisation is needed and an introduction to IPA
- Presentation of four headline design principles, and a discussion of prioritisation:
  1. Minimise the impact of aircraft noise
  2. Minimise fuel requirements and greenhouse gas emissions
  3. Simple and efficient flight paths for operational efficiency
  4. Minimise impact on other airspace users
- Presentation of four design principles related to noise reduction and discussion of prioritisation:
  - A. Minimise the number of people newly affected by noise
  - B. Design multiple flight paths, with only one flight path active at a time to provide predictable respite from noise
  - C. Minimise the total number of people affected by noise
  - D. Avoid multiple flight paths over one community
- Presentation and discussion of three further design principles:
  - E. Prioritise flight paths over rural areas rather than urban areas
  - F. Prioritise flight paths over parks and open spaces rather than residential areas
  - G. Prioritise flight paths over commercial and industrial areas, rather than residential areas

The explanation of IPA, PBN and each of the design principles was presented in a printed handout given to each participant (containing text and illustrative diagrams) that was read out and explained by the moderator. The stimulus shown to participants can be found in Appendix 2 on pages 17-18.

After the presentation and brief discussion of each set of principles, participants were given 20 tokens with which to indicate the principles they would choose to prioritise – the more tokens they voted against a particular principle, the higher priority they were placing on it. The results of these votes were recorded and are shown in Appendix 2 on page 23. However, the main purpose the voting served was to stimulate discussion, with the participants debating and deciding between the principles after the vote. Given the complexity of the issues, and the ways in which some participants changed their views in the light of greater information and debate, our conclusions are primarily based on the results of these discussions rather than the vote tabulation shown in the Appendix.

## 4. Findings

### Context

When presented with the proposals for Independent Parallel Approach, most agreed it seemed sensible in principle. They recognise that it would be beneficial for everybody if incoming flights can be landed more efficiently and reduce stack holding.

However, many questioned the motives behind the move. They suspected that this heralds the start of Heathrow starting to increase capacity in readiness for the third runway, rather than a drive to increase efficiencies for the number of planes already scheduled. And there was a sense of inevitability about this; people generally expect that big businesses continually strive to grow. And the move towards growth through IPA made more sense to participants knowing that a third runway is in the pipeline.

*Well, what happens when they get this to full efficiency and then they think, 'Well, actually, we're now going to do something else because the capacity, we can fit more in, we can do more.' Then it's going to expand again, isn't it?*

Slough, Older group

*Financially they really, really want to increase capacity. With the third runway it's going to increase loads but this looks like a plan so that in the interim, potentially, they could start upping it and upping it and upping it. And actually the technology's there to do it but the things that are on here - cos this is positive, 'Ooh, we can do this and we can do that'; as opposed to 'This will mean more noise.' And we are going to be landing a hell of a lot more planes suddenly*

Ealing, Younger Group

Participants for the group discussions were recruited on the basis that they were not strongly for or against the third runway, and this ambivalence extends to a laissez faire attitude to the IPA proposals. The participants tended to feel that the growth of the airport and increasing numbers of flights is something they will learn to live with, whether they like it or not. Furthermore, there are many advantages that living near Heathrow brings which cancels it out, such as benefits to the local economy, employment, and ease of travelling.

*I think it's progress, isn't it? We've got to move on. And if you want to live in London you've got to take the rough with the smooth, haven't you?*

Ealing, Older group

*If you're going to have more planes, if you're going to increase capacity, you're going to affect more people whatever you do, so more people are going to have the noise. There's only so much they can do, if you live under it you have to get on with it*

Ealing, Older group

However, they became considerably more troubled about the IPA proposals when they started thinking that they could be one of the newly affected people, as this is an inevitable feature of the IPA routes. Indeed, the higher the likelihood seemed that they would be overflowed, the more concerned about noise they became, especially in Slough. They were worried that this would affect their quality of life, as the flights during early morning hours could interrupt their sleep, or potentially worse wake

their children up which would impact on their whole household. They were also concerned this would affect house prices.

*But then if you tell me that every plane is going to start going over my house then all them go in that pot: 'OK, take all that out of CO2, and it would all be on Noise.'*

Ealing, Older Group

*Because as a house owner, if you've got a new flight path, that could reduce the price of your house*

Slough, Older Group

*I think it's because we live here. If you asked someone who lived in the area they'd be like, 'Actually I think the sharing the noise is fair', but if it was somebody that didn't live under a flight path, 'I don't want to live under a flight path'*

Slough, Younger Group

People's top of mind concerns are the potential increase in noise and air pollution. Participants tended to think first and foremost about the potential negative implications rather than the positives. Their tendency was to worry that this would lead to increased air traffic and the associated drawbacks, rather than the benefits of increased efficiency, such as reduced stack holding and less flights during antisocial hours. Indeed, the fact that the changes would only be implemented for a short amount of time (until the 3<sup>rd</sup> runway) tended to get somewhat lost. When participants were reminded, they were marginally reassured. The fact that the noise would be occurring in the early hours was more of a concern for families with younger children and for shift workers.

*For me personally a bad idea because of the noise and pollution. I know the environmentalists are going to go mad*

Ealing, Older Group

*Surely that will just mean that more people will suffer. The people who have noise will still suffer and these guys over here that have never had it are going to suffer as well*

Ealing, Older Group

*I suppose it reduces stack holding, and that's beneficial as a passenger and also in terms of noise*

Ealing, Younger group

*This is just so they can get more aircraft into Heathrow in the morning, isn't it? Problem is, there's obviously going to be new areas that they're going to be circling in the holding stack.*

Slough, Younger group

There were also a couple of participants who were concerned that the new complexities that the IPA approach would entail could compromise safety.

*I think the safety aspects, air traffic control, I can't imagine how hard their job is, and then suddenly you're making it complicated... and if there's a crash that's our houses they're going to land on, so you've got to have safety and consideration that they're people, that you can only increase their work load so much without compromising safety*

Slough, Younger group

*I was thinking about... the landing side of it. So, we don't think it's safe for them to be 1400 metres away and landing at the same time. But, yeah, we're going to ask them to come in and swing a piloted plane that weighs 500 tonnes at 500 miles an hour, so that's 8 nautical miles, which is seconds; so they've got to come in with all the winds and that and try and line it up: that seems less safe than just coming in parallel, in my eyes*

Slough, Younger group

## Attitudes to headline design principles

### **Minimise the impact of aircraft noise**

Of the four headline design principles tested, minimising the impact of aircraft noise emerged as the most important consideration. This is perceived to have the greatest immediate impact on their everyday lives. This is largely because many of those we spoke to feared that they may be among the newly affected, and for them their main personal fear was that the noise would affect their daily lives. Therefore, while there is a fear of the longer-term effects of greenhouse gas emissions, it takes second place to noise pollution as it is not considered as directly applicable to their daily lives.

*I think [noise] has the most tangible impact on us as local residents straight away. Whilst we may eventually get ill because of pollution, actually the thing that impacts us straight away isn't pollution or fumes or that the pilot's a bit tired: it's the noise of the bloody planes*

Ealing, Younger group

*OK, ten years down we might be gasping for breath but it's the fact that today these planes are potentially disrupting our lives*

Ealing, Younger group

*But for you personally, if you're sat at home and you've got planes flying over and in the summer your doors are open into your garden, are you worried about the CO2 or are you worried about the noise?*

Ealing, Older Group

Those who do not currently live under the flight path have a personalised fear of the impact it will have on their everyday lives. On the other hand, those who do experience it find it is not as bad as they had thought, and they become acclimatised. The participants in Slough, which are further from central London are more concerned about noise than those in Ealing, who are more likely to consider noise as part and parcel of everyday life as a resident of London.

*But, seriously, I'm ten minutes' drive to Heathrow so it's very noisy; but I've kind of got used to it*

Ealing, Younger group

*And also over time I've got a deaf ear to them. I think that's a good point, if you've lived thirty years in West Ealing after a while you're oblivious to it*

Ealing, Older Group

People are most concerned about the noise from planes interrupting their sleep, and the associated problems that entails, such as health and mental welfare. Those with families also were concerned that their young children may wake up in the mornings to the noise of the planes, and not then go back to sleep, waking the whole house up. There is a strong need to feel safe and secure and protected from noise within their own houses.

*Noise, if you don't get your sleep and stuff like that, that has a massive impact on your quality of life*

Slough, Younger group

*It has an impact on mental health, on the quality of life in a more general way; so if you were on the flight path, or if you are on the flight path, then you have different considerations. If you can't get sleep that has a knock on effect on your mental health*

Ealing, Younger group

There is also a fear that if your house is under a flight path when it was not previously, it would reduce the value of their property. Therefore, the new proposals could have financial implications for residents.

*Because as a house owner, if you've got a new flight path, that could reduce the price of your house*

Slough, Older group

*But that's always the risk when you live near an airport. Like, you know a risk when you buy a house near an airport, that's the risk*

Slough, Younger group

*If you've bought your house ten years ago based on, you know, the research of the flight paths, then ten years on your house is affected, because you've already done that research and taken it into account*

Slough, Younger group

Some participants however did say that they were not concerned about the noise, as they felt that noise is a factor that could be mitigated against. For example, a house could be triple glazed, people can wear ear defenders, and that you could amend your lifestyle according to flight patterns. However, these people tended to be those who were more concerned about the environmental implications of being under a flight path.

*But also you need to consider that Heathrow can have budgets for double glazing and things like that. People that live directly under the flight path all get their houses double glazed, don't they?*

Ealing, Older Group

*CO2 is the most important to me because if I had noise then I would triple glaze and I could do things about the noise in my house; but I couldn't do things to keep the CO2 away from my children. And that's health. If you have to have something like a mushroom over your ears then so be it, but that's not going to affect your health*

Slough, Older group

**Minimise fuel requirements and greenhouse gas emissions**

Noise being the predominant concern for the groups does not undermine the importance of greenhouse gas emissions. This remains a key overriding issue for participants; it is not as immediately prevailing but people are concerned about the longer-term effects.



*Well, it's obvious isn't it? Everyone's talking about cutting CO2s  
It's the air we breathe, isn't it? It's pollution, it's health*

Slough, Older group

*Pollution really does worry me, to be honest ... for me, I'd probably just want to move away from it all but I need to be in London, just because the pollution thing is more important to me than the noise. And to put all this on our doorstep? And we can have a voice and say, 'No, we just don't want this.' And I just think that maybe voices should be heard about it. I mean, we can go out and buy a car just like that; but to put an extra huge plane full of fuel, you know, it does worry me*

Ealing, Younger group

In the context of Heathrow and flight paths, participants equated a discussion of fuel burned and CO2 emissions with the impact on air pollution, more-so than the impacts on climate change. The issue of greenhouse gas emissions is more of a concern when people think more widely about their communities and families, and when they think about the future for the planet and future generations. One or two participants talked about the immediate impact that the environment had had on their own health, but generally it was an issue for collective concern rather than the individual fears.

*The future generations, that's really important, we've already done enough damage to this planet without continuing to do more*

Slough, Younger group

*But they're linked, because if the planes aren't flying overhead then there isn't the noise, and also there isn't the fuel smell pervading your local area. That said, we do have a long term ambition I think in terms of not wanting to pollute the environment*

Ealing, Younger group

*I'm thinking of more clean air, the actual community breathing cleaner air, as well as the environment as a whole. So you've got two equally important things you've got to protect. People, and the planet*

Slough, Younger group

Some participants talked about the immediate effects of the air pollution on their lives, such as the oil in the air, the smell on the washing, the black of the buildings.

*You just notice it because they jettison the fuel just before they come into land*

Slough, Older group

*Yeah, people don't put their washing out so much these days but years ago their washing would get a smell of the fumes*

Slough, Older group

*Yes, and on my net curtains you can see ... and, yeah, I assume that's from the fumes. I do wash them (laughs) but it gets black*

- Slough, Older group

It was not entirely clear to participants how flight path planning could help to address greenhouse gas emissions or minimise fuel requirements. Rather, it is seen as something that should be addressed outside this remit through use of better technology.

*Technology is getting more and more efficient and producing less CO2. I'm not saying you're going to get an electric plane (laughs) but they are going to be able to reduce emissions and noise with better engine design*

Ealing, Older Group

A couple of the participants in discussion groups in Ealing said that given the high levels of pollution in London they are not clear whether the main contributors to emissions are from the road or the air, but rather part and parcel of living in London.

*The thing is, CO2 is a big problem, but I don't think most of us, maybe you, but I don't know if the planes weren't there how much better would the air be? Because, you know, it is London and it is terrible. If we're getting a hundred planes a day or no planes a day, what's the difference? Are we going to be healthier? Considering the number of cars and all the rest of it is it actually that important?*

Ealing, older group

*I think once it's pumped out there it's there; whereas the noise, it will be minimised, but the environmental damage - I mean, I got asthma just from environmental pollution, I've been told: was that from cars, or planes? I don't know. And that's just developed in the last two years. It's a really difficult one.*

Ealing, Younger group

### **Minimise impact on other airspace users**

The principle of minimising the impact on other airspace users had little traction with any of the participants, largely as they did not feel it was necessarily relevant to them.

This principle was seen to be outside the remit of flight path design. They felt that all the airports should be working together for flight path planning and sharing air space, not least as a safety measure.

*But I have to admit, I'd have thought they were already doing that anyway, sharing air space with other places. When you look at that map you see how close all the air spaces are, I'm surprised they're not already sharing*

Slough, Older group

Most did not know much about RAF Northolt but did know that it was underutilised. A couple of people did know that it is now used for private jets. They therefore did not think it needed to be a priority for consideration in the design principles.

*One of the ideas about Northolt, EasyJet wanted to buy it as a hub and they go turned down, and since the RAF have downsized they do take private jets into there. But they are limited in terms of how many can fly in*

Ealing, Older Group

### **Simple and efficient flight paths for operational efficiency**

This principle received little support from participants. As it was phrased they considered it to be a principle that was designed to make pilot's and air traffic control staff's jobs easier, and participants had very little sympathy for this and felt that any operational efficiencies should be standard. Pilots are perceived to be overpaid and have an easy job as they mostly fly the planes on auto pilot. Air traffic

controllers are considered to have a more complex job, and to have more public sympathy. However, their job should be made more efficient through the use of technology rather than flight path planning. There was a lack of comprehension about how flight path planning would lead to operational efficiency.

*Some of this to me just on reading it first time all looks a bit smoke and mirrors: pilots don't do anything except take off and land, as far as I know for the rest of the time it's auto pilot. And letting more airspace for Luton, Gatwick - so what?*

Ealing, Older Group

*That should be a priority, a top priority, anyway, for Heathrow, regardless*

Slough, Older group

*Most of it's now on computer, you know... But hats off to anyone who's an air traffic controller, that's such a stressful job, but technology is going to improve it*

Ealing, Older Group

*I thought about the technology and I felt it didn't need many of my tokens because the technology's improving and actually everything's much more automated and we're not asking them to do stupid things and they're assisted by automation and they can probably cope with that*

Ealing, Younger group

*[Pilots]ve just got to take off and land, that's it*

Slough, Younger group

One or two said they would prefer it because when they travel with their families they want to fly the most direct route possible and get home quickly.

*Obviously the quickest route is the best and, coming into London, (laughs), it's going to come in over houses anyway*

Ealing, Younger group

### Attitudes to noise impact principles

The main consideration participants felt they needed to agree on was decide on was whether the key principle should be that less people should be affected by noise disproportionately, or whether to spread the load.

*It's like robbing Peter to give to Paul*

Ealing, Older group

And they found that there is no easy answer, but rather a combination of factors that need to be taken into consideration.

*I think when we first looked at it we all had that kind of feel; I think it maybe is kind of like one or the other, in that you either hammer straight into the airport and sod the houses, or you take the indirect route and reduce the noise. They seem to be up against one another*

Ealing, Younger group

*I think as well though that there's multiple factors, so then if the multiple flight paths also reduced pollution then that might make me be a little bit less selfish (laughs) I think I can't say that there's only one, I think they need to take a few things into consideration*

Slough, Younger group

But ultimately, people will prioritise what they feel will affect them most directly.

*It's a bit selfish, really, but it's human nature to look after ourselves*

Slough, Older group

*I think it's because we live here. If you asked someone who lived in the area they'd be like, 'Actually I think the sharing the noise is fair', but if it was somebody that didn't live under a flight path, 'I don't want to live under a flight path'*

Slough, Younger group

**Minimise the number of people newly affected by noise**

This is the principle that participants related to most strongly, as this is the category that many of the participants fear; those who are not currently under a flight path are fearful of finding themselves living under one. They fear the noise affecting their quality of life and house prices.

Generally, there was support for IPA, and agreement that some people would be newly affected and that this should be accepted as part and parcel of living near an airport. But they are very wary about being personally and directly affected.

As a result, participants wanted to see the number of people being newly affected minimised, and that was seen as the most important of the noise impact principles.

*But it's minimising it. I wasn't looking at it from a selfish point of view, it's that if it's going to affect new areas over time you're now not going to know where to purchase, and it causes confusion about the whole of west London. But at the moment you know where to avoid pollution and noise*

Ealing, Younger group

However, there one participant recognised that while those who are newly affected may protest the loudest, it is inevitable that this will happen.

*I can understand their perspective because then you're not going to have these dissenting people newly affected, but actually, if you're designing it properly and taking everything into account then affecting new people is inevitable*

Ealing, Younger group

**Design multiple flight paths, with only one flight path active at a time to provide predictable respite from noise**

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. Most of the participants said that it would make being told they were to live under one of the new flight paths more palatable if they were told that it was only going to happen on a couple of days of the week. They felt that if they knew which days it would happen they could plan around it or make allowances, and that this would mitigate the impact.

*It's the more fair solution, isn't it? I had more green because I live in the area but looking at it unbiasedly that's the fair solution, isn't it?*

Ealing, Younger group

*I think if you offered that now to people who are on the flight path day in day out they would go for that option. So if they have less on certain days they're going to give a thumbs up; but people who have it then but don't have it now, they're going to give a thumbs down. So for me it's fairer to spread it around*

Slough, Older group

*Because then the people currently affected are going to have it a lot worse if you're saying there's more planes, which doesn't seem too fair. The idea of multiple flight paths, which I think they do now, because it switches around, means that you do get respite and the air quality isn't constantly terrible in certain areas. So, like, 'Heathrow expansion, what does it mean to me?' Then it's, 'Oh, two days a week it's going to be a little bit noisier than it is now; but it will be quieter on other days.' I get that*

Ealing, Younger group

**Avoiding multiple paths over one community**

Again this principle was supported, as it is seen to be fair. However, participants struggled to see how this principle differed much from the other principles, particularly as they feel that the airports should all be working together to ensure that British airspace is used effectively with minimal disruption. This was therefore not as popular as the principle for predictable respite, which they felt would have the same outcome but they would know when they would have a break.

*It's something I feel is inevitable. Consultations, to me, means that they're going to do it anyway. And I understand why they're going to do it and I'm for it, you know, and I can see the benefits: employment, apprenticeships and so on. And so I think we should all share it, you know, living in west London. Why do you expect one community to take, say, 60% of it and share the rest?*

Ealing, Older Group

**Minimise the total number of people affected by noise**

This was the least supported principle. It gained some support as the image shows flights going over the green spaces rather than residential areas, which is supported. However, it goes against the previous principles discussed in which participants have agreed that the noise pollution should be shared, rather than some communities being disproportionately affected.

*I think [minimising the total number of people affected by noise] is the least important, you know, London is always growing and developing, and we pretty much agree that whichever way the plane comes in it's going to fly over people*

Ealing, Older group

*And obviously they're going to choose a flight path that's over more trees and that, so hopefully the paths they choose aren't going to affect too many people*

Slough, Older group

**Prioritise flight paths over rural areas, rather than over urban areas**

Participants struggled with this principle as they struggled to think of any rural areas that would be under the flight path and would be affected by noise.

*The same wishful thinking because there aren't rural areas in London*

Ealing, Older Group

On the whole, this principle divided participants. Some tended towards a protectionist, idealistic view of the countryside, and wanted to protect it from noise and air pollution. Others prioritised the idea of flight paths over rural areas, as that in essence meant the flight paths would not be near their own home, and away from large population centres.

*No, because then there won't be any place without pollution, it's going to affect everything*

Ealing, Younger group

*I think if we choose to live under the madness, that's fine. I think why expand it, because it's lovely and green and we want it to stay like that for us and our children. Then let's not make it worse*

Ealing, Younger group

*And, to be fair, if you buy a house near an airport that's what you expect. If you live in the country you expect cows and cock-a-doodle-dos and things like that. But if you live by an airport you can't complain about airport noise: I'm sorry, but that's a bit naughty. If you don't like it go somewhere else*

Slough, Older group

*But if you say 'over green areas' you're going to have people arguing; if you say 'over houses' you're going to have people arguing. So, wherever you go someone's going to argue against it. So, realistically, it's [Heathrow's] choice*

Slough, Younger group

**Prioritise flight paths over parks and open spaces rather than residential areas**

Again, participants struggled with this principle on the grounds that they did not think there were large enough parks and open spaces to justify changing flight paths to take them into account. There seemed to be two key issues being considered here. Firstly, there was agreement that where it is viable it is preferable to fly over open spaces than residential areas. On the other hand, people were concerned that any flight paths that were directed across park areas would disproportionately affect the residential areas around the parks, and between the parks and the airports. Therefore, this did not feel like a viable solution.

*But how can they plan to put it over parks and open spaces if there isn't any?*

Slough, Younger group

*Also, how long would it take a plane to fly over Richmond park? Ten seconds? And either end of that you've got houses, so ten seconds isn't going to make any difference*

Ealing, Older Group



*I'm just cynical about this (laughs). Because we are in London, and we're talking about flying over London. And so unless a plane can go like this (does zigzag movement with hand) it really makes no difference how it comes in at all. Wherever you want to flight path, Richmond park, wherever, we're densely enough populated for it not to make a difference*

Ealing, Older Group

*Is there enough open space to make that relevant? In London we have nice parks but in terms of percentage it's not that much. It's rural, or it's the city. You can't really plan a journey over Hyde Park, so it's not going to make a difference*

Ealing, Younger group

That said, participants made a distinction between times when parks were more or less likely to be used and therefore prioritised versus residential areas, i.e. that residential areas deserved more protection during early morning and late evening, whereas park were more likely to be used and enjoyed in the middle of the day.

*It's difficult because obviously it's dependent on times, isn't it, that's not important [in parks] early in the morning and late at night*

Slough, Younger group

*You spend less time at the park. I'm in the park quite a lot actually with my children but that's not as valuable to me as when I'm trying to sleep at home.*

Slough, Younger group

### **Prioritise flight paths over commercial and industrial areas, rather than residential areas**

Participants living in Slough supported this principle, as there are large industrial areas around Slough that they could envisage being under a flight path. However, Ealing participants struggled to see how that could work in their area as the industrial areas were not large enough to warrant flight paths being directed over them.

*It would have less impact on ... because obviously the people that are there are shopping or working, they're not there sleeping. So they're awake, not fast asleep, it's not going over houses waking people up. So for me going over those areas makes logical sense*

Slough, Younger group

*I agree, if you flew it over industrial areas, places where there's already road noise anyway then you might as well*

Ealing, Younger group

*If I was being totally pedantic, the biggest industrial area in west London is Park Royal, and I wouldn't want it to fly over that (laughter) It would be flying over Ealing to get to Heathrow. And I read that Park Royal is one of the biggest industrial area in western Europe*

Ealing, Older Group

*And, I mean, they hardly spend much time flying over a particular area anyway, so it's not like they're going to be hunting out the industrial areas to fly over, because there's not that many*

Ealing, Older Group

Some thought that following the paths of the motorways would be ideal, as there is already pollution there and it would avoid residential areas.

*Perhaps the corridor along the M4 and stuff like that, but there isn't that much that isn't close to a residential area, it's not like we've got huge acres of industrial areas. I mean, if there was a route into London that was just factories all the way*

Ealing, Younger group

*There's already noise and pollution on the motorway so why not stick as close to those areas as possible?*

Slough, Younger group

### **Other principles to consider**

The groups also came up with some other principles of their own they feel should be considered. A key one is thinking about the impact that increased number of flights arriving at Heathrow will have on the area's infrastructure, and in particularly congestion.

*Yeah, I think the transport infrastructure takes a bit hit, I know the roads around Heathrow jam up, and I know the Piccadilly Line jams up*

Ealing, Younger group

*Noise, yeah, but also congestion. At least with coming in later, at least you can get a cohort of passengers out of the way; but if it's in that peak, everyone trying to get away between 8 and 10, not that everyone works those shifts, I can just imagine mornings being an absolutely nightmare. In the whole of west London... I used to go to school in Isleworth and I had to leave at half seven to get there*

Ealing, Younger group

*The same with trains: my husband travels to Clapham and it's just impossible, he had to miss three trains because they're packed... He says, 'You can just see people with luggage'.*

Ealing, Younger group

*If you made it really efficient and took it to the nth degree so that they don't need to land planes except between 7 in the morning and 7 in the evening, then how do the roads cope with that? How do the trains cope with that? So actually having it more spread out isn't necessarily a terrible thing*

Ealing, Younger group

If flights paths are to be directed over more green belt areas some participants would like to see consideration for the wildlife and animals.

*I think also one thing we haven't mentioned, I mean, I'm not a massive animal lover but my dog has started to freak out with fireworks as she gets older, and storms and things, and you think the park has wildlife in it and I think it would be nice to have a think about the wild animals as well, cos if you're always going to stick it over parks and things*

Ealing, Older Group



## 5. Conclusions

Within the research conducted the two key areas for consideration in the principles are noise and air pollution:

- Noise pollution is the most immediate concern for quality of life today. It is the most prevalent personalised fear. People fear for the pervasive impact on their daily life, and also the negative effect it could have on their house prices.
- Concerns about air pollution encapsulate local residents' fear for the future, and most markedly the concern for future generations. However, it is important to note that this opinion mostly relates to fears about air quality and not about CO<sub>2</sub>, despite the explicit focus of the principle on CO<sub>2</sub>.

Therefore, minimising the impact of aircraft noise and minimising fuel requirements and greenhouse gas emissions are the clear priorities emerging from this research, with the greater priority on noise impact. Minimising the impact on other airspace users and operational efficiency were not seen as priorities for IPA. That is not to say that these are not important, but that participants see these as less relevant in this context, and should be things that are dealt with as a matter of course above and beyond this remit.

When considering noise impact principles, the participants think in two key ways: the citizen view prioritises fairness for all, but is superseded by the self-interested view, which in turn is driven by the personalised fear of what the changes could possibly mean for them personally. It is important for Heathrow to consider both viewpoints.

The resident view is that it is fairer for more people to share the pain of the noise pollution. However, this goes against their self-interest, as they have a personalised fear of being newly affected. However, this fear can be mitigated with the promise of predictable respite. The research suggests that these are the two noise impact principles that Heathrow should prioritise, and these two should sit hand in hand.

Avoiding multiple flight paths over one community is seen as an outcome of the two principles above, and therefore not a priority in its own right. And minimising the total number of people affected by noise is at juxtaposition with their citizen view of the fairness of sharing the 'pain'.

Residents agree with the principles to fly over less residential areas, particularly parks in the times when they are not used or industrial areas. However, this is on the proviso if this does not result in residential areas surrounding parks and industrial areas being disproportionately affected. Using motorway routes was also suggested to avoid residential areas. This does not extend to urban areas, over which no consensus was reached, but some would like to see protected against the noise and air pollution associated with urban areas.

Many of the other concerns they feel that Heathrow should be dealing with outside the remit of this project. It does not mean that those things are not as important, but they are considerations that citizens expect Heathrow to be considering outside flight path principles. These include: sharing airspace, technology to make flying and air traffic control safer, technology to make planes more fuel efficient, technology to make planes quieter, compensation packages for local residents and communities.

## Appendix 1: Stimulus materials

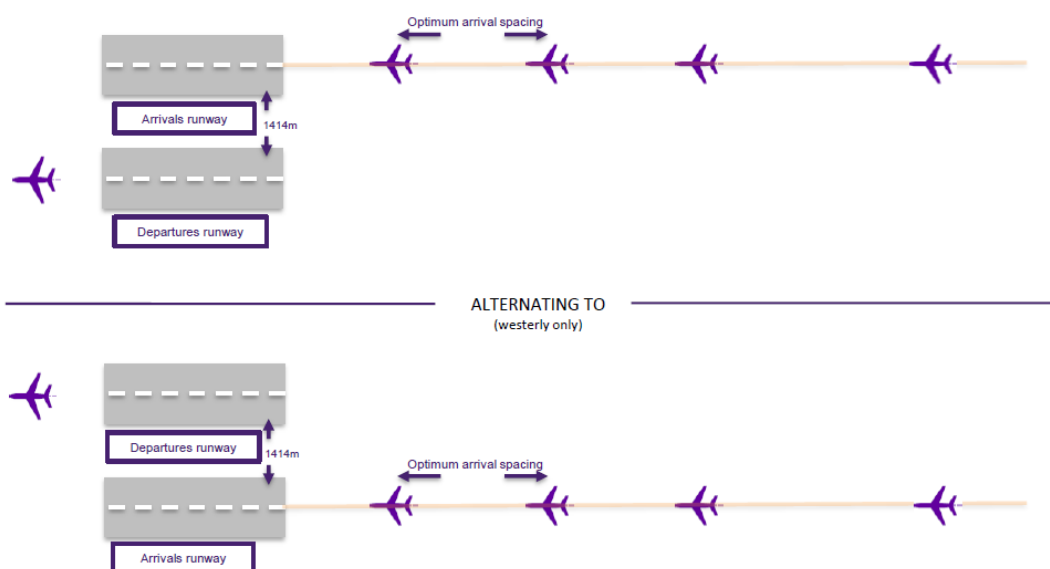
### Heathrow's landing operations today:

Heathrow has two runways, using one runway for departures and one for arrivals. In certain circumstances, when there is a build-up of arrivals, both runways can be used for landing. This is done:

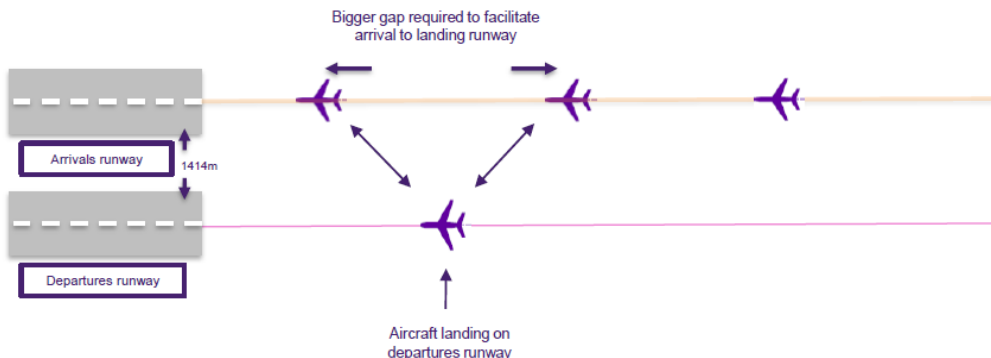
- When there is a forecast delay of 20 minutes or more.
- Between 6.00-7.00 am, the busiest time of day for arrivals into Heathrow.

When both runways are in use for landing, planes cannot approach the runways exactly the same time. To land aircraft safely, the spacing between planes on the primary landing runway must be increased, meaning fewer airplanes can land on this runway overall.

*Normal operation, with one runway for departures, one runway for arrivals:*



*Landing aircraft on both runways::*



**Heathrow’s proposed changes:**

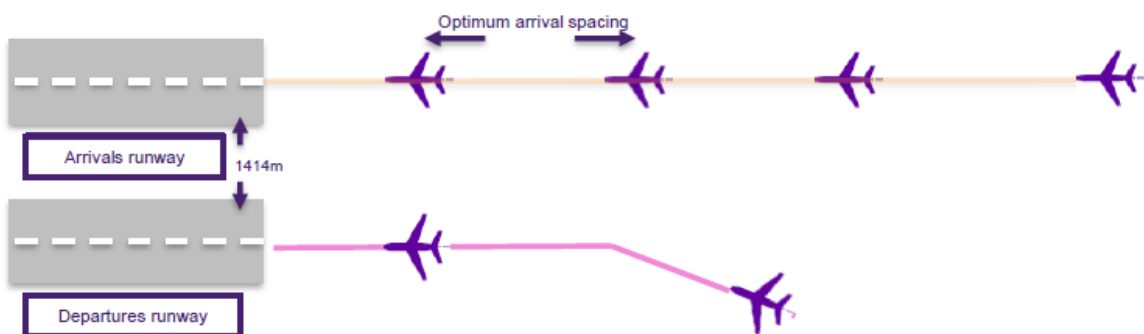
Heathrow is planning to make a change called Independent Parallel Approach, to allow planes to approach the runways at the same time, and make arrivals more efficient.

The changes will mean that:

- Landings on the arrivals runway will still be directed onto final approach at 8 nautical miles from touch down and beyond, as happens today.
- Aircraft landing on the other runway will join final approach closer than 8 nautical miles from touchdown
- Planes landing on the departure runway will fly over new areas that do not normally have Heathrow arrivals going over them.

Heathrow is planning to introduce IPA in 2022.

*Landing with IPA:*



**Why is Heathrow making changes to its landing operations?**

These changes are possible because of a new technology that is available on planes today called “Performance Based Navigation”, which allows planes to fly a much more precise route when they are taking off and coming in to land.

IPA will improve Heathrow’s ability to recover from delays and could also increase its total capacity. Specifically, it could:

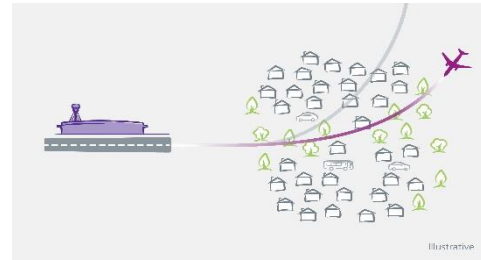
- Enable Heathrow to start flight arrivals later in the morning, for example at 5.30am rather than 4.30am today
- Reduce the number of late running flights.
- Reduce Heathrow’s stack holding, which would also lead to quicker landings and reduced emissions.
- Create the possibility of increasing total capacity at Heathrow prior to the opening of a third runway
- Reduce the total number of planes on today’s flight paths into the departure runway.

*N.B.:*

- *This proposal does not seek a change to the Government rules on the maximum number of aircraft allowed to land on the departures runway per hour.*
- *This proposal only relates to Heathrow’s current two runways. When a third runway is built, all of Heathrow’s airspace will be redesigned.*

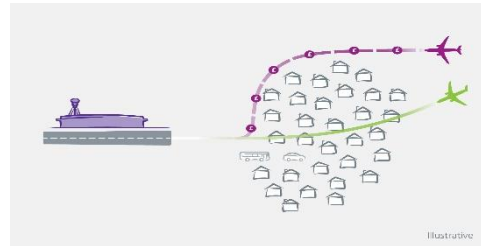
**Minimise the impact of aircraft noise**

Future airspace design will comply with Government regulation and policy on noise impact. In addition to this Heathrow will aim to reduce effects on health and quality of life from noise by considering local circumstances, and by contributing to improvements where possible.



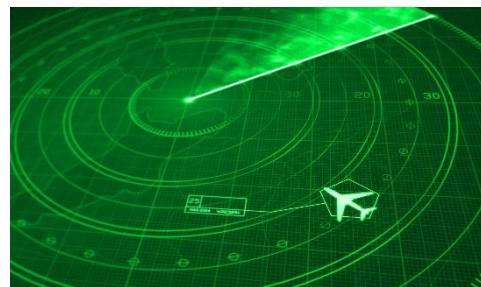
**Minimise fuel requirements and greenhouse gas emissions**

Heathrow would seek to minimise the amount of fuel and CO2 emissions required by our flight paths, by keeping flight paths as short and direct as possible. Heathrow would avoid long and complicated paths that require more fuel (and therefore greater cost) for airlines.



**Simple and efficient flight paths for operational efficiency**

Heathrow would prioritise simple flight paths that minimise the workload of pilots and air traffic control.



**Minimise impact on other airspace users**

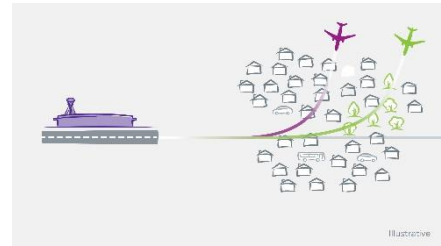
Heathrow would minimise our impact on other airspace users, especially neighbouring airports of Luton, Gatwick and RAF Northolt.

This means Heathrow are willing to share airspace where necessary, only seek extra airspace where justifiable and look for opportunities to give away airspace that is not essential for future operations.



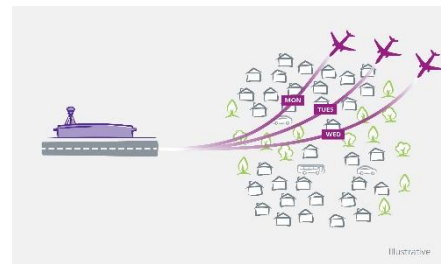
**Minimise the number of people newly affected by noise**

IPA flight paths will overfly areas not currently regularly overflowed by Heathrow arrivals. Where possible, we will avoid putting in routes over the most heavily populated areas.



**Design multiple flight paths, with only one flight path active at a time to provide predictable respite from noise**

Heathrow would provide local communities with predictable respite from noise by scheduling the use of different flight paths by day/week/month so that communities can look ahead and know when they are likely to be overflowed. The use of additional flight paths would mean each flight path was flown less frequently but more people would be affected by noise.



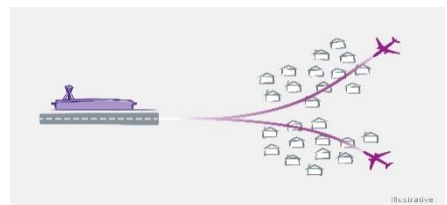
**Minimise the total number of people affected by noise**

Heathrow would aim to put flight paths over the areas with the lowest number of people. This will mean fewer people overflowed, but each of those communities would be more affected compared. This will lead to planes concentrated over a smaller number of routes.



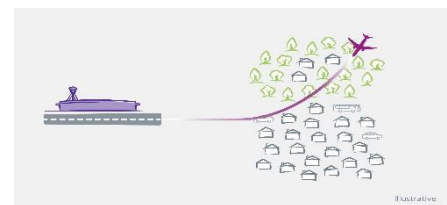
**Avoid multiple flight paths over one community**

Heathrow would aim for different IPA flight paths to be placed over different communities and avoid using the same airspace as routes from nearby airports.



**Prioritise flight paths over rural areas, rather than over urban areas**

Heathrow would aim to put planes over rural areas rather than urban areas, as they are less populated.



**Prioritise flight paths over parks and open spaces, rather than over residential areas**

Heathrow would aim to put planes over parks and open spaces rather than residential areas in towns and cities.



**Prioritise flight paths over commercial and industrial areas, rather than residential areas**

Heathrow would aim to put planes over commercial areas (like shopping centres and business parks) and industrial areas (like factories and warehouses) rather than residential areas, wherever possible.



## Appendix 2: Principle scoring

### Headline design principles

	Slough Younger	Slough Older	Ealing Younger	Ealing Older	Total
Minimise the impact of aircraft noise	79	68	62	55	262
Minimise fuel requirements and greenhouse gas emissions	56	49	42	57	204
Minimise impact on other airspace users	14	14	20	13	61
Simple and efficient flight paths for operational efficiency	11	9	16	15	51

### Noise impact principles

	Slough Younger	Slough Older	Ealing Younger	Ealing Older	Total
Minimise the number of people newly affected by noise	83	21	56	40	200
Design multiple flight paths, with only one flight path active at a time to provide predictable respite from noise	34	66	30	42	172
Avoid multiple flight paths over one community	25	37	23	27	112
Minimise the total number of people affected by noise	18	16	31	31	96