

Guidance Note for Noise Action Plan Contours for Heathrow Airport 2015

This is a guide to help the reader navigate through and understand the report. A layout of the main noise-data figures and tables is provided below. For a glossary of terms see Page 76 of the report.

Figures and Tables in 2015 Report	Noise Metrics								
	Year and Information	L _{day} 07-19h	L _{evening} 19-23h	L _{night} 23-07h	L _{den}	L _{6.5hrs} night	N65 16h day	N70 16h day	N60 8h night
2014 and 2015: Contours	Figures:	3	4	5	6	7			
2014 and 2015: area, population, houses	Tables:	4	5	6	7	8			
2014 and 2015: area, population, houses (cumulative)	Tables:	C6	C7	C8	C9	C10			
2006 and 2015: area, population, houses (cumulative)	Tables:	C11	C12	C13	C14	C15	9	10	11
2006 and '09-'15 Trends: area, population, houses	Figures:	8	9	10	11	12			
2006 and 2015: Contours	Figures:				13		16	18	20
Change in levels between 2006 and 2015	Figures:			15	14		17	19	

Major Findings

2015 compared with 2014

- Total aircraft movements in 2015 were 0.39% higher than in 2014. (Table 1)
- While evening flights had increased 1.75%, night flights had decreased 0.33%. (Tables C2 and C3)
- The areas of the 2015 contours were typically 4 to 7% less than for 2014. This can be attributed to increases in the numbers of quieter, newer aircraft such as A380 and B787 and the decrease in night flights. (Tables 4 - 8)
- The figures for reductions in population and households within the contours were less than the area reductions due to changes in some operational parameters. A higher percentage of westerly movements due to wind patterns effectively increased the population and households affected. Additionally, a return to a more even north-south runway split (after 2014 resurfacing of the northern runway) also increased population and households within the various 2015 contours. (Tables 4 - 8)

Trends and changes between 2006 and 2015

- Total aircraft movements in 2015 were 0.7% lower than in 2006. (Table 1)
- The changes in area, population and houses within various contours showed some increases and decreases over the decade influenced by various factors, with an underlying general trend of reducing contour areas. The winter weather, ATC strikes and the ash cloud in 2010 decreased the population and household figures. Runway resurfacing increased impact. (Figures C11 - C15)
- Over the decade, despite up to around 20% reductions in contour area, changes in population and households within contours were much smaller, around 8% or less or sometimes actual increases. This was due to the construction of new households in noise affected areas. For example, in Table C14 (and Figure 13), the area of Lden 60 dBA contour reduced 17%, but the population within the contour increased by 4% and the number of households only reduced by 3%. As show in blue, had there been no increase in housing stock, the population and households would have both reduced 16%. (Tables C11 - C16 and Tables 9 - 11)
- Figures 14 and 15, respectively, show the change in Lden and Lnight between 2006 and 2015. Green areas show decreases of 0 - 3 decibels. Purple shows increases of up to 1 decibel. Calculations used the actual aircraft numbers but a 70% west/30% east modal split to allow a better comparison of the 2 years. Some other changes are not self-evident - in 2006 the southerly turn from a 27L departure (southern runway to the west) was tighter, there was less traffic to the middle east (departure tracks heading south east) and there was a more even north/south runway split in 2006 than in 2015. All of these factors have contributed to the purple areas of increased noise to the east, west and south-west of the southern runway.
- Similarly, Figures 17 and 19, respectively, show the change in N65 and N70 (16hr day) between 2006 and 2015. Green areas show decreases of 10 - 150 movements per day and purple shows increases of up to 100 movements. Calculations used the actual aircraft numbers but a 70% west/30% east modal split to allow comparison of the 2 years. While the 2015 contour areas are smaller (see Figures 16 and 18), variations in fleet mix and runway and track usage result in a mix of areas of green and purple.

Wind, Runway Use and Tracks

- Under easterly winds and easterly operations, departures are restricted to the southern runway under the Cranford Agreement. The concentration of tracks means that a higher proportion of westerly wind tends to cause an increase in the contour areas. This effect was compensated for in the noise change maps (Figures 14, 15, 17 and 19) by re-calculating 2006 contours using the same E-W modal split as for 2015.
- The night time split of traffic between the northern and southern runways can also affect contour shape and thus population and household numbers. In 2013 the southern runway was resurfaced and in 2014, the northern. The effect of such night time runway work on the northern runway can be seen in the night time Leq contours in Figure 7. Both effects can be seen in the longer term data in Figures 8 through 12.
- More details are provided on pages 21 and 22 of the report.