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Stansted Airport: Future Airspace Research

Melanie Nicholls – Director, Head of Qualitative Research

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Background, sample and method

Background, aims and objectives

- London Stansted Airport is one of the UKs major international gateways and a key contributor to the regional and national economy. As part of Government proposals to modernise the way UK airspace is managed, London Stansted Airport will soon be undertaking an extensive process of engagement and consultation with stakeholders and local communities. Over the course of the next few years London Stansted Airport will bring together NATS, the CAA, the Department for Transport and other airports to shape the airspace design on which it will formally consult (likely in 2020). Before this, it will be important to speak to individuals, organisations and groups that have an interest in the airspace around London Stansted Airport to provide feedback on principles that will be used to redesign the airspace, as part of the overall programme.

- The research will seek to capture feedback from a range of interested parties to ensure that London Stansted Airport has a clear understanding of the views of all its major stakeholder groups, and that the design principles that emerge are properly understood and fit for purpose. This will set the foundations of the future airspace work.

- The key aims and objectives of the research are to:
  - Ensure that London Stansted Airport have complied fully with the requirements of the CAAs CAP1616 process regarding engagement in Stage 1B.
  - Ensure that London Stansted Airport has a strong understanding of the views of its stakeholder groups, to inform the subsequent stages of design and development.
  - And, ensure that the design principles that emerge are properly understood, are consistent with the statement of need, support operational requirements, and allow London Stansted Airport to continue to grow safely and efficiently.

Sample and method

- YouGov conducted 9 x 2 hour extended F2F focus groups with key stakeholder groups, identified by Stansted airport, plus an additional 8 x interviews with key groups (aviation, special interest, young people). Research took place between 2nd and 20th March 2020. The group specification is outlined below.

General Public
Living close to STN, more affected by noise

Special Interest
All members of regional special interest groups

Elected Reps
All members of district, local and parish councils

Community Reps
All representatives of local community

General Public
Living close to STN, less affected by noise

Community Reps
All representatives of local community

Aviation
Directly affected on-airport stakeholders

Top-up interviews
Aviation off-airport, Special Interest and General Public

Business
On-site / off-site businesses and business bodies

Elected Reps
All members of district, local and parish councils

Aviation
Directly affected off-airport stakeholders

Perceptions of Stansted Airport

While stakeholders' perceptions of Stansted airport are broadly positive, some negatives emerge

Positively, Stansted airport is a major local employer, a contributor to the local economy, and a travel hub

It's a major local employer

Noted by all stakeholders (esp. business and elected reps), STN is seen as a major local employer. As well as employment opportunities at the airport, it also provides opportunities for support services in the surrounding area. Stakeholders agree that STN is a very important contributor to the local economy.

It's part of UK infrastructure

As an international airport, situated in the busy South East, Stansted airport is seen as an important part of the UK infrastructure. For business stakeholders, this is important, as it allows for international connectivity – allowing business travellers to access London / South East, helping to drive business forward.

It's a 24 hour airport

Not only an international airport, it's also a 24 hour airport, due to passenger and cargo activity. While the passenger arm is most well known (esp. for leisure travel), and seen as it's core offering, there is an awareness / appreciation of the cargo offer in some groups (e.g. aviation). Individuals (general public) mention noise impacts of cargo night flights.

It's a local travel hub

Ultimately, it's s convenient option for local people looking to travel domestically and internationally, without having to travel into London. While the airport is accessible by public transport (e.g. rail and bus), some feel that this could be enhanced. Most agree that road access is fair, though there can be congestion at times.

Noise and access are seen as negatives of the airport, although pollution is also noted

Noise is an issue

For those who are currently overflown, noise is the greatest challenge. Some think that noise has increased in the past few years due to changes to flight routes, increased night flights (cargo) and use of 4 engine planes. Those that live or work close to the airport are most exposed to noise pollution (esp. at take off and low altitudes) and there is negativity towards the airport from some groups (e.g. general public and elected reps) as a result.

Access a challenge

Although STN is accessible by road and rail, many feel that public transport could be improved, esp. Stansted Express, which is busy and unreliable. Road access for cars and buses is fair, though there is congestion at peak times. There's strong negativity toward parking charges (esp. drop-off), which many feel have dramatically increased in recent years. This has lead to travellers parking on streets in Bishops Stortford, negatively impacting residents.

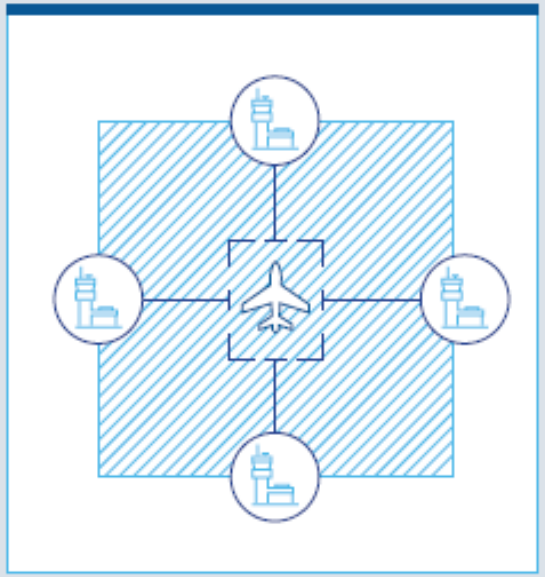
Air pollution noted

Emissions, the environment and air pollution are at the forefront of mind for many, given media coverage of these topics. Some stakeholders comment on the pollution associated with STNs operations, and question how this impacts the areas surrounding the airport (inc. sites of natural interest – Special Interest). Many also comment on the volume of flights, which results in higher emissions overall. While noise is the greatest local challenge, air pollution is also a concern.

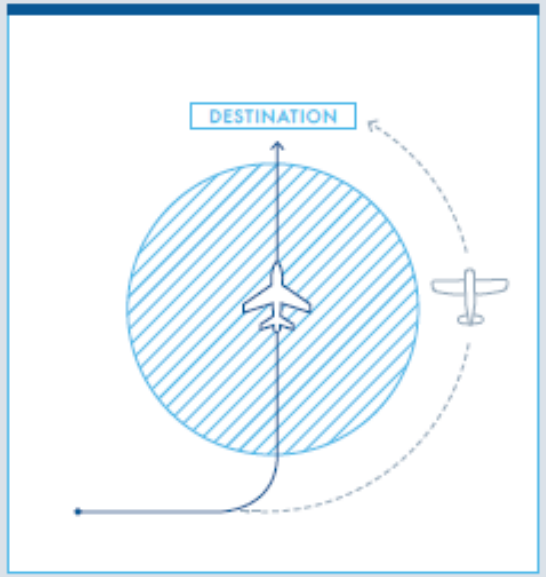
Perceptions of the Future Airspace Programme

Stakeholders were shown a video to explain the Future Airspace Modernisation programme, and a visual summary of the process…

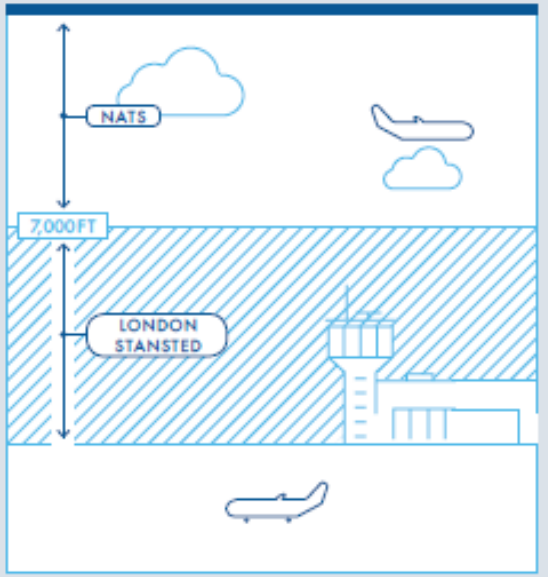
What is the Future Airspace Programme?



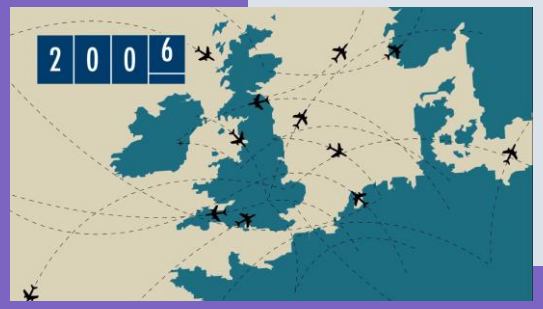
The Government has set out a programme to modernise airspace across the whole of the UK. This requires the Civil Aviation Authority (CAA), NATS and all UK airports to work collectively to modernise UK airspace and make it more efficient.



Existing UK airspace was designed for a very different age, one where aircraft and navigation was much less sophisticated. Modernisation could bring significant benefits, including making journeys quicker, quieter and cleaner.



London Stansted, along with all other airports in the UK, will need to redesign the way aircraft arrive at and depart from the airport at heights of up to 7,000 feet. NATS will have responsibility for redesigning the airspace above 7,000 feet. Airspace in London and the South East is particularly complex. For this reason, Stansted will also need to coordinate its airspace with other airports in the region, particularly those nearby.



Most can see the reason for, and benefits of the Future Airspace Programme, but some questions emerge

A fit-for-purpose system: most (esp. business, aviation) recognise that airspace hasn't been changed since the 1950s, despite increased passenger numbers and improved aircraft design. Modernising airspace will allow aircraft to fly more efficiently, benefitting all parties.

Addressing noise: with noise pollution a key challenge for those closest to the airport (esp. general public or stakeholders), it's hoped that modernising airspace will address this issue. More efficient routes and aircraft is expected to reduce noise pollution.

Tackling emissions: with environment / emissions becoming more prominent in the media and politics, there's greater awareness of the need to take action. Many expect a more efficient airspace to result in reduced emissions, addressing this challenge.

Increased capacity: a sizeable minority are cynical about the programme, and see it primarily as a way to increase airport capacity. There is a concern that this will result in expansion in many airports (cf: Heathrow airport), which will impact local residents.

Impacting communities: there is concern that changes to airspace will result in new routes and potentially new areas being overflown. New routes – outside of current corridors – may lead to noise being spread more widely across areas, impacting more people.

Practical challenges: there are some questions about the logistics of the programme (i.e. designing / implementing routes in 3 years), as large programmes rarely run to time. Is there sufficient time built in at key stages (implementation) to ensure that all actions are completed?

While stakeholders understand the need for progress, some question how this fits into the wider emissions debate

The Future Airspace Programme is a positive step…

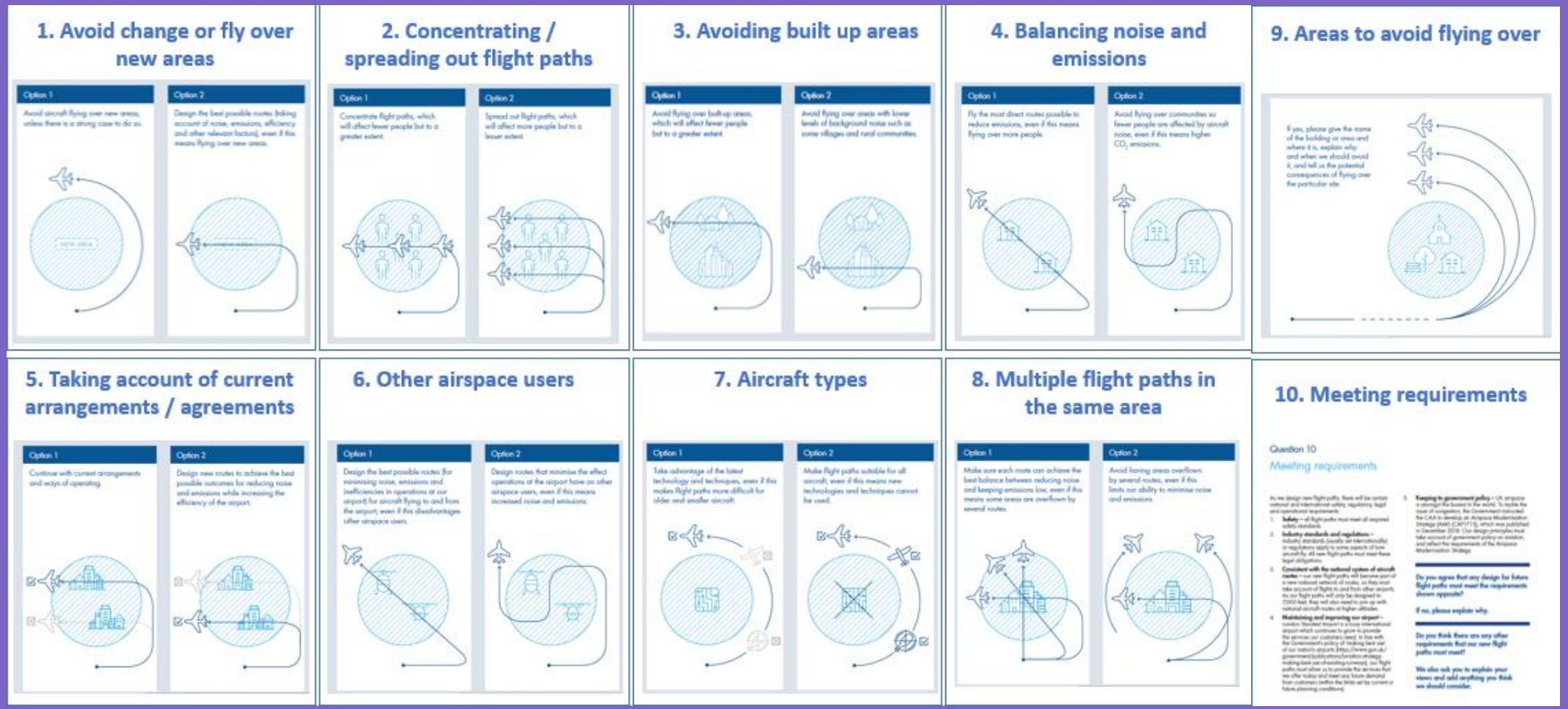
Stakeholders can understand the rationale for the Future Airspace Programme, and see it as a step in the right direction. There is clear value in redesigning the airspace – reducing noise and emissions, and increasing efficiency, which will have a positive impact on all those involved – from passengers, through to airlines and airports.

... But they struggle see how it aligns with emissions targets

Across groups, emissions is at the forefront of mind (though noise is also key for general public and elected reps). With Government emissions targets firmly in the public eye, many struggle to see how airspace modernisation aligns with this, given the potential for increased capacity over time. More reassurance is needed.

1B Design question review

Ten high-level design questions were shown to stakeholders



Question 1

Avoid change or fly over new areas

Our flight paths were introduced after taking account of local views, and many have stayed the same for years.

Some people have chosen to live close to or under flight paths, perhaps because they are less affected by or concerned about aircraft noise. On the other hand, some people may have chosen to live in areas away from flight paths as they don't want aircraft flying over or close to their homes.

As we design our future flight paths, we need to consider whether to:

- prioritise keeping changes to a minimum to avoid flying over new areas (unless there is a strong reason to do so); or

- start with a 'clean sheet' and design new routes that might reduce the effect of aircraft noise, cut emissions and make better use of modern technology, but might fly over new areas as a result.

Please indicate your preference below

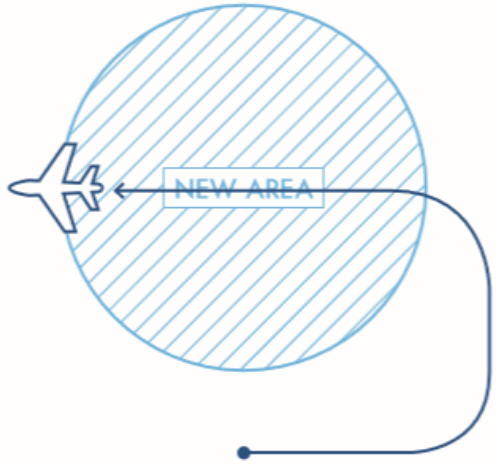
When we design our flight paths, which option below do you prefer and why?

Option 1

Avoid aircraft flying over new areas, unless there is a strong case to do so.

Option 2

Design the best possible routes (taking account of noise, emissions, efficiency and other relevant factors), even if this means flying over new areas.



Question 1 Summary: Avoid change or fly over new areas

Views on the principle

Across all stakeholder groups, the majority think that there should be a 'clean slate' approach that looks at all the potential options ensure the most effective routes (in terms of emissions, noise and efficiency) are generated. For many, the Future Airspace Programme is a 'once in a lifetime opportunity' that calls for radical change.

Preferred option

Option 2 is the preference for most, as they realise that change must be embraced in order to redesign airspace. However, some groups (e.g. Special Interest and Aviation) call for a hybrid approach – with both old and new routes 'put on the table' for review, rather than changing all routes (even those that work well) for the sake of change.

Differences by groups

The main differences exist between those who are affected / not affected by flight paths (esp. General public, Elected reps, and some Community reps) – as ultimately this would impact their day-to-day lives. For those who are not currently flown over, the prospect of new flight paths (and the noise disruption associated) is a key concern.

"Option 2 is the one you have to go for, you have to design the best possible routes even if it means overflying new areas. That's the way it goes because we have to do the efficiency bit, reduce emissions, or industry will die"

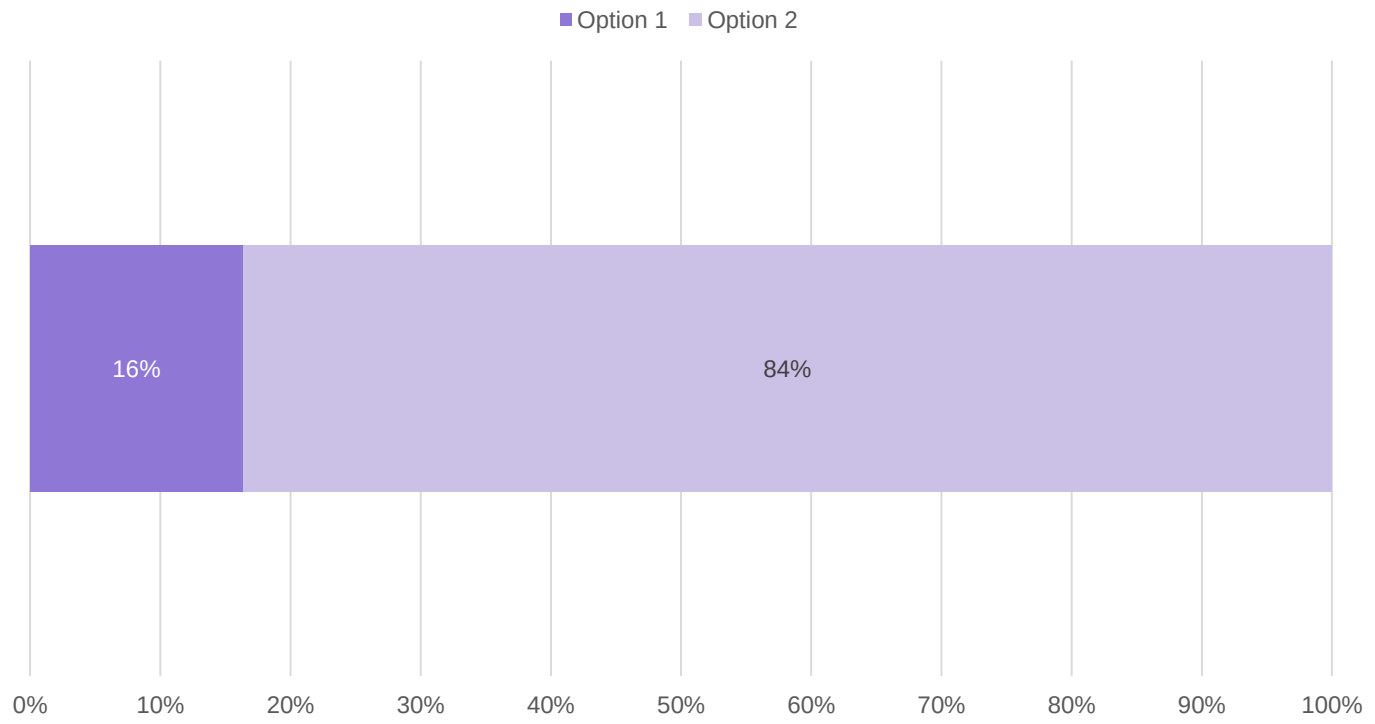
Aviation

Overall, Option 2 is the preferred route for question 1

Avoid change or fly over new areas

Option 1 *– Avoid aircraft flying over new areas*

Option 2 *– Design the best possible routes, even if this means flying over new areas*



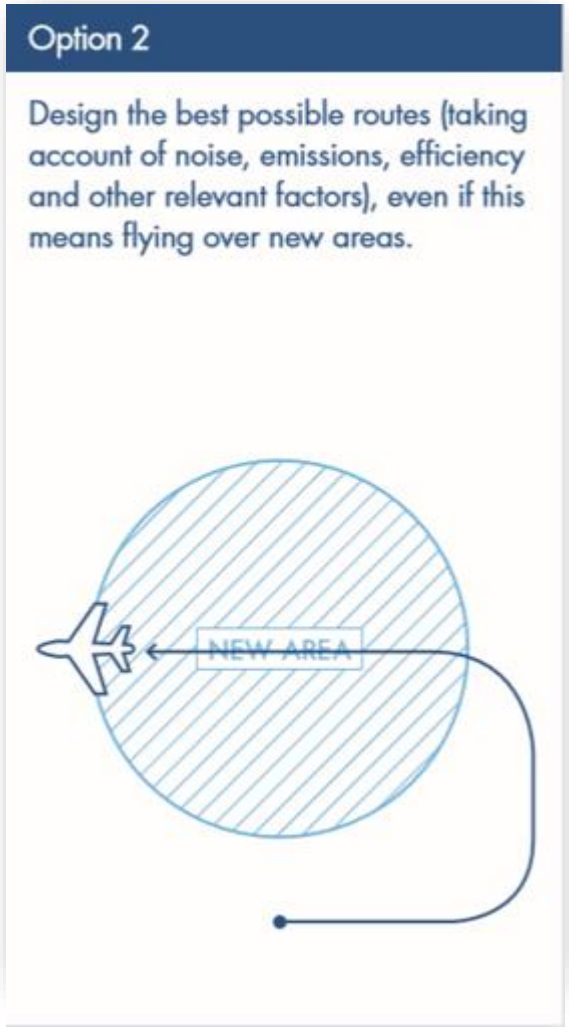
N.B. figure is based on responses on self-complete forms completed by stakeholders in the groups

Option 1 would avoid disruption, but it would not allow for change

- **New communities would not be disrupted**
  - This option avoids disruption, as no new areas (or communities) will be overflown
  - Those who are overflown are used to noise, and are better able to cope with it, so are less likely to feel the impact
- **Those not currently overflown would be protected**
  - Those not overflown are concerned about the noise impacts if flightpaths were to change, which would impact their lives and ability to sell property
  - If current routes were retained, they'd be protected from noise in future
- **But it does not embrace the need for change**
  - Option 1 reduces the opportunity to improve noise, emissions and efficiency
  - And it does not relieve the burden felt by those currently overflown

Option 2 seems the most practical solution to most, and embraces the spirit of airspace modernisation

- **Option 2 is most aligned with the airspace strategy**
  - Starting with a ‘blank slate’ will allow for a considered review of routes, ensuring the best outcomes
  - The most efficient routes can be developed, without any constraints
  - This will have a positive impact on noise and emissions, ensuring a better experience for those on the ground
- **Reducing emissions must be a focus**
  - Stakeholders recognise the long-term damage that emissions can have on the environment, and see it as something that must be tackled
  - Plotting the best routes that reduce emissions is essential for future generations, even if has a short-term impact in terms of overflying
- **Impacts from overflying will reduce in time**
  - Some (Business and Aviation) note that technological developments in aviation will result in much quieter and cleaner flights in future, so impacts on the ground will be therefore be lessened in time



Question 1: potential adaptations

Optimisation / improvements

For many, it's the lack of specific information that's the challenge: while Option 2 is the preference, many want to know which areas will be flown over and the severity of noise in new areas, as this will shape their views. They also want to know what 'efficiencies' mean in this context.

Potential for an option 3

As referenced earlier, there is clear opportunity for an Option 3 – that offers a hybrid approach. If current routes are effective, they should be considered alongside new routes, rather than discarded entirely. Retaining some (familiar) old routes could reduce disruption to locals during roll out.

Question 2

Concentrating or spreading out flight paths

Modern aircraft can use satellite guidance to allow them to fly more accurately. This means flight paths can now concentrate aircraft so fewer people are overflown and affected by aircraft noise. However, the people who are overflown will be affected more than they previously were.

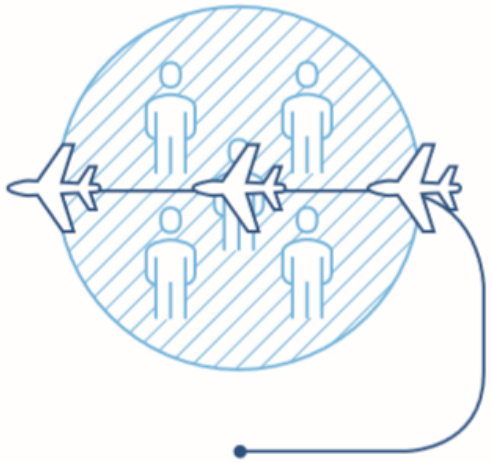
As an alternative, we can design flight paths that spread aircraft out over a wider area, perhaps using several alternative routes, and use varying flight paths on different days of the week or during different times of day to provide periods when there is no aircraft noise. If we take this approach, we will need to decide how long the periods of 'no aircraft noise' last to create significant benefit.

Please indicate your preference below

When we design our flight paths, which option below do you prefer and why?

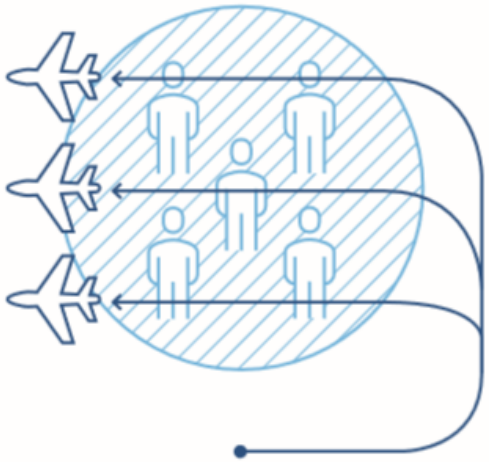
Option 1

Concentrate flight paths, which will affect fewer people but to a greater extent.



Option 2

Spread out flight paths, which will affect more people but to a lesser extent.



Question 2 Summary: Concentrating or spreading out flight paths

Views on the principle

For most stakeholders, spreading flights is preferred, as it's seen as the fairest option. By 'sharing the load' amongst a larger number of people, noise impacts and disruption will be diluted. Many call out the importance of respite here, which would need to be communicated clearly to reassure residents around overflying.

Preferred option

On the whole, Option 2 is the preference, however, some audiences (e.g. Aviation, Community) are more divided. Those that favour Option 1 do so as concentrating routes impacts fewer people (esp. if it paths are concentrated over areas currently overflown). There is some support for a third option, however.

Differences by groups

The burden of noise is the greatest focus for General Public and Elected Reps, with their views shaped by their own experiences of noise (i.e. whether or not they're currently overflown). Special Interest stakeholders see the merit in both options. Aviation reps ask if change will result in a more complicated airspace.

"How much respite? The only way to give respite is to make it less frequent – if reducing from once every 6 minutes to 10 minutes – you can take the odd plane going over, but it's the constant flow that causes the annoyance"

General Public

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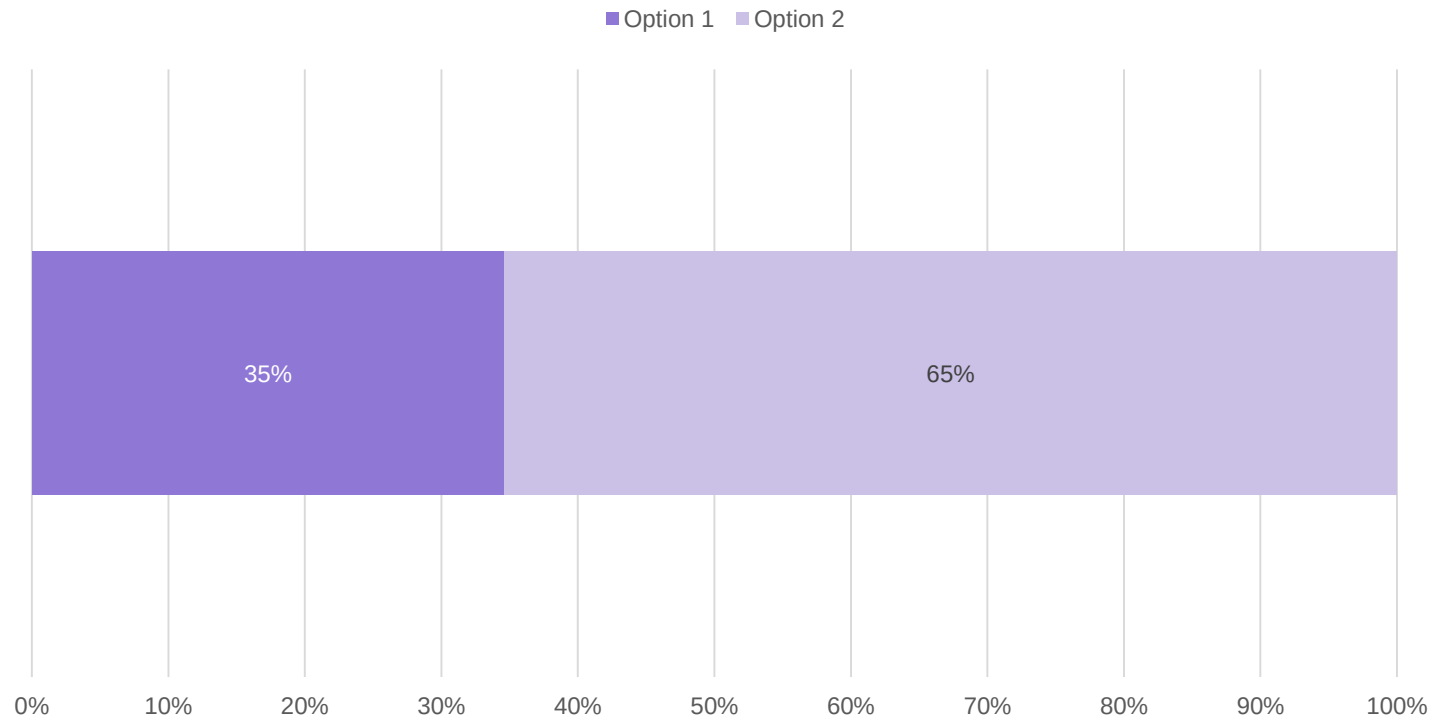
Overall, Option 2 is the preferred route for question 2

Concentrating or spreading out flight paths

Option 1 *– Concentrate flight paths, which will affect fewer people but to a greater extent*

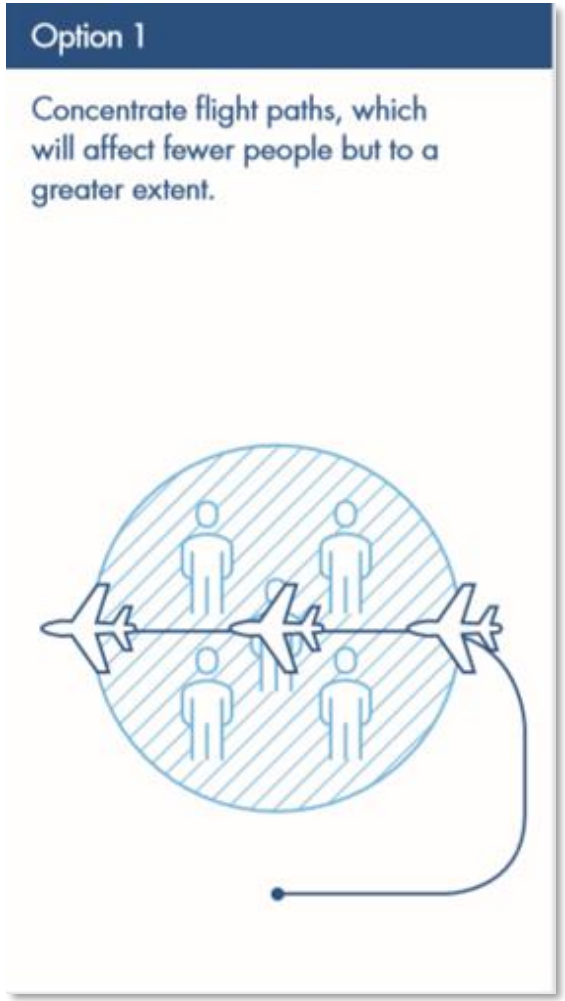
Option 2 *– Spread out flight paths, which will affect more people but to a lesser extent*



N.B. figure is based on responses on self-complete forms completed by stakeholders in the groups

While option 1 is less egalitarian, it does minimise impact

- **Concentrating flight paths would impact fewer people**
  - Although people will be affected by noise, it will be a small number
  - If flight paths are concentrated over areas that are already overflown, people will be familiar with noise and potentially able to adjust
- **It would limit perception of overflying**
  - If routes are spread across a wider area, they will be more noticeable, which may lead to the *perception* of there being more flights amongst a wider number of people
  - Concentrating flights over one area will not have this impact
- **However, if flights increase, it could become intolerable**
  - If there are many more flights concentrated in specific areas, the noise could become unbearable
  - Some are concerned about the health impacts that concentrated noise and emissions could have on residents



Option 2 is the fairest option as it ‘spreads the load’

- **Option 2 is the preference across groups**
  - Spreading out routes is the most equitable option: more people will be impacted, the effects will be diluted down
  - Most agree that it’s better for a larger number of people to face minor inconvenience than for a small number to be overwhelmed
- **The use of respite is strongly welcomed**
  - Across groups, this is felt to be important – communicating that there will be times of no aircraft noise will allow local people to plan their lives
  - Some question whether non-populated areas (e.g. woodland areas) could be flown over at night instead of residential areas
- **Some question the logistics of this option**
  - Aviation reps ask whether this would result in a more complicated airspace
  - Others struggle to see how flights would be staggered and respite administered
  - Individuals also ask if this is paving the way for more routes, which would undo the potential benefits

Question 2: potential adaptations

Optimisation / improvements

Views on concentrated flight paths vary depending on whether they're over areas currently or not currently overflown, so details on this would be welcome. There are also some questions about how the respite element would work in practice – how it would be arranged / administered.

Potential for an option 3

While most are able to select an option, there are calls for an Option 3. One suggestion, is for concentrated flight paths over motorways / railways (rather than residential areas), or for a modified Option 2 with varying flight paths on different days or fewer, larger aircraft to reduce impact, or for a more nuanced approach to plotting routes.

Question 3

Flying over built-up areas

When designing flight paths, we need to consider the local communities that will be flown over and affected by aircraft noise. Our current routes avoid flying over built-up areas, where possible, as this was the advice from the Government at the time the flight paths were designed.

If we designed flight paths that flew over built-up areas, more people would be overflown. However, background noise in towns and cities (from cars, construction, crowds of people and so on) is higher, so aircraft noise may be less noticeable.

If we continue to avoid flying over built-up areas, this will reduce the number of people who are overflown. However, this may lead to aircraft flying over areas where the level of background noise may be lower, so aircraft noise may be more noticeable.

Please indicate your preference below

When we design our flight paths, which option below do you prefer and why?

Option 1

Avoid flying over built-up areas, which will affect fewer people but to a greater extent.

Option 2

Avoid flying over villages and rural communities, which will affect more people but to a lesser extent.

Question 3 Summary: flying over built-up areas

Views on the principle

Stakeholders struggle with the options for this question. They can all see the benefit of flying over built up areas (and background noise to mask aircraft noise), and avoiding less built up areas where possible. However, individuals also comment on the safety implications of flying over built up areas.

Preferred option

While there is a preference for Option 2, some stakeholders are divided on this, and it's not always a clear cut decision. There is a strong call to preserve rural tranquillity but many recognise that it's not a black and white case of flying over urban or rural areas, and some call for an Option 3 that allows for a hybrid solution here.

Differences by groups

Aviation reps request an Option 3 that allows for flight paths to fly over urban / rural areas, during different parts of the day to limit disruption. They also comment on the importance of climbing quickly here. Across all other groups, the broad preference is to retain the tranquillity of the countryside, in order to limit disruption to those living in this area.

"Make sure you reserve the countryside for peace and quiet – for the sake of people's mental health"

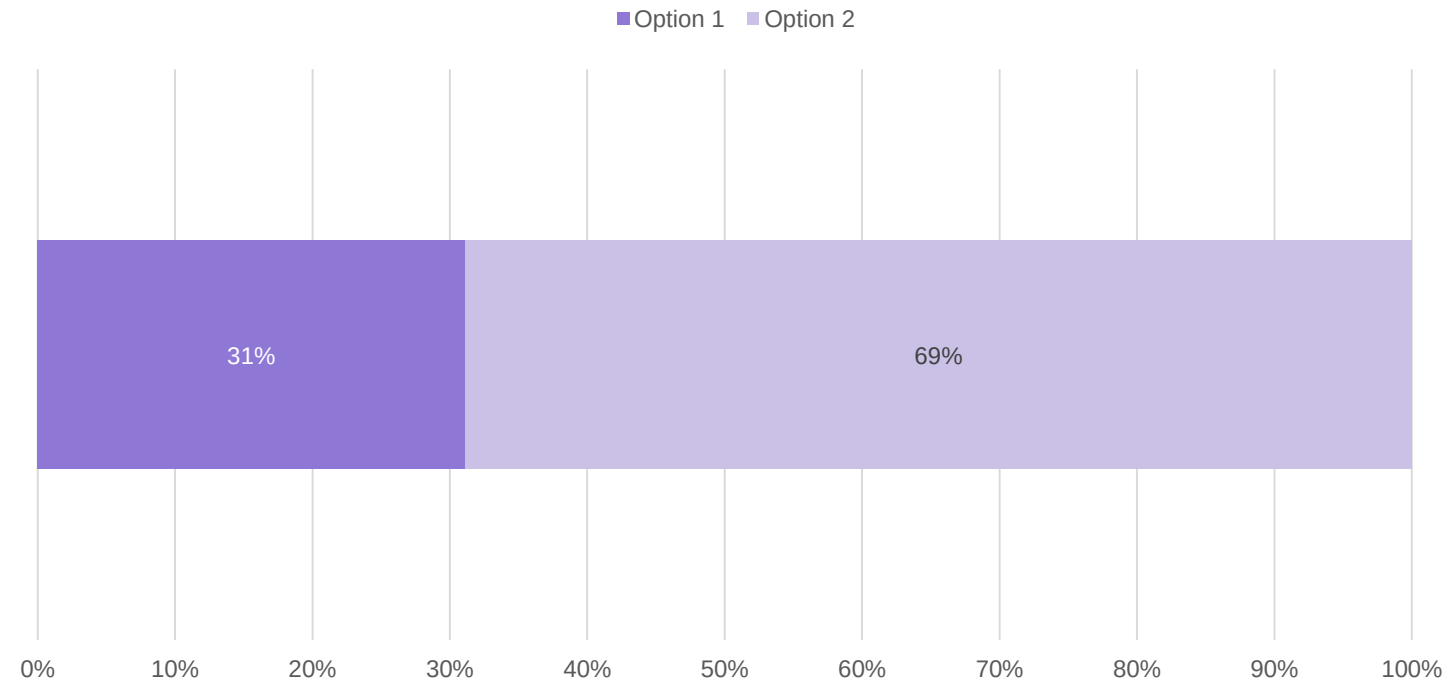
Community

Overall, Option 2 is the preferred route for question 3

Flying over built-up areas

Option 1 *– Avoid flying over built-up areas, which will affect fewer people but to a greater extent*

Option 2 *– Avoid flying over villages and rural communities, which will affect more people but to a lesser extent*



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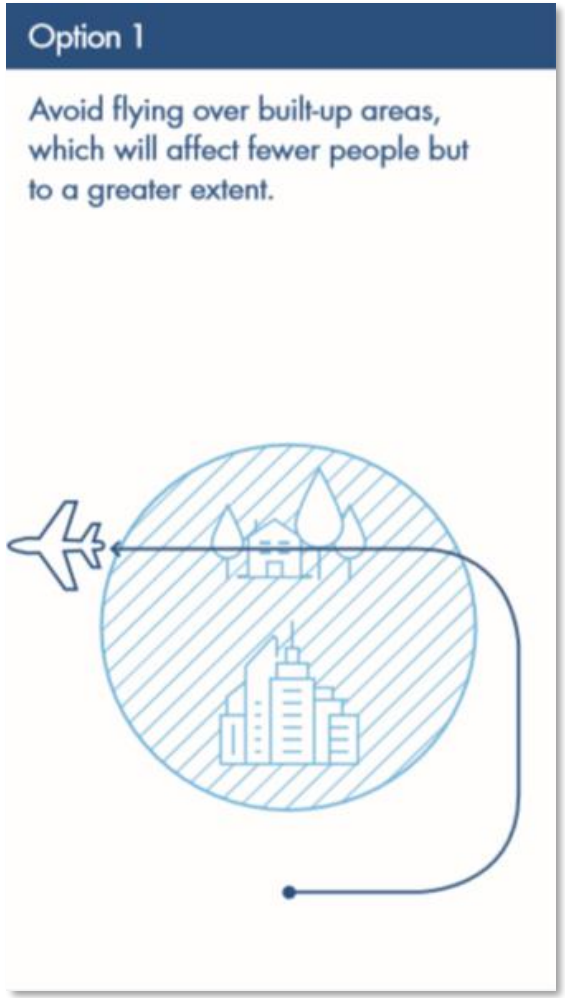
N.B. figure is based on responses on self-complete forms completed by stakeholders in the groups

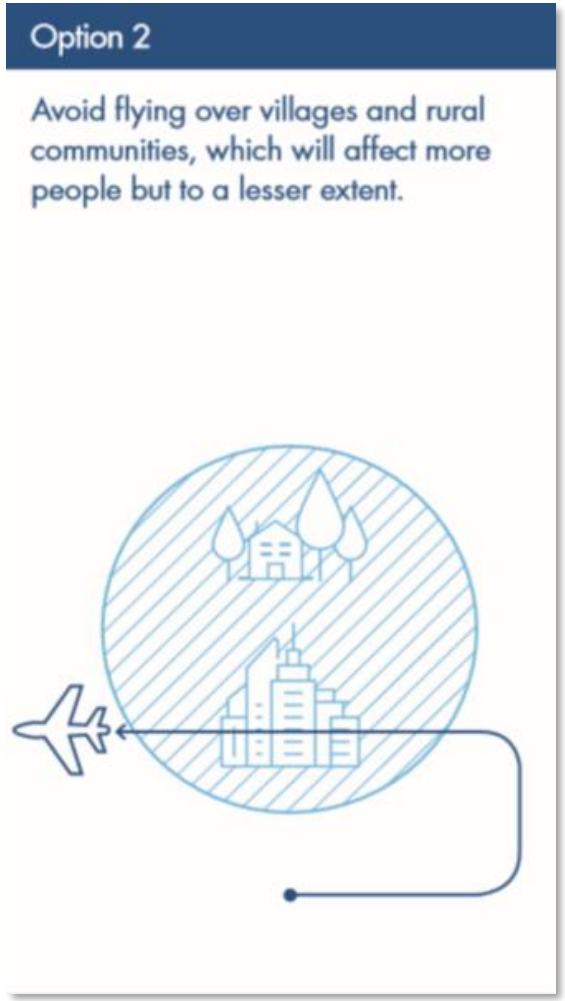
Option 1 would negatively impact rural communities surrounding the airport

- **The rationale for avoiding urban areas is clear**
  - Urban areas are known to be polluted already, and suffer from high levels of noise, which aircraft noise and emissions would exacerbate
  - The burden would be lifted from a large number of people, if routes avoided these areas
- **However, there are some safety concerns**
  - For many, there are safety concerns about overflying urban areas (though this is disputed by Aviation reps)
  - Many agree that flying over rural areas (or industrial / non-residential urban areas) would reduce the impact if an accident occurred
- **And it would negatively impact rural communities**
  - Stakeholders (esp. General public and Elected reps) make the point that people in rural areas choose to live there for the tranquillity – aircraft noise would be very disruptive



Option 2 – avoiding rural areas – would limit overall levels of disruption

- **Option 2 appeals, given Stansted's rural surrounds**
  - Stakeholders agree that option 2 would benefit those living in quieter, more tranquil rural areas surrounding the airport
  - If routes flew over built up areas there would be enough noise to 'soak up' aircraft noise, limiting impact
  - In contrast, overflying rural areas would be much more disruptive
- **Most see this as the safest approach**
  - In many groups, concerns around the safety of flying over built up areas are mentioned spontaneously
  - Most agree that flying over rural areas would limit the impact if an accident were to occur
- **However, rural areas will become more developed in time**
  - Given building developments, they question whether flight paths designed to fly over rural areas now will in fact fly over urban areas in 2-3 years time



Question 3: potential adaptations

Optimisation / improvements

For many, the use of ‘urban’ is misleading here, as aircraft overflying Harlow is very different to flying over smaller towns or villages. There are also comments about increased building work – would future developments be factored into potential routes?

Potential for an option 3

While Option 2 is the preference, some do call for an Option 3. There are calls for a hybrid approach, with flight paths over urban and rural areas on different times of day to ensure efficiency, whilst reducing impacts. Others request flight paths being concentrated over rural (non-residential) and industrial areas, which would reassure around safety.

Question 4

Balancing noise and emissions

We can now design flight paths so that aircraft fly more direct routes, shortening the distance to their destinations and reducing CO2 emissions. It can also make journey times a little shorter.

Sometimes, aircraft fly a little further to avoid flying over local communities. Shortening these routes so they fly more directly might, in some instances, lead to aircraft flying over more local communities, which could lead to more people being affected by aircraft noise.

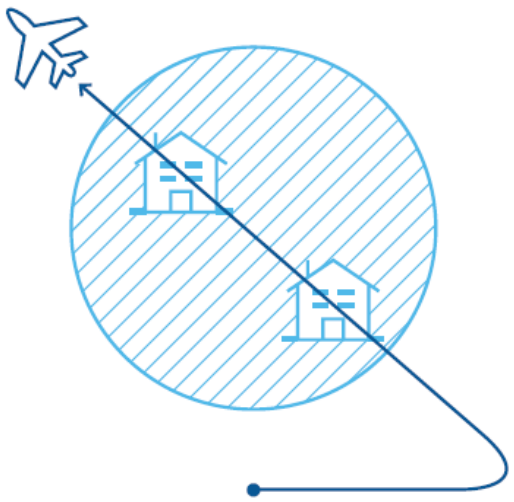
We need to find the right balance between having more direct flights (to reduce emissions and journey times) and keeping local communities' exposure to aircraft noise to a minimum.

Please indicate your preference below

When we design our flight paths, which option below do you prefer and why?

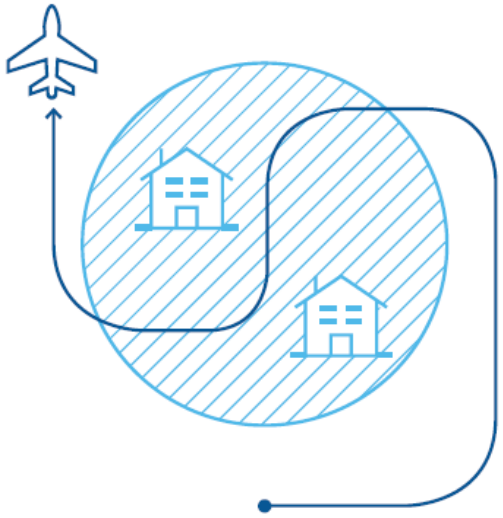
Option 1

Fly the most direct routes possible to reduce emissions, even if this means flying over more people.



Option 2

Avoid flying over communities so fewer people are affected by aircraft noise, even if this means higher CO_2 emissions.



Question 4 Summary: Balancing noise and emissions

Views on the principle

With the rise of the Green Agenda, all understand the impact of emissions on the environment, and understand the need to tackle this in future. For a core group, however (i.e. those living / representing those in communities close to the airport) noise is the greater everyday challenge to address.

Preferred option

Across groups, Option 1 is preferred to Option 2, but there's some interest in an Option 3. Efficiency is the priority for many, as increased efficiency will lead to a reduction in emissions, tackling a country-wide issue head on. However, a hybrid Option 3 could take this step further.

Differences by groups

Some (Special Interest) think that emissions is too big a challenge to tackle by flightpath design alone, and think it should be dealt with in other ways. Business reps champion efficiency (as long as any reduction in emissions isn't offset later on in flights), and think that airlines should be involved to ensure this is executed effectively.

"It's a matter of looking at key priorities – one is lesser effect on people and one is emissions – on this one, emissions comes top, you've got to absolutely get our carbon footprint down"

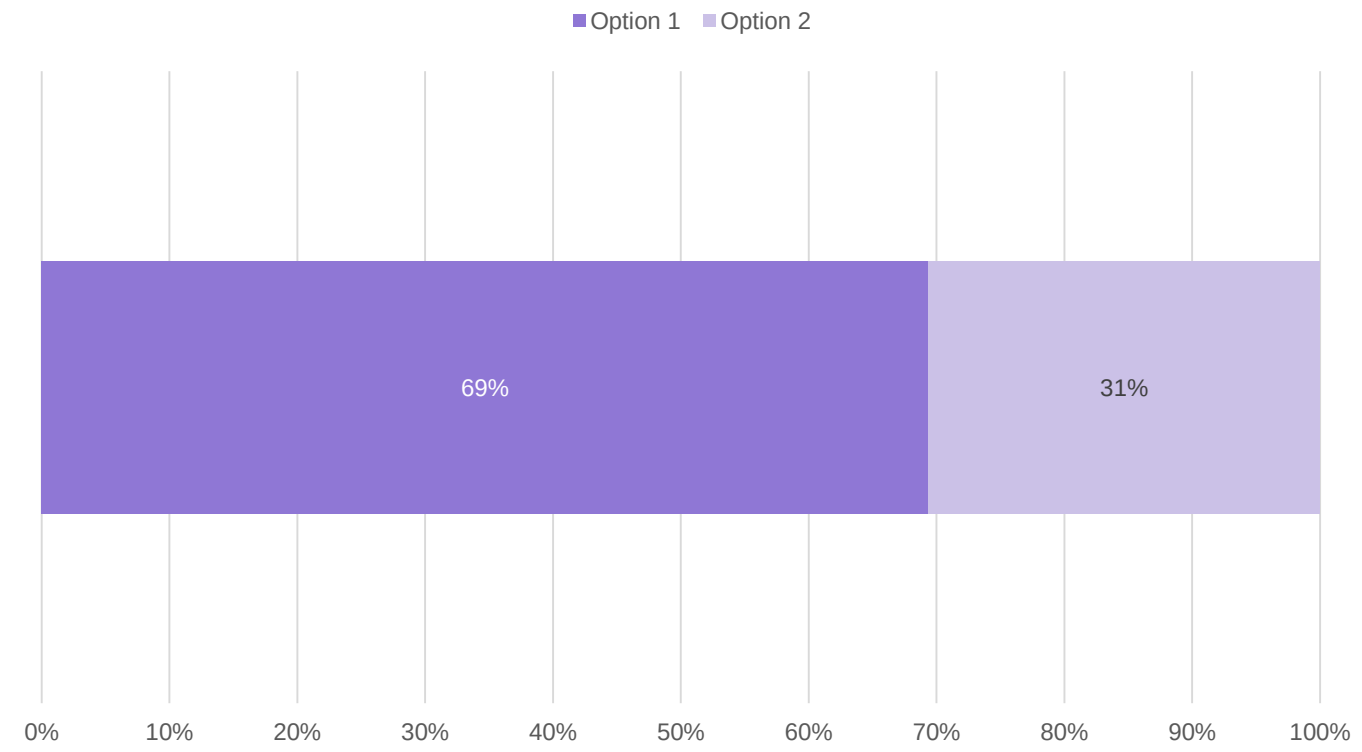
Business

Overall, Option 1 is the preferred route for question 4

Balancing noise and emissions

Option 1 *– Fly the most direct routes possible to reduce emissions, even if this means flying over more people*

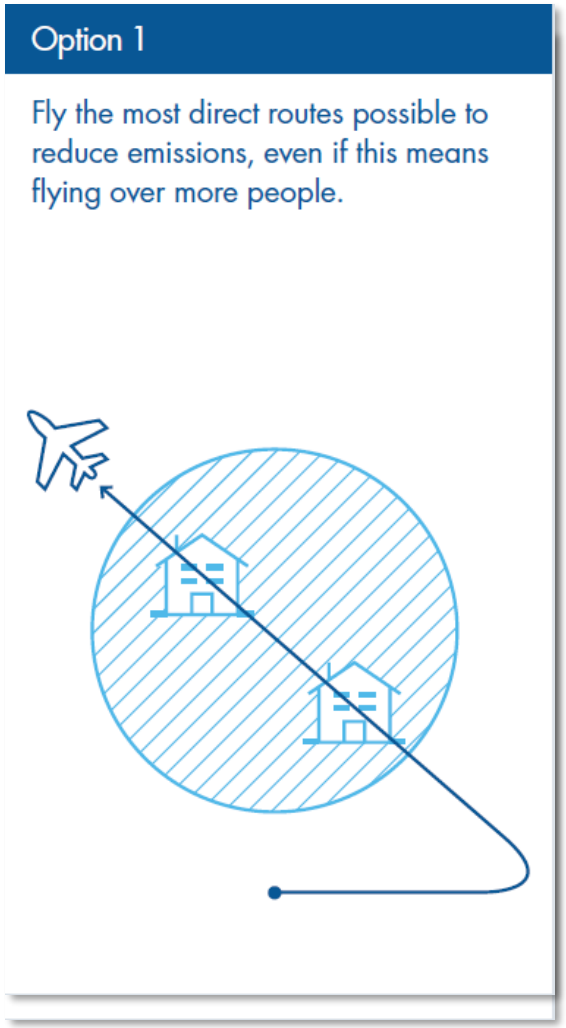
Option 2 *– Avoid flying over communities so fewer people are affected by aircraft noise, even if this means higher CO2 emissions*



N.B. figure is based on responses on self-complete forms completed by stakeholders in the groups

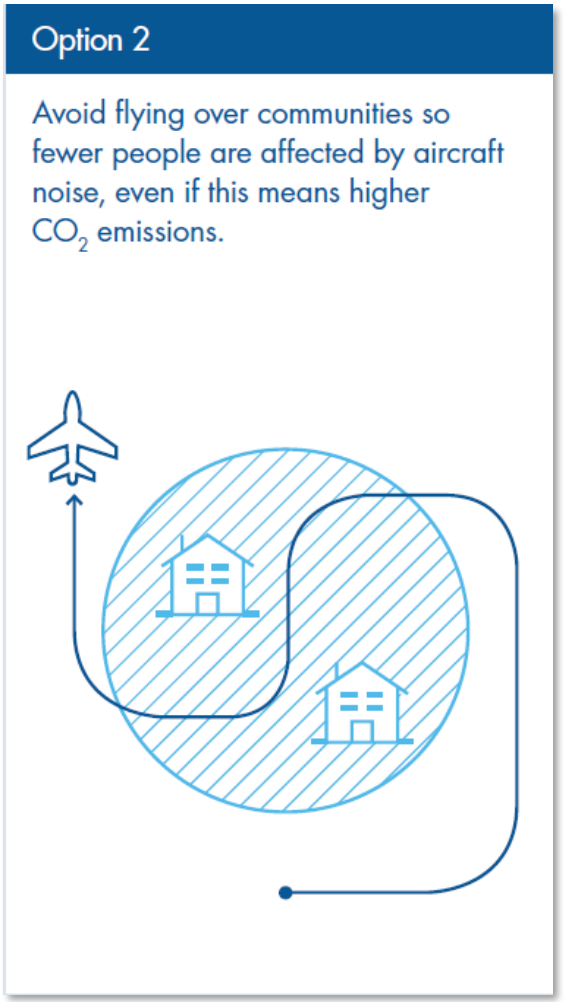
Option 1 the most pragmatic approach, ensuring efficiency

- **Option 1 is the most practical and pragmatic approach**
  - Avoiding built up areas (Option 2) would result in longer routes that are less efficient and fail to curb emissions
  - Flying direct is a more practical and efficient approach
- **It tackles the emissions challenge head on**
  - Stakeholders are conscious of climate change, and there's an awareness of the Government's ambitious emissions targets: action must be taken
  - Flying the most direct / efficient routes will lead to cuts in emissions, having a positive impact on the environment
  - However, some want reassurance about the extent of the reduction: will this be offset by actions later on in the journey (e.g. stacks)?
- **However, communities may be impacted**
  - Flying over communities would have an impact on noise and air quality which would be particularly challenging for those not currently overflown



Option 2 is better for local residents, but doesn't address emissions

- **Option 2 would benefit local communities**
  - Avoiding overflying residents would reduce noise impacts on the ground – key given Stansted's rural catchment
  - It's also expected to have a positive effect on local air quality
- **However, most feel that this is infeasible**
  - Plotting flight paths that avoid communities would be challenging, given the number of communities in the area
  - It would be doubly challenging given increasing building work – flight paths that avoid communities now, may not avoid them in 1 or 2 years' time
  - Ultimately, Option 2 is not seen as a practical solution
- **And it fails to tackle emissions**
  - Although there would be some merit in avoiding communities, emissions are the key challenge for most: potentially increasing CO2 emissions is not acceptable



Question 4: potential adaptations

Optimisation / improvements

Most have the information they need to answer this question, though they do question which areas will be affected (as this will ultimately shape their views). Some state that noise impacts will be reduced in future, given enhanced aircraft design, making this less of an issue overall.

Potential for an option 3

There are some calls for an Option 3 here, with some asking for respite to be built into Option 1, to ensure those overflown aren't too heavily impacted by noise, or for an Option 3 where modern aircraft fly Option 1, and older aircraft fly Option 2, forcing designers to adapt aircraft to be more environmentally friendly

Question 5

Taking account of current arrangements and agreements

We already operate in a way that limits the effect of aircraft noise. This includes the set of flight paths we have in place for departing aircraft (our noise preferential routes), using a 'continuous descent' approach for south westerly arrivals (so arriving aircraft are able to stay higher for longer) and using satellite guidance on some of our departure routes (so aircraft fly the route as accurately as possible).

We also have a number of agreed operational procedures (for example, the point an aircraft must be at for the final approach to the runway on arrival, and the arrangement to avoid flying directly over St Elizabeth's, a local residential care home for patients with epilepsy and other complex medical conditions).

As we design future flight paths, we need to consider whether to continue operating as we have previously agreed or whether we should design entirely new routes to achieve the best possible outcomes (taking account of factors such as noise, emissions, sensitive sites and the airport running efficiently to minimise delays to passengers).

Remember you can also use the box below to give us a different view that reflects your specific priorities.

Please indicate your preference below

When we design our flight paths, which option below do you prefer and why?

Option 1

Continue with current arrangements and ways of operating.

Option 2

Design new routes to achieve the best possible outcomes for reducing noise and emissions while increasing the efficiency of the airport.

Question 5 Summary: Taking account of current arrangements and agreements

Views on the principle

Most agree that to future-proof airspace, the opportunity to 'start again' should be embraced, and therefore plotting new efficient routes should be the focus. However, they do realise that some existing arrangements (e.g. St Elizabeth's) will need to be considered in the redesign too, in order to reduce any negative impacts on the local community.

Preferred option

Across groups, Option 2 is the strong preference. Starting 'from scratch' is seen as the most efficient and effective approach, as it could result in reduced noise and emissions. Individuals do call for an option 3, however, particularly a hybrid option that allows for new routes to be plotted but some previous arrangements taken into account if needed.

Differences by groups

General public groups suggest that alternative measures could be put in place (e.g. sound proofing, triple glazing) to reduce impacts on St Elizabeth's / other cases, and Aviation reps suggest moving St Elizabeth's if needed. Elected reps, Business, and Community groups all say that St Elizabeth's should be considered in plans.

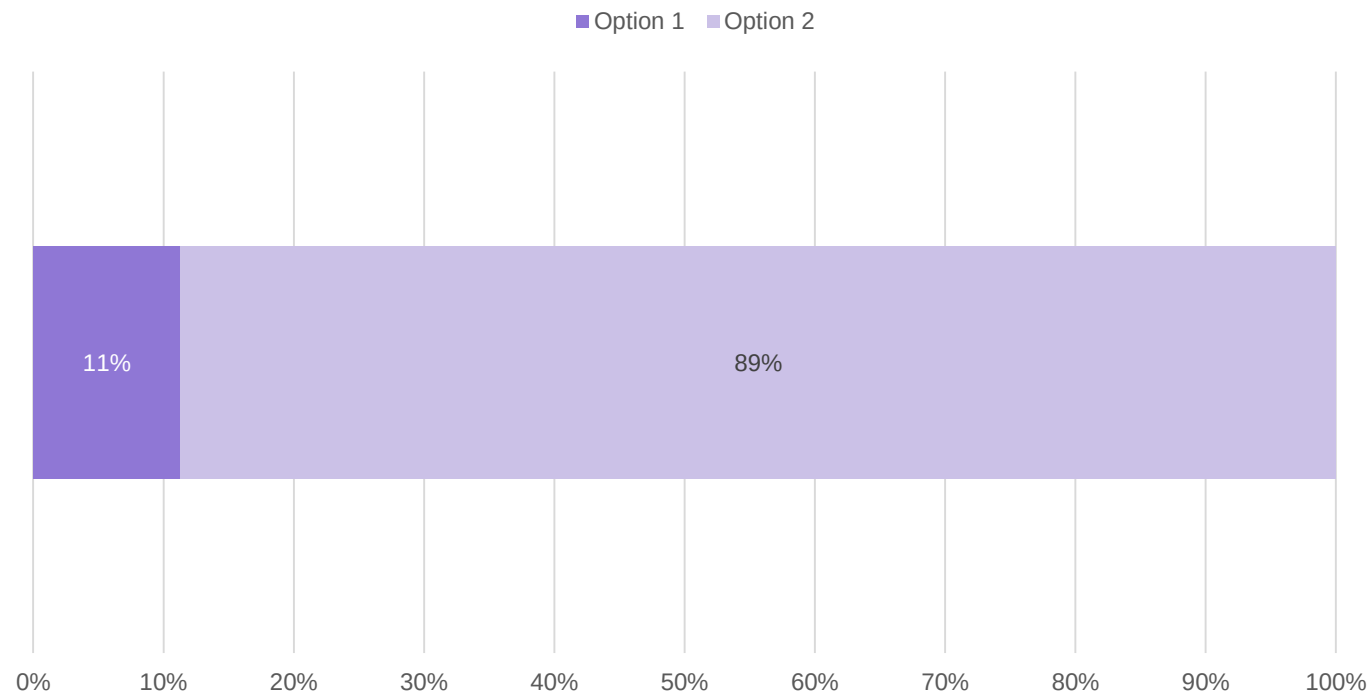
"Things have moved on – now we have measures to mitigate the noise."
"Need to take a more blank slate approach"
Community

Overall, Option 2 is the preferred route for question 5

Taking account of current arrangements and agreements

Option 1 *– Continue with current arrangements and ways of operating*

Option 2 *– Design new routes to achieve the best possible outcomes for reducing noise and emissions while increasing the efficiency of the airport*



N.B. figure is based on responses on self-complete forms completed by stakeholders in the groups

Option 1 – continuing with current ways of operating fails to embrace change

- **Option 1 limits the potential for efficiency**
  - This seems to go against the aims of the Airspace Modernisation programme, which provides the opportunity for wide-scale change
  - Many call for an opportunity to redesign airspace that will have benefits for all, not just current arrangements and ways of operating
  - Stakeholders cannot see how Option 1 could bring efficiencies

- **However, there is some sympathy for St Elizabeth's**
  - Avoiding flying over St Elizabeth's is largely seen as a positive arrangement
  - Some ask whether changing this will have an adverse affect on residents
  - Most agree that this should be considered when future routes are plotted

- **Some call for changes on the ground**
  - Rather than changing routes to avoid certain sites, some call for changes to buildings (e.g. soundproofing), or in extreme cases specific sites being moved, to reduce impact of overflying

Option 2 will tackle noise and emissions, and lead to increased efficiencies

- **Option 2 is most strongly aligned with the programme**
  - This option embraces the spirit of the Airspace Modernisation programme – designing new routes from scratch to ensure greatest outcomes
  - Most agree that emissions and noise should be the priority here, rather than preserving all existing arrangements without review
- **Reducing noise and emissions is key**
  - Reducing emissions is important across groups, as this is a local, national and international challenge that must be addressed
  - Cutting noise is also important for local communities and those currently overflown, reducing the burden
- **However, there should be scope for flexibility**
  - While the most efficient routes should be plotted, current arrangements should be factored into future routes where necessary (e.g. St Elizabeth's), and changes made if needed

Question 5: potential adaptations

Optimisation / improvements

There are some questions about what ‘improving efficiency of the airport’ means in real terms (i.e. throughput or financial efficiency?), and this must be clarified. Stakeholders rank emissions and noise efficiencies as much higher priority than airport efficiencies (esp. if financial).

Scope for Option 3

Those that suggest an Option 3 mostly ask for a enhanced Option 2 approach, here. Plotting the most efficient routes, and then amending them to avoid certain areas would be a solution. Others ask for old / new routes to be ‘put on the table’, and existing routes improved if needed

Question 6

Other airspace users

While we control airspace around our airport, not all flights in our airspace are to and from the airport. We need to make our airspace available for other users, including private aircraft, helicopters, military flights, air ambulance, gliders, microlight aircraft, balloon flights and drones.

How we design our flight paths could allow other users to operate freely or might lead to them making lengthy detours and experiencing delays.

As we design future flight paths, we need to consider whether to:

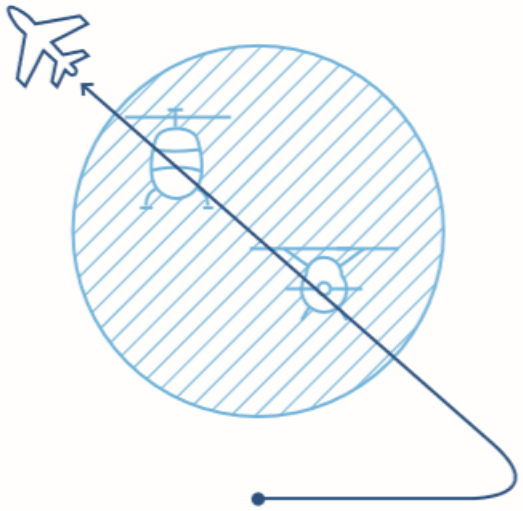
- prioritise the best possible routes for aircraft flying to and from the airport, to minimise noise, emissions and inefficiencies in operations at our airport; or
- introduce flight paths that mean other airspace users are not significantly disadvantaged by changes, even if this means aircraft using the airport cause more noise or emissions.

Please indicate your preference below

When we design our flight paths, which option below do you prefer and why?

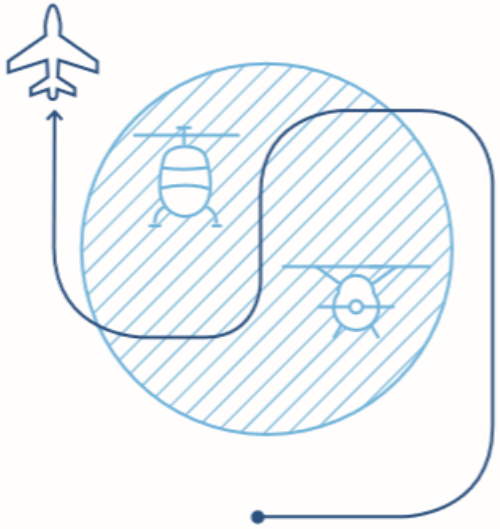
Option 1

Design the best possible routes (for minimising noise, emissions and inefficiencies in operations at our airport) for aircraft flying to and from the airport, even if this disadvantages other airspace users.



Option 2

Design routes that minimise the effect operations at the airport have on other airspace users, even if this means increased noise and emissions.



Question 6 Summary: Other airspace users

Views on the principle

The majority of stakeholders see airport traffic as the priority. As a commercial airport, stakeholders think that Stansted should give primacy to passenger and cargo aircraft. Stakeholders also agree that air ambulance, police and military aircraft should have priority in case of emergency. Other GA craft are seen to take less precedence overall.

Preferred option

Option 1 is the broad preference, as this is the most efficient approach, and one that benefits core (commercial) aircraft. A minority select Option 2 or an Option 3, on the basis that this would accommodate all airspace users – regardless of whether they're commercial or GA. Aviation reps call out the importance of safety in any future redesign.

Differences by groups

Most stakeholder groups think that commercial traffic should take precedence. However, Business reps and Aviation reps call for a solution that maximises efficiencies for the airport and reduces noise and emissions that is not at the expense of GA. There's a sense that the more defined the airspace, the more accommodating it is to all users.

"I think the airport needs to have the priority – it's running a business etc.…The day to day flights should have priority"

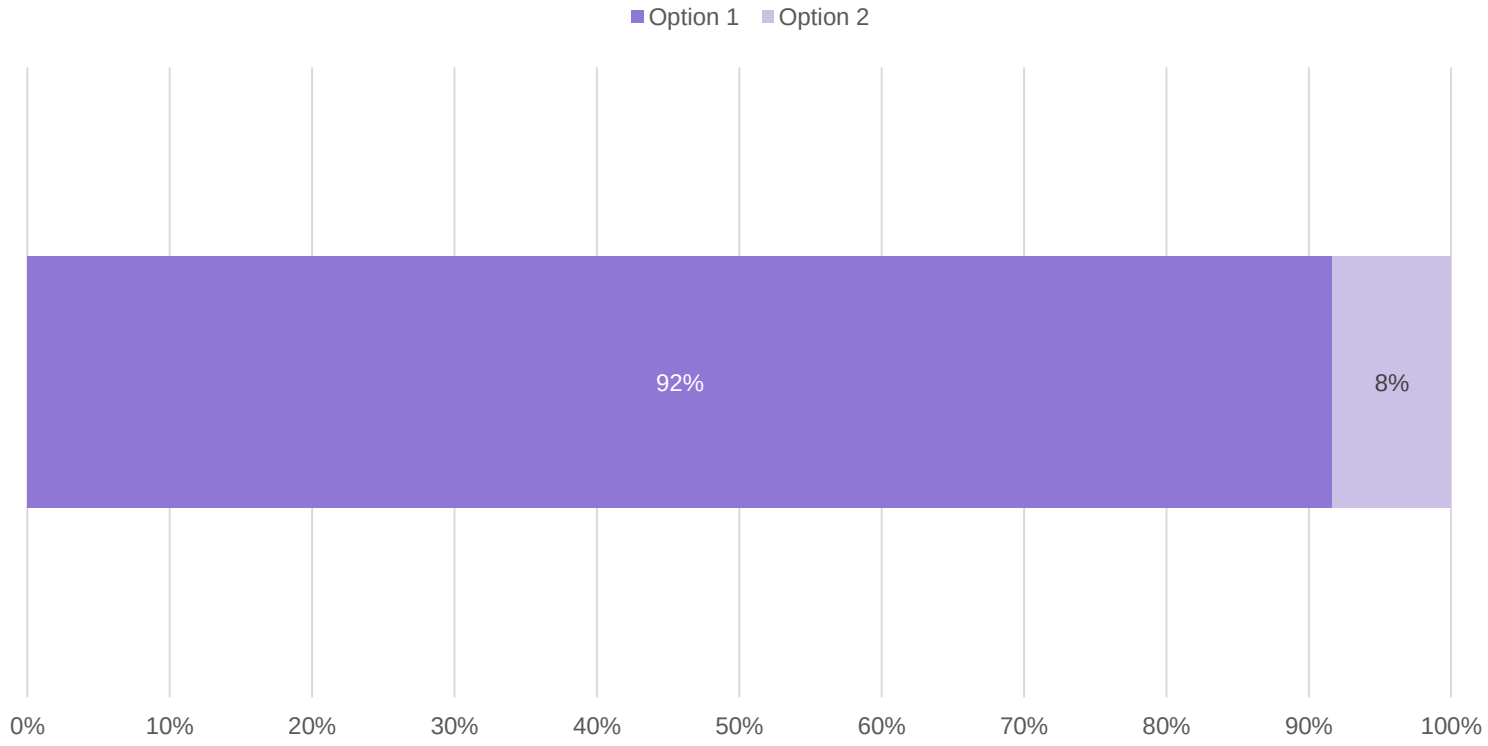
Elected Reps

Overall, Option 1 is the preferred route for question 6

Other airspace users

Option 1 *– Design the best possible routes (for minimising noise, emissions and inefficiencies in operations at our airport) for aircraft flying to and from the airport, even if this disadvantages other airspace users.*

Option 2 *– Design routes that minimise the effect operations at the airport have on other airspace users, even if this means increased noise and emissions.*



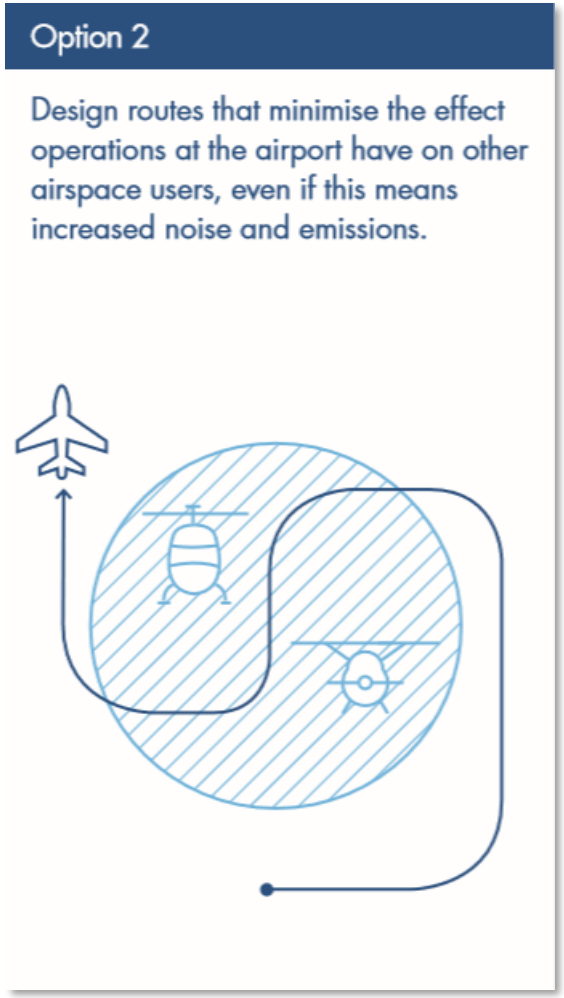
N.B. figure is based on responses on self-complete forms completed by stakeholders in the groups

Option 1 is seen as the most efficient and effective approach

- **Option 1 will result in more efficient routes**
  - Designing the best routes will minimise noise and emissions – both of which are key for stakeholders
- **The priority ordering is felt to be fair**
  - Most think that commercial aircraft should take precedence over GA, as they think that passenger / cargo flights make up the bulk of movements
  - Air Ambulance / emergency services / military aircraft are seen as distinct to other types of GA – and there's positivity that they will retain priority status
- **However, should change be at the expense of GA?**
  - Those in the Aviation and Business groups think that airspace can be used by all airspace users, without any one group being disadvantaged
  - Ensuring that the airspace is defined (with distinct boundaries), and encouraging early climbing, could allow GA to fly alongside commercial
  - Aviation also call out the safety implications of closing off airspace to GA, as pushing GA to fly in smaller areas could be dangerous

For most, Option 2 lacks appeal as it fails to deliver on efficiency

- **Option 2 does not maximise efficiency**
  - Given the opportunity to make bold changes with the Future Airspace programme, Option 2 feels too limiting
  - Emissions and noise are key topics for stakeholders, and all should be done to reduce these where possible – not increase these
- **Only a minority support this stance**
  - Those that do support it, do so in opposition to the idea that change could disadvantage some airspace users and not others
- **Some think an Option 3 would offer a compromise**
  - Business and Aviation reps call for a solution that allows all airspace users to use airspace as required
  - More ‘intelligent’ flying (e.g. such as steeper climbs) could mean that the controlled airspace below would be available for GA



Question 6: potential adaptations

Optimisation / improvements

Stakeholders agree that the information provided is clear, and the information about priority emergency aircraft usage is both reassuring and well received. Some ask what proportion of Stansted's airspace users are GA vs. commercial, and more detail on this could be of benefit.

Scope for Option 3

Most are able to make their selection without the need of an Option 3. However, for Aviation reps (which includes GA) there are calls for an optimised Option 1. With steeper climbs this could free up airspace below (in theory) for GA to use. This would result in efficiencies for all airspace users.

Question 7

Aircraft types

Some flight paths would require aircraft to have the very latest navigation equipment. If we design flight paths that require aircraft to use the latest equipment, it could make it difficult for older or smaller aircraft to be used. This could reduce the frequency of some flights and potentially lead to delays. It may also result in aircraft without up-to-date technology having to fly slightly different flight paths, or flying less accurately, which could lead to them flying over local communities which are not currently flown over.

If we design flight paths that are suitable for all aircraft types, we may not be able to take full advantage of some of the latest equipment and techniques. This might mean, for example, that we can't minimise aircraft noise as effectively or that the airport operates less efficiently.

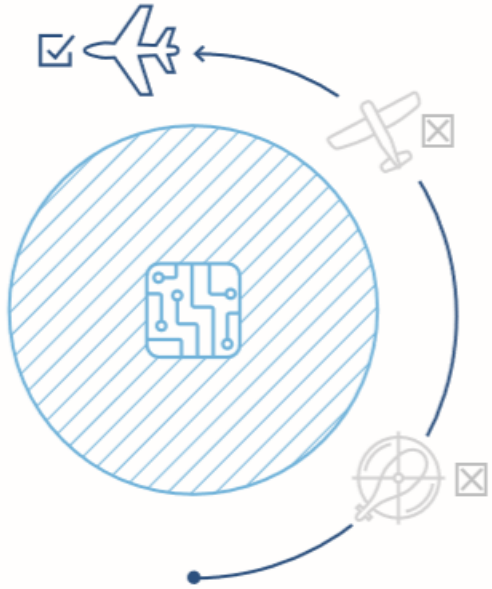
The number of older and smaller aircraft affected by any change we make is likely to reduce over time. In the meantime, we need to consider how and where these aircraft currently operate.

Please indicate your preference below

When we design our flight paths, which option below do you prefer and why?

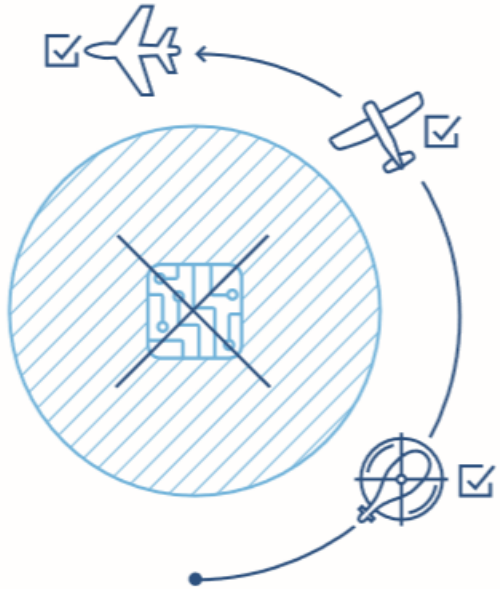
Option 1

Take advantage of the latest technology and techniques, even if this makes flight paths more difficult for older and smaller aircraft.



Option 2

Make flight paths suitable for all aircraft, even if this means new technologies and techniques cannot be used.



Question 7 Summary: Aircraft types

Views on the principle

For the vast majority, airspace modernisation should embrace new technology and the development of aircraft. Stakeholders agree that where new technology is available to improve noise and emissions, it should be used. While older aircraft may be disadvantaged, most think this will only affect a small proportion of aircraft overall.

Preferred option

Across groups, there is a strong preference for Option 1 – the redesign should generate routes that are 'future-proofed', designed with new technology in mind. Many think that airlines should play a part in developing new technology in order to phase out older aircraft, and believe that the design of new routes for tech-enabled craft will prompt action.

Differences by groups

Aviation reps argue that the new technology already exists and that some airlines are waiting to use it: airspace should, therefore, be designed to use it. Business reps think that the UK should take responsivity for embracing new technology, and Special Interest stakeholders think that phasing out older craft is the next natural step.

"Option 1 – the sooner we take advantage of modern techniques the better – an analogy is old cars – as a practical reality you've got to move with the times and the priority has got to be with improving emissions"

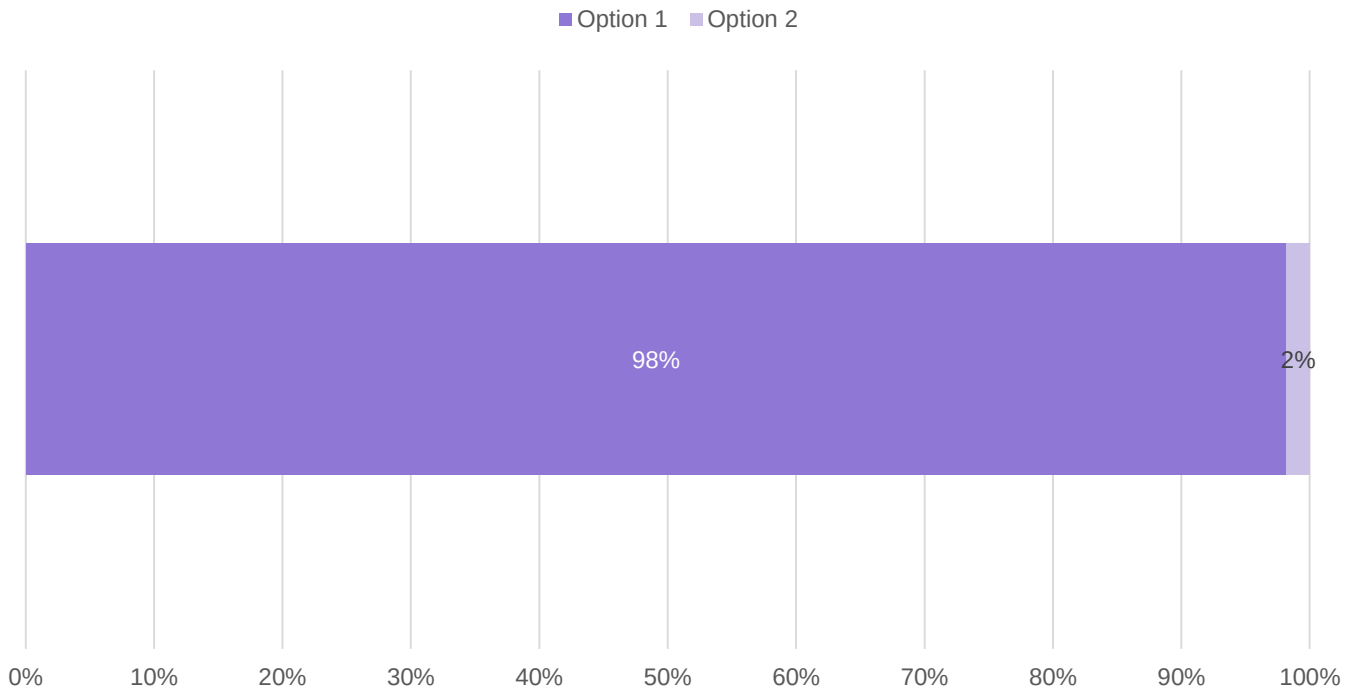
Special Interest

Overall, Option 1 is the preferred route for question 7

Aircraft types

Option 1 *– Take advantage of the latest technology and techniques, even if this makes flight paths more difficult for older and smaller aircraft.*

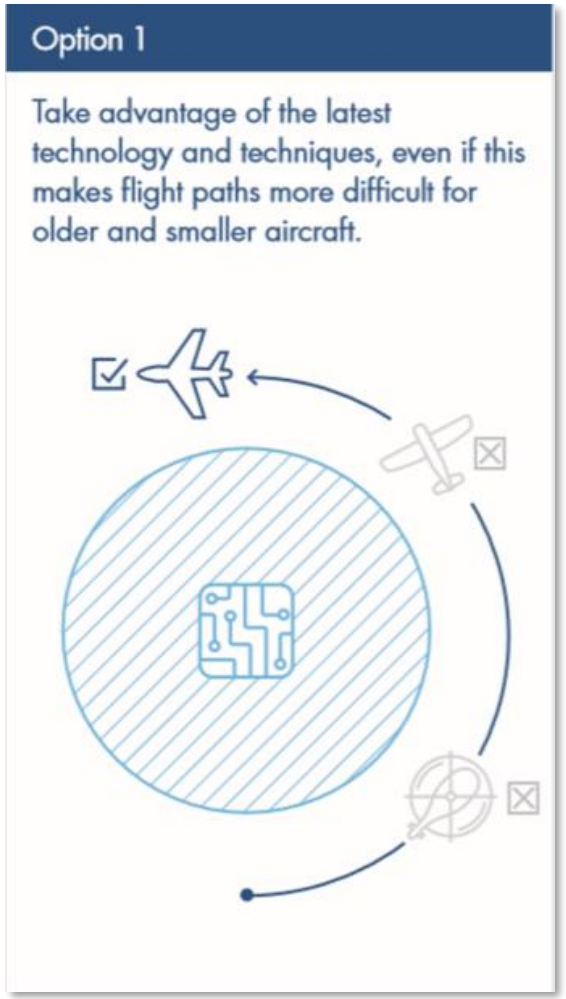
Option 2 *– Make flight paths suitable for all aircraft, even if this means new technologies and techniques cannot be used*



N.B. figure is based on responses on self-complete forms completed by stakeholders in the groups

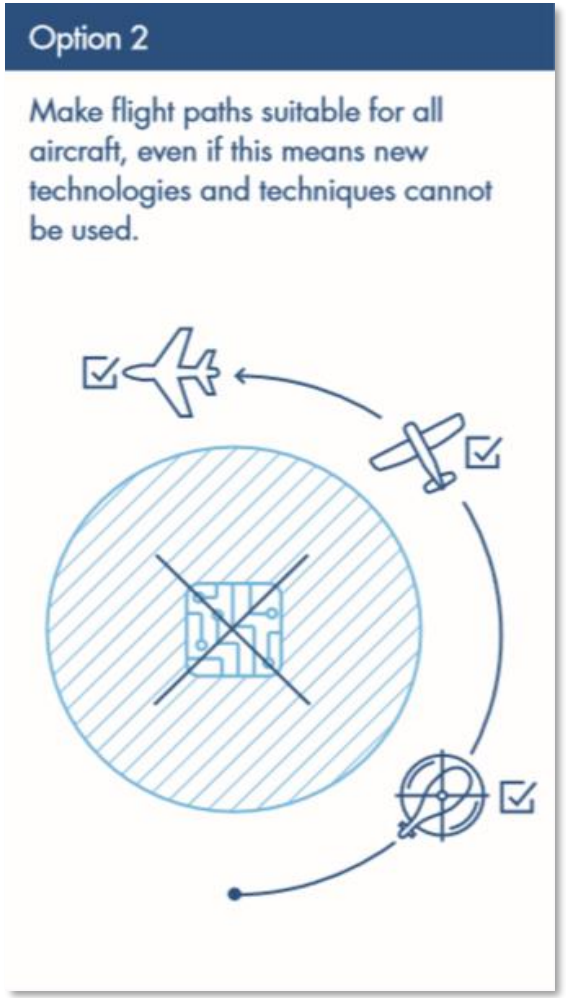
Option 1 is the natural choice for modernisation

- **Across groups, Option 1 is strong preference**
  - The purpose of the redesign is to modernise and future-proof airspace – this goes hand in hand with new technology
  - The purpose of the Airspace Modernisation programme is to modernise airspace, and all agree that new technology should play a role
- **Airlines should take on responsibility**
  - Most agree that the airlines should be at the forefront of change: it's their responsibility to use technology that allows for quiet and clean travel
  - If airspace is designed with the latest technology in mind, airlines will be pushed to make the changes required
- **Older aircraft should be phased out**
  - Many compare this to the phasing out of diesel cars: older aircraft are thought to be noisier than newer craft, so this will have a positive impact
  - However, some do ask how this will affect specific carriers / airlines



Option 2 is not seen as a feasible option

- **Option 2 is not aligned with the modernisation strategy**
  - It's more egalitarian, but it doesn't embrace technology or change
  - Stakeholders think that this goes against the aims of the programme
- **Many think that older aircraft will gradually be phased out**
  - While older craft may be flying now, they expect them to be phased out eventually (cf: diesel cars)
  - If flight paths aren't changed now, they won't be fit for purpose in future
- **Cutting noise and emissions is the priority**
  - Stakeholders prioritise reducing noise and emissions wherever possible, and expect newer / tech-enabled craft to be quieter and cleaner
  - They do not think this will be possible if new technologies and techniques are not embraced



Question 7: potential adaptations

Optimisation / improvements

Most are content with the information available, though individuals do ask which airlines will be impacted by the changes (e.g. smaller carriers, budget airlines), and whether smaller aircraft will be able to use different discrete flightpaths, or alternative (smaller) airports instead of Stansted.

Scope for Option 3

Responses to this question are cut and dried, so there are no calls for an Option 3. Some do note that it could be challenging for smaller carriers, and ask whether there will be some exceptions made to smaller / older craft as they are gradually phased out and removed from the airspace.

Question 8

Multiple flight paths in the same area

For safety reasons, aircraft must take off and land into the wind. This allows departing aircraft to climb faster and landing aircraft to stop more quickly.

The direction of take-off and landing changes when the direction of the wind changes. For this reason, we have two sets of flight paths, one for when the wind is from the south west (as is most often the case) and one for when the wind is from the north east.

From each runway there are alternative arrival and departure routes. This means that we have several flight paths, some of which overlap. If we design each new flight path on its own, we can make sure each route is the best it can be, so reducing noise and emissions, and allowing the airport to operate as efficiently as possible (improving travel time while reducing emissions). However, designing each flight path individually could mean that, when we put them all together, some areas are overflown by several routes.

When we design future flight paths, we need to find the best overall outcome and consider whether we should prioritise:

- the efficiency of individual routes; or
- avoiding areas being overflown by several routes.

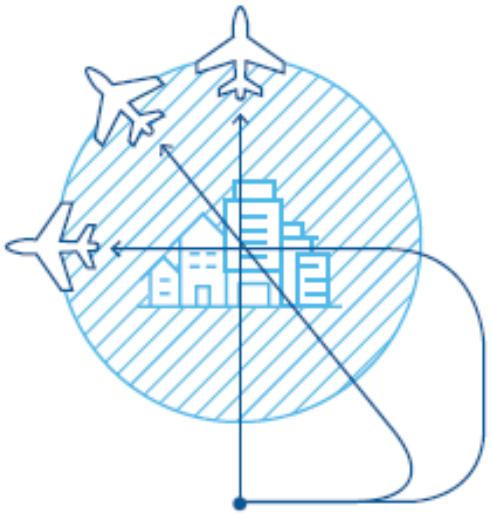
Remember you can also use the box below to give us a different view that reflects your specific priorities.

Please indicate your preference below

When we design our flight paths, which option below do you prefer?

Option 1

Make sure each route can achieve the best balance between reducing noise and keeping emissions low, even if this means some areas are overflown by several routes.



Option 2

Avoid having areas overflown by several routes, even if this limits our ability to minimise noise and emissions.

Question 8 Summary: Multiple flight paths in the same area

Views on the principle

Again, stakeholders prioritise efficiency first and foremost, so designing the most efficient routes that limit noise and emissions is key. However, many struggle with the real impact it could have on local communities and there are calls for areas that will be heavily overflown to be reviewed on a case-by-case basis during redesign.

Preferred option

Option 1 is preferred, however some do struggle to make the decision. Those that support this option do so as they think it will achieve the best balance in terms of emissions and noise. However, there is an acknowledgement that communities may be heavily affected, so an Option 3 (that assesses the burden on overflown areas) is requested.

Differences by groups

Aviation reps see Option 1 as the best choice for long-term benefit (esp. coupled with enhanced technology that will reduce noise impacts on the ground). Some General Public call for adaptions to buildings on the ground to reduce the impact of those overflown. Special Interest are concerned about local impacts.

"You can put limits surely on how often one particular area is overflown – if you are getting a plane every 30 mins then surely that's not fair"

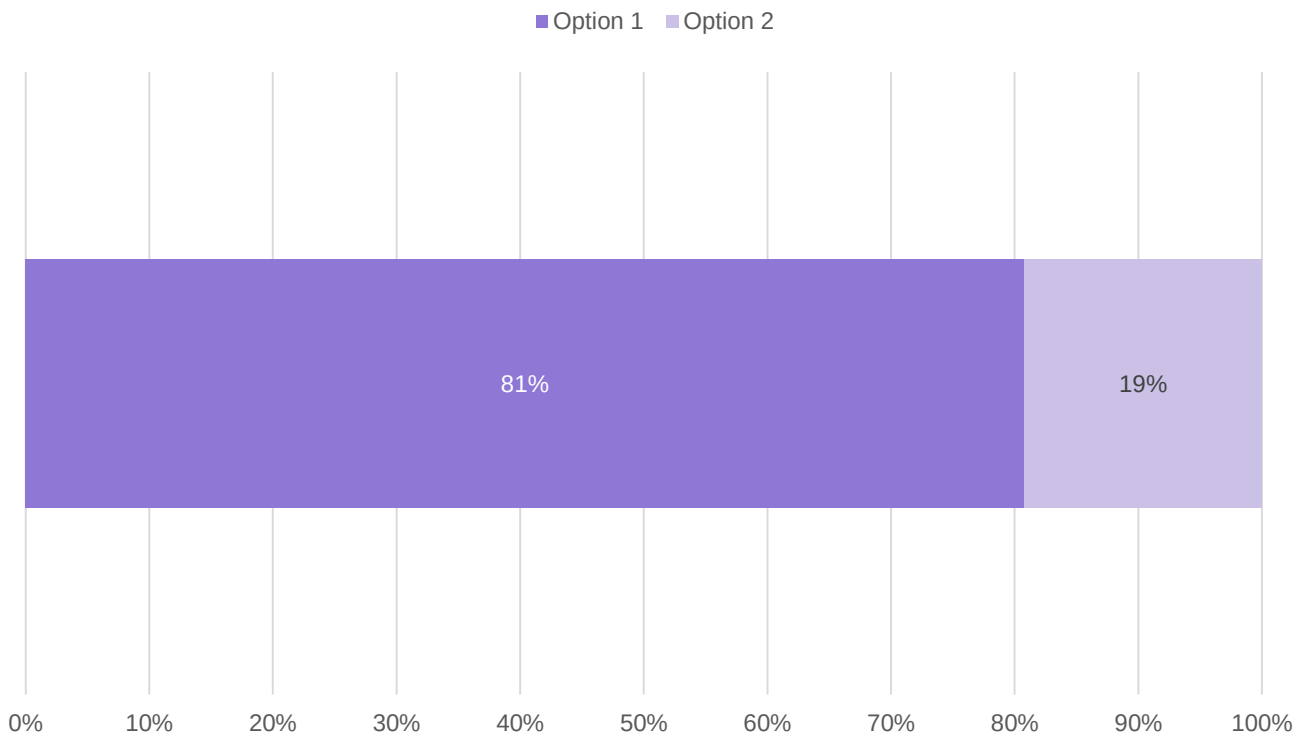
General Public

Overall, Option 1 is the preferred route for question 8

Multiple flight paths in the same area

Option 1 *– Make sure each route can achieve the best balance between reducing noise and keeping emissions low, even if this means some areas are overflown by several routes.*

Option 2 *– Avoid having areas overflown by several routes, even if this limits our ability to minimise noise and emissions.*



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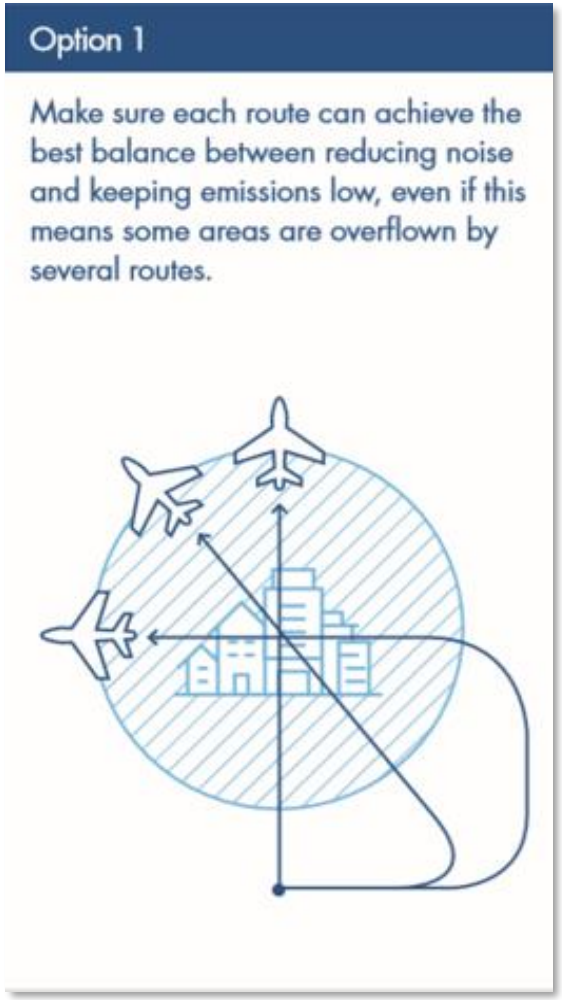
N.B. figure is based on responses on self-complete forms completed by stakeholders in the groups

Option 1 is the most efficient approach, and is preferred by most

- **Option 1 could reduce noise and emissions**
  - Noise and emissions are the priority, and have to be addressed
  - People will always be overflown (particularly with landing patterns dictated by wind direction), so routes should be plotted with efficiencies in mind, to reduce noise and emissions impacts
- **But communities could be heavily burdened**
  - There is sympathy for those who will be overflown, as it will impact their lives and potentially house prices
  - Some call for limits to be put in place to ensure that areas aren't too heavily burdened by noise – esp. rural communities
  - Others (General public) ask for changes to be made on the ground (e.g. soundproofing) to ease the burden
- **An option 3 could help to mitigate impacts**
  - There is interest in a 3rd option that would allow for the most effective routes to be plotted, but then reconsidered if some areas are too heavily impacted



Option 2 is fairer to local communities, but it is inefficient

- **Few see Option 2 as a strong option**
  - Option 2 fails to address noise and emissions, which are key priories for stakeholders
- **For most, it's an inefficient approach**
  - Avoiding overflying areas will mean that the most efficient routes cannot be plotted
  - This will limit ability to reduce noise and emissions, and result in a much less efficient use of airspace
- **However, communities could be protected**
  - There is concern that noise could become intolerable if areas were overflown by several routes
  - Although aircraft are quieter than before, more *frequent* flights mean that noise may still be an issue; avoiding overflying would relieve this burden

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Question 8: potential adaptations

Optimisation / improvements

Some struggle to make an informed choice without knowing where the routes will be plotted, and which communities will be impacted – and there are calls for fuller details here (e.g. whether towns / villages / rural areas will be impacted).

Scope for Option 3

There is some interest in an Option 3, that provides a hybrid approach. This would allow the most efficient routes to be plotted, but with the caveat that areas heavily overflown would be reviewed, and routes would be altered if needed.

Question 9

Areas that we should avoid flying over

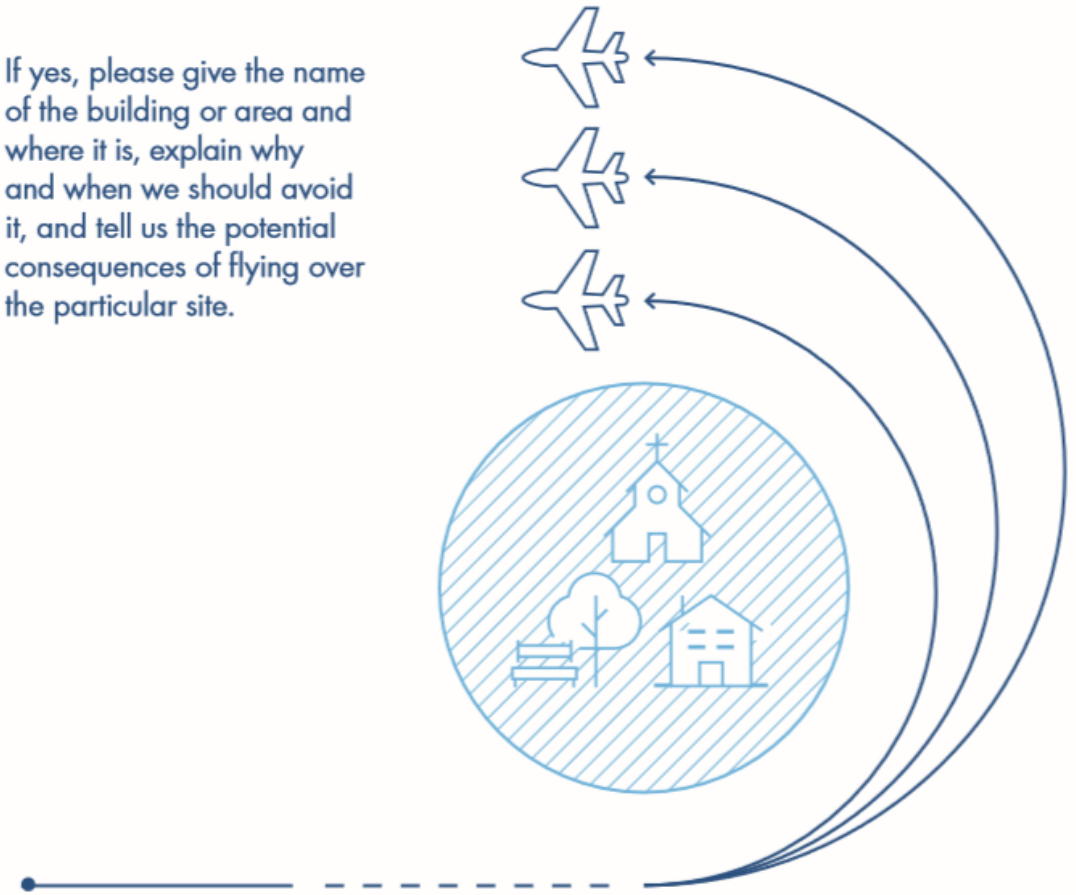
The flight paths we design will control aircraft flying at altitudes of up to 7,000 feet. The areas that might be overflown up to this altitude are shown on the Manchester Airport area diagram.

When designing flight paths, we need to consider areas that will be overflown, particularly at lower altitudes. It may be best to avoid some areas, such as parks, historic properties and nature reserves, because they are particularly tranquil or spaces where people go to relax. Certain buildings, such as schools, care homes and hospitals, can be particularly affected by noise.

It may also be inappropriate to fly over some areas, for example if they present a danger to aircraft because they are used for military training or have a large number of birds.

When we design our flight paths, are there any areas or buildings that you think we should avoid flying over?

If yes, please give the name of the building or area and where it is, explain why and when we should avoid it, and tell us the potential consequences of flying over the particular site.



Most agree that avoiding specific sites would be too much of a logistical challenge

Preserving tranquillity: there is some interest in preserving unspoilt areas in the local area, though most recognise that this would be a challenge given the rural surrounds of the airport. There are calls for Hatfield forest to be considered strongly in future, given its natural significance, and popularity with locals / visitors.

"Got to be Hatfield forest – an ancient woodland. Really important to preserve what we have left"
Community

Avoiding sites of care: while vulnerable people could be avoided, most recognise that this is infeasible. As a result, stakeholders agreed that measures on the ground for soundproofing (e.g. triple glazing), or potentially moving buildings most heavily affected by noise (e.g. care homes), would be more effective.

"Biggest concern is hospitals - they should take priority - it would be interesting to know how much of a burden it is if at all, given sound proofing and triple glazing"
Special Interest

Protecting historic places: individuals make the distinction between older buildings that cannot be insulated, and newer buildings where soundproofing is possible. Thaxted church and Audley End are both in the former category, and should be considered, where possible, when plotting future flight paths.

"Audley End House – it's national heritage, a Jacobean mansion"
Special Interest

Question 10

Meeting requirements

As we design new flight paths, there will be certain national and international safety, regulatory, legal and operational requirements:

1. **Safety** – all flight paths must meet all required safety standards.
2. **Industry standards and regulations** – industry standards (usually set internationally) or regulations apply to some aspects of how aircraft fly. All new flight paths must meet these legal obligations.
3. **Consistent with the national system of aircraft routes** – our new flight paths will become part of a new national network of routes, so they must take account of flights to and from other airports. As our flight paths will only be designed to 7,000 feet, they will also need to join up with national aircraft routes at higher altitudes.
4. **Maintaining and improving our airport** – London Stansted Airport is a busy international airport which continues to grow to provide the services our customers need. In line with the Government's policy of 'making best use' of our nation's airports (https://www.gov.uk/government/publications/aviation-strategy-making-best-use-of-existing-runways), our flight paths must allow us to provide the services that we offer today and meet any future demand from customers (within the limits set by current or future planning conditions).
5. **Keeping to government policy** – UK airspace is amongst the busiest in the world. To tackle the issue of congestion, the Government instructed the CAA to develop an Airspace Modernisation Strategy (AMS (CAP1711)), which was published in December 2018. Our design principles must take account of government policy on aviation, and reflect the requirements of the Airspace Modernisation Strategy.

Do you agree that any design for future flight paths must meet the requirements shown opposite?

If no, please explain why.

Do you think there are any other requirements that our new flight paths must meet?

We also ask you to explain your views and add anything you think we should consider.

Question 11

Other things we should consider

In our questions we set out the important factors that we think we will need to consider when designing new flight paths.

As well as considering your answers to those important questions, we want to know if there are other things you think we should be taking account of.

If there is anything else we need to consider, or do you have any suggestions? If yes, please give details below.

Stakeholders understand the inclusion of all the requirements, but most feel that safety should be the priority

Requirements are clear and understood: across groups, stakeholders understand the inclusion of these requirements – and as many are mandated – realise there's little scope to disagree. Inclusions around safety, standards and regulations and joining up with other agencies are all key.

"Legal and aircraft requirements must be a minefield, but no way around that – have to comply, it's a given – it's not an option."
Special Interest

Safety is the priority: across groups safety is considered to be essential, and see it as the most important element of airspace modernisation. As a result, all agree that it should be the number one priority for Stansted, and should be at the forefront of future redesign work. For a minority, safety includes pollution, too.

"Safety is always going to be the important thing, and the rest of it has to click together."
Aviation

Mixed views on airport requirements: while individuals (Special Interest) see this as important, to ensure an inclusive experience for all travellers (esp. those with disabilities), other groups (general public) think that this this relates to expansion, which will benefit the airport, rather than stakeholder groups.

"Stansted seems to be trying to branch out into transatlantic areas…Don't try to be all things to all people."
General Public

Final thoughts

Final thoughts (1)

1. Positive associations of Stansted airport include employment and travel links, but negative associations focus on noise, air pollution and access.
2. Stakeholders understand the rationale for the Future Airspace programme, but they do question what increased capacity means for them, and for the environment.
3. Across stakeholder groups, reducing noise / emissions is the greatest focus for the Future Airspace programme – noise is more of a concern for those who are currently impacted.
4. Creating the most efficient routes to reduce noise / emissions is strongly supported (e.g. Q1 [avoid change], Q2 [concentrating / spreading], Q4 [balancing noise / emissions])

Final thoughts (2)

5. There are some calls for flexibility when designing new routes (e.g. Q3 [avoiding built up areas], Q5 [maintaining arrangements / agreements]), to ensure that these don't negatively impact local areas

6. There is support for increased use of technology (Q7), which is in-line with the Future Airspace programme, and will help to cut emissions / noise pollution

7. All understand the importance of meeting requirements (Q10), with safety the priority for most, followed by industry standards and regulations.

8. Stakeholders call for alternative 'Option 3s' on a number of occasions, so there is scope to reflect on these points before moving into the second stage of testing.

June 2020

Stansted Airport: Future Airspace Research

Melanie Nicholls – Director, Head of Qualitative Research

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