

# CORRIDORS OF CONCENTRATION

The concentration of flight paths over South East London



## **A SHORT REPORT FROM HACAN and PLANE HELL ACTION** (with assistance from the Civil Aviation Authority)

- OUTLINING THE NUMBER OF HEATHROW AIRCRAFT FLYING OVER SE LONDON
- HIGHLIGHTING INCREASED LEVELS OF CONCENTRATION
- PROPOSING SOLUTIONS WHICH WOULD BENEFIT LOCAL COMMUNITIES

**COVERING**

**Greenwich · Lambeth · Lewisham · Southwark**

## SUMMARY

### What we did

- **We surveyed selected locations in SE London from Greenwich in the east to Clapham in the west.**
- **We noted all aircraft which were audible from each location.** They were not necessarily all directly overhead but most were loud enough to be noticeable or intrusive. We concentrated on daytime flying, but included some night counts. We also used data from Heathrow's xPlane tool to compare aircraft numbers in 2011 and 2017 and assess levels of concentration that may have taken place.
- **We are grateful for the work the Civil Aviation Authority did to assist us in assessing our counts. Their findings can be found on page 19.**

### Why we did it

- **To highlight the impact of aircraft noise on SE London**
- **To influence the policy debate by feeding into Heathrow's consultation on flight paths**

### What we found

- **The area is heavily overflown, with typically 38 planes an hour audible to many communities.** This could rise to over 40 during busy periods and over 50 in the hour between 6am and 7am (when planes land on both runways at Heathrow). The planes are typically at heights between 5,000ft in the Greenwich area to under 4,000ft at Clapham Common. Heights have changed little in the past few years.
- **Increased concentration of flights has taken place in recent years.** More than ever flights are being guided through 'concentrated corridors' which means that particular communities are especially badly hit. We have deliberately used the word 'corridor' as the planes are not necessarily in a precise line but are within a corridor where they are audible.
- **The overall number of flights is much the same as when we last surveyed the area 10 years ago but this masks significant changes in certain places:**
  - the number of flights in the east of the region has increased dramatically: daily flights in the Brockley corridor grew by 135 between 2011 and 2017; Greenwich saw an increase of 165 a day.
  - flights numbers in the 'southern corridor' – which is focused on the southern runway – have risen significantly
  - increased concentration has meant more flights for particular communities.

**We concluded many more planes are joining their final approach corridors further east than before and are more concentrated within those corridors. We also found evidence of increased night concentration.**

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# 1 The Area Surveyed



*Surveyed areas in SE London*

We surveyed areas from between Clapham Common, SW4 in the west, to Greenwich, SE10 in the east. Parks are included in the survey because they both provide good vantage points and are noticeably overflown.

The areas surveyed include some of those where residents have reported increased noise disturbance from overhead aircraft in recent years.

## 1.1 Area Details

We made counts in the following locations, covering the boroughs of Greenwich, Lambeth, Lewisham and Southwark:

- Deptford SE8
- Greenwich SE10
- Brockley (Lewisham) SE4 & SE6
- Rotherhithe SE16
- Peckham SE15
- Dulwich SE22
- Brockwell Park (Herne Hill) SE24
- Burgess Park (Southwark) SE5
- Camberwell, Oval/Kennington SW8/SE5
- Stockwell/South Lambeth Road SW8/SW9
- Imperial War Museum SE1/SE11
- Clapham Common SW4

## 1.2 How we carried out the survey

We aimed to make counts on both sides of the runway switchover at 3pm. Planes were counted for an hour. The survey results indicate count timings. Most counts were made outdoors and we indicate indoor counts in the report. We counted all planes that were audible. The count locations are marked on the above map. The heights shown are indicative not exact. There is some variation of height over any one location.

The counts were done by a number of people. The instruction to people was to include in the count all planes that were audible. The variation in some of the figures, while not critical to the broad findings of the report, may be accounted for in the different ways people may have interpreted 'audible'.

We only counted Heathrow-bound aircraft. It is worth noting that a number of areas in South East London are also overflowed by planes landing at LCY during its easterly operations and consequently can have overhead traffic to both LHR and LCY simultaneously. All our surveys were made on days when there was a west wind. In a typical year a west wind blows 70% of the year. But aircraft also land over London when an east wind blows up to a speed of 5 knots. None of the areas we surveyed are affected by planes taking off from Heathrow.

We used the xPlane (Brüel & Kjær, n.d.) tool that is available on the Heathrow website to compare flight numbers and flight patterns between 2011 (the earliest year for which xPlane has data) and 2017. Our work was supplemented with data from the CAA.

## 2 Our Results

### 2.1 GREENWICH SE10

Date	Sunday 19/11/2017
Place	Cutty Sark near Greenwich Town Centre
Count 1: 12.00-13.00	24 planes
Count 2: 15.00-16.00	27 planes
Height	< 5,000 feet
Distance from Heathrow	19nm, 21.8sm
<p>Greenwich was the furthest east we surveyed. The numbers were lower than elsewhere because many of the planes coming either from the north or the south had yet to turn on to their approach to Heathrow. That took place further west. However, Heathrow's xPlane tool reveals a large increase in the number of daily flights within 5 miles of Greenwich since 2011.</p> <p>Flight paths mapped by the CAA: see page 19</p>	

### 2.2 BROCKLEY SE4

Date	Sunday 26/11/2017
Place	Brockley train station
Count 1: 11.20 - 12.20	32 planes
Count 2: 15.00 - 16.00	39 planes
Height	4,500 feet
Distance from Heathrow	18nm, 20.7sm
<p>Aircraft landing on the southern runway until 3pm; on the northern runway after 3pm.</p> <p>A key feature at Brockley is the number of turning movements. Most planes are turning from the north or south on to their approach to Heathrow. This makes the noise particularly noticeable. As with Greenwich, xPlane shows a big daily increase in flights since 2011 within 5 miles of Brockley – see page 15.</p> <p>Flight paths mapped by the CAA: see page 19</p>	

### 2.3 ROTHERHITHE SE16

Date	Saturday 18/11/2017 & Tuesday 21/11/2017
Place	Baltic Quay, Sweden Gate
Count 1: 04.24 – 05.25	13 planes
Count 2: 06.00 – 07.00	53 planes
Height	4,500 feet
Distance from Heathrow	17.6nm, 20.25sm
<p>There are no scheduled flights between 11.30pm and 4.30am. From 4.30am to 6am 16-18 are scheduled. They are all landings. The first count was a record of an hour of night flights; the second count 6-7am, known as the shoulder period, was the only time when both runways are scheduled to be used for arrivals.</p> <p>This was an indoors survey. It was carried out at Baltic Quay, Sweden Gate (between the Thames and Surrey Quays).</p>	

### 2.4 PECKHAM SE15

Date	Thursday 16/11/2017
Place	Southampton Way, SE5/SE15
Count 1: 11.34 – 12.34 hrs	35 planes
Count 2: 15.00 – 16.00 hrs	37 planes
Height	4,500 feet
Distance from Heathrow	14nm, 16.1sm
<p>Aircraft landing on the northern runway until 3pm; on the southern runway after 3pm.</p> <p>The planes were fairly spread out but there seemed to be no discernible difference between the pre-3pm and post-3pm noise. What is interesting is that the CAA maps show many of the planes were some distance away yet aircraft noise dominated the residential streets away from the main road.</p> <p>Flight paths mapped by the CAA: see page 19</p>	

## 2.5 DULWICH SE22

Date	Tuesday 14/11/2017 & Thursday 16/11/2017
Place	Dovercourt Road
Count 1: 15.06 - 16.06 (14/11)	39 planes
Count 2: 10.50 - 11.50 (16/11)	38 planes
Height	4,500 feet
Distance from Heathrow	16nm, 18.4sm
<p>Aircraft landing on the southern runway until 3pm; on the northern runway after 3pm.</p> <p>The survey was done indoors in Dovercourt Road which is close to Dulwich Village</p> <p>The area has experienced aircraft noise for many years but the number of planes which are audible is consistently high and, like other areas mainly affected by planes landing on the southern runway, it saw a noticeable increase in flight numbers between 2011 and 2017.</p>	

## 2.6 WALWORTH SE17

Date	Thursday 9/11/2017
Place	
Count 1: 18.10 - 19.10	50 planes
Count 2: 06.00 – 07.00	50 planes
Height	3,600 – 4,000 feet
Distance from Heathrow	13.22nm, 15.22 sm
<p>The numbers here are higher than the other counts in areas close by. The numbers during the hour between 06.00 and 07.00, when planes land on both runways at Heathrow, is only slightly higher than some of the other counts during this hour but the number between 18.10 and 19.10 is a lot higher than the average in the area.</p>	

## 2.7 BURGESS PARK SE5

Date	Sunday 26/11/2017
Place	Burgess Park west entrance
Count 1: 11.23 - 12.23	43 planes
Count 2: 15.01 - 16.01	47 planes
Height	4,000 - 4,500 feet
Distance from Heathrow	16nm, 18.4sm
Other Local Counts	<p>John Ruskin St, SE5 (indoors):</p> <p>Monday 6/11/2017  05.58 – 06.58 48 planes  (the hour when planes land on both runways)</p> <p>Tuesday 7/11/2017  04.33 – 05.00 16 planes</p> <p>Sunday 19/11/2017  19.45 – 20.45 37 planes</p>
<p>This survey was done on the same day and at about the same times as the survey at Brockley, just 2 miles to the east but there were many more planes. In addition to the planes coming from the Brockley direction, there were planes coming from Canary Wharf and Elephant &amp; Castle. Those from the two latter directions caused more of a whine, perhaps because they were turning. The very large planes were noticeably louder. There was a difference in direction depending on the runway being used. The planes at the height they are at from Burgess Park onwards means the noise carries across a wide area.</p> <p>Flight paths mapped by the CAA: see page 19</p>	

## 2.8 RUSKIN PARK (CAMBERWELL) SE5

Date	Sunday 26/11/2017 & Monday 27/11/17
Place	Inside Ruskin Park
Count 1: 07.02 - 08.02 (26/11)	41 planes
Count 2: 15.00 - 16.00 (27/11)	39 planes
Height	4,500 feet
Distance from Heathrow	13.38nm, 15.4sm
Other Local Counts	Graces Road, SE5  Saturday 11/11/2017 08.00 – 09.00 40 planes (northern runway)
<p>Aircraft landing on the southern runway until 3pm; on the northern runway after 3pm.</p> <p>Ruskin Park, tucked behind Kings College Hospital, is a peaceful oasis except for the aircraft noise. The weather conditions were benign.</p> <p>Interestingly, a 2006 study came to a similar conclusion: HACAN commissioned a report from consultants Bureau Veritas (Bureau Veritas, 2008). It counted planes on two occasions. During one hour it counted 24 planes; during the other 50. More variation than we found in November 2017 but the conclusion of the study, published in 2007, was the same: ‘the aircraft arrival rate was sufficiently great to mean that aircraft noise dominated the local noise environment.’</p>	

## 2.9 BROCKWELL PARK SE24

Date	Sunday 12/11/2017 and Monday 13/11/17
Place	Close to the Herne Hill entrance
Count 1: 12.45 - 13.45 (12/11)	43 planes
Count 2: 14.45 - 15.45 (13/11)	35 planes
Height	4,500 feet
Distance from Heathrow	12.95nm, 14.91sm
<p>Aircraft landing on the southern runway until 3pm; on the northern runway after 3pm.</p> <p>Most planes approached from the east or the north east; some came from the south east. Interestingly the post-3pm planes which were landing on the northern runway about two miles away, although somewhat quieter, were clearly audible from the park.</p> <p>Flight paths mapped by the CAA: see page 19.</p>	

## 2.10 OVAL/KENNINGTON PARK SE11

Date	Monday 13/11/2017
Place	Kennington Park
Count 1: 09.45 - 10.45	34 planes
Count 2: 16.05 - 17.05	35 planes
Height	< 4,000 feet
Distance from Heathrow	12.87nm, 14.81sm
Other Local Counts	<p>At Listowel Close, SW9: Sunday 26/11/2017 08.44 – 09.44 42 planes</p> <p>At Claylands Road, SW8: Monday 13/11/2017 05.20 – 06.20 19 planes Monday 27/11/2017 09.15 – 10.15 27 planes</p>
<p>The patterns in the two sessions on Monday 13/11/17 were different. In the morning aircraft were approaching from a number of directions. In the afternoon nearly all the aircraft were to the east of the park, closer to John Ruskin St and flying on a similar alignment making for very intense noise.</p> <p>Aircraft landing on the southern runway until 3pm; on the northern runway after 3pm.</p>	

### 2.10.1 A Note on Previous Findings for this area

**The Bureau Veritas Study** commissioned by HACAN and published in 2007 surveyed Kennington Park on 6/11/2006 for just over an hour and found some 43 events were recorded giving an arrival rate of around 1 movement every 97 seconds. It was again the case at this location that the arrival rate was sufficiently high as to provide an almost constant backdrop of aircraft noise over the measurement position. For most of the measurement period it was noted that as soon as one aircraft event had passed over the next could be heard approaching. One of our 2017 surveyors, on the Kennington/Walworth border, found similar: a plane about every 75 seconds.

In a 2010 survey by HACAN a count of 32 – 43 planes per hour was noted at the Oval.

Over the past 10 years the number of planes has not changed significantly. Our observations would suggest however, that in this area, at certain times of the day (particularly when the northern runway is in use) the planes have become more concentrated. This would tie in with the consistent message we have been getting from local residents and seems to be borne out by the Heathrow map and is supported by evidence from Heathrow xPlane.

### 2.11 STOCKWELL SW8

Date	Sunday 12/11/2017
Place	Opposite Stockwell Underground
Count 1: 07.02 - 08.02	38 planes
Count 2: 15.00 - 16.00	38 planes
Height	4,000 feet
Distance from Heathrow	12.33nm, 14.2sm
<p>Aircraft landing on the southern runway until 3pm; on the northern runway after 3pm.</p> <p>HACAN last counted planes in Stockwell in the early 2000s. Then they averaged 28 an hour. Today it is 38 reflecting the growth in the number of flights arriving at Heathrow.</p> <p>The figures tally with a survey carried out near South Lambeth Road (about 500 yards from Stockwell Station)</p> <p>Monday 13/11/17 13.45 – 14.45 hrs    38 planes</p> <p>Wednesday 15/11/17 06.50 - 07.50 hrs    40 planes</p> <p>The heights were typically about 4,000 feet.</p> <p>Flight paths mapped by the CAA: see page 19</p>	

## 2.12 IMPERIAL WAR MUSEUM SE1 & SE11

Date	Wednesday 22/11/2017
Place	Close to the Imperial War Museum
Count 1: 18.37 - 19.37	37 planes
Count 2: 09.26 - 09.48 0-2/11/17	16 planes
Height	4,000 feet
Distance from Heathrow	12.94nm, 14.9sm
<p>Aircraft landing on the northern runway until 3pm; on the southern runway after 3pm.</p> <p>Our surveyor reported that the 'air was full of noise all the time' with planes criss-crossing the area to reach their approaches to the runways with planes from north and south stacks all day.</p>	

## 2.13 CLAPHAM COMMON SW4

Date	Friday 10/11/2017
Place	On the Common, close to Clapham Common Underground Station
Count 1: 13.10 - 14.10	42 planes
Count 2: 15.00 - 16.00	35 planes
Height	< 4,000 feet
Distance from Heathrow	11.72nm, 13.5sm
<p>Aircraft landing on the northern runway until 3pm; on the southern runway after 3pm.</p> <p>HACAN last counted the planes here in 2010. Numbers were very similar. What is striking this time is how much more concentrated the flight paths are. In 2010 we recorded planes flying over the Common and to both the north and south of it. This time all planes flew to the north of the Common, on a different alignment before and after 3pm.</p> <p>Flight paths mapped by the CAA: see page 19</p>	

### 3 The Concentration Story

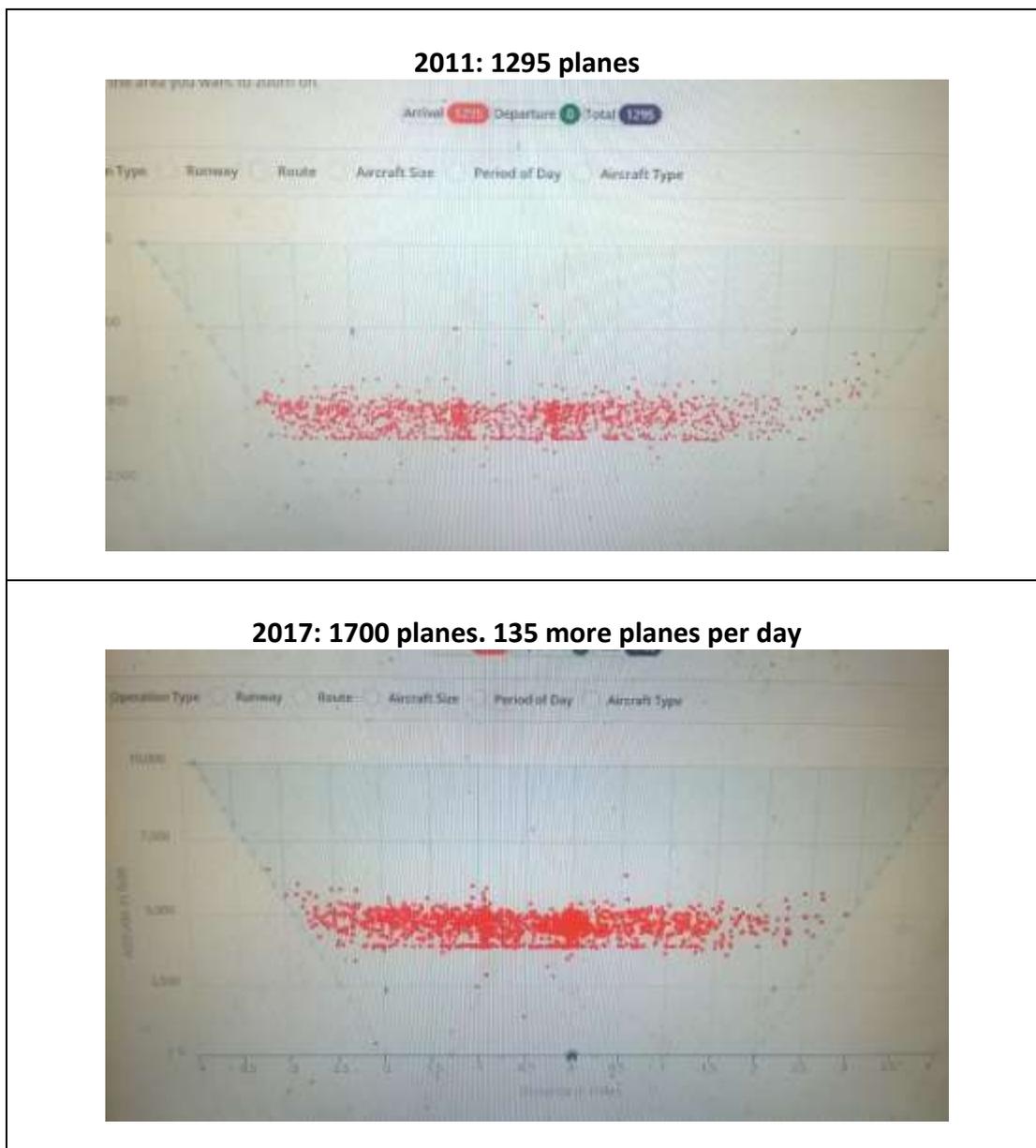
We compared 2011 and 2017 data with [xPlane](#). xPlane may be new to readers. The screen shots on the next few pages show the number of aircraft going through a 'gate'. Each dot represents an aircraft

For each surveyed location, we examined a 3-day period having prevailing westerly winds so that all Heathrow planes were landing over London from the east.

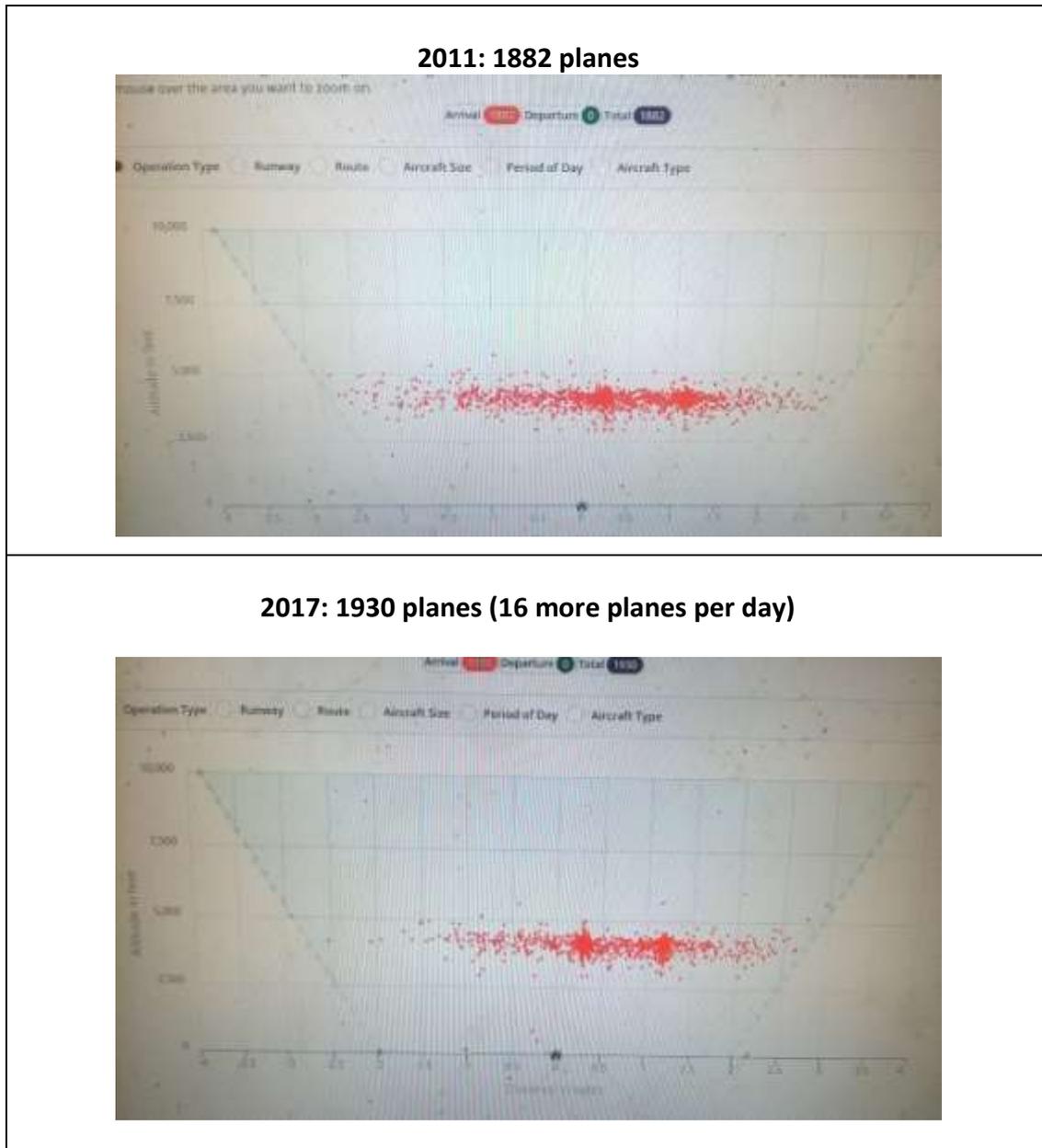
We looked at data within a 5-mile band: 2.5 miles on either side of each location. We chose the 5-mile band to see if and how planes had shifted over a wide area.

The following spread of examples show how concentration has taken place. Data for Lambeth North further suggests that more planes have moved south of the river.

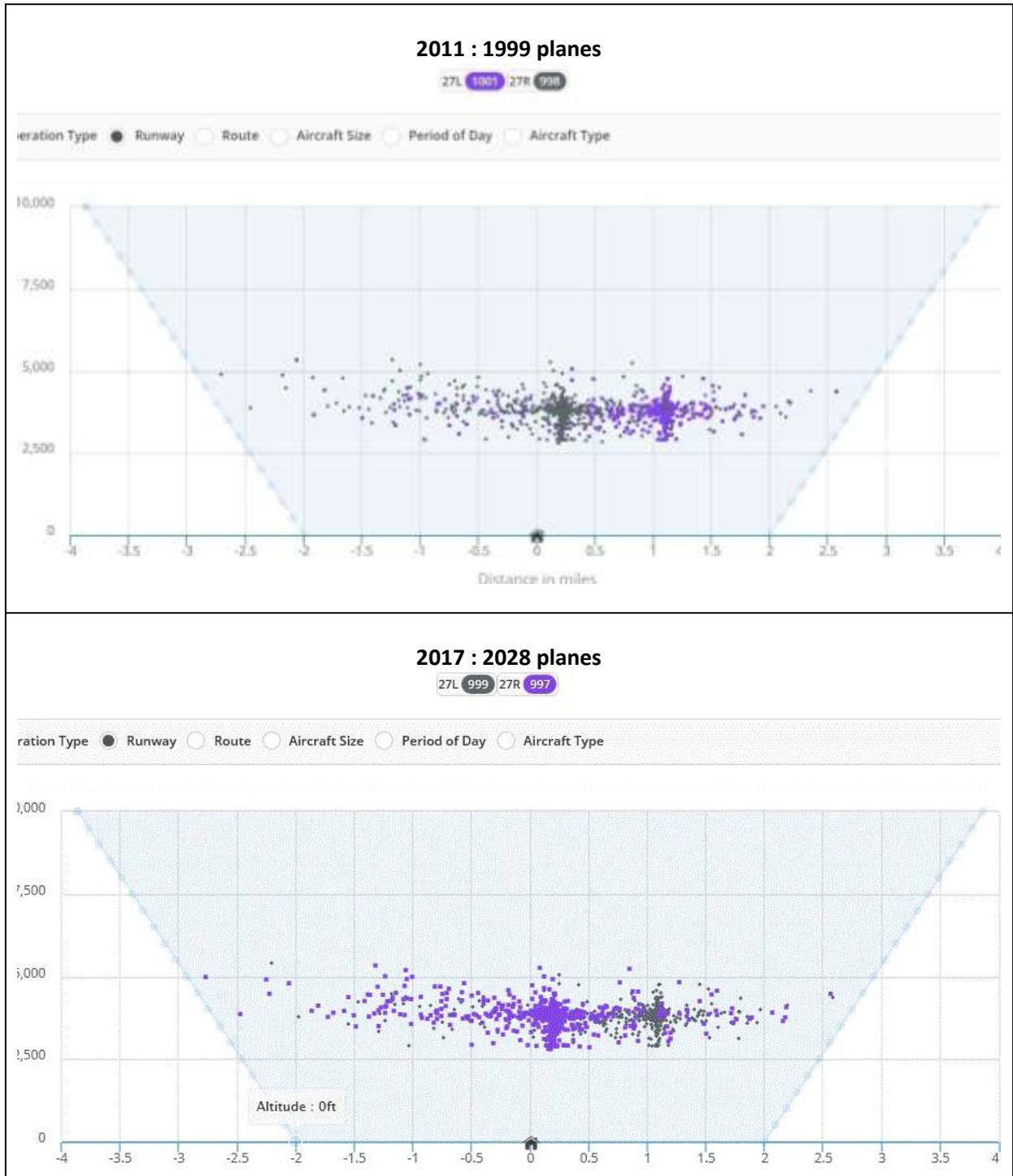
#### 3.1 Example 1: Brockley BR Station SE4



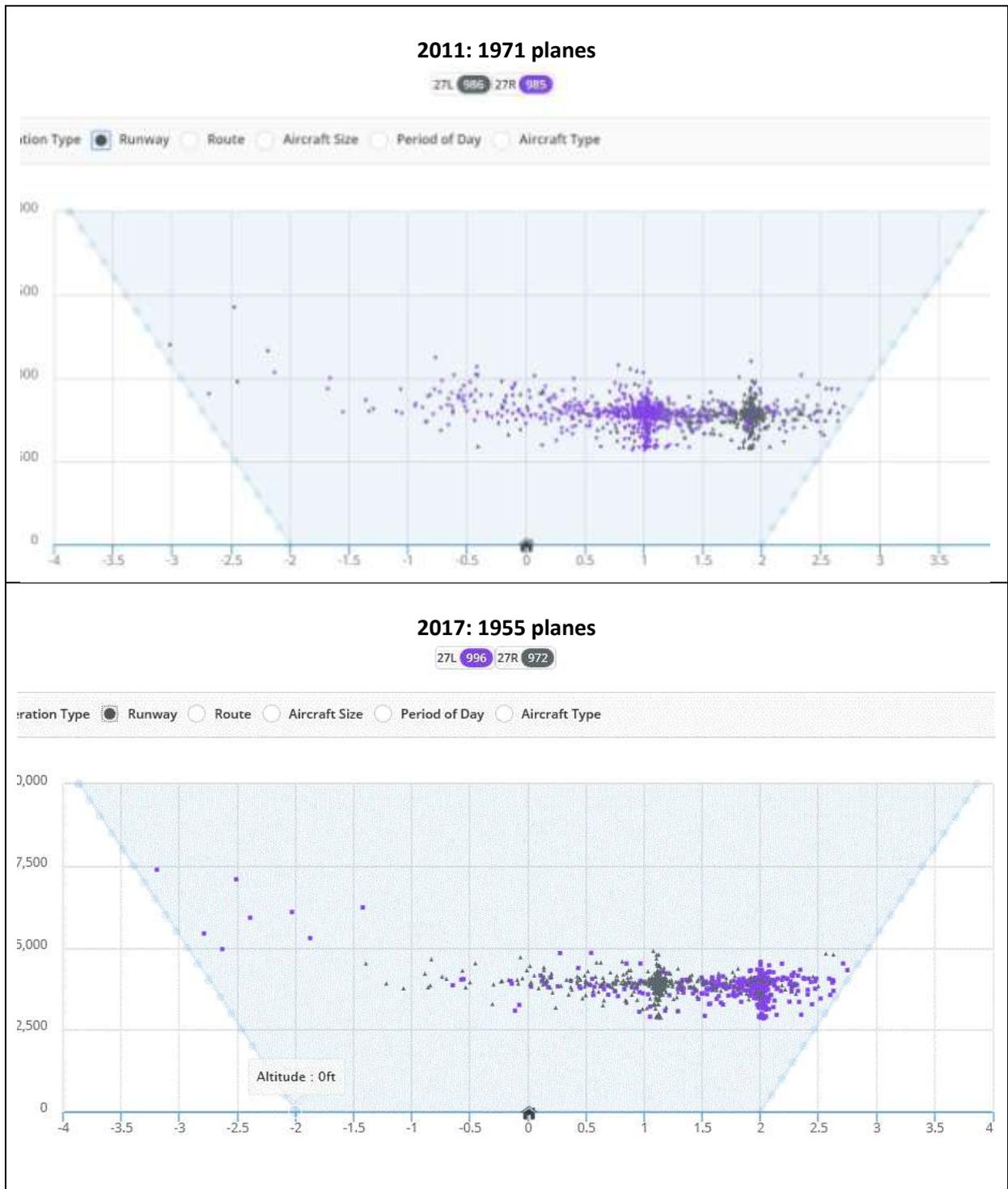
## 3.2 Example 2: Walworth (John Ruskin St) SE5



### 3.3 Example 3: Oval (Claylands Road) SW8



### 3.4 Example 4: Lambeth North (Walcot Square) SE11



At the example locations the flights have become more concentrated. This was also the trend at all the locations we surveyed.

We noted the difference in daily flight numbers at each surveyed location between the two years. A pattern emerged.

- The closer to the runway, the smaller the increase in daily flights. There was a larger increase in areas used to approach the southern runway such as Dulwich (up 81) and Brockwell Park (up 50).
- The most noticeable increase was in areas further out such as Greenwich (up 165) and Brockley (up 135). We stress that these are not an increase at our surveyed locations but across a 5 mile band surrounding them.
- Planes have been shifted further south as can be seen from examples 3 and 4 above.

The total number of planes using Heathrow during 2011 was about 5,000 more than were expected to use it in 2017. This must mean that some areas have seen numbers decrease.

This all suggests that many more aircraft are joining their approach corridors further east in 2017 than in 2011 and are more concentrated within those corridors. If fewer planes are joining the corridors closer to Heathrow, it suggests that areas like Islington and Camden, which have been used for these tighter turns, may well have seen a fall in the number of flights passing over them.

## 4 The Civil Aviation Authority Assessment

The Civil Aviation Authority did work to assess our findings in key locations that we measured. They cannot be held responsible for the accuracy of our findings in any of the other locations. But in the locations which the CAA assessed they concluded that “overall the results support your observations”.

### Flight path analysis of Heathrow arrivals

Date	Location	Time of observation	Number of planes observed By HACAN	Number of LHR arrivals during observation period	Point of Closest Approach of all arrivals (ft)			Height above Airfield of all arrivals (ft)		
					Max	Avg.	Min	Max	Avg.	Min
10/11/2017	Clapham Common Northside	13.10-14.10	42	42	6,200	3,900	3,000	3,800	3,600	3,000
10/11/2017	Clapham Common Northside	15.00-16.00	35	35	7,400	6,900	5,800	3,800	3,700	3,400
12/11/2017	Stockwell Underground Station	07.02-08.02	38	40	14,100	4,900	3,800	4,100	3,800	3,100
12/11/2017	Stockwell Underground Station	15.00-16.00	38	36	5,300	4,300	3,200	4,000	3,800	3,100
12/11/2017	<b>Brockwell Park (Herne Hill end)</b>	<b>12.45-13.45</b>	<b>43</b>	<b>42</b>	<b>13,400</b>	<b>6,500</b>	<b>3,800</b>	<b>4,500</b>	<b>4,100</b>	<b>3,700</b>
13/11/2017	Brockwell Park (Herne Hill end)	14.45-15.45	35	36	15,200	7,700	4,500	4,300	3,900	3,400
13/11/2017	Kennington Park	09.45-10.45	34	38	12,600	6,100	3,800	4,800	4,000	3,100
13/11/2017	Bethwin Road	16.05-17.05	35	41	11,200	6,600	3,700	4,600	4,100	3,500
16/11/2017	Southampton Way, Peckham	11.34-12.34	37	41	11,300	5,600	3,900	4,400	4,000	3,300
16/11/2017	Southampton Way, Peckham	15.00-16.00	39	38	12,200	6,100	3,800	4,500	4,100	3,400
19/11/2017	Cutty Sark, Greenwich	12.00-13.00	24	37	17,300	8,300	4,400	5,500	4,900	3,600
19/11/2017	Cutty Sark, Greenwich	15.00-16.00	27	41	18,800	9,600	3,900	5,600	4,700	3,900
26/11/2017	Brockley Station	11.20-12.20	32	37	19,300	8,000	4,500	5,100	4,400	3,300
26/11/2017	Brockley Station	15.00-16.00	39	42	13,500	8,000	4,800	5,700	4,700	3,900
26/11/2017	Burgess Park West Entrance	11.23-12.23	43	36	12,700	6,900	3,800	4,700	4,000	3,000
26/11/2017	Burgess Park West Entrance	15.01-16.01	47	41	8,800	4,800	3,800	4,700	4,200	3,500

The CAA flight paths (incorporating some observers' comments) for those locations can be found here: <http://hacan.org.uk/wp-content/uploads/2018/03/CAA-Heathrow-arrival-observations.pdf>

## 5. CONCLUSIONS

- I. Large swathes of South East London are overflowed all day with no respite.
- II. Many areas are overflowed by around 40 planes an hour.
- III. Aircraft can be intrusive as far away as 2 miles.
- IV. The overall number of flights is much the same as when we last surveyed the areas in 2011 but this masks significant changes in certain areas:
  - the number of flights to the east of the region has increased dramatically: daily flights in the Brockley corridor have grown by 135 between 2011 and 2017; Greenwich saw an increase of 165 a day
  - the number of flights in the southern corridor, heading towards the southern runway, have risen significantly
  - increased concentration has meant more flights over particular communities such as Walworth (SE5/SE17) and Rotherhithe (SE16)
- V. Many more planes are joining their final approach corridors further east than previously and are then being concentrated within those corridors much more than they were. This means particular communities now bear the brunt of the noise.
- VI. Between 6am and 7am – the only hour of the day when planes land on both runways at Heathrow – we recorded over 50 flights in certain areas.
- VII. Although the survey concentrated on daytime flying, we noted that the area also experiences night flights, starting at 4.30am. Night flights have become much more concentrated.

## 6. RECOMMENDATIONS

- 1. In the short-term, flight paths need to be varied as much as possible to reduce the concentration we identified.**
- 2. The practice of concentrating night flights over particular communities should be avoided;** instead the uncrowded airspace there is at night should be used to create multiple flight paths.
- 3. In the longer-term, when Heathrow redesigns its airspace, it needs to ensure that the new technology is used to distribute arrivals fairly over multiple approach routes.** This should include the introduction of flight paths where planes join their final approach closer to the airport. This would minimise the ‘tromboning’ which is currently taking place over South East London.

## Glossary

CAA	Civil Aviation Authority
HAL	Heathrow Airport Holdings Limited
LCY	London City Airport
LHR	London Heathrow
NATS	National Air Traffic Services
PBN	Performance Based Navigation

## References

Brüel & Kjær. (n.d.). *xPlane*. Retrieved from <http://xplane.bksv.com/>

Bureau Veritas. (2007). London: Bureau Veritas.

## Appendix I

Some counts were made using a hand-held decibel reader. The results are shown again in the table below together with any decibel reading that was made.

Count Area	Count postcode	Count date	Count Time	Total	Decibels
Kennington	SW8 1NZ	27/11/2017	09.15 - 10.15	27	
Lambeth	SW8 1EE	15/11/2017	06.50 - 07.50	38	
Lambeth	SW8 1EE	13/11/2017	13.45 - 14.45	40	
Walworth	SE5 0PQ	07/11/2017	04.33 - 05.00	16	
Walworth	SE5 0PQ	12/11/2017	19.45 - 20.45	37	
Walworth	SE5 Burgess Pk West Ent	26/11/2017	11.23 - 12.23	43	
Walworth	SE5 Burgess Pk West Ent	26/11/2017	15.02 - 16.01	47	
Walworth	SE5 0PQ	06/11/2017	05.58 - 06.58	48	
C'well, Grace's Rd	SE5 8PF	11/11/2017	08.00 - 09.00	40	58-71
Ruskin Park, loos	SE5 8EL	26/11/2017	07.03 - 08.02	41	54-72
Oval, Listowel Cl	SW9 6DN	26/11/2017	08.44 - 09.44	42	55-69
C'well	SE5 9QR	16/11/2017	06.30 - 07.30	19	
C'well	SE5 9QR	14/11/2017	06.10 - 07.10	23	
Walworth	SE17 3QE	09/11/2017	18.10 - 19.10	50	
Walworth	SE17 3QE	15/11/2017	12.00 - 13.30	e 75 secs	
Walworth	SE17 3QE	19/11/2017	16.30 - 17.30	e 75 secs	
Walworth	SE17 3QE	19/11/2017	10.00 - 18.00	e 75 secs	
Oval, Dorset Pl	SW8 1EF	18/11/2017	06.44 - 07.44	34	
Oval, Dorset Pl	SW8 1EF	19/11/2017	06.00 - 07.00	34	
Charlton Village	SE7 7AA	17/11/2017	12.00 - 13.00	21	
Deptford Laban Centre	SE8 3DZ	25/11/2017	12.00 - 13.00	40	

Greenwich Observatory	SE10 8XJ	08/11/2017	10.30 - 11.30	49	
Blackheath	SE3 0TX	20/11/2017	12.00 - 13.00	50	
Deptford High St	SE8 3PQ	19/11/2017	12.00 - 13.00	53	
Deptford Laban Centre	SE8 3DZ	10/11/2017	09.30 - 10.30	54	
Greenwich Queens House	SE10 9NF	10/11/2017	08.00 - 09.00	55	
Deptford Laban Centre	SE8 3DZ	30/11/2017	08.00 - 09.00	61	
Deptford Laban Centre	SE8 3DZ	21/11/2017	10.00 - 11.00	63	
Brixton	SW9 0NU	29/11/2017	16.15 - 17.15	18	
Brixton	SW9 0NU	29/11/2017	06.30 - 07.30	26	
Kennington	SW8 1NZ	13/11/2017	05.20 - 06.20	19	
Dulwich	SE22 8SS	16/11/2017	10.50 - 11.49	38	
Dulwich	SE22 8SS	14/11/2017	15.06 - 16.05	39	
Orpington		27/11/2017	05.00 - 24.00	1 e 2 mins	
Lambeth	SE11 4UH IWM	02/11/2017	09.26 - 09.48	16	
Lambeth	SE11 4UH IWM	22/11/2017	18.37 - 19.37	37	
	SE5 8QS	10/11/2017	05.30 - 06.45	50	
Rotherhithe	SE16 7TJ	18/11/2017	04.24 - 05.24	13	
Rotherhithe	SE16 7TJ	21/11/2017	06.00 - 07.00	53	
Rotherhithe	SE16 7TJ	05/11/2017	04.30	1 e min	
Mottingham	SE9 3LU	10/11/2017		5	
Lewisham	SE6				
Greenwich	SE10 9HT / Cutty Sark	19/11/2017	12.00 - 13.00	24	
Greenwich	SE10 9HT / Cutty Sark	19/11/2017	15.00 - 16.00	27	
Kennington Pk	SE5 0PQ	13/11/2017	09.45 - 10.45	34	
Kennington Pk	SE5 0PQ	13/11/2017	16.05 - 17.05	35	
Clapham Cm	SW4 9DE	10/11/2017	15.00 - 16.00	35	
Southampton Way	SE5 7TX	16/11/2017	11.34 - 12.34	37	
Stockwell	SW8 1UG	12/11/2017	07.02 - 08.02	38	
Stockwell	SW8 1UG	12/11/2017	15.00 - 16.00	38	
Southampton Way	SE5 7TX	16/11/2017	15.00 - 16.00	39	
Ruskin Park		27/11/2017	15.00 - 16.00	39	
Clapham Cm	SW4 9DE	10/11/2017	13.10 - 14.10	42	

## Appendix II

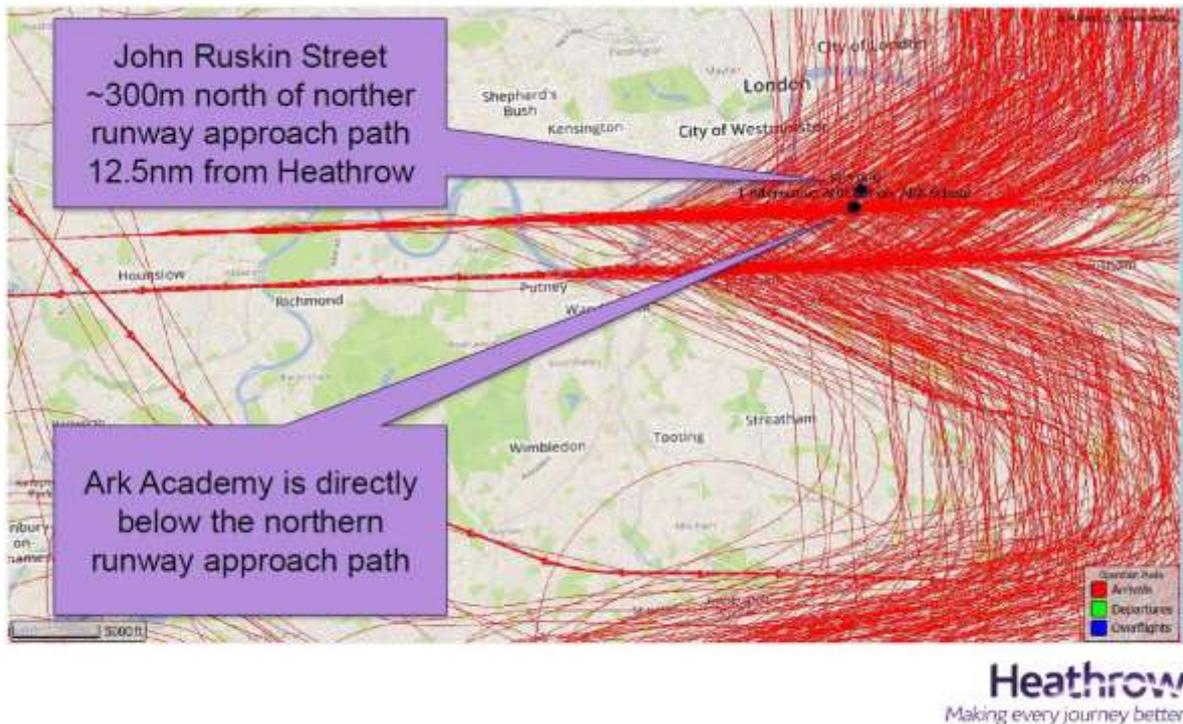
The section shows some individual decibel readings with planes passing overhead.

Ruskin Park, Ferndene Road Sunday 26 Nov 2017 Background 46db	
Time	Decibel
07:03	65
07:04	66
07:06	65
07:07	64
07:09	66
07:11	63
07:12	63
07:13	72
07:15	66
07:17	66
07:19	68
07:21	69
07:23	64
07:26	62
07:27	63
07:28	64
07:29	63
07:31	61
07:32	62
07:33	66
07:35	65
07:37	65
07:39	64
07:40	61
07:42	60
07:43	64
07:44	63
07:46	58
07:47	66
07:48	62
07:49	63
07:51	67
07:53	63
07:54	57
07:55	62
07:56	63
07:58	60
07:59	65

Kennington, Listowel Close Sunday 26 Nov 2017 Background 45db	
Time	Decibel
08:44	68
08:46	60
08:47	59
08:48	61
08:50	56
08:51	63
08:52	61
08:54	62
08:55	60
08:57	62
08:59	65
09:00	66
09:01*	69
09:02*	58
9.03	65
9.05	63
9.07	64
9.08	62
9.09	64
9.11	63
9.12	68
9.14	60
9.16	58
9.17	57
9.18	63
9.2	60
9.21	60
9.23	60
9.24	62
9.26	58
9.27	58
9.29	49
9.3	63
9.32	61
9.34	62
9.36	55
9.37	62
9.38	58
9.4	57
9.41	62

## SOUTH EAST LONDON TODAY

Aircraft follow a curved path to join the final approaches to the runways. This image illustrates the effect over South East London.



The Ark Academy is the site of a newly installed Heathrow-maintained noise monitor.

We would like to thank everybody who helped with this report. In particular, the volunteers who did the counts. We'd also like to thank Darren Rhodes and his team at the CAA for the work they put into assessing many of our counts.

Any errors are ours and ours alone.

The report is published jointly by HACAN, the organisation that gives a voice to people under the Heathrow flight paths and Plane Hell Action (PHA-SE), active in South East London.  
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