

HEATHROW EXPANSION

FUTURE AIRSPACE CHANGE

UPDATE – SEPTEMBER 2018



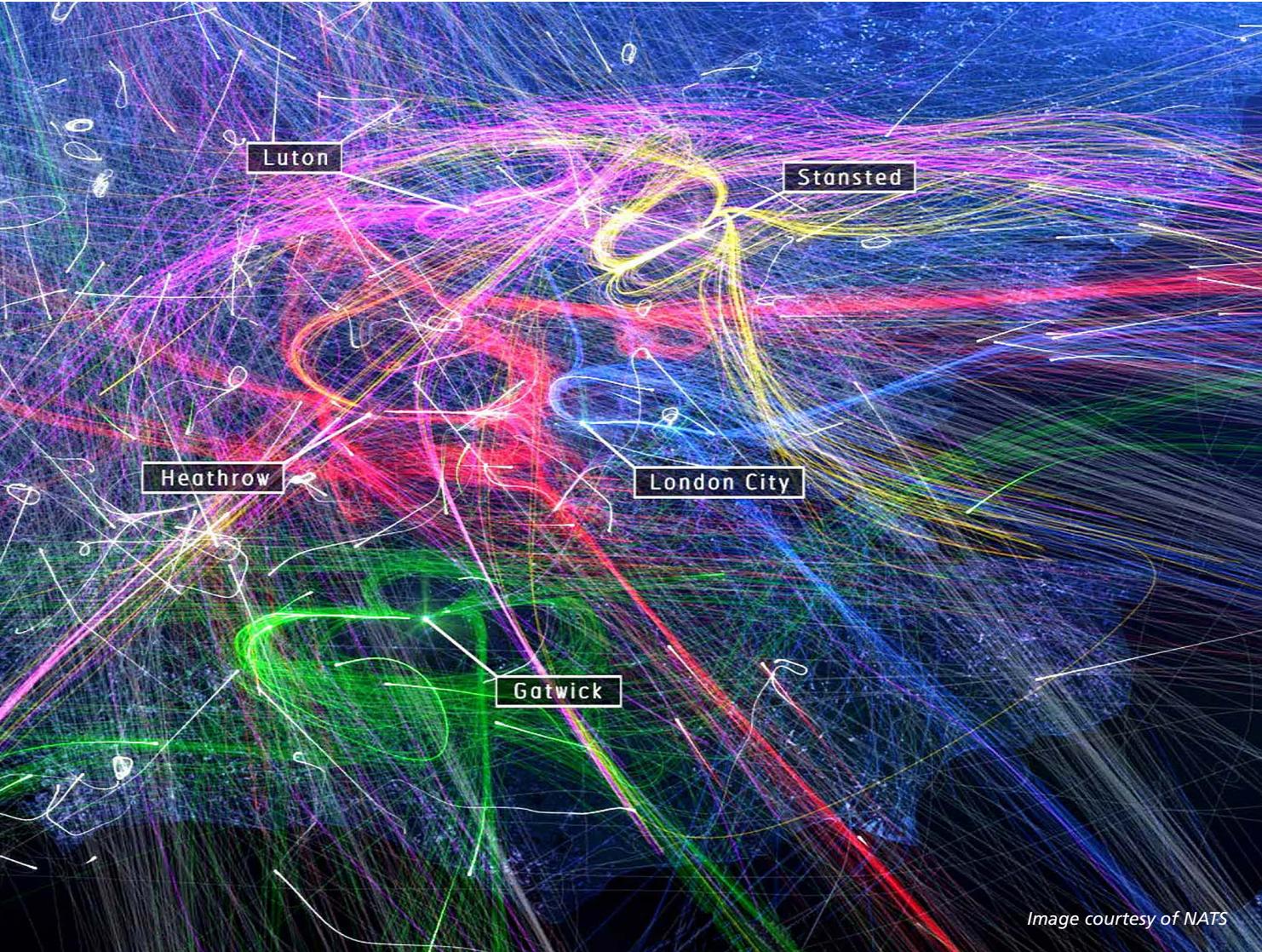
On 25 June 2018, Parliament formally backed Heathrow expansion, with MPs voting in support of the Government's Airports National Policy Statement (Airports NPS).

The Airports NPS sets out Government policy for new airport infrastructure including the need for additional airport capacity in the south-east of England and explains how this can be delivered by a new north west runway at Heathrow. It also sets out the tests that Heathrow's application for development consent to build the runway must meet, for example on air quality and noise.

The expansion of the airport is not just about the physical changes required on the ground. Building a new runway will also lead to changes to where and how planes fly in the future. At the same time the Government is embarking on plans to modernise the UK's airspace.

This document provides information on the process Heathrow needs to go through to undertake the airspace changes required for the expansion of Heathrow. It also details how this will be aligned to the Government's airspace modernisation strategy, the different stages of consultation and where we are now in the process.

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This image shows flights coming in and out of the five major airports across the south-east of England

Airspace modernisation strategy

Airspace in the south-east of England is one of the busiest in the world with five major airports in close proximity: Heathrow, Gatwick, Stansted, London City and Luton. The current airspace was designed for an age when aircraft and navigational technology was much less sophisticated than today.

In the coming years, major changes to flight paths are taking place across the UK as the Government implements its airspace modernisation strategy. This programme is being overseen by the Department for Transport (DfT) and Civil

Aviation Authority (CAA). The UK's airspace modernisation is part of a Europe-wide modernisation project called the Single European Sky.

The aim of the strategy is to make the airspace more efficient by improving punctuality; cutting CO₂ emissions; better managing noise by exploring the use of multiple routes; the reduction of aircraft-holding at low levels; and ensuring there is capacity to meet future demand. This strategy will require all the UK's main airports to modernise their airspace. It also requires NATS, the air traffic controllers, to modernise the network that sits above these airports, which is known as en-route airspace.

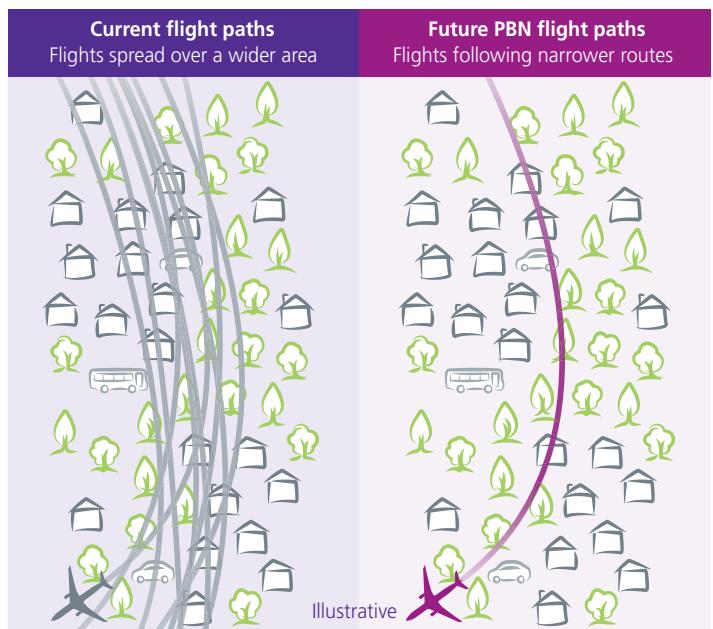
Performance Based Navigation

The introduction of Performance Based Navigation (PBN) is key to achieving the aims of airspace modernisation. PBN improves the accuracy of where aircraft fly by moving away from 'conventional' navigation using ground-based beacons to more sophisticated satellite navigation.

Over the last decade there have been major advances in aircraft navigational technology. There are currently different types of navigation systems used by airlines and across different aircraft fleets, meaning that today there is an element of variation within the specified routes as to how and where aircraft fly. However, in the future, once all aircraft use PBN it will create identical routes for all operators to follow.

Because the technology is so accurate, PBN enables aircraft to fly more accurately. This helps improve operational performance, reduces delays and provides opportunities to better avoid noise sensitive areas. However, we understand that the use of PBN will be a concern to some communities because it will mean routes become narrower and more concentrated than today.

Heathrow is committed to working with residents, local stakeholders and the aviation industry to find ways to implement PBN whilst seeking to avoid, minimise or improve significant adverse effects from aircraft noise.



The first stage of this is defining the principles that we will use when designing future airspace. There is more information on our approach to this on page 4.

Airspace modernisation and Heathrow expansion

Heathrow plans to undertake the process to modernise our airspace at the same time as we expand the airport.

The process to expand the physical airport infrastructure follows a different approval process under the Planning Act 2008 to obtain a Development Consent Order (DCO) from the Secretary of State for Transport. It is separate to the Airspace Change Process which falls under the CAA's remit (outlined below).

Changes that are made to accommodate a third runway at Heathrow will also need to fit in with the changing airspace of the UK and Europe. Heathrow is working closely with NATS and the other airports in the south-east of England to develop an integrated approach to airspace modernisation.

Airspace modernisation provides a once in a generation opportunity to modernise and improve the way Heathrow's airspace is used.

INDICATIVE AIRSPACE TIMELINE

Continuous engagement with communities and stakeholders									
2018	2019	•	2020	•	2021	•	2022	•	2023
Stage One Consultation – Design principles Jan - Mar 2018 Consultation on the set of principles that will be used to design future flight paths					Stage Three Consultation – Flight path options Consultation on flight path options				Decision The CAA and Government will decide whether to approve Heathrow's proposed airspace changes
			Stage Two Consultation – Design envelopes Consultation on broad geographical areas in which flight paths could be positioned				Submission Heathrow will submit its proposed flight paths to the CAA		

Airspace Change Process

The DfT is responsible for all aviation policy in the UK, including airspace. The CAA is responsible for its regulation and for the Airspace Change Process which all airports must follow where changes to airspace are proposed. Heathrow is responsible for the design of any changes to flight paths into and out of the airport up to approximately 7000ft and NATS are responsible for changes to airspace above 7000ft.

Changes to flight paths are submitted to and approved by the CAA, following the Airspace Design Guidance provided in its document known as 'CAP 1616'. This guidance sets out a process framework following a multi-stage approach for changing airspace. It places great importance on engaging and consulting on airspace proposals throughout the process with a wide range of stakeholders, including potentially affected communities.

Although a statutory consultation is only required at a later stage of the airspace change process, given the scale and complexity of Heathrow's airspace changes, we have decided to carry out three phases of consultation. This gives all stakeholders the best opportunity to be involved throughout the process to help shape the design and structure of Heathrow's future airspace.

1

Consultation 1: **Design principles**

In January – March 2018 we carried out our first airspace consultation on some of the key design principles we could use to redesign our airspace.

2

Consultation 2: **Design envelopes**

In the second consultation, we will present the geographic areas within which flight paths could be positioned. We will ask what local factors should be taken into account when developing new flight paths within these geographically defined areas known as 'design envelopes'.

3

Consultation 3: **Flight path options**

The feedback we receive will help to inform the design of 'flight path options' (i.e. our proposals for the actual routes aircraft will fly), which will be presented in a third and final statutory consultation.

Image courtesy of NATS



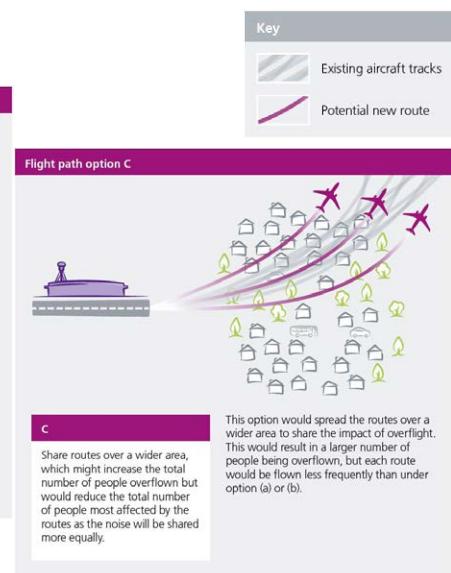
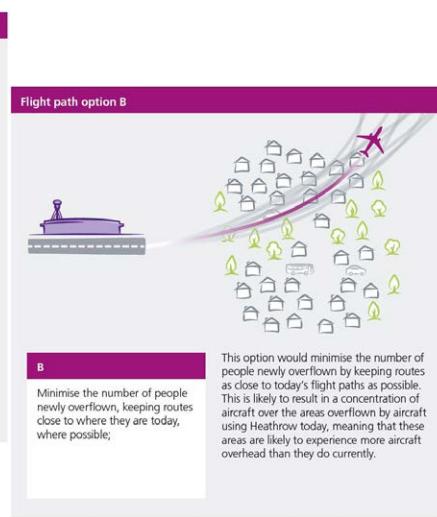
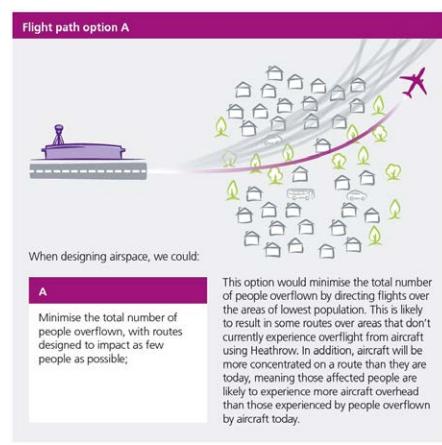
This image shows flights across Europe

Defining Heathrow's Airspace Design Principles

Consultation 1: January-March 2018

Between January and March 2018, we carried out our first airspace consultation on some of the key design principles we could use to redesign our airspace. Development of design principles falls under stage 1 of the airspace change process under CAP 1616. This ran alongside the consultation for the airport expansion which follows a different process.

There are a number of core principles that we must accommodate when redesigning our airspace. These include policy, safety, environmental and operational factors. However, beyond these core requirements there are a number of options and ‘trade-offs’ to choose between when designing future flight paths – this was the focus of our first consultation.



Post-consultation engagement

The feedback received from the consultation has been collated, analysed and fed into the production of a draft set of principles. This has been considered alongside the policy requirements such as safety, capacity and the requirements set out in the Airports NPS to help decide how the principles should be prioritised.

To gain further feedback on this draft set of principles, between June and July 2018 we undertook supplementary engagement with community and industry stakeholders. This involved sharing our draft principles and asking for feedback on whether there were any principles missing from this list and whether they felt the proposed prioritisation was appropriate.

The principles we consulted on addressed the key environmental choices or trade-offs that have been most frequently highlighted to us by local communities and their representatives over recent years as part of our ongoing stakeholder engagement. In this first consultation we asked for feedback on these key principles and how they should be prioritised.

For example, we asked whether we should design routes that look to minimise the total number of people significantly affected by noise; or prioritise minimising the total number of new people overflown; or try to share flights over a wider area with the consequence of affecting more people. We also asked all our stakeholders whether there was anything else we should consider as a design principle.

We also commissioned a series of focus groups with members of the public that had not engaged with the consultation. This was to ensure that we received a broad range of views from across different communities; for example, areas less affected by today's operations but which may potentially be affected by new flight paths in the future.

This subsequent feedback was collated, considered and used to produce a final set of prioritised design principles (tabled below). These were submitted to the CAA on 31 August 2018. The CAA will now consider whether we have met the requirements of the design principle stage of its airspace change guidance and inform us of their decision over the Autumn.

Heathrow's Design Principles

The table below is Heathrow's proposed prioritised list of design principles. Principles 1-5 are core requirements of the airspace design related to policy or regulation. They all have equal priority since any airspace design option will need to deliver against each of these. These are set out as "Heathrow must...".

Principles 6-10 are the more strategic principles that Heathrow intends to deliver on, but inevitably some trade-offs will have to be made. These are set out as "Heathrow should..." and are shown in the table in priority order.

While our principles do not provide a simple formula to develop our airspace design, they are a valuable first step in the CAA's airspace design process, and we will refer to them whenever we make design decisions. This will ensure transparency so that all our stakeholders can see how the design principles have been taken into account in our emerging future designs.

Heathrow's Airspace Design Principles for Expansion	
1	Must be safe
2	Must meet Airports National Policy Statement requirements, including capacity
3	Must meet three Airports National Policy Statement noise policy tests
4	Must meet local air quality requirements
5	Must meet commitments to the Government's Airspace Modernisation Strategy
6	Should limit, and where possible reduce, local noise effects from flights by: <ul style="list-style-type: none">a. using more noise efficient operational practicesb. minimising number of people newly overflownc. maximising sharing through predictable respited. avoiding overflying communities with multiple routese. maximising sharing through managed dispersalf. minimising total population overflowng. designing flight paths over commercial and industrial areash. prioritising routing flight paths over parks and open spaces (rather than over residential areas), but avoiding overflight of Areas of Outstanding Natural Beauty (AONB)
7	Should minimise fuel /CO ₂ / greenhouse gases per flight
8	Should ensure operational efficiency and resilience to maximise benefits to all stakeholders
9	Should base our airspace design on the latest navigation technology widely available
10	Should minimise impact on other airspace users

Detailed information on the rationale for why these principles have been chosen and their proposed order; why other principles were not included in our final list; and how we carried out our consultation and subsequent engagement, can be found in the "Heathrow's Design Principles" document. It also provides detail on the various requirements and policy objectives that Heathrow will need to meet. This document is available online: www.heathrowexpansion.com

Next steps

If accepted by the CAA, the design principles will then be fixed and will be used to evaluate our airspace design options. However, we will be undertaking two further public consultations throughout the airspace design process. These consultations will provide a greater focus on local issues and may identify locations with particular noise sensitive buildings. Specific local information may also lead us to prioritise the principles differently in some cases. If this outcome arises, we will be fully transparent about the reasons and effects of this.