



Adding capacity at Heathrow airport: Summary

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Introduction

Please note: this consultation closed on 27 February 2008.

In 2002, the Government consulted widely on its air transport policy and set out its conclusions in the 2003 White Paper *The Future of Air Transport*. This promised further work and consultation on a number of issues relating to Heathrow airport. In the light of that work, we are now seeking your views on how Heathrow could be developed over the next 20 years or more. The White Paper made clear that, given the strong economic benefits, the Government supported the further development of Heathrow, by adding a third runway and exploring the scope for making greater use of the existing two runways.

This support was conditional on:

- a noise limit - no increase in the size of the area significantly affected by aircraft noise (as measured by the 57dBA L_{eq} noise contour in 2002);
- air quality limits - being confident of meeting European air quality limits around the airport, in particular for nitrogen dioxide (NO₂) which is the most critical local pollutant around Heathrow; and
- improving public transport access to the airport.

The Department for Transport's Project for the Sustainable Development of Heathrow was set up to consider whether, and how, these conditions might be met. As envisaged in the White Paper, this work has drawn on a wide range of expertise, including BAA as the airport operator, the Highways Agency, the Civil Aviation Authority (CAA) and NATS, to review the science, develop options and model their impacts. The consultation document presents the results of this work. It describes in detail how Heathrow operates today and sets out forecast future demand. It presents a revised proposal by BAA for adding a third runway north of the A4 (2,200 metres (m) operational length compared with the original 2,000m proposal), with associated passenger terminal facilities and access to the road and rail networks. This could potentially enable the airport to handle around 700,000 air transport movements (ATMs) a year, nearly 50 per cent more than today.

The consultation also presents proposals for introducing mixed mode on the existing two runways, either with or without additional ATMs, as an interim measure ahead of a third runway. Runway alternation would have to cease during mixed mode operations. An important aim of this consultation is to get a better understanding of the importance attached by local communities to the benefits of runway alternation, and the time of day it is of most value, so that this can be taken into account in the decision-making process; and to understand the wider benefits of the various options.

Adding a third runway at Heathrow could also potentially provide capacity to increase movements in the night period. However, night flights at Heathrow are strictly controlled between 2300 and 0700, including limits on the permitted numbers and total amount of noise in the night quota period (2330 to 0600). In view of this, nothing in this consultation will affect the continued operation of the current night flying restrictions which were put in place in 2006 and extend until they next review in 2012.

Purpose of this document

This document provides a summary of the main proposals outlined in the consultation document alongside a list of questions on which views are being sought. A pull-out response form has been provided within the summary and it is strongly recommended that you read the consultation document before you answer the questions. Please also give reasons and evidence to support your views where you can.

The questions follow a similar order to the structure of the consultation document and the last section of the response form can be used to add any further comments. It would be helpful if you could also fill in the personal details section at the beginning of the response form to assist with the analysis of responses.

Freedom of Information and confidentiality

Information provided about individuals in the response form and in any other responses to this consultation will be processed by the Department for Transport and its agents only for the purposes of this consultation exercise in accordance with the requirements of the Data Protection Act 1998.

A summary of responses to this consultation will be published on our website (www.dft.gov.uk) after the consultation period has closed. According to the requirements of the Freedom of Information Act 2000, all information contained in your response to this consultation may be subject to publication or disclosure. This may include personal information such as your name and address. If you want your response or your name and address to remain confidential, you should explain why confidentiality is necessary, in the relevant section of the response form. Your request will be granted only if it is consistent with Freedom of

Information obligations. An automatic confidentiality disclaimer generated by your email system will not be regarded as binding on the Department.

Further information

You can order a copy of the consultation document, supporting technical documents, and a CD ROM containing this information from:

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Tel: 0845 600 4170

Email: heathrowconsultation@dft.gsi.gov.uk

Online: <http://www.dft.gov.uk/heathrowconsultation/>

We are holding a series of public exhibitions in the Heathrow area to give you the chance to talk to experts about how potential developments at the airport might affect your community. The exhibitions programme is as follows:

7th December: Barnes -
London Wetland Centre (10am-8pm)

10th December: West Drayton* -
Novotel London Heathrow (10am-8pm)

12th December: Cranford -
Sheraton Skyline Hotel (10am-8pm)

15th December: Hounslow -
Montague Hall (8.30am-4pm)

17th December: Windsor -
Windsor Leisure Centre (10am-8pm)

19th December: Stanwell -
Stanwell Village Hall (10am-8pm)

14th January 2008: Colnbrook* -
Sheraton Heathrow Hotel (10am-8pm)

16th January 2008: Brentford -
Holiday Inn Brentford Lock (10am-8pm)

18th January 2008: Richmond -
Adult Community College (10am-8pm)

21st January 2008: Egham -
The Jurgens Centre (10am-8pm)

23rd January 2008: Langley -
Langley Community Centre (10am-8pm)

*Shuttle buses provided from Sipson.

Registering your views

Please take the time to fill in the response form. Completed forms should be sent to the freepost address below:

Freepost RRRR-TARL-ABJS
Adding Capacity at Heathrow Airport
(DfT Consultation)
Research Services House
Elmgrove Road
Harrow
HA1 2QG

The response form is also available online.

Length of consultation

The consultation will run for 14 weeks from 22 November 2007. If you wish to register your views using the response form or by sending your written response to the freepost address provided, please ensure this is done before the consultation deadline of 27 February 2008.

Summary of the main proposals

The Policy Context

1.1 The aviation sector makes an important contribution to the UK economy, bringing significant benefits in terms of employment and business investment. International connectivity - Heathrow is our main gateway to the global economy - supports billions of pounds of British exports and thousands of UK jobs, and encourages hundreds of international businesses to locate in the UK. The service sector accounts for some 70 per cent of UK GDP and the UK is the world's second largest exporter of services. This increases the demand for international connectivity, for example, the financial services sector uses six times more air travel than other businesses. But Heathrow's runways are now full and its route network is shrinking. Since 1990 the number of destinations served by Heathrow has fallen by over 20 per cent. Capacity constraints will lead to fewer routes, increasingly congested conditions and more delays at the airport and fewer connecting services to UK regions.

1.2 As well as being an important international destination, Heathrow operates as the UK's major international hub airport. As demand continues to rise, the airport is increasingly vulnerable to foreign competition and major European airports are expanding at Heathrow's expense. Amsterdam Schiphol, for example, has five runways and serves 21 UK airports compared with only nine served by Heathrow. Not addressing this risks damaging UK interests, not only in aviation but more widely across the economy. Fifty two per cent of companies consider transport links are vital in deciding where to locate their business and 70 per cent of foreign companies' first location in Britain is within one hour of Heathrow ^[1] .

1.3 The Government's support for further development of Heathrow has been set in the context of its wider aviation policies, including: making best use of existing airport capacity; ensuring that, over time, aviation pays the external costs its activities impose on society at large; and seeking to reduce and minimise the impacts of airports on those who live nearby and on the natural environment.

1.4 The *2006 Future of Air Transport Progress Report* explained how the Government is addressing the global challenge of climate change. We believe that a well-designed, open, international emissions trading regime for aviation is still the best way of ensuring that the aviation sector plays its part in tackling climate change. And we welcome the European Union's plans to include aviation in the EU Emissions Trading Scheme. Under current proposals, aviation emissions would effectively be capped at the average level over the period 2004 to 2006.

This means that when the trading scheme is established, any additional aviation emissions above that level would lead to no increase in total emissions, since airlines would have to pay for the equivalent emissions reductions in other sectors. This will place the aviation industry on a more sustainable footing for the future. We consulted earlier in 2007 on a proposed methodology for developing a periodic emissions cost assessment, as a way of tracking how far the aviation sector is already meeting its external climate change costs. And we continue to explore and promote other measures, including carbon offsetting schemes.

1.5 The Government believes that domestic aviation taxes such as Air Passenger Duty (APD) can play a valuable role in encouraging behavioural change, reducing emissions from aviation and ensuring that air travel makes a fair contribution towards the Government's spending priorities, including public transport and the environment. As announced in the 2007 Pre-Budget Report, the Government intends to reform the taxation of aviation to send better environmental signals. From November 2009, we plan to replace APD with a duty payable per plane rather than per passenger. We will consult on ways to make aviation duty better correlated to distance travelled and encourage more planes to fly at full capacity.

1.6 All this fits within the wider context of the Department's strategic approach to sustainable transport policy across all transport modes, as set out in our recent discussion document: *Towards a Sustainable Transport System - Supporting Economic Growth in a Low Carbon World*.

1.7 Our approach is entirely consistent with the Stern Review (*The Economics of Climate Change*) and the *Eddington Transport Study*. Stern recommended that the best way to tackle the complex pattern of carbon emissions is to ensure that each activity which produces carbon is priced in a way that reflects its true cost to society, and to the environment. Eddington is equally clear that seeking artificially to constrain the natural growth of aviation, once carbon pricing is fully in place, would pose a significant cost to the UK economy, with no additional environmental benefit. Referring specifically to Heathrow, Eddington stated that "*even once users pay the full environmental costs of their journeys, there will remain a strong economic case for additional runway capacity*" ^[2] .

1.8 Our work shows that a third runway at Heathrow would bring net economic benefits of around Â£5bn in net present value terms, even after taking account of climate change and noise costs. If mixed mode operations were introduced in the interim, the net benefits would increase, reflecting the additional benefits both of extra capacity and / or reduced delay in the period before a third runway could be available. This confirms that the economic case for expansion at Heathrow remains strong, as was concluded at the time of the White Paper.

1.9 The programme of work since the White Paper has focused on the period up to 2030, based on forecasts of air traffic and surface access movements. It has reviewed the key environmental impacts - air quality and noise - and assessed the implications for airspace and access to and from the airport. The work has drawn on technical expertise from a range of stakeholders.

The following sections summarise each of the main proposals outlined in the consultation document.

Section A: Adding a third runway

(See Questions A1 to A8)

1.10 This consultation has been prepared in relation to BAA's latest proposal and sets out our assessment of the impacts of their proposal for a third runway in relation to the three tests identified in the White Paper, with respect to noise, air quality and public transport access. Before the 2003 White Paper, the Government said the new runway would be used for both landings and take-offs (mixed mode) from the outset, with the existing runways operating in segregated mode with alternation, as now. This remains the position.

1.11 BAA's latest proposals are for:

- A new runway at 2,200m operational length - this would be slightly longer than previously envisaged (2,000m) to accommodate an efficient mix of all but the largest four-engined aircraft and allow the airport as a whole to operate effectively. The slightly longer runway length would not itself increase the land-take or require any additional properties. It would not affect the forecast mix of short-haul and long-haul traffic across the airport as a whole. Thus, it does not imply more carbon emissions.
- An additional passenger terminal, with direct access to existing rail services, that meets the needs of air passengers and airline alliances under mixed operations (both long-haul and short-haul traffic), and reduces the need for aircraft to taxi across the existing northern runway.

1.12 Adding a third runway with associated passenger terminal facilities would require additional land, with a loss of around 700 properties including the community of Sipson.

1.13 The Government acknowledges the case for supporting a three runway airport with additional passenger terminal facilities. The Government also acknowledges the rationale for a slightly longer runway and believes that the environmental pre-conditions for policy support as set out in the White Paper, remain valid and are appropriate for this revised proposal.

1.14 Our work shows that, under these proposals, the airport could operate with three runways from around 2020, with around 702,000 ATMs, and fully meet the air quality limits.

1.15 The ability to meet the air quality limits in future years reflects substantial improvements in road traffic emissions, as a result of further developments in European standards and trends in cleaner aircraft engines with a higher proportion of twin-engined as opposed to four-engined aircraft. It does not rely on having to take additional measures, for example to constrain the number of aircraft movements or bear down on road traffic.

1.16 This assessment also reflects improved air quality modelling, which has been shown to represent future emissions much more accurately than before, and to reduce a significant element of over-prediction in the earlier work.

1.17 It would, however, be necessary to limit aircraft movements initially in order to meet the noise limit. The numbers would depend on the timing of the airport's development, composition of the fleet and rate at which the older, noisier aircraft are retired. We estimate runways from around 2020 with at least around 605,000 ATMs a year within the noise limit.

1.18 We believe a third runway could therefore be added at Heathrow and sustain at least 605,000 ATMs in 2020 followed by a gradual increase to 702,000 ATMs in 2030 whilst keeping within the noise and air quality limits.

1.19 We would expect the airport operator to carry out further work in order to be able to satisfy the planning authorities that the operation of the airport with three runways would be managed so as to ensure that the noise contour limit and air quality limits are consistently complied with.

Section B: Making more use of the existing runways

(See Questions B1 to B8)

1.20 The Government supports in principle measures to make greater use of the existing runways at Heathrow.

1.21 At present the two runways at Heathrow are primarily used either for take-off or landing at any one time, known as segregated mode.

For example, on westerly approaches, arrivals alternate between the northern and southern runway on a cyclical pattern, providing communities under the flight paths in west London with periods of predictable concentrations of arrival noise followed by periods of respite.

Mixed mode could be introduced in broadly one of three ways:

1. **Mixed mode within the existing planning capacity** -that is, with no increase in capacity overall, but the ability to allow additional movements in peak hours at the expense of thinning out traffic at times of lower demand. This could be introduced from around 2010/11, subject to consultation under the CAA's airspace change procedures. It would provide valuable flexibility and resilience when the airport is under particular pressure, for example to recover from incidents or adverse weather.
2. **Full mixed mode -available throughout the day and providing up to 60,000 additional movements a year** (an extra 12 per cent). This is equivalent to an average of eight extra aircraft every hour -a total of 88 aircraft an hour (with a mix of arrivals and departures) compared with 80 an hour under segregated mode, although in certain peak hours the number would be higher (summer

schedules in 2005 allowed for peak hour movements of up to 66). Full mixed mode, building up from the current movements limit over time, could bring total movements to around 540,000 by 2015

3. **Partial mixed mode** -as above, but limited to certain hours of the day, for example 06 00 to 1200 hours, with consequent reductions in the amount of new capacity provided.

1.22 Allowing aircraft to both take off and land on the same runway during operating hours could increase the number of aircraft using each runway - this is known as operating in mixed mode. This is the approach adopted at all single runway airports in the UK and most multiple runway airports internationally. This would be a temporary measure, as mixed mode operations on the existing runways would cease once a third runway was operating, but the new runway would operate with both arrivals and departures.

1.23 The Government's view is that full mixed mode operations are feasible at Heathrow and could be introduced to provide worthwhile additional capacity and flexibility on the existing runways as an interim measure before any new runway, subject to further detailed design and formal CAA approval of airspace changes. On the basis of the modelling work, the Government also believes that this could be delivered to meet the noise contour limit in the White Paper, with a 57dBA L_{eq} noise contour at around 125.5 sq km with 540,000 ATMs from around 2015.

1.24 Any proposals to increase capacity by means of mixed mode operations would require planning approval to relax the current movements limit (480,000 a year).

1.25 We believe that full mixed mode (540,000 ATMs) by 2015 would be compatible with compliance with the EU air quality limits for PM10, and NO2 in the vicinity of the airport without the need for further mitigation measures. There would be some limited NO2 exceedences north of the M4 but these are not mainly due to the airport. They would have to be addressed by a variety of traffic management or other measures.

1.26 Mixed mode would also see an end to the Cranford agreement during easterly operations. This would mean some redistribution of noise around the airport, with some communities (e.g. parts of Windsor and Feltham) likely to experience fewer movements on easterlies whilst others (e.g. in Cranford and Hounslow) would experience more. The impact of current westerly preference and the Cranford agreement is covered in more detail in the next section.

[1] Economic Benefits of Heathrow Airport, BAA.

[2] The Eddington Transport Study: The case for action: Sir Rod Eddington's advice to Government, December 2006.

Section C: Impacts of current operations - westerly preference and the Cranford agreement

(See Questions C1 to C3)

1.27 There is a long-standing commitment, following the Terminal 5 Inquiry, to review the continuing merits of current practices, whether or not any of the other proposals in this document go ahead. Here we consider two such practices.

Westerly preference

1.28 Aircraft generally take off and land into the prevailing wind, which at Heathrow tends to be from the west and southwest. This helps generate more lift from the wings and improves aircraft performance. This means that aircraft often arrive from the east and depart towards the west, known as 'westerly' operations.

1.29 There is a system of 'westerly preference' during the day which means that westerly operations continue even when there is a light easterly wind. This was introduced in the 1960s to reduce the number of departing aircraft which would otherwise take off over the more densely populated areas to the east of the airport. As a result, on average, the airport operates on 'westerlies' for about 70 per cent of the time, though this can vary considerably from month to month and year to year.

1.30 While modern aircraft are significantly quieter than in the 1960s, arrivals noise has tended to improve less markedly than departure noise and it is felt the relative merits of continuing with westerly preference require re-examination.

1.31 The effects of retaining westerly preference have been reviewed and the position is not clear cut. The Government's provisional view is that there are no strong grounds for disturbing the current practice of westerly preference in any future scenario at Heathrow. Ending westerly preference would have some benefit in terms of reducing NO₂ concentrations in the area to the north-east of the airport, but the issue is not critical to achieving compliance with air quality limits. In general, an increase in easterly operations would result in a smaller area, but with more people, affected at 57dBA Leq noise levels, because of the higher population density to the east. Noise would be redistributed around the airport, with some communities experiencing less noise, and others more.

Cranford agreement

1.32 This long-standing practice avoids easterly departures off the northern runway over Cranford, wherever possible. This was designed to protect the residents of Cranford, close to the eastern end of the northern runway, from the high noise levels experienced on the ground from departing aircraft. It means that when the airport is operating on easterlies, departures generally use the southern runway and arrivals generally use the northern runway.

1.33 The protection of Cranford from departure noise is, however, at the expense of Windsor, which experiences a greater share of arrivals than would otherwise be the case, and to the detriment of Hounslow, which is affected by departures on easterlies.

1.34 Although the current procedure still benefits Cranford residents, it also means that there is no runway alternation during easterly operations, with departures normally from the southern runway, and arrivals mostly on the northern. As a result, Windsor and adjoining areas under the northern runway approach tracks get little relief from the noise of arriving aircraft, and communities to the east of the southern runway, such as Hatton and North Feltham, get little relief from departure noise.

1.35 The Cranford agreement would need to be suspended during any period of mixed mode operations.

1.36 The CAA's Environmental Research and Consultancy Department has assessed a range of scenarios to test the effects on noise if the Cranford agreement were ended and if westerly preference were replaced by easterly preference - allowing easterly operations with a tailwind of up to five knots - with the 480,000

movements limit still in place.

1.37 This shows that ending the Cranford agreement would redistribute noise more fairly around the airport when it is operating on easterlies. We believe there is a strong argument for ending the Cranford agreement on the grounds of sharing the noise burden more equitably, regardless of any other decisions that are taken.

However, the main issue that arises from ending the Cranford agreement is whether it is preferable to benefit large numbers of people by removing them from the 57dBA Leq contour at the expense of exposing smaller numbers of people to increased noise at higher levels.

Section D: Night-time rotation and early morning runway alternation

(See Questions D1 and D2)

Rotation of westerly and easterly preference at night

1.38 Since 2000, the use of Heathrow's runways at night (mainly affecting arrivals) has alternated between westerly and easterly preference, on a weekly basis, whenever weather conditions permit. The change followed public consultation which showed wide support for sharing the noise burden around Heathrow more fairly during this period.

1.39 The operational split will vary from year to year according to the weather. But the results of a monitoring exercise show that the practice of rotation has resulted in significantly fewer flights arriving over the area to the east of the airport compared with before, with a westerly/easterly split of around 70/30 compared with 89/11 in the year 2000. In 2004/05 this means there were some 700 fewer flights arriving over the area to the east of the airport compared with the previous regime.

1.40 The Government believes that, on the basis of the evidence of the monitoring exercise, the practice of rotating westerly and easterly preference at night has been beneficial in distributing arrivals noise more fairly around the airport and should be maintained.

Runway alternation in the early morning period (0600 to 0700)

1.41 A system of runway alternation has operated since 1973 under which, in westerly operations, arrivals alternate between the northern and southern runways on a cyclical pattern. This provides communities in west London under the final approach tracks with periods of concentrated arrivals followed by predictable periods of relief from arrivals noise. Runway alternation was extended in 1999 to night-time operations (after the last departure). The combination of runway alternation and the weekly rotation between an easterly and westerly preference at night, subject to weather conditions, results in a four week alternation pattern, before the cycle repeats.

1.42 In the busy morning period (0600 to 0700), alternation is currently on a trial basis. This reflects concern that having only one runway available for landings in the early morning could lead to an unacceptable build-up of delays, with knock-on effects throughout the day.

1.43 Runway alternation would have to cease during any period of mixed mode operations. Alternatively, if mixed mode was not introduced in the 0600 to 0700 period, there is an option to make the current alternation arrangements permanent.

1.44 Monitoring over the period 2003/04 and 2004/05 shows that whilst full alternation was achieved less often in the first half hour (0600 to 0630) it was achieved on a significant number of occasions in the second half hour (0630 to 0700), providing those living to the east of the airport with periods of relief from arrivals noise that they would not otherwise have experienced.

1.45 The Government believes that, on the basis of the evidence, the current trial of alternating the two existing runways for arrivals in the 0600 to 0700 period has been beneficial in sharing the noise burden around the airport. The Government therefore believes that this arrangement should continue on a permanent basis, so far as it is not precluded by any decisions on mixed mode or by the need for air traffic controllers to authorise the use of both runways for arrivals in this period, to minimise delays.

Surface access

1.46 We have not identified the need for special measures to manage down road traffic or mitigate vehicle emissions in order to comply with the air quality tests in the event of further development. But we have looked at how road traffic conditions and demand on public transport would be expected to change over time in the Heathrow area.

1.47 We are satisfied that there is potential to meet the likely demand for public transport access to Heathrow with a third runway. Some demand management may be needed in the Central Terminal Area if full mixed mode is introduced with effect from 2015. If development is taken forward, it would be for the airport operator, working with key parties, to develop a surface access strategy as part of preparing for any planning application.

Summary

1.48 In view of the significant potential economic benefits, the Government considers that there is a strong case for the introduction of further capacity at Heathrow. This consultation paper sets out the options for doing this both within the existing two runways and with the benefit of an additional, third runway. It would be for the airport operator to obtain the necessary planning and regulatory approvals.

1.49 Heathrow's operations are of key importance to the local and national economy, and to our competitiveness internationally. They also impact on large numbers of people across London. We believe that delivering growth at Heathrow within the noise and air quality limits in the White Paper strikes the right balance between the environmental, social and economic considerations. However, we want to give all interested parties the widest opportunity to respond to this consultation and register their views on the issues, and to provide supporting evidence.