



Airspace modernisation trials

Europe's entire airspace needs modernisation. It was designed for an age when aircraft were fewer and less efficient, and navigation was much less sophisticated.

Here in the UK, for example, flight paths have barely changed in 40 years, yet we have twice as many aircraft in the air. To bring things up to date, the Government has asked every airport in the UK to submit plans for airspace modernisation.

Since last year, we have been running a series of trials to explore how we can make flight paths near Heathrow more efficient and how we can share or reduce the effects of noise.

Trialling flight paths that are better for passengers and neighbours

Modern aircraft and satellite-based navigation systems are making it possible to improve the way we fly at Heathrow. We can adjust our flight patterns to save fuel, reduce delays and offer predictable noise relief to more communities. The modernisation of airspace will help to:

- **Improve operational efficiency:** fewer delays on the ground and fewer aircraft waiting overhead in holding stacks
- **Reduce emissions:** aircraft reach a fuel-efficient cruising height sooner, fly on more direct flight paths and spend

less time in overhead stacks

- **Reduce noise:** with steeper angles for landing and improved climb gradients, fewer people experience aircraft noise
- **Share noise relief:** precise flight paths allow us to control the noise footprint of departing aircraft and give more communities periods of relief by switching flight paths.

There's much more information on the airspace modernisation section of our website – visit heathrow.com/noise

Nothing's decided

The trials really are just trials. The current round finishes on 12 November 2014, and we're planning more for autumn 2015. No permanent changes to flight paths can be made without the permission of the Government – and we certainly wouldn't do it without publicly consulting first.

Before any of that can happen, we have to find out what's best for passengers, airlines and neighbours. While the trials go on, some people will experience more noise; others less. If you live in a community that experiences more noise during the trials, it doesn't mean you're bound to be worse off when the Government makes its final decision. These are just trials and the Government's decision is still several years away.

Frequently asked questions

Why are the trials taking place?

The Government wants to update the UK airspace. Like all other airports, we're legally bound to submit proposals to improve our own surrounding airspace. But we can't put forward any meaningful options for local consultation or to the government if we haven't tested them out first. That's why we're running a series of trials with NATS to learn more about our surrounding airspace and how we can get better performance from modern aircraft and navigation technologies.

The Government's plan is to modernise the UK skies by 2020. It set out its objectives in its Future Airspace Policy, which is itself part of a Europe-wide modernisation project called the Single European Sky.

The important point to note is that any proposals for permanent changes to flight paths will be subject to full public consultation and ultimately require government approval.

Why does airspace need modernising?

The basic structure of the UK airspace was developed over 40 years ago when there were fewer aircraft in the air, and aircraft and navigation systems were different. Britain's airspace is now out of date. Technology and air travel have moved on; aircraft numbers have doubled.

If the UK is to achieve sustainable growth in aviation, it has to redraw its airspace to take advantage of modern aircraft and navigation systems. Modern aircraft have a steeper climb gradient, which means they achieve a fuel-efficient cruising height sooner and their noise affects fewer people on the ground. Satellite-based navigation systems are far more precise than traditional ground-based systems. They can direct aircraft more precisely on direct routes that use less fuel.

Within a modernised airspace we can operate much more efficiently. Fewer aircraft will have to circle overhead in holding stacks, and there will be fewer delays on the ground. A modernised airspace is better for everyone. It saves fuel, cuts carbon emissions, reduces delays, reduces aircraft noise and has the potential to share the benefits of noise respite more widely.

Did you tell anyone about the trials before they started?

Yes we did, but it's clear that we should be doing more to publicise them. The trials started in December 2013. Before we began, we held briefings with many local organisations including neighbouring local authorities, residents' groups, campaign groups and local MPs.

We also discussed the trials – including our approach to communicating with the public – with the Heathrow Airport Consultative Committee, the Heathrow Noise Forum and with HACAN, the campaign group that represents many people who live under Heathrow's flight paths. The Noise Forum includes representatives from the Local Authorities Aircraft Noise Council (LAANC), the Civil Aviation Authority,

the Department for Transport, National Air Traffic Services, the International Air Transport Association, HACAN and Heathrow.

The current round of trials has generated many more complaints than the previous trials. There has even been a strong reaction from people living in communities that have always had aircraft flying overhead. We now know that we need to do more to let people know what we're doing.

Before we run any new trials, we will publicise them much more widely than we have in the past. We will also spread the message further afield by talking to more councils and MPs than we did last time.

Who gives Heathrow permission to run the trials?

Although many parties are involved in the planning and development of the trials, the body that ultimately grants approval for each round of trials is the Civil Aviation Authority (CAA).

The CAA has also set out a guidance document (CAP 725) covering proposals for any permanent changes to flight paths.

Are the trials connected to your proposal for a third runway?

No. The Government wants us to modernise Heathrow's airspace by 2020 whatever the outcome of our bid for a third runway. Our airspace trials relate purely to our existing two-runway airport.

Are you testing new flight paths?

No. We're using the trials to gather data on different ways of operating. The data will help us and NATS develop an optimal airspace design that's better for everyone – for passengers, for the environment and for people living in the communities around Heathrow.

One thing we're particularly keen to learn is how much we can use variations in routes to share noise from departing aircraft. Residents tell us that they value the fair sharing of noise relief.

Because we're gathering data rather than testing flight paths, what you experience during the trials is not necessarily indicative of how Heathrow's eventual airspace will look or sound.

If you're not testing flight paths, why did you choose these routes?

This is a series of trials in which we're testing concepts rather than flight paths. Each trial has specific data-gathering objectives. We're gathering a body of data to help us play our part in the Government's Future Airspace Strategy. So we're interested in topics such as:

- **The use of more accurate satellite-based navigation.** This will help us understand how precisely different aircraft can follow a route. With satellite-based navigation, aircraft should be able to follow a flight path like trains on a track,

but we need to know how different types of aircraft respond. If some follow less precise paths than others we'll need more separation between routes.

- **Resilience.** Under current airspace rules, we have to separate departure routes by 45 degrees so that planes can take off at one-minute intervals. Anything less requires greater separation and means we aren't able to achieve more frequent departures to help us recover during periods of disruption. It also limits our ability to offer respite by adding more routes. So we're testing whether we can operate with route separations of 10 and 15 degrees.

*To Note: Reducing the angle of separation between departure routes does **not** mean the number of flights will increase. Heathrow is capped at 480,000 movements a year. We're testing resilience, not how to accommodate more departures.*

- **Sharing of noise and relief through runway alternation.** Residents tell us that sharing noise and periods of relief is fairer than concentrating noise on certain communities. So we're testing to what extent we can use alternative departure routes to spread the burden of noise and periods of relief.

When choosing trial routes, we also had to make sure they were well clear of other non-trial aircraft traffic. Trial routes cannot conflict or interfere with holding stacks and arriving aircraft.

Why are the trials stopping early? Is it because of the volume of complaints you received?

No. When we planned the trials we estimated how much time we'd need to gather the data we wanted. Once a trial starts and real data starts to flow in, we reassess based on what we've learned. If we're getting plenty of reliable data, we can end a trial early. That's what we've found with the current round. We know that we'll have enough data for us to end the current trials on 12 November.

When will the next round of trials run, and which areas will they affect?

We think we'll need to run one more round of airspace trials during the autumn of 2015. We're still working out the details. Next year we'll let everyone know what we're doing before we start. The good news is that we think we can reduce the scope of future trials. Using the data we've gathered so far, NATS has developed the tools to do more pre-trial analysis using a simulator. That should make future trials more precise.

How will you publicise future trials?

We'll make sure everyone who's likely to be affected knows about the trials before they start. We'll publicise them through direct mailings, newspaper advertisements, the Heathrow website and social media. Naturally we'll continue to discuss trials with stakeholders, residents' forums and members of the Heathrow Airport Consultative Committee. We'll also extend future communications and discussions to

boroughs and constituencies further afield.

Implementation of the Government's Future Airspace Strategy will be a hot topic for many years to come. As we move towards a new design for Heathrow's airspace in 2020, we look forward to regular and open discussions with everyone involved.

How do you measure the impact on residents?

Once the trial is over, and we've had time to analyse the results, we'll publish a full report.

The report will contain operational data and feedback, details of community responses (including complaint numbers and locations) and a section on noise impacts. We can show how the trials affect noise patterns around Heathrow by analysing data from aircraft tracks.

Before we put forward any proposals for a permanent change to Heathrow's airspace, there must be full consultation. We'd have to outline the noise impacts in an Environmental Impact Assessment which would form part of that consultation.

Are you registering every single complaint?

Yes. We register all telephone calls, voicemails, emails and online complaints. You can see the number of daily complaints on the website:

www.heathrowoperationaldata.com

Are there more night and early morning flights during the trials?

No. The trials do not affect Heathrow's operating hours. Departures start at 06:00, and the last scheduled departure is 22:50. Although we do our best to keep to schedule, flights can run late. The current trials do not involve arrivals.

Are planes flying lower during the trials?

Not that we know of. During the trials, aircraft keep to the angle of ascent that they use during normal operations. There's no reason for them to fly lower, and our initial data seems to bear this out. We will include a full analysis of aircraft heights in the report we'll publish when the trials are over.

What happens after the last trial ends?

The Government wants all UK airports to modernise their airspaces by 2020. Before anything can happen at Heathrow, we have to submit options for consultation and, following feedback, a proposal to the Government. The consultation will include an Environmental Impact Assessment that must include details of noise impacts.

We think that consultation is likely to happen during 2016.

We can't make permanent changes to our airspace without the approval of the Civil Aviation Authority and permission from the Government. The Government has not yet set any dates for granting permission.

Further information

More information about the future airspace modernisation programme can be found at:

heathrow.com/trials

To make an enquiry or complaint:

Online: **heathrow.com/noise**

Email: **noise@heathrow.com**

By calling: **0800 344844**

Or you can comment and follow us on Twitter:

: **[@heathrownoise](https://twitter.com/heathrownoise)**