



Changes to the night time use of Heathrow runways (Announcement, 21 Dec 2000)

Aviation Minister Chris Mullin today announced changes in the use of Heathrow's runways at night in order to allow for a fairer and more equitable distribution of aircraft noise between midnight and 6.00am.

The changes will reduce the imbalance at night between the numbers of aircraft approaching Heathrow to land from the west over Berkshire (i.e. in an easterly direction) and from the east over London (in a westerly direction). They follow a consultation that invited views from local authorities, the Heathrow Airport Consultative Committee, the aviation industry, community groups and others. There was considerable support for a more equitable sharing of the burden.

In reply to a Parliamentary Question from Tony Colman MP (Putney), Mr Mullin said:

"I have concluded that it would not be fair and equitable to maintain the current Westerly Preference at night. It would be irrational to maintain in operation a noise mitigation measure that no longer serves the purpose for which it was originally intended. Indeed, it now has the perverse effect at night of adding to the sum of the disturbance that may be caused.

"It makes no sense for the Westerly Preference to be operated at times when there are few or no take-offs, because it does not serve as a noise mitigating measure, and it is incompatible with the Government's aim to minimise the impact of the airport on the local environment.

"I have considered carefully the arguments put forward for introducing an easterly preference at night, because I recognise this would provide the greatest benefit to the greatest number of people, but it would not provide a fair and equitable outcome. Everyone, whether they live in a densely populated area or otherwise, is entitled to the same consideration and respect.

"I have decided that the current Westerly Preference should be replaced at night by a weekly rotation between westerly and easterly operations whenever weather conditions permit.

"I expect the new arrangements will be introduced in the Spring, but full implementation will not be possible until the completion of runway resurfacing work in 2002/3."

No changes are being made to the night restrictions regime introduced in 1999.

Notes to Editors

The full text of the Parliamentary Question and Mr Mullin's answer is attached.

Aircraft normally take off and land into a headwind, but it is safe for them to operate with a light following wind. A 'westerly preference' has been operated at Heathrow since 1962 as a noise mitigation measure. The preference provides for 'westerly operations' (i.e. when landing aircraft approach Heathrow from the east over London and take off to the west over Berkshire) to continue when there is a light easterly following wind up to 5-knots, if the runways are dry and any cross-wind does not exceed 12-knots. Maintaining westerly operations in this way reduces the need for aircraft to take off in an easterly direction over Hounslow, Ealing, Twickenham etc., where the departure routes cannot be designed to avoid the most densely populated areas; in contrast to the position west of the airport where the departure routes pass between the main built-up areas.

Westerly preference is an important noise mitigation measure during the daytime. Aircraft taking off use more power than when landing and consequently make more noise. As most aircraft also take off at a steeper gradient than the 3° final approach glideslope followed by landing aircraft, take-off noise footprints are usually larger than landing ones, so their noise affects more people. However, the quid pro quo for reducing take-offs over west London is that landing aircraft have to make their final approach over London more often, and these are concentrated on the two final approach tracks.

Most night flights at Heathrow are now arrivals from the Far East and North America. These usually land after 4.30am. There are seldom any departures between midnight and 6.00am.

New pattern of runway rotation to be implemented at night

		A	B	C
Local time:		0000-0600	0600-1500	1500-0000
		Runway	Runway	Runway
Week 1	Westerly landings approaching over London	27L	27L	27R
Week 2	Easterly landings approaching over Windsor	09L	27R	27L
Week 3	Westerly landings approaching over London	27R	27L	27R
Week 4	Easterly landings approaching over Windsor	09R	27R	27L
Week 5	Westerly landings approaching over London	27L	27L	27R

Runway 27L and 09R is the southern runway and Runway 27R and 09L is the northern runway

Full implementation will not be possible until the completion in 2002/3 of runway resurfacing work and replacement of the instrument landing system as announced by BAA. Until then, weekly rotation between easterly and westerly operations can proceed, but alternation between the northern and southern runways will be suspended at night for most of this period.

If tailwinds exceed 5-knots, or the cross-wind component exceeds 12-knots, or the runways are wet, aircraft will land and take off into the wind. In a typical year this is likely to interfere with the planned rotation on about 15 to 20% of nights. The midnight switchover from westerly to easterly landings is approximate; it may be earlier or later depending on the time of the last scheduled departure, including any that are delayed. If it is necessary for an aircraft to take off before 6.00am, and it is an aircraft that is not exempt from the night restrictions, it will take off to the west if weather conditions permit. In this case the planned rotation may not be maintained up to 6.00am on some occasions, but this should seldom happen. Columns B and C in the table above also show the current pattern of daytime runway alternation during westerly operations, which will be unaffected.

Background

The first consultation paper issued on 17 November 1998 invited comments on 10 options for modifying the use of Heathrow's runways at night. On 23 November 1999 Chris Mullin announced that runway alternation would be extended to most of the night period (DETR Press Notice 1075). At the same time a second consultation paper was issued inviting comments on the following alternative proposals:

A: To suspend westerly preference at night after the last departure (including any delayed departures) until the first departure the next morning, but not later than 6.00 a.m.

B. For the same period of the night, to put in place a fixed weekly rotation between westerly and easterly operations by applying a 5-knot preference, subject to overriding weather conditions.

The consultation paper included information on the use of Heathrow's runways at night, and the effect of the westerly preference. Because winds speeds are generally lower at night than in the daytime, in the course of an average year Heathrow's runways can be used in either direction on about 70% of nights. As a result, in an average year, the operation of the westerly preference leads to about 89% of the early morning arrivals between 4.30am and 6.00am making their final approach over the densely populated area of London. If the westerly preference was suspended at night, this would fall to about 64%. If an easterly preference was operated at night, it would fall to about 17%.

The consultation paper examined the likely effects of changing the directional preference at night. It included the following table showing the number of people living within the 90dBA SEL [1] arrival footprint of a B747-Classic [2] for each of Heathrow's runways:

Population within a B747 'Classic' 90 dBA SEL footprint	
Runway 09R (southern runway - easterly operations)	3,800
Runway 09L (northern runway - easterly operations)	8,500
Runway 27L (southern runway - westerly operations)	33,300
Runway 27R (northern runway - westerly operations)	36,200

These footprints extend over the last 10km or so of the final approach track only. While the 1992 sleep research [3] showed that the average person was very unlikely to be disturbed outside these areas, complaints are received from a wider area. The population under each approach track from 35 km to touchdown is:

Total Population 35 km to touchdown	
Runway 09R (southern runway - easterly operations)	21,500
Runway 09L (northern runway - easterly operations)	42,500
Runway 27L (southern runway - westerly operations)	291,600
Runway 27R (northern runway - westerly operations)	295,500

The consultation paper also examined the changes in population distribution and density up to 35 km from touchdown for each final approach track.

Proposal A could be expected in the course of a typical year to reduce the number of occasions at night when aircraft approach to land over London (westerly operations) from about 89% of the time to about 64% of the time. It would increase the number of occasions at night when aircraft approach to land over areas to the west of the airport (easterly operations), including Wargrave, Waltham, Twyford, Bracknell, Wokingham, Windsor and Poyle, from about 11% of the time to about 36% of the time.

Proposal B could be expected to reduce the number of occasions at night when aircraft approach to land over London (westerly operations) from about 89% of the time to about 53% of the time. It would increase the number of occasions at night when aircraft approach to land over areas to the west of the airport (easterly operations) from about 11% of the time to about 47% of the time. Such a scheme would also offer more predictable periods of relief from the noise of landing aircraft at night for all communities around the airport.

Due to the position of Maidenhead in relation to Heathrow's runways, landing aircraft do not normally overfly the town at night because of the requirement for them to be aligned with the runway by no later than 10 nautical miles (18½ km) from touchdown. Slough town is not normally over-flown by landing aircraft during the day or at night.

Runway Alternation

Runway alternation at Heathrow was introduced for daytime landings (7.00am to 11.00pm) in 1972. It applies during westerly operations only and provides communities east of the airport under the final approach tracks with predictable periods of relief from the noise of landing aircraft. During daytime westerly operations, landing aircraft use one runway from 7.00am until 3.00pm and switch to the parallel runway from 3.00pm until 11.00pm. In order to achieve a fair and equitable balance in the use of the two runways, the runway assigned to landing aircraft after 3.00pm also alternates on a weekly basis so that communities in west London situated under the final approach tracks may benefit from quieter periods in the mornings, or the afternoons and evenings as the case may be. The change is made at 3.00pm as this is one of the least busy periods of the day, allowing the switch over to be made with the minimum of

disruption.

Runway alternation was extended to most of the night period (11.00pm to 6.00am) on 19 December 1999, following consultation.

Runway alternation during the day for easterly operations (when aircraft approach to land from the west over Windsor) was considered in the 1970s but not introduced.

House of Commons

Mr Tony Colman (Lab Putney)

To ask the Secretary of State for the Environment, Transport and the Regions, whether he has reached a decision on the proposals for changes to the preferential use of Heathrow's runways at night; and if he will make a statement.

Mr Chris Mullin

On 23 November 1999, following consultation, I announced the extension of runway alternation at Heathrow to most of the night period and a trial to establish the feasibility of extending it further to include the remaining hour from 6.00am to 7.00am. Following discussions with Heathrow Airport Limited, night-time alternation between 11.00pm to 6.00am commenced on 19 December 1999. The 6.00am to 7.00am trial got under way in August this year and is expected to run for up to two years.

Also on 23 November 1999 the Department of the Environment, Transport and the Regions issued a further consultation paper making proposals for changes to the preferential use of Heathrow's runways at night. Comments were invited on two proposals which would alter the balance between westerly and easterly operations at night. These were:

- A. To suspend westerly preference at night after the last departure (including any delayed departures) until the first departure the next morning, but not later than 6.00am; or
- B. For the same period of the night, to put in place a fixed weekly rotation between westerly and easterly operations by applying a 5-knot preference, subject to overriding weather conditions.

Aircraft normally take off and land into a headwind, but it is safe for them to operate with a light following wind up to 5-knots if the runways are dry and any cross-winds do not exceed safe levels. The 5-knot Westerly Preference at Heathrow was introduced in 1962 as a noise mitigation measure. Its purpose is to reduce the number of aircraft that take off in an easterly direction over London where it is not possible to design departure routes that avoid the densely populated areas east of the airport, in contrast to the position west of the airport.

At the time the Westerly Preference was introduced there were many more departures at night, sufficient to warrant its operation on a 24-hour basis. This remained the case for many years; for example in 1971 we know that 43% of night flights were departures. In recent years the position has changed significantly. In 1998 and 1999 only about 4% of night flights were departures, most of which took off before midnight. The majority of night flights at Heathrow today, averaging about 15 per night, are arrivals from the Far East and North America, and usually land after 4.30am. As a result, the operation of the Westerly

Preference at night no longer contributes to reducing the overall impact of aircraft operations on the communities around the airport. Indeed, perversely, it now serves to increase the number of flights that overfly the densely populated areas of London at night, to the extent that about 90% of night flights currently do so in the course of an average year. This is not fair or equitable. It makes no sense for the Westerly Preference to be operated at times when there are few or no take-offs, because it does not serve as a noise mitigating measure, and it is incompatible with the Government's aim to minimise the impact of the airport on the local environment.

Nearly 11,000 copies of the 23 November 1999 consultation paper were issued and 6,389 responses were received by the closing date on 17 March 2000. The Mayor of London was invited to give his views shortly after taking office. With few exceptions, the responses from areas to the east of the airport support one or both of the Government's proposals and those from areas to the west of the airport argue for retention of the current arrangements. The Royal Borough of Windsor and Maidenhead, alone among local authorities, ran a campaign in its area on the issues raised.

446 respondents preferred proposal A and 1811 preferred proposal B. 19 other respondents agreed that change was necessary but expressed no preference between the two proposals. 3876 respondents preferred that no changes were made, 3831 of which sent in their response using the reply slips distributed by the Royal Borough of Windsor and Maidenhead. A further 238 respondents commented on the proposals without indicating a clear view one way or the other. In rounded terms, 36% of respondents considered that changes should be made to the operation of the Westerly Preference at night and 61% preferred that no changes were made. Among the 40 responses from local authorities, individual Councillors, parish councils and environmental groups, 19 called for no change, 5 supported proposal A, 15 supported proposal B and one advocated a continuous 5-knot easterly preference at night on the grounds that this would provide the greatest benefits to the greatest number of people (the population living to the east of the airport under the final approach tracks exceeds that living to the west by a ratio of about 9 to 1).

The consultation paper also invited comments on how ad hoc departures of aircraft that are exempt from the night restrictions should be handled. 1424 respondents commented. 750 (53%) preferred that these aircraft should take off according to the planned direction of operations.

The consultation paper was criticised for not including options for retaining the current westerly preference at night or introducing an easterly preference at night. Both had been among the wider range of the options explored in the consultation paper issued in November 1998. Neither was taken forward in this second consultation because we did not consider that either outcome would be fair and equitable, taking into account both daytime and night-time operations (cf. paragraph 46 of the November 1999 consultation paper, copies of which have been placed in the Library). One of the themes running through the responses to the 1998 consultation paper, particularly from organisations and representative bodies, was that the present arrangements are not fair and equitable and could be improved. We concluded that maintaining a continuous easterly preference at night would not produce an outcome that was manifestly fairer or more equitable than the present arrangements (Hansard, 23 November 1999, Cols.62-65). The responses to this consultation paper have introduced no new arguments in either respect.

The consultation paper was also criticised by 33 respondents (all west of the airport) for being too complex. Many aspects of airport operations are technical and unfamiliar to most people, and the consultation paper had to strike a balance between providing people with the information they needed to reach an informed opinion, and not over-burdening them with technical issues and aviation jargon.

I have considered carefully the arguments put forward that residents of Windsor and adjoining areas under the final approach track to the northern runway during easterly operations do not enjoy periods of relief from aircraft noise during the day because runway alternation is precluded by the Cranford Agreement. Some of the same areas are also exposed to departure noise during westerly operations, and therefore get little relief from aircraft noise. In that respect the position of Windsor is not significantly different from parts of Hounslow which are under the final approach track to the southern runway during westerly operations, but enjoy no relief from departure noise during easterly operations. On the one side Hounslow benefits from runway alternation, and on the other side the departure routes have been designed to avoid most of Windsor. However, we recognise there is a separate case for reviewing the Cranford Agreement, a point that was acknowledged by the Government during the Terminal 5 Inquiry. We wish to consider carefully the Inspector's advice on the issue before undertaking such a review.

I have concluded that it would not be fair and equitable to maintain the current Westerly Preference at night. It would be irrational to maintain in operation a noise mitigation measure that no longer serves the purpose for which it was originally intended. Indeed, it now has the perverse effect at night of adding to the sum of the disturbance that may be caused. I have considered carefully the arguments put forward for introducing an easterly preference at night, because I recognise this would provide the greatest benefit to the greatest number of people, but it would not provide a fair and equitable outcome. Everyone, whether they live in a densely populated area or otherwise, is entitled to the same consideration and respect.

Therefore, I have decided that the current Westerly Preference should be replaced at night by a weekly rotation between westerly and easterly operations whenever weather conditions permit: Proposal B in the consultation paper. It would be achieved by applying, on successive weeks, a 5-knot westerly preference followed by a 5-knot easterly preference. On those weeks when an easterly preference is operated, it will begin after the last scheduled departure, including any that are delayed, and will remain in operation until the first scheduled departure the next morning, but not later than 6.00am to allow sufficient time to return the airport to the normal daytime pattern of operations before the morning peak period. Ad hoc departures before 6.00am by aircraft exempt from the night restrictions will take off according to the planned direction of operations. This will result in some departures over west London by aircraft whose noise levels are sufficiently low for them to be exempt from the night restrictions.

It is expected that the rotating preference at night will produce a more even modal split between westerly and easterly operations. Over the longer term it is expected to result in a modal split of about 53% westerly operations and 47% easterly operations (2330-0600). This compares with the present position of 89% westerly operations and 11% easterly operations. It will also provide more predictable periods of relief from the noise of landing aircraft, but subject to weather conditions on the night.

I expect the new arrangements will be introduced in the Spring, but full implementation will not be possible until the completion of runway resurfacing work in 2002/3. The operation of Westerly Preference during the day is unaffected by this decision.

Copies of responses, except where the author has requested confidentiality, will be available for inspection by prior appointment (020 7944 3039) at the DETR Library and Information Centre, Ashdown House, 123 Victoria Street, London, SW1E 6DE.

Footnotes:

[1]. Sound exposure level.

[2]. Series 100, 200 and 300 Boeing 747s.

[3]. 'Report of a Field Study of Aircraft Noise and Sleep Disturbance' - December 1992. Commissioned by the Department of Transport from the Department of Safety, Environment and Engineering of NATS. The Study found that 1 in 75 people are likely to be awakened by noise levels in the range 90-100 dBA SEL. Higher noise levels are likely to result in more awakenings. The Study report noted that the number of awakenings probably lies in a range between 1 in 60 and 1 in 100. This represents a best estimate on the basis of the research, and is based on assumptions (e.g. that no one is awakened below 90 dBA SEL, that there is no variation in the probability of awakenings, and that a person can be woken more than once), and awakenings are those described in the research.