2019: Q3

QUARTERLY REPORT TO THE
HEATHROW **COMMUNITY ENGAGEMENT** BOARD

FOR THE PERIOD **JULY – SEPTEMBER 2019**

Heathrow

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Cover image: Heathrow Airport control tower © Heathrow Airport

Heathrow Chief Executive's report to HCEB

Following the close of Heathrow's 12-week statutory Airport Expansion Consultation on the preferred masterplan for expansion (which ran from 18 June to 13 September 2019), polling showed that more local residents support the project than oppose it in 16 out of the 18 Parliamentary constituencies around Heathrow.

The Airport Expansion Consultation has been Heathrow's largest and most innovative consultation exercise to date, with over 40 local events supported by an extensive publicity campaign encouraging 2.6 million households, to have their say on the airport's proposals. The consultation sought views on Heathrow's proposals for the future layout of the airport, including the new runway and other airport infrastructure such as terminals and road access, as well as how Heathrow proposes to manage and mitigate the effects of this growth on local communities.

The 43 consultation events aimed to give local communities the opportunity to engage with the airport's expansion plans, ask the experts about the project's impacts and learn about the proposed measures to help mitigate them.

To help finalise our proposals and share our latest plans, we will be undertaking a further consultation for Heathrow expansion from April 2020 for eight weeks (the Targeted Consultation). Following the Targeted Consultation and analysis of feedback, we will finalise our plans and submit our Development Consent Order application in the final quarter of 2020.

We are clear that expansion at Heathrow will not come at any cost to the environment, which is why we are working with the industry and government to ensure growth is managed sustainably both now and with expansion.

We are also continuing to invest in future proofing Heathrow. The airport will be a testbed for ground-breaking technology, like our new CT scanners, to ensure that our passenger experience remains world class as numbers continue to grow. Using new technology and innovation as we deliver expansion will also demonstrate our global leadership on sustainable travel.

Heathrow is supportive of the Committee on Climate Change's recommendation to include aviation in the net zero emissions target by 2050 and is working to decarbonise airport operations as quickly as possible. IAG's announcement of net zero emissions from flight by 2050 show the potential that the aviation sector can decarbonise whilst also protecting the benefits of global travel and trade. We will continue to work with them to achieve this and call on other airlines to follow their lead.

John Holland-Kaye
Chief Executive, Heathrow Airport Limited

Q3 highlights

JULY 2019

- The airport has called on the UN's aviation body ICAO to set targets for the use of sustainable fuels in aviation and the government to invest some of the nearly £4 billion annual revenue raised from Air Passenger Duty to scale-up its production.

- Heathrow launched a new bus and RailAir service from Guildford to Heathrow, adding to the range of public transport options available to passengers and colleagues to get to Heathrow by sustainable means. The new service has already taken hundreds of vehicles off the road since launching.

- The airport collaborated with Royal Botanic Gardens, Kew to unveil a unique, hand-made 12 metre squared Botanical Tapestry, depicting global flora in intricate and colourful detail. The piece celebrates £25,000 raised for Kew's work on conserving the world's plant life and was on display in T2 departures.

AUGUST 2019

- SAS took the top spot in the 'Fly Quiet and Green' league table for Q2 for its work on tackling late and early flights, benefitting the airport's local communities and improvements to operational performance.

- Heathrow and the Department for Trade also launched this year's World of Opportunity competition, inviting SMEs up and down the country to apply for grants to help fund exporting.

- Following Heathrow's announcement to invest £50 million in cutting edge CT scanners, the Department for Transport unveiled plans for all major UK airports to implement the technology which could bring an end to the 100ml liquid restrictions and potentially end the need for liquids bags, reducing the amount of single-use plastic attributed to aviation.

SEPTEMBER 2019

- Heathrow proudly welcomed the plan by British Airways' parent company IAG to offset carbon emissions for all its UK domestic flights from 2020, becoming the first airline group worldwide to commit to achieving net zero carbon emissions by 2050.

- The airport announced it will kick-start a new trial turning unrecyclable plastic passenger waste – including food packaging and plastic film – into airport furniture, uniforms and lower-emission jet fuel by 2025.

- Heathrow Chief Executive John Holland-Kaye attended the UN Climate Summit in New York and announced Heathrow would join the World Economic Forum's new 'Clean Skies for Tomorrow Coalition' aimed at helping the sector achieve carbon-neutral flying, while also welcoming the Committee on Climate Change recommendation for government to include aviation in the UK's net zero emissions target by 2050.

- Virgin Atlantic announced plans to open over 80 new routes from an expanded Heathrow, helping to create a second flag carrier at the UK's hub airport in a move that will increase competition and improve passenger choice.

The Kew Gardens Botanical Tapestry

Our priorities

MOJO

To be a great place to work, we will help our people fulfil their potential and work together to lead change across Heathrow with energy and pride

TRANSFORM CUSTOMER SERVICE

To deliver the world's best passenger experience, we will work with the Heathrow community to transform the service we give to passengers and airlines, improving punctuality and resilience

BEAT THE PLAN

To secure future investment, we will beat the Q6 business plan and deliver a competitive return to shareholders by growing revenue, reducing costs and delivering investments efficiently

SUSTAINABLE GROWTH

To grow and operate our airport sustainability, now and in the future

Our values

KEEPING EVERYONE SAFE

TREATING EVERYONE WITH RESPECT

GIVING EXCELLENT SERVICE

WORKING TOGETHER

IMPROVING EVERY DAY

DOING THE RIGHT THING

Mojo

PROUD CAMPAIGN

Heathrow's Proud diversity network once again rose to the challenge of putting the Pride in Heathrow with a host of on-airport activities to mark an important month and a significant landmark as the LGBT+ community marked the 50th anniversary of the Stonewall uprising. The PROUD network is raising awareness and breaking stereotypes on LGBT+ lifestyle and issues.

WHEELCHAIR BASKETBALL

Heathrow Airport's Network for Disability (HAND) wheelchair basketball returned for the third consecutive year, joined by the mighty London Titans team who demonstrated their skills and invited colleagues and passengers to gain an insight into what it's like for a person with a disability to take part in a competitive sport. Heathrow's HAND diversity network champions – making the airport a more accessible airport and workplace for anyone with a disability.

Pride launch event, July 2019

BIODIVERSITY AWARDS

Heathrow has been nominated for three CIRIA BIG Biodiversity Challenge awards, marking an outstanding year for Heathrow's work on biodiversity. The CIRIA (Construction Industry Research and Information Association) awards are the construction industry Oscars, so it's a great achievement to be nominated. Heathrow currently manages approximately 170 hectares across 13 sites for nature conservation purposes, roughly 10% of the entire airport footprint. In 2018 we celebrated 10 years of Heathrow's Biodiversity benchmark Award from the Wildlife Trust.

CHARITY BIKE RIDE

More than 125,000 cyclists have taken part in the Ride London event since it was first started in 2013. This year, some of our Heathrow colleagues were among the pedallers riding the 100 miles through the Surrey Hills, following the London 2012 Olympic cycling route, and crossing the famous finishing line on The Mall. Eight Heathrow cyclists were riding to raise money for Heathrow Community Fund, and other charities close to their hearts. The Heathrow Community Fund has been awarding grants and funding for more than 20 years. It is an independent charity which receives funding from Heathrow and colleagues through their own fundraising. The Heathrow Active People initiative (HAPi) provides grants to organisations all over the country which Heathrow colleagues regularly volunteer for.


Heathrow Community Rangers in Stanwell

HEATHROW COMMUNITY RANGERS

Communities to the South and West of the Airport now have their very own Heathrow Rangers supporting their local area. The first Heathrow Rangers were deployed in the Colnbrook, Poyle, Stanwell and Stanwell Moor local communities. They work closely with local Councils and local law enforcement teams to help maintain tidy, safe and attractive communities all year round. Ongoing day-to-day tasks include gardening, litter picking, monitoring HGVs and private hire vehicles as well as reporting any fly-tipping and anti-social behaviour. The role will also help to deliver hands-on community days in local primary schools, involving painting, gardening and other practical tasks to help build better, brighter school grounds.

ASQ performance

Levels of customer satisfaction show a stable YoY performance yet they are down on H1
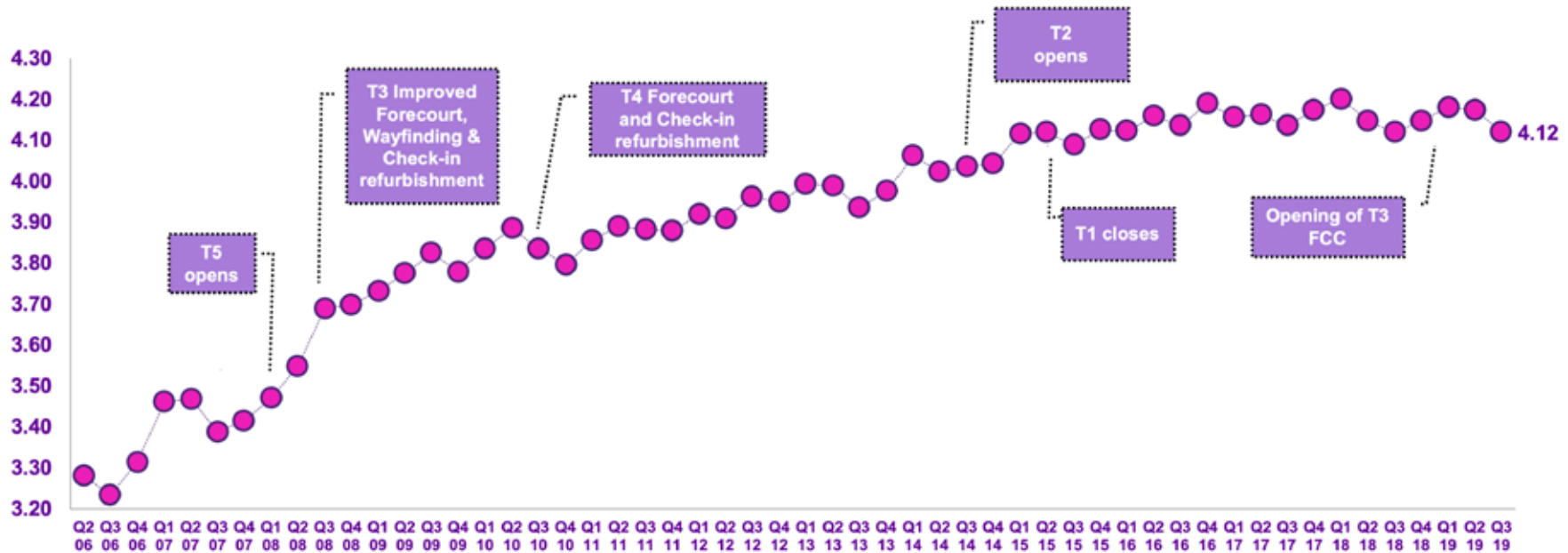
Source: Heathrow Passenger & Airport Insights/ASQ Q3 2019
Note: ASQ Rating Scale: 5 = Excellent & 1 = Poor

Heathrow's quarterly results

Heathrow on-track for ninth year of growth – Results for the nine months ended 30 September 2019

- **On track for ninth consecutive year of growth**
  More passengers than ever are choosing to fly from Heathrow with a record 61 million passengers (+0.7%) travelling through the UK's hub airport already this year. This puts us on course to secure our ninth consecutive year of passenger growth.

- **Investment in service driving growth**
  Better service for passengers continues to be one of the main drivers underpinning passenger growth. Service scores maintained their high with 82% of passengers rating their experience as either *Excellent* or *Very Good* following £489 million of investment to boost airport efficiency, resilience and security.

- **Strong financial performance**
  Strong retail performance and more passengers pushed Heathrow's revenue up to £2,302 million and increased EBITDA by 1.3% to £1,454 million. Adjusted profit before tax also strengthened by 40.1%.

- **Expansion benefits**
  The tangible benefits of expansion are already materialising. Virgin Atlantic outlined credible plans to create a second flag carrier at Heathrow with over 80 new services helping to drive down airfares through increased competition and choice for passengers. We are also currently reviewing feedback from our latest consultation and will submit our planning application next year.

- **Reducing carbon emissions**
  Heathrow welcomes the Committee on Climate Change's recent report recommending that aviation be included in the UK's target to achieve net zero emissions by 2050. Heathrow will operate carbon neutral airport infrastructure from 2020 and we are developing a number of bold options to substantially cut or offset aircraft emissions associated with the airport. Alongside moves by airlines – including IAG's recent announcement to offset all UK domestic flights from 2020 – the UK aviation industry is taking credible action to decarbonise.

Heathrow Chief Financial Officer Javier Echave said:
"Heathrow is on-track for another year of record performance – which is great news for UK plc. Passengers are getting a better service, we have consulted on a strong masterplan to expand and we can see lower airfares and more airline choice for passengers appearing on the horizon. New investments in technology and a more sustainable supply chain are helping us to build a better Heathrow for the future - but carbon emissions remain the aviation industry's most pressing challenge. We are committed to overcoming it and we will be outlining our own bold plans to reduce or offset aircraft emissions at Heathrow in the coming months."

At or for the nine months ended 30 September	2018	**2019**	Change (%)
(£m unless otherwise stated)			
Revenue	2,211	**2,302**	4.1
EBITDA[1]	1,435	**1,454**	1.3
Cash generated from operations	1,336	**1,463**	9.5
Adjusted profit before tax[2]	212	**297**	40.1
Heathrow (SP) Limited consolidated nominal net debt[3]	12,407	**12,844**	3.5
Heathrow Finance plc consolidated net debt[3]	13,980	**14,175**	1.4
Regulatory Asset Base[3]	16,200	**16,529**	2.0
Passengers (million)[4]	60.5	**61.0**	0.7
Retail revenue per passenger (£)[4]	8.59	**8.79**	2.3

Notes

1) EBITDA is earnings before interest, tax, depreciation and amortisation.

2) Adjusted profit before tax is profit before tax and certain re-measurements (excluding fair value gain / loss on investment properties and financial instruments). See page 7 for reconciliation to loss before tax. For the nine months to 30 September 2019 loss before tax was (£76) million (2018: £426 million profit). The loss before tax for the nine-month period to 30 September 2019 includes £368 million non-cash fair value loss on derivatives as a result of increased inflation expectations and a downward shift in the 6 month LIBOR curve affecting both index-linked and interest rate swaps. The derivatives have been entered to economically hedge RPI linked revenue and the Regulatory Asset Base.

3) 2018 net debt and RAB figures at 31 December 2018. Nominal net debt excludes intra-group loans and includes inflation-linked accretion.

4) Changes in passengers and retail revenue per passenger are calculated using unrounded passenger numbers.
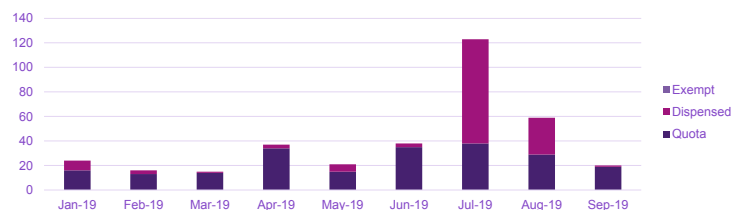
Night flights

Departures

Late running departures by quota, dispensed and exempt (Jan – Sep 2019)

Departure Night Movements 2019	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Quota	16	13	14	34	15	35	38	29	19				213
Dispensed	8	3	1	3	6	3	85	30	1				140
Exempt	-	-	-	-	-	-	-	-	-				-
Total	24	16	15	37	21	38	123	59	20				353

Notes

1. Dispensed flights: Sometimes, for reasons of disruption, emergency or passenger hardship, flights are allowed by DfT to operate outside the constraints of the movement limits.
2. Exempt flights: Aircraft are currently exempt from movement limits if their noise certification data is less than QC 0.25. Other exempt flights include State flights, head of Military, select VIP's.

Heathrow

Departures

Departure night movements by time window (Jan – Sep 2019)

Departure Night Movements 2019	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
23:30 - 00:00	15	10	8	16	16	21	61	42	11				200
00:00 - 00:30	7	4	5	15	4	13	26	15	6				95
00:30 - 01:00	1	2	2	5	1	4	15	-	2				32
01:00 - 01:30	1	-	-	-	-	-	14	1	-				16
01:30 - 02:00	-	-	-	1	-	-	4	1	1				7
02:00 - 02:30	-	-	-	-	-	-	3	-	-				3
02:30 - 03:00	-	-	-	-	-	-	-	-	-				-
03:00 - 03:30	-	-	-	-	-	-	-	-	-				-
03:30 - 04:00	-	-	-	-	-	-	-	-	-				-
04:00 - 04:30	-	-	-	-	-	-	-	-	-				-
04:30 - 05:00	-	-	-	-	-	-	-	-	-				-
05:00 - 05:30	-	-	-	-	-	-	-	-	-				-
05:30 - 06:00	-	-	-	-	-	-	-	-	-				-
Total	24	16	15	37	21	38	123	59	20				353

Heathrow

Night flights

Arrivals

Late running arrivals by quota, dispensed and exempt (Jan – Sep 2019)

Legend:
- Exempt
- Dispensed
- Quota
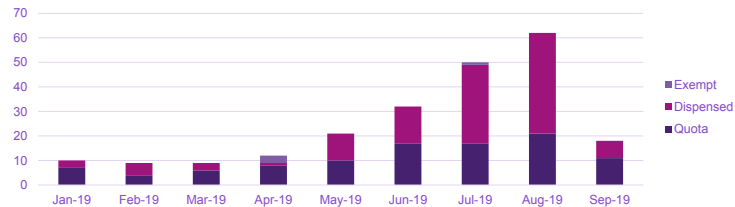
Arrival Night Movements 2019	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Quota	7	4	6	8	10	17	17	21	11				101
Dispensed	3	5	3	1	11	15	32	41	7				118
Exempt	-	-	-	3	-	-	1	-	-				4
Total	10	9	9	12	21	32	50	62	18				223

Notes

1. Dispensed flights: Sometimes, for reasons of disruption, emergency or passenger hardship, flights are allowed by DfT to operate outside the constraints of the movement limits.
2. Exempt flights: Aircraft are currently exempt from movement limits if their noise certification data is less than QC 0.25. Other exempt flights include State flights, head of Military, select VIP's.

Arrivals

Arrival night movements by time window (Jan – Sep 2019)

Departure Night Movements 2019	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
23:30 - 00:00	5	4	6	7	11	25	30	36	14				138
00:00 - 00:30	1	3	2	2	5	4	11	16	2				46
00:30 - 01:00	2	1	1	-	3	1	6	10	2				26
01:00 - 01:30	-	-	-	-	1	2	-	-	-				3
01:30 - 02:00	-	1	-	1	-	-	-	-	-				2
02:00 - 02:30	-	-	-	-	-	-	2	-	-				2
02:30 - 03:00	-	-	-	-	-	-	-	-	-				-
03:00 - 03:30	-	-	-	-	-	1	-	-	-				1
03:30 - 04:00	-	-	-	1	-	-	1	-	-				2
04:00 - 04:30	2	-	-	1	-	-	-	-	-				3
04:30 - 05:00	208	200	193	32	62	101	168	116	109				1,189
05:00 - 05:30	174	164	201	175	185	165	138	160	160				1,522
05:30 - 06:00	136	128	135	110	128	97	70	96	112				1,012
Total	528	501	538	329	396	395	426	434	399				3,946

Notes

1. Arrivals from 04:30 to 06:00 are scheduled early morning arrivals.

Noise complaints

Complaints statistics

Overall statistics

1,793 people complained between July and September 2019, making over 22,000 complaints.

	Jul 2019	Aug 2019	Sep 2019	Total
No. of Complainants	936	825	519	1,793
No. of Complaints	8,154	7,708	6,827	22,689

Top 10 Complainants

Complaints from the 10 people who complained the most times this quarter.

No. of Complaints	Percentage of Total Complaints	Percentage of Complainants
15,318	67.5%	0.6%

Complainants who complained less than 5 times

Complaints from people who contacted Heathrow 5 times or less this quarter.

No. of Complaints	No. of Complainants	Percentage of Total Complainants	Percentage of Total Complaints
2,463	1,611	89.8%	10.9%

Complaints by Local Authority (HCEB Boroughs)

Map of Complainants

The size of bubble and numbers stated represent the total number of complainants from each Borough.

Map of Complaints

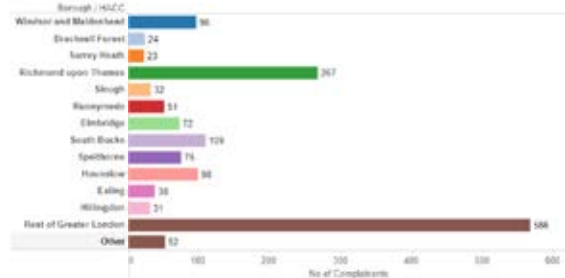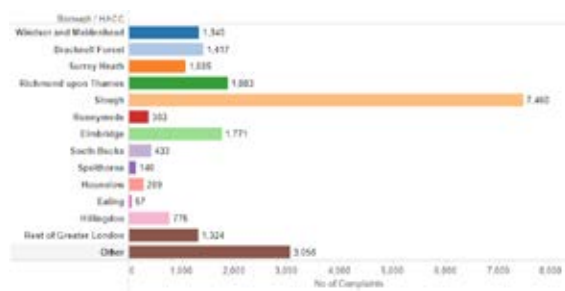The size of bubble and numbers stated represent the total number of complaints from each Borough.

Heathrow

Noise complaints

Local Authority Statistics

Number of Complainants

Number of Complaints
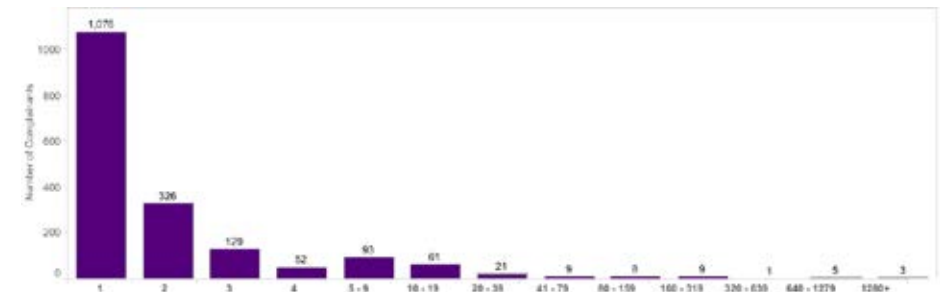

Distribution of Complaints

How many times complainants contacted us

The histogram below plots how many people against how many times they contacted Heathrow this quarter. For example, it shows that 1,076 people complained once, that 129 people complained 3 times and that 3 people complained more than 1,280 times.
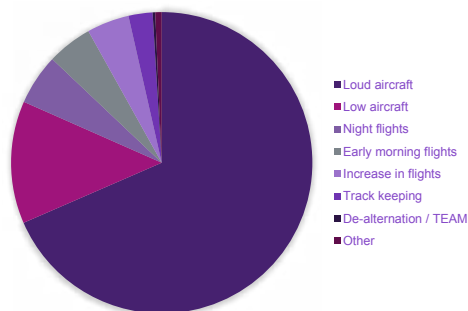
Noise complaints

Noise Complaints by Category

Complaint Category	Proportion
Loud aircraft	68.5%
Low aircraft	13.1%
Night flights	5.4%
Early morning flights	4.8%
Increase in flights	4.5%
Track keeping	2.6%
De-alternation / TEAM	0.3%
Other	0.7%

- Loud aircraft
- Low aircraft
- Night flights
- Early morning flights
- Increase in flights
- Track keeping
- De-alternation / TEAM
- Other

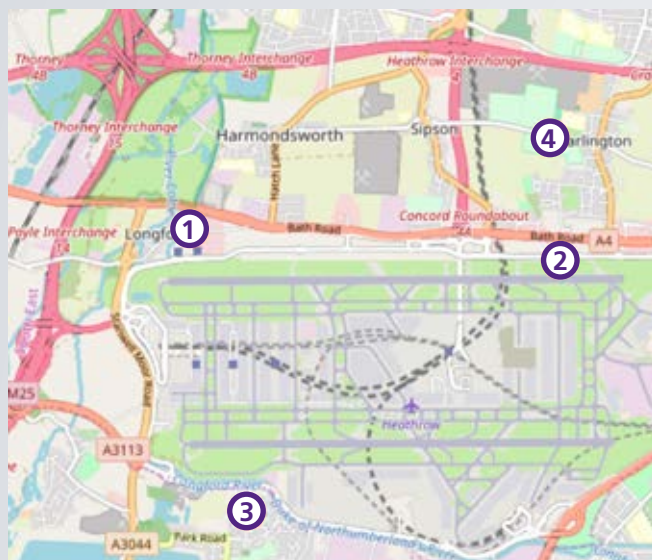Note: Multiple or duplicate complaints made by one person on one day are not included in this chart.

Heathrow

Heathrow Noise Complaints Report 2019 Q3
7 October 2019 Heathrow Community Relations

Air quality

Monitoring stations

A summary of site information is presented in the map and table below:

	Site name	Variable	Date started	Date ended
1	Heathrow Green Gates	PM$_{2.5}$	19.04.2002	Ongoing
	Heathrow Green Gates	NO$_2$	01.07.2001	Ongoing
	Heathrow Green Gates	GE$_{10}$	04.05.2001	Ongoing
2	Heathrow LHR2	NO$_2$	01.01.1993	Ongoing
	Heathrow LHR2	GE$_{10}$	16.11.1994	Ongoing
	Heathrow LHR2	PM$_{2.5}$	09.12.2009	Ongoing
3	Heathrow Oaks Road	NO$_2$	01.07.2001	Ongoing
	Heathrow Oaks Road	GE$_{10}$	04.05.2001	Ongoing
	Heathrow Oaks Road	PM$_{2.5}$	19.04.2002	Ongoing
4	London Harlington	NO$_2$	01.01.2004	Ongoing
	London Harlington	GE$_{10}$	01.01.2004	Ongoing
	London Harlington	O$_3$	01.01.2004	Ongoing
	London Harlington	PM$_{2.5}$	16.09.2008	Ongoing

1 Heathrow Green Gates
Site type: Airport
Pollutant: NO$_X$ as NO$_2$, PM$_{2.5}$, NO$_2$, PM$_{10}$

2 Heathrow LHR2
Site type: Airport
Pollutant: NO$_X$ as NO$_2$, PM$_{2.5}$, NO$_2$, PM$_{10}$

3 Heathrow Oaks Road
Site type: Airport
Pollutant: NO$_X$ as NO$_2$, PM$_{2.5}$, NO$_2$, PM$_{10}$

4 London Harlington
Site type: Urban industrial
Pollutant: NO$_X$ as NO$_2$, PM$_{2.5}$, NO$_2$, PM$_{10}$,O$_3$

Data description

Some of the plots provided in this report use associated meteorological data (typically wind speed and wind direction) in order to put measured pollutant concentrations in a dispersion context. Very few monitoring stations include dedicated met equipment and those that do typically rely on relatively short met masts and so only provide very localised representation of dispersion. Instead of relying on limited local met data, these reports have incorporated modelled met data from Ricardo's WRF model (at 10km resolution)[1]. (Currently the report still uses the worldmet to import met data.)

Gaseous pollutant mass units are at 20 °C and 1013mb. NO$_X$ mass units are NO$_X$ as NO$_2$ µg m^{-3}. Particulate matter concentrations are reported at ambient temperature and pressure. Note that PM$_{10}$ is referred to in the data tables and plots as 'GE$_{10}$' if it is derived from an instrument that has demonstrated equivalence with the gravimetric reference method[2] (e.g. a TEOM FDMS, a FIDAS or a BAM with a correction factor applied).

1 https://uk-air.defra.gov.uk/research/air-quality-modelling?view=modelling

2 https://uk-air.defra.gov.uk/networks/monitoring-methods?view=pm-equivalence

Air quality

Relevant pollution Limit Values

The European Air Quality Directive and Fourth Daughter Directive set out legal limits for different pollutants as Limit Values, Target Values or Long Term Objectives to protect human health. These are summarised in the table below. Local authorities don't typically measure ozone, benzene, B[a]P or metals that are captured within Defra's national networks. All pollutants measured have been included in this data summary for completeness, irrespective of their significance for local authority policy interests.

Legal limits for different pollutants

Pollutant	Metric	Type	Legal value
NO_2	1-hr	LV	200 µg m^{-3} (18 allowed)
NO_2	Annual mean	LV	40 µg m^{-3}
PM_{10}	24-hr	LV	50 µg m^{-3} (35 allowed)
PM_{10}	Annual mean	LV	40 µg m^{-3}
$PM_{2.5}$	Annual mean	LV (stage 1)	25 µg m^{-3}
$PM_{2.5}$	Annual mean	LV (stage 2)	20 µg m^{-3}
SO_2	1-hr	LV	350 µg m^{-3} (24 allowed)
SO_2	24-hr	LV	125 µg m^{-3} (3 allowed)
CO	8-hr mean	LV	10 mg m^{-3}
Ozone	Maximum daily running 8-hour mean	LV	100 µg m^{-3} (10 allowed)
Ozone	Maximum daily running 8-hour mean	LTO	120 µg m^{-3}
Benzene	Annual mean	LV	5.0 µg m^{-3}
Benzo[a]pyrene	Annual mean	TV	1.0 ng m^{-3}
Arsenic	Annual mean	TV	6.0 ng m^{-3}
Cadmium	Annual mean	TV	5.0 ng m^{-3}
Nickel	Annual mean	TV	20.0 ng m^{-3}
Lead	Annual mean	LV	0.5 µg m^{-3}

Air quality

Data analysis

Summary statistics

The following tables present some basic pollutant statistics for the period selected in the report.

The Low, Moderate and High indicates the percentage of times when pollution concentrations are in the corresponding AQI bands defined by DEFRA.

Summary statistics for NO_2 (µg m-3)

Site	Mean	Data capture	Hourly maximum	Low	Moderate	High	Hours exceeding LV
Heathrow Green Gates	24.2	100%	133.1	100.0%	0.0%	0.0%	0
Heathrow LHR2	34.2	100%	163.1	99.9%	0.0%	0.0%	0
Heathrow Oaks Road	20.5	80%	151.8	100.0%	0.0%	0.0%	0
London Harlington	23.8	100%	130.1	100.0%	0.0%	0.0%	0

Summary statistics for $PM_{2.5}$ (µg m-3)

Site	Mean	Data capture	Max 24-hour mean	Low	Moderate	High
Heathrow Green Gates	5.3	100%	15.6	100.0%	0.0%	0.0%
Heathrow LHR2	5.6	100%	19.7	100.0%	0.0%	0.0%
Heathrow Oaks Road	6.1	100%	22.1	100.0%	0.0%	0.0%
London Harlington	6.1	90%	20.0	100.0%	0.0%	0.0%

Summary statistics for PM_{10} (µg m-3)

Site	Mean	Data capture	Max 24-hour mean	Low	Moderate	High	Days exceeding LV
Heathrow Green Gates	10.3	100%	27.1	100.0%	0.0%	0.0%	0
Heathrow LHR2	10.2	100%	27.6	100.0%	0.0%	0.0%	0
Heathrow Oaks Road	12.3	100%	41.1	100.0%	0.0%	0.0%	0
London Harlington	12.5	90%	30.7	100.0%	0.0%	0.0%	0

Summary statistics for O_3

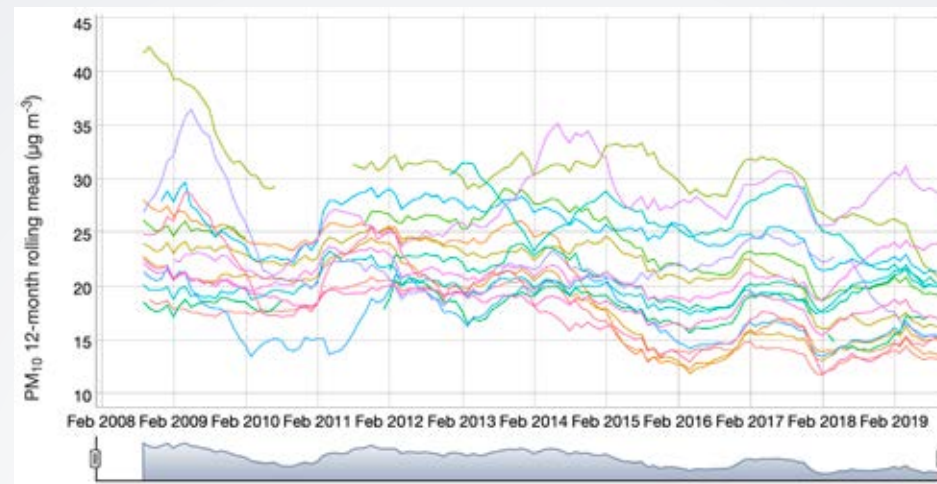| Site	Data capture	Max 8-hour rolling mean	Low	Moderate	High
London Harlington	100%	139.9	98.2%	1.8%	0.0%

Air quality

Rolling annual mean

Rolling annual means of different pollutants (calculated based on the preceding 12 monthly mean) for all the Heathrow sites from 2008 are shown on the graphs below:

NO_2 12-month rolling mean for the Heathrow sites from 2008

PM_{10} 12-month rolling mean for the Heathrow sites from 2008

$PM_{2.5}$ 12-month rolling mean for the Heathrow sites from 2008
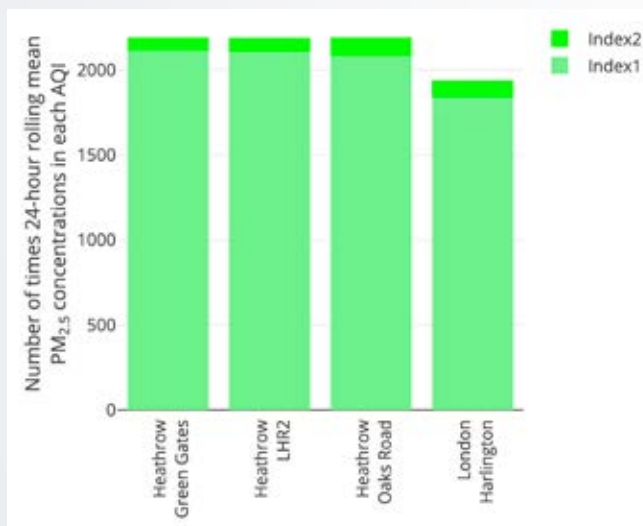
Air quality

AQ index distribution

The plots below illustrate the distribution of AQ index values for each site by pollutant. It shows the number of occasions (hours) that each site reported concentrations are in each index. More information on the AQ Index is available from UK-Air[3]. Note that this summary presents data at hourly resolution which differs from Defra's Daily AQ Index (DAQI) which takes the worst across all pollutants and hours to represent each day.
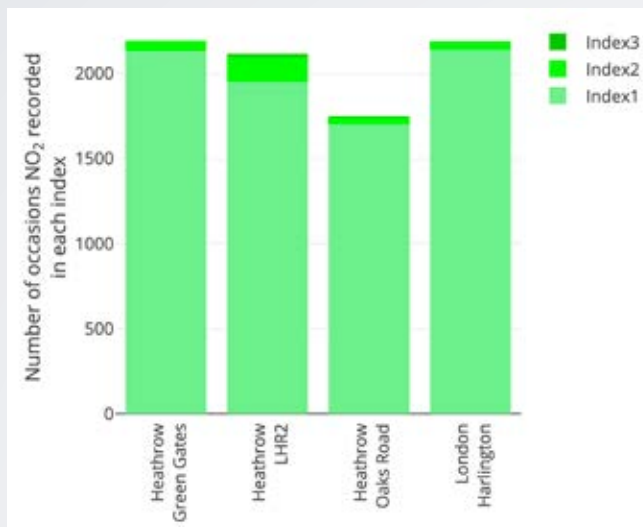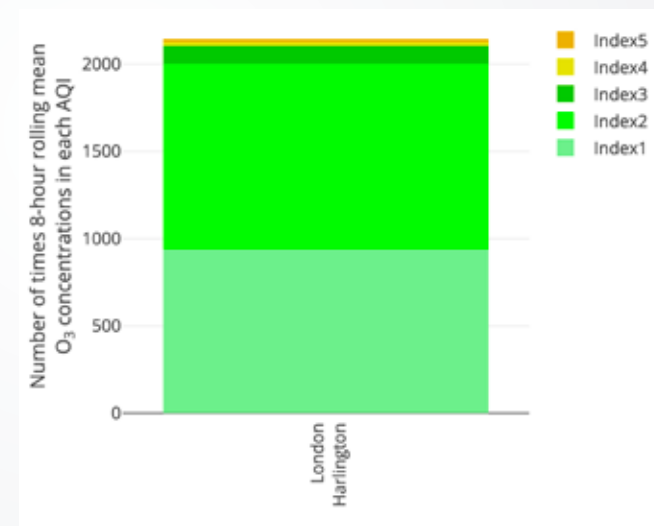

Distribution of AQI for NO_2
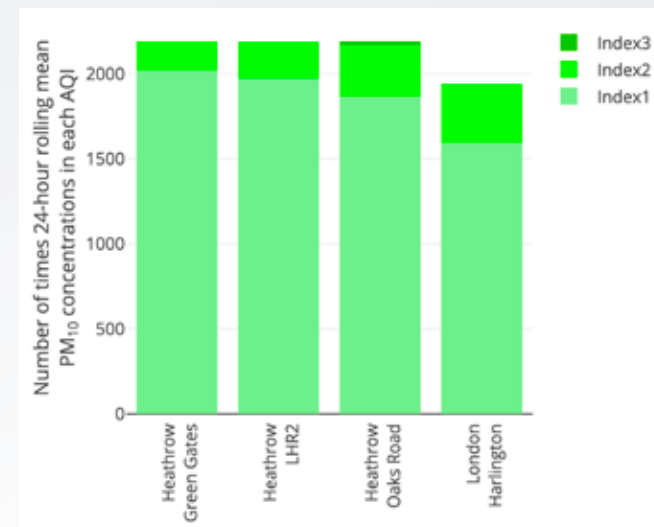
Distribution of AQI for PM_{10}

Distribution of AQI for $PM_{2.5}$

Distribution of AQI for O_3

Air quality

Boxplots

The plots below are box and whisker plots to show the distribution in concentrations for each monitoring station. The boxes demarcate the lower quartile, median and upper quartile. The whiskers extend to the maximum and minimum values within median ± 1.5 times interquartile range (IQR). Values outside the median ± 1.5 times IQR are generally considered as outliers.
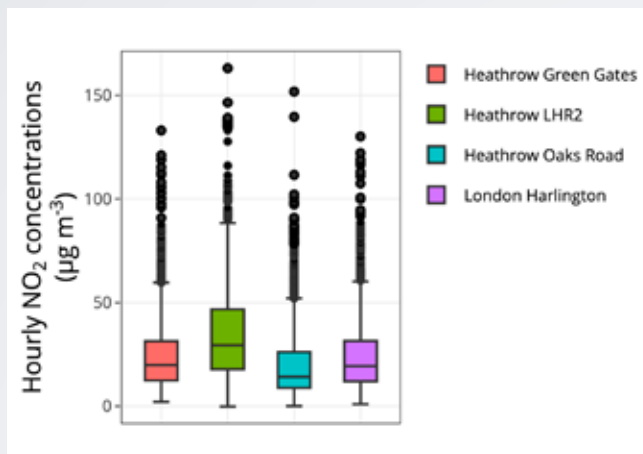
Boxplot for hourly NO_2 concentrations

Boxplot for hourly PM_{10} concentrations

Boxplot for hourly $PM_{2.5}$ concentrations

Boxplot for hourly O_3 concentrations

Air quality

Time series plots

The plots below show the time series of concentrations. Each pollutant is presented on a different tab and all sites are shown on each plot for comparison. The period covered is the complete data record to show trends over the medium and long term. Each iteration of this regular report (e.g. monthly, or quarterly) has the most recent data appended to the plot (not implemented in the code yet). A daily average resolution has been chosen as the most appropriate metric over a variety of different time windows.
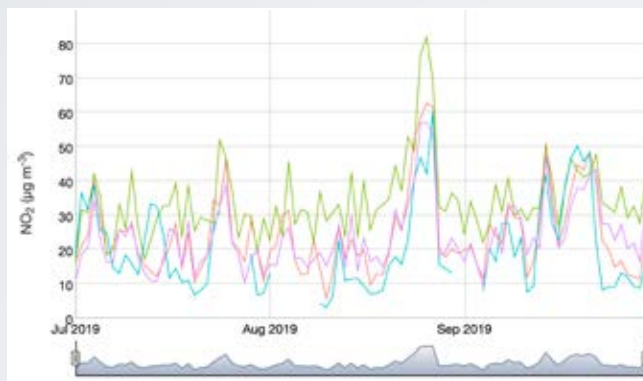
Time series plot of daily average NO₂ concentration
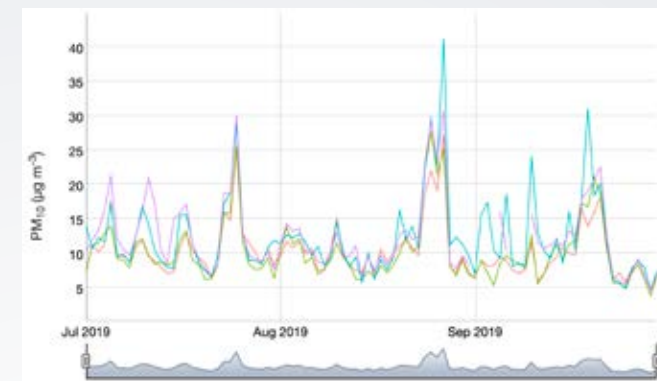
Time series plot of daily average PM₁₀ concentration
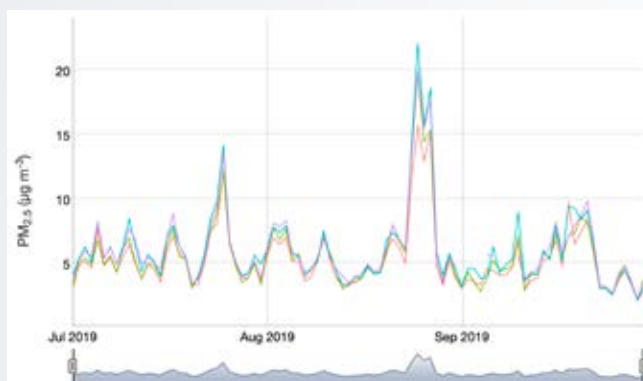
Time series plot of daily average PM₂.₅ concentration

Time series plot of daily average O₃ concentration

Air quality

Time variation plots

These plots show concentrations over different time intervals such as diurnal, day of week and month of year. The plot showing seasonal variation will show only the three months of the quarter or a dot showing one month depending on the time frame covered in this report. The topmost frame shows the concentrations as they vary by hour of the day and day of the week. The hour of the day variation is summarised on its own in the lower left pane and the variation by day of the week is shown in the lower right pane. These plots often help explain variations in concentration according to the emissions activity associated with them. For example, NO_x concentrations at roadside sites tend to exhibit peaks according to morning and evening traffic rush hours and tend to decline over weekends when there is generally lower traffic volumes.
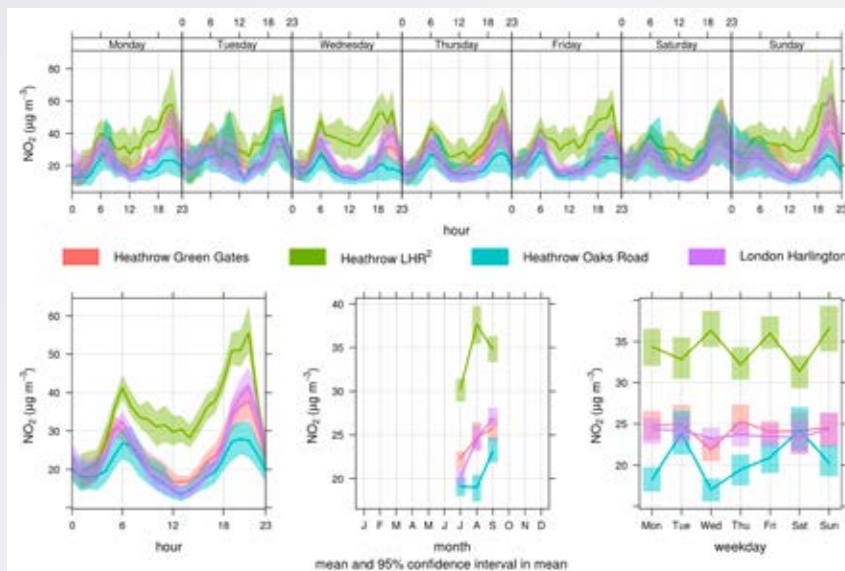
Time variation of hourly NO_2 concentrations
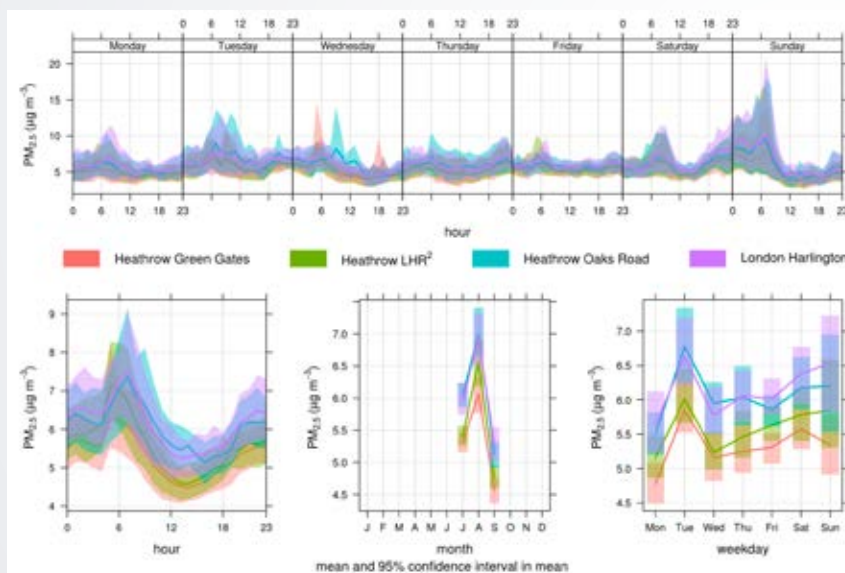
Time variation of hourly $PM_{2.5}$ concentrations

Air quality

Time variation plots continued
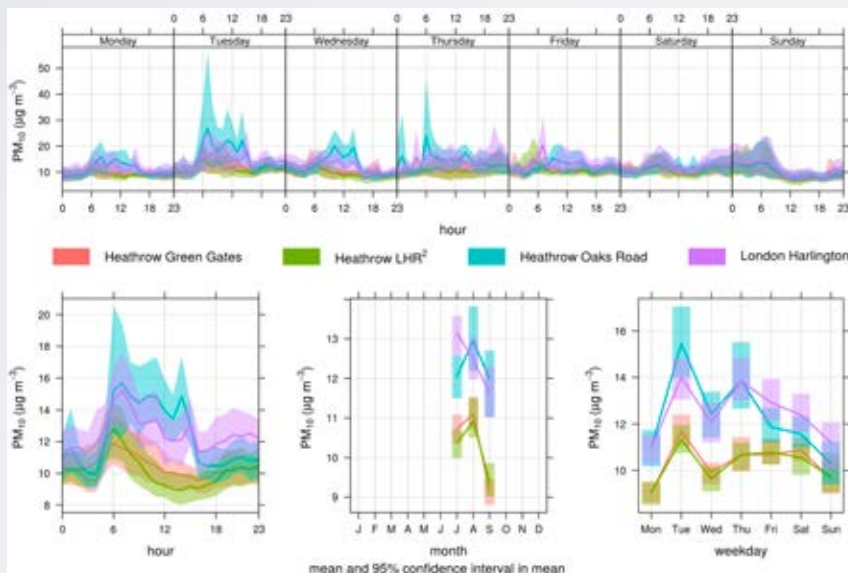
Time variation of hourly PM₁₀ concentrations
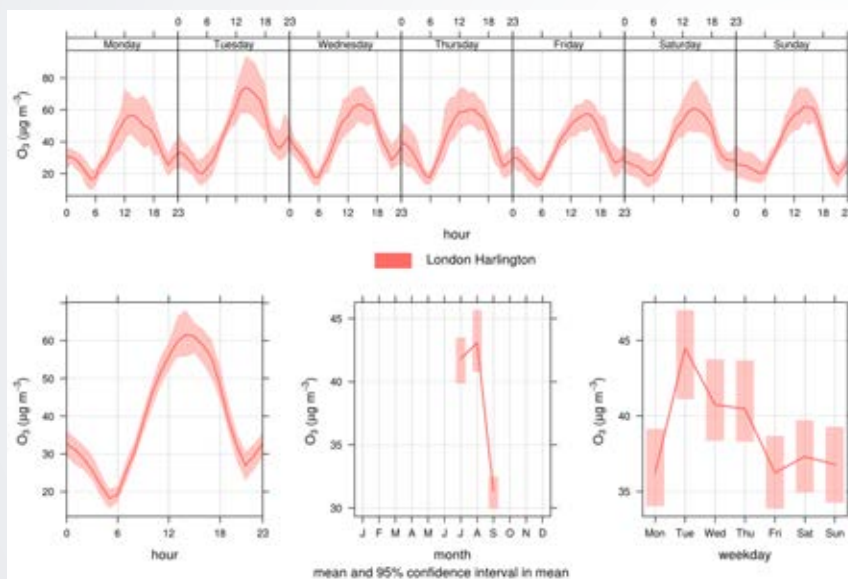
Time variation of hourly O₃ concentrations

Air quality

Calendar plots

The plots below shows daily variation in concentrations by pollutant across the period of the report, as laid out in a calendar style. This allows intuitive viewing of day to day headline trends in the wider context of the period. The background colours shown for each day relate to the concentration. The date is coloured by the wind speed for that day.

The site with highest average concentrations is used to produce the calendar plot.
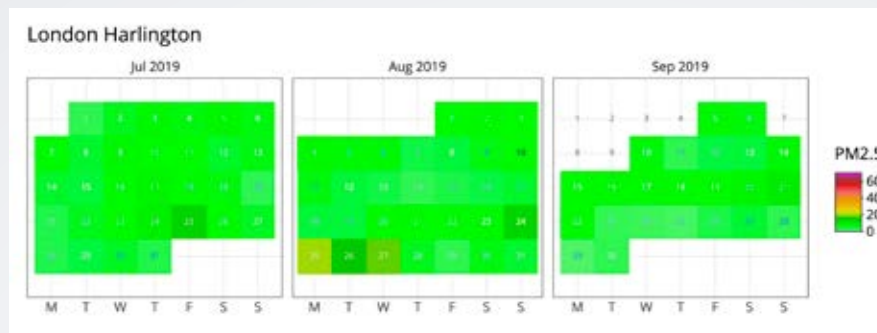
PM$_{2.5}$ calendar plot
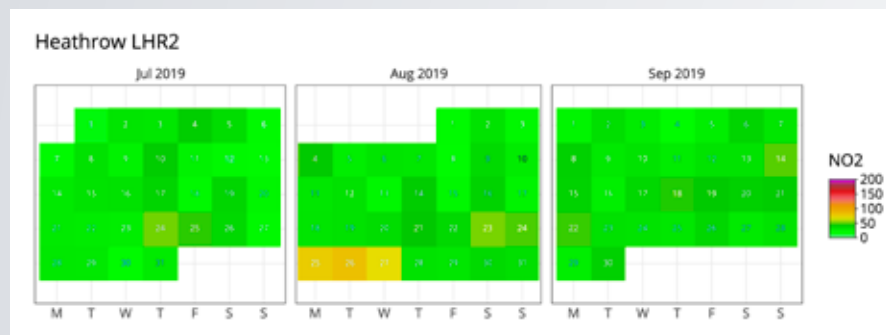
NO$_2$ calendar plot
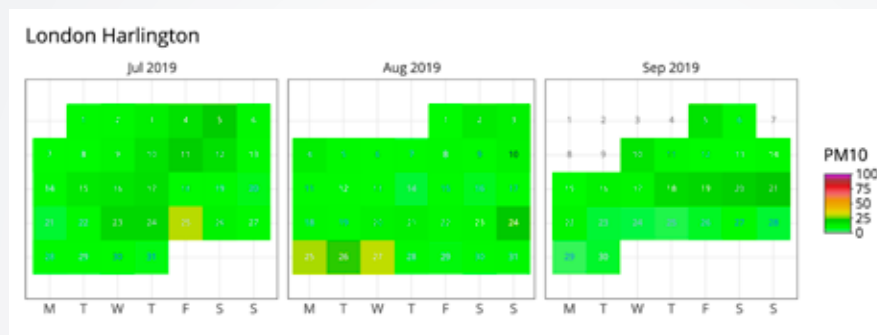
PM$_{10}$ calendar plot

O$_3$ calendar plot of daily maximum 8-hour rolling mean

Air quality

Polar plot map

The maps below show polar plots for each pollutant at each monitoring station superimposed on the map to help understand the relative strength and direction of sources. The distance from the plot origin shows the wind speed.

For primary pollutants directly emitted to the atmosphere these can often help to identify a local source especially when multiple plots are used in conjunction to 'triangulate' a common source. For pollutants with a secondary component (i.e. formed through chemical reactions in the atmosphere, e.g. NO_2, $PM_{2.5}$ and O_3) the directional signature as seen in the measurements may not be as strong.

Polar plot for NO_2

Polar plot for PM_{10}

Polar plot for $PM_{2.5}$

Polar plot for O_3

Heathrow Employment & Skills Academy

Heathrow
Employment & Skills Academy

Q3 data

Candidate Interactions	Ealing	Hillingdon	Hounslow	Slough	Spelthorne	Other	Total
Search Range Total	120	145	176	114	82	202	839
Total Year to Date	288	423	576	238	226	585	2336

Candidate Registrations	Ealing				Hillingdon				Hounslow				Slough				Spelthorne				Other				Total			
Search Range Total	542				638				816				207				106				1555				3864			
Total year to date	**1368**				**1545**				**2106**				**554**				**270**				**4151**				**9994**			
JCP/EI/AIE/Other	42	269	220	11	64	308	246	20	78	409	317	12	22	92	89	4	7	37	61	1	157	612	746	40	370	1727	1679	88
Total year to date	118	657	557	36	128	693	674	50	199	954	917	36	58	210	268	18	20	99	146	5	465	1578	2008	100	**988**	**4191**	**4570**	**245**

Candidate Referrals Into Pre-Employment Training	Ealing				Hillingdon				Hounslow				Slough				Spelthorne				Other				Total			
All Sectors	51				55				128				11				3				59				307			
Total year to date	**115**				**114**				**228**				**33**				**10**				**119**				**619**			
JCP/EI/AIE/Other	3	34	14	0	12	27	13	3	25	72	28	3	3	4	4	0	1	1	1	0	17	23	16	3	61	161	76	9
Total year to date	13	70	26	6	26	53	29	6	53	122	47	6	9	9	11	4	3	3	2	2	29	51	34	5	**133**	**308**	**149**	**29**

Candidates Completing Pre-Employment Training	Ealing	Hillingdon	Hounslow	Slough	Spelthorne	Other	Total
Pre-Employment	33	26	67	6	2	35	169
IAG +6 Hours	125	156	216	38	12	127	674
Search Range Total	158	182	283	44	14	162	843
Total year to date	**193**	**399**	**631**	**107**	**42**	**351**	**1723**

Candidates Not Completing Pre-Employment Training	Ealing	Hillingdon	Hounslow	Slough	Spelthorne	Other	Total
Search Range Total	**4**	**1**	**16**	**0**	**0**	**3**	**24**
Total year to date	**7**	**5**	**26**	**2**	**0**	**11**	**51**

Candidate Accessing Employment	Ealing				Hillingdon				Hounslow				Slough				Spelthorne				Other				Total			
Retail + Travel Services	33				30				42				7				2				16				130			
Hospitality	8				10				12				2				1				5				38			
Aviation	0				1				1				0				0				0				2			
Construction	2				7				4				0				1				1				15			
Other	18				23				29				11				6				21				108			
Search Range Total	61				71				88				20				10				43				293			
JCP/EI/AIE/Other	3	32	21	5	9	37	22	3	7	46	34	1	6	9	5	0	0	7	3	0	9	18	16	0	34	149	101	9
Total year to date	**133**				**166**				**202**				**33**				**23**				**94**				**651**			
JCP/EI/AIE/Other	16	70	38	9	16	83	62	5	11	113	73	5	8	11	14	0	1	15	6	1	17	40	36	1	**69**	**332**	**229**	**21**

Heathrow Employment & Skills Academy
Quarterly data: October 2019

Heathrow Employment & Skills Academy

Heathrow
Employment & Skills Academy

Q3 data

Our Impact: Job Seeker's Allowance (JSA) Claimants	Ealing	Hillingdon	Hounslow	Slough	Spelthorne	Other	Total
Total JSA Claimants	7530	3975	6150	2425	830	N/A	20910
Residents attending IAG/PET as a percentage	0.11%	0.20%	0.47%	0.29%	0.12%	N/A	0.34%
Residents achieving employment as a percentage	0.04%	0.23%	0.11%	0.25%	0.00%	N/A	0.16%

Candidates Accessing Sustained Employment	Ealing	Hillingdon	Hounslow	Slough	Spelthorne	Other	Total
Search Range Total	25	24	37	4	5	15	110
Total year to date	46	46	75	15	8	25	215

SAS - Apprenticeships	Ealing	Hillingdon	Hounslow	Slough	Spelthorne	Other	Total
No. of Starts	0	3	2	1	1	3	10
No. of Starts year to date	1	3	5	1	2	6	18
No. of Achievers							0
No. of Achievers year to date							0
Total In-Learning*	1	3	5	1	2	6	18
No. of Starts - M + PP	0	2	1	0	1	3	7
No. of Starts year to date - M + PP	1	2	2	0	1	5	11

Apprenticeships	Ealing	Hillingdon	Hounslow	Slough	Spelthorne	Other	Total
No. of Starts	1	9	7	3	1	8	29
No. of Starts year to date	6	20	23	12	5	15	81
No. of Achievers	2	3	7	1	2	7	22
No. of Achievers year to date	7	13	13	6	2	16	57
Total In-Learning*	46	158	163	113	49	310	839
Lvl 2-3 Progression	0	1	1	0	0	1	3

Heathrow Employment & Skills Academy
Quarterly data: October 2019

Q3 Traffic summary

- Heathrow welcomed 6.7 million passengers in September, bringing total passenger numbers from January to end of September 2019 to nearly 61 million (+0.7% over the same period last year)

- A record breaking 262,000 passengers travelled through Heathrow on the airport's busiest day ever on 4 August.

- New flights to Newquay, Isle of Man and Guernsey announced this summer continue to boost domestic passenger numbers, up 3.6% in July. Africa saw the most growth in August, up 6% compared to 2018, with the market continuing to benefit from the new route to Durban and increased aircraft sizes on flights to Nigeria.

- Over 381,000 metric tonnes of cargo, including vital pharmaceuticals, technical equipment and Scottish salmon, passed through Heathrow in Q3. The top markets for cargo growth were Africa (+4.2%) and the Middle East (+1.8%) in August 2019.

JULY TRAFFIC FIGURES

Terminal passengers (000s)

Market	Jul 2019	% Change	Jan to Jul 2019	% Change	Aug 2018 to Jul 2019	% Change
UK	447	3.6	2,772	-0.5	4,782	-1.6
EU	2,690	-1.8	15,843	0.0	27,606	1.3
Non-EU Europe	552	-0.8	3,315	-0.2	5,716	0.1
Africa	303	5.2	2,037	8.8	3,503	7.3
North America	1,834	0.5	10,743	4.7	18,586	5.0
Latin America	122	-1.4	808	2.9	1,373	3.0
Middle East	746	-0.9	4,317	-1.4	7,599	-1.1
Asia / Pacific	1,061	-3.2	6,669	0.4	11,556	1.4
Total	**7,754**	**-0.7**	**46,505**	**1.4**	**80,722**	**1.9**

Air transport movements

Market	Jul 2019	% Change	Jan to Jul 2019	% Change	Aug 2018 to Jul 2019	% Change
UK	3,658	10.5	23,019	1.5	39,070	-1.8
EU	18,725	-1.1	122,783	-0.2	212,197	-0.1
Non-EU Europe	3,695	0.4	25,675	1.1	43,986	-0.1
Africa	1,241	5.3	8,893	8.1	15,100	5.8
North America	7,504	1.1	48,492	1.6	83,343	1.7
Latin America	512	-2.5	3,537	3.0	6,097	4.5
Middle East	2,675	0.8	17,480	-2.2	30,263	-2.3
Asia / Pacific	4,052	-0.0	27,542	2.0	47,558	3.4
Total	**42,062**	**0.7**	**277,421**	**0.7**	**477,614**	**0.5**

Cargo (metric tonnes)

Market	Jul 2019	% Change	Jan to Jul 2019	% Change	Aug 2018 to Jul 2019	% Change
UK	53	-43.5	339	-46.0	628	-43.5
EU	7,866	-11.3	55,237	-16.7	99,707	-12.6
Non-EU Europe	4,817	-5.1	33,076	1.8	57,745	1.6
Africa		7,055	-2.7	55,800	7.4	94,218
North America	44,649	-10.2	336,381	-6.0	594,445	-4.1
Latin America	4,526	2.8	32,335	12.8	56,070	9.7
Middle East	22,594	2.6	148,121	-0.3	256,584	-3.2
Asia / Pacific	39,029	-8.9	275,323	-6.7	495,187	-3.9
Total	**130,589**	**-6.9**	**936,611**	**-4.6**	**1,654,585**	**-3.4**

Q3 Traffic summary

AUGUST TRAFFIC FIGURES

Terminal passengers (000s)

Market	Aug 2019	% Change	Jan to Aug 2019	% Change	Sep 2018 to Aug 2019	% Change
UK	437	2.7	3,209	-0.0	4,794	-1.0
EU	2,620	-0.5	18,463	-0.1	27,592	1.1
Non-EU Europe	536	0.1	3,851	-0.2	5,716	0.3
Africa	313	6.0	2,349	8.5	3,521	7.7
North America	1,829	1.9	12,572	4.3	18,620	4.7
Latin America	121	2.3	930	2.8	1,376	3.0
Middle East	790	-0.6	5,108	-1.3	7,594	-1.4
Asia / Pacific	1,034	-3.7	7,704	-0.2	11,517	0.4
Total	**7,680**	**0.1**	**54,185**	**1.2**	**80,731**	**1.7**

Air transport movements

Market	Aug 2019	% Change	Jan to Aug 2019	% Change	Sep 2018 to Aug 2019	% Change
UK	3,704	10.8	26,723	2.7	39,432	-0.2
EU	18,554	-1.2	141,337	-0.4	211,977	-0.0
Non-EU Europe	3,691	-0.9	29,366	0.8	43,952	0.2
Africa	1,275	7.7	10,168	8.0	15,191	6.7
North America	7,465	0.7	55,957	1.5	83,392	1.4
Latin America	516	-3.2	4,053	2.2	6,080	3.5
Middle East	2,679	0.5	20,159	-1.9	30,276	-2.3
Asia / Pacific	4,068	-0.3	31,610	1.7	47,547	2.9
Total	**41,952**	**0.6**	**319,373**	**0.7**	**477,847**	**0.6**

Cargo (metric tonnes)

Market	Aug 2019	% Change	Jan to Aug 2019	% Change	Sep 2018 to Aug 2019	% Change
UK	48	-37.7	387	-45.1	599	-45.4
EU	7,555	-8.3	62,793	-15.8	99,020	-13.1
Non-EU Europe	4,896	1.9	37,971	1.8	57,834	1.4
Africa	7,047	4.2	62,848	7.1	94,501	5.1
North America	44,580	-12.0	380,961	-6.8	588,369	-5.3
Latin America	4,431	-6.1	36,766	10.2	55,783	7.9
Middle East	21,451	1.8	169,572	-0.0	256,970	-2.6
Asia / Pacific	36,855	-17.0	312,177	-8.1	487,634	-5.6
Total	**126,864**	**-9.9**	**1,063,475**	**-5.3**	**1,640,711**	**-4.3**

Q3 Traffic summary

SEPTEMBER TRAFFIC FIGURES

Terminal passengers (000s)

Market	Sep 2019	% Change	Jan to Sep 2019	% Change	Oct 2018 to Sep 2019	% Change
UK	388	-6.5	3,597	-0.8	4,767	-1.5
EU	2,334	-5.8	20,797	-0.7	27,449	0.5
Non-EU Europe	470	-0.7	4,321	-0.2	5,713	0.3
Africa	278	1.0	2,627	7.6	3,524	7.6
North America	1,616	0.0	14,188	3.8	18,621	4.4
Latin America	110	-3.1	1,039	2.2	1,373	2.6
Middle East	644	1.6	5,751	-1.0	7,605	-0.8
Asia / Pacific	939	-4.3	8,643	-0.7	11,475	00
Total	**6,777**	**-2.9**	**60,962**	**0.7**	**80,526**	**1.3**

Air transport movements

Market	Sep 2019	% Change	Jan to Sep 2019	% Change	Oct 2018 to Sep 2019	% Change
UK	3,326	1.7	30,049	2.6	39,488	-0.4
EU	17,172	-6.7	158,509	-1.1	210,734	-0.5
Non-EU Europe	3,502	-1.3	32,868	0.6	43,906	0.4
Africa	1,185	3.6	11,353	7.5	15,232	7.2
North America	6,970	-2.9	62,927	10	83,187	09
Latin America	474	-4.8	4,527	1.4	6,056	2.6
Middle East	2,535	0.8	22,694	-1.6	30,295	-1.9
Asia / Pacific	3,822	-1.7	35,432	1.3	47,480	2.3
Total	**38,986**	**-3.6**	**358,359**	**0.2**	**476,378**	**0.3**

Cargo (metric tonnes)

Market	Sep 2019	% Change	Jan to Sep 2019	% Change	Oct 2018 to Sep 2019	% Change
UK	43	-31.4	430	-44.0	579	-44.5
EU	7,913	-17.2	70,706	-15.9	97,373	-14.8
Non-EU Europe	4,711	-7.4	42,683	0.7	57,458	0.7
Africa	7,000	-0.1	69,847	6.3	94,496	5.2
North America	42,987	-16.8	423,949	-7.9	579,665	-7.1
Latin America	4,323	-1.9	41,089	8.8	55,702	8.1
Middle East	21807	1.7	191,379	0.2	257,335	-2.2
Asia / Pacific	36,908	-14.8	349,085	-8.8	481,453	-6.7
Total	**125,693**	**-11.7**	**1,189,168**	**-6.0**	**1,624,061**	**-5.4**

Heathrow