

# Gatwick Airport Flight Performance Report

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This report covers the period  
(1st January 2017 – 31st March 2017)



YOUR LONDON AIRPORT  
*Gatwick*

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# Introduction

## ABOUT THIS REPORT

This report is produced by the Gatwick Flight Performance Team (FPT). This team is responsible for recording, investigating and responding to aircraft noise enquiries as well as monitoring airline compliance to noise mitigation measures as detailed in the UK Aeronautical Information Publication (AIP). This department also actively engages with the airlines to improve their adherence to the above noise mitigation measures and in addition manages the night-time restrictions on flying at Gatwick.

This report contains detailed data on aircraft activity at Gatwick including the adherence to the noise mitigation measures detailed in the UK AIP, a report on night flying during the period, and an analysis of noise complaints received during the period.

## KEY MONITORING INDICATORS – 1<sup>st</sup> JANUARY 2017 – 31<sup>st</sup> MARCH 2017

Parameter		12 month performance averages <sup>1</sup>			
		Year to date (2017)	Previous year (2016)	2011	2006
Track keeping performance (% on track)	▲	98.27% <sup>2</sup>	99.68%	97.47%	98.17% <sup>3</sup>
24hr CDO (% achievement) <sup>4</sup>	▼	89.37%	88.49%	90.49%	80.79%
Day/Shoulder CDO (% achievement)	▼	89.07%	87.86%	90.19%	79.9%
Core night CDO (% achievement)	▼	92.53%	95.00%	93.96%	89.6%
1,000ft Infringements (No.)	▼	0	0	3	11
1,000ft Infringements (No. below 900ft)	▼	0	0	1	6
Departure Noise Infringements (Day)	-	0	0	0	10
Departure Noise Infringements (Night/Shoulder)	▼	0	0	4	2
Individual complainants	▲	2354	1700	343	587
Total noise complaints received <sup>5</sup>	▲	23289	15692	2673	4791
Enquiry response performance target is 95% within 8 days (January to March 2017)	▼	81.99%	99.88%	KPI 95%	
West/East Runway Split (%)	-	67/33	70/30	67/33	68/32

<sup>1</sup> The colour indicates the most recent 12 month performance compared to 2011, with green showing improvement and red a decline in performance.

<sup>2</sup> Track keeping statistics measurement changed on the 26<sup>th</sup> May 2016 due to the Route 4 amendment, all SID's are now included in the total figure.

<sup>3</sup> This figure did not include deviations from prop types or those due to weather.

<sup>4</sup> As a result of the Independent Review of Arrivals, it was recommended (Imm-05) that the CDO monitoring altitude be increased from 6,000ft to 7,000ft as of 1<sup>st</sup> August 2016.

<sup>5</sup> Complaints are recorded in line with our published complaints handling policy. The revised policy, published in November 2014, advised that only one complaint per day is recorded per individual. On the 29<sup>th</sup> September 2016, there was a further revision to our complaints handling policy which now allows individuals to make multiple complaints per day and these will each be recorded.

# Executive Summary

## Performance Headlines

### AIRPORT OPERATIONS

Between 1<sup>st</sup> January and 31<sup>st</sup> March 2017, there were a total of 61,284 fixed wing aircraft movements at Gatwick, an increase in traffic of about 4.9% compared to the same period in 2016. The direction of operation is determined by wind direction and this was split 67% on the westerly runway and 33% on the easterly runway for the period. The rolling 16 year average for the split in runway usage is approximately 68% westerly and 32% easterly.

### NORTHERN RUNWAY (26R/08L) USAGE

Although Gatwick has the main runway and the ‘reserve’ or northern runway, they cannot be operated simultaneously.

The northern runway is normally only utilised during the night when maintenance on the main runway is planned. During these three months, there were a total of 271 movements from the northern runway.

### TRACK KEEPING

Track keeping performance has decreased slightly compared to the previous year’s performance, details of which will follow later in this report. As part of our continuing commitment to increase on-track performance, the FPT also continues to engage with the airlines directly and through the Flight Operations Performance and Safety Committee (FLOPSC) on a range of initiatives to monitor compliance.

### WOULD YOU LIKE TO KNOW MORE ABOUT AIRCRAFT NOISE OR TRACK A FLIGHT?

To track aircraft, see noise readings or make a complaint about aircraft noise at Gatwick you can visit our website:

**<http://www.gatwickairport.com/aircraftnoiseandairspace>**

The website provides detailed maps on aircraft traffic around the airport as well as useful information on noise and statistics on aircraft movements. It also details the work we undertake with others in the aviation industry to try and alleviate the impact of our operations on both the local and wider community.

### CONTINUOUS DESCENT OPERATIONS (CDO) PERFORMANCE

While the Noise and Track Keeping (NTK) system utilises the most up-to-date format of radar data currently available, the

algorithm that measures CDO performance has remained unchanged since the definition was initially defined several years ago. As part of a development project to improve the accuracy of CDO measurement, the Flight Performance Team has worked closely with NATS to upgrade the current algorithm. The core algorithm remains unaltered, although some additional rules have been added with the result that some marginal profiles, previously classified as CDO compliant, will now be re-classified as non-CDO flights. These changes came into effect from May 2015 and the resulting variance in recorded levels of performance is in the order of 1%, therefore we expect to see a minor drop off in recorded performance from this date. Historical observations have consistently shown a reduction in performance during the winter months due to instances of inclement weather.

It is important to note that as recommended by the Independent Review of Arrivals, the altitude at which CDO is measured has changed as of 1<sup>st</sup> August 2016, more details later in the report.

### COMMUNITY NOISE MONITORING

In addition to fixed monitors located close to the ends of the runway, there are currently mobile noise monitors deployed at sites in Lingfield, Rusper, Oakwood Hill, Cowden, South Holmwood, and East Grinstead.

For several years, we have run a programme of noise monitoring to get a better understanding of the levels of aircraft noise in the communities surrounding Gatwick Airport. The noise monitors provide a method of monitoring and recording noise from both aircraft, and background sources. This allows us to evaluate trends and make comparisons between the noise environments at different location.

### COMPLAINTS

The number of recorded complaints has increased compared to the previous twelve months as well as the number of individuals which have also increased. The past year has been the busiest year in the airport’s history and there has also been a large amount of publicity surrounding the potential second runway, and the community issues related to the Route 4 amendment, which may be contributing factors for the number of complaints in 2017.

The postcode areas with the greatest number of enquiries during the three month period were Horley, Rotherfield, East Grinstead and Newdigate. The number of individual complainants between January and March 2017 was **352**. Complaints about aircraft operations are processed in accordance with our published Complaints Handling Policy. Details of this policy are available on our website.



# Runway Direction

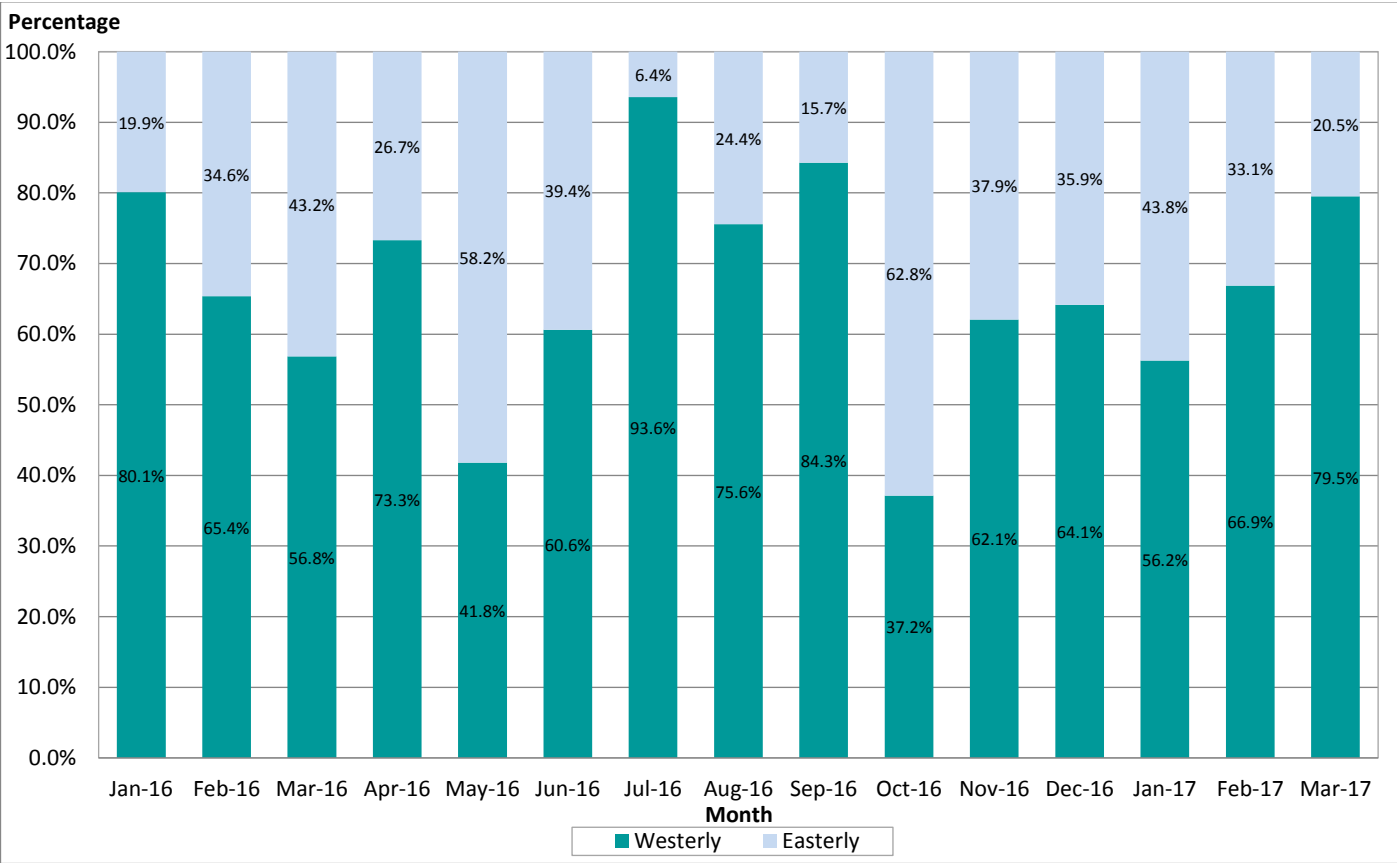
The graph below represents the direction of runway operation at Gatwick. Aircraft operating in a westerly direction take off towards the west and land from the east. Aircraft operating in an easterly direction take off towards the east and land from the west.

Although the long term average is approximately 68:32 in favour of westerly operations, it is not unusual to experience long periods of prolonged operation in either one direction or another.



## RUNWAY DIRECTION SPLIT

THE GRAPH BELOW SHOWS THE SPLIT OVER THE 15 MONTH PERIOD (JANUARY 2016 – MARCH 2017)



# The Aeronautical Information Publication

An Aeronautical Information Publication (or AIP) is defined by the International Civil Aviation Organisation (ICAO) as a publication issued by or with the authority of a state and containing aeronautical information of a lasting character essential to air navigation.

It is designed to be a manual containing thorough details of regulations, procedures and other information pertinent to flying aircraft in the particular country to which it relates. It is usually issued by or on behalf of the respective civil aviation administration.

The structure and contents of AIPs are standardized by international agreement through ICAO. AIPs normally have three parts - GEN (general), ENR (en route) and AD (aerodromes).

The Gatwick Aerodrome AIP contains details regarding the noise mitigation measures in place and adherence to these is reported in this section.

## ADHERENCE TO NOISE MITIGATION MEASURES AS DETAILED IN THE GATWICK AIP

Each element of this report is preceded, where applicable, by the relevant Aeronautical Information Publication (AIP) reference and summary text detailing the purpose of the requirement. Data is then presented on current performance.

It should be noted that Gatwick is 202ft above mean sea level (AMSL) and the Noise and Track Keeping system (NTK) measures height relative to Gatwick elevation and not sea level.

References in the AIP are usually above sea level (quoted as Gatwick QNH) and therefore need to be reduced by 202ft to be comparable with heights, as measured by the NTK. For example, the requirement to join the ILS at 3,000ft would equate to 2,798ft in the NTK system.

No account is taken of the variability of heights as measured by the radar which, depending on the distance from the radar head, can be +/- 200ft from that indicated. This is obviously allowed for by NATS and ANS when managing operations.

# Departures - Noise Infringements

## DEPARTURE NOISE LIMITS (DAYTIME)

**EGKK AD 2.21 (3(3))** *Subject to sub-paragraphs (5) and (6) below, any aircraft shall, after take-off, be operated in such a way that it will not cause more than 94 dBA Lmax by day (from 0700 to 2300 hours local time) as measured at any noise monitoring terminal at any of the sites referred to in sub-paragraph (2). This is to ensure that departing aircraft do not exceed the stated level during the day.*

Year	Number of Day Infringements	Year	Number of Day Infringements
2006	9	2012	0
2007	13	2013	0
2008	2	2014	0
2009	0	2015	0
2010	0	2016	0
2011	0	2017	0

## DEPARTURE NOISE LIMITS (CORE NIGHT & SHOULDERS)

**EGKK AD 2.21 (3(4))** *Subject to sub-paragraphs (5) and (6) below, any aircraft shall, after take-off, be operated in such a way that it will not cause more than 89 dBA Lmax by night (from 2300 to 0700 hours local time) and that it will not cause more than 87 dBA Lmax during the night quota period (from 2330 to 0600 hours local time) as measured at any noise monitoring terminal at any of the sites referred to in sub-paragraph (2). This is to ensure that departing aircraft do not exceed the stated levels during the night and shoulder periods.*

Year	Number of Night & Shoulder Infringements	Year	Number of Night & Shoulder Infringements
2006	2	2012	0
2007	2	2013	0
2008	2	2014	0
2009	1	2015	0
2010	0	2016	1
2011	4	2017	0

# Departures - Initial Climb Performance

**EGKK AD 2.21 (3(1))** *After take-off the aircraft shall be operated in such a way that it is at a height of not less than 1000ft aal (above airfield level) at 6.5 km from start of roll as measured along the departure track of the aircraft. This is to ensure departing aircraft achieve at least that climb gradient in order to reduce the impact on the ground.*

## Comment:

There were no infringements of the 1,000ft rule during the three month period.

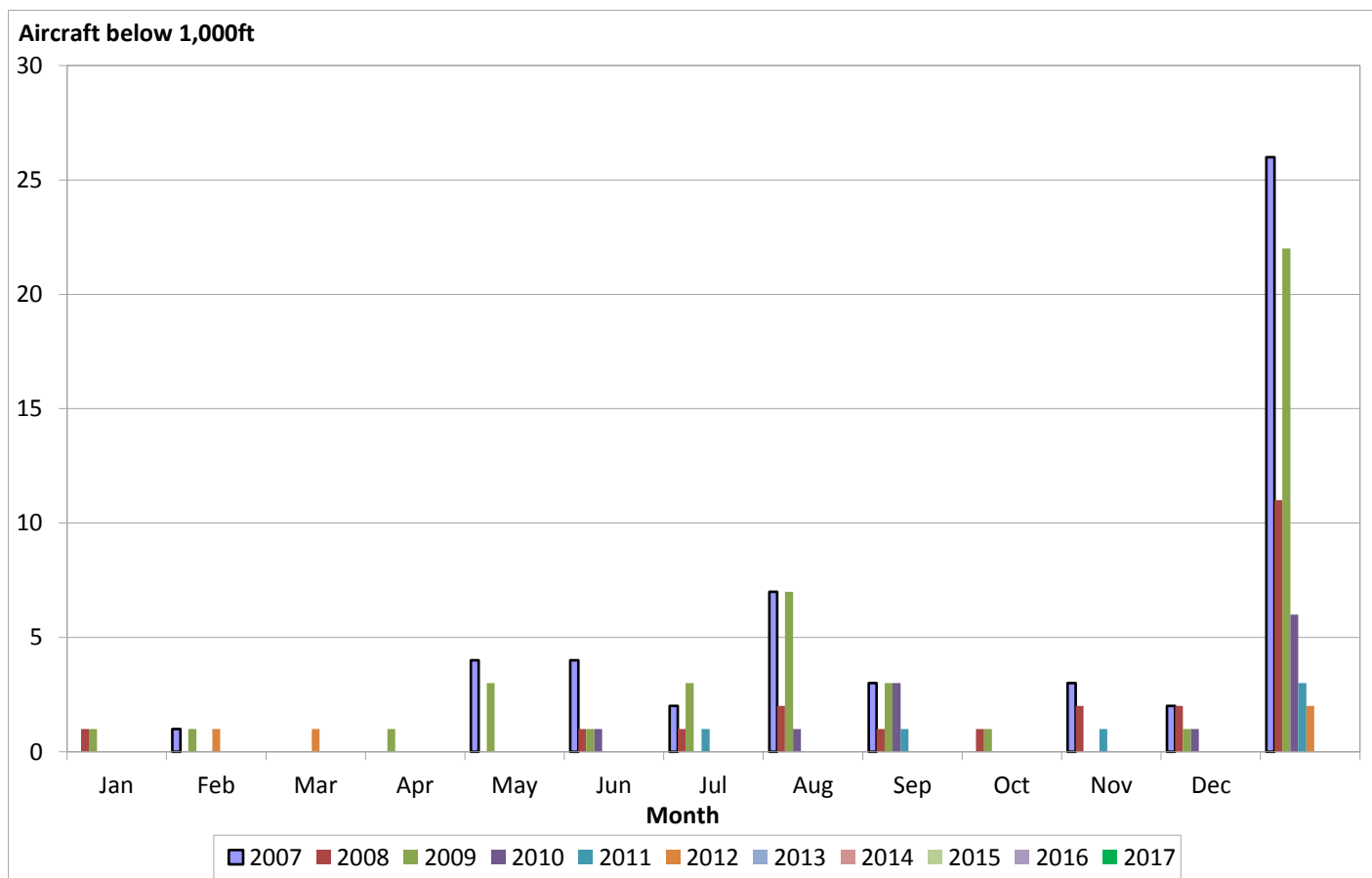
Historically, the summer months are typically the peak period for aircraft failing to meet the 1,000ft requirement, primarily due to the warmer weather which reduces aircraft climb performance.

## 1,000ft INFRINGEMENT TABLE

Year	Total Infringements	Year	Total Infringements
2006	11	2012	2
2007	26	2013	0
2008	11	2014	0
2009	22	2015	0
2010	6	2016	0
2011	3	2017	0

THE GRAPH BELOW ILLUSTRATES 1,000ft INFRINGEMENT PERFORMANCE SINCE 2007

## Initial Climb Performance



# Departures – Track Keeping

All jet aircraft leaving Gatwick Airport should follow flight paths known as Noise Preferential Routes (NPRs) up to a height of 3,000ft or 4,000ft depending on the route. An NPR consists of a 'centreline' and an associate compliance monitoring swathe (3km across, i.e. 1.5km either side of the NPR centreline). These NPR's are mapped below. As long as aircraft remain within the corridor boundaries, they are deemed to be on-track. A map illustrating the Noise Preferential Routes at Gatwick is available below.

Air Traffic Control (ATC) are responsible for the routing of aircraft once airborne and when 3,000 or 4,000ft has been reached, they may give a flight a more direct heading, known as vectoring, off the route. This is subject to certain factors, including weather conditions and other traffic in the vicinity. Flights leaving the route below the required height are automatically tagged and details are sent to the airline for investigation. Our Flight Operations Performance & Safety Committee (FLOPSC) regularly review track keeping performance.

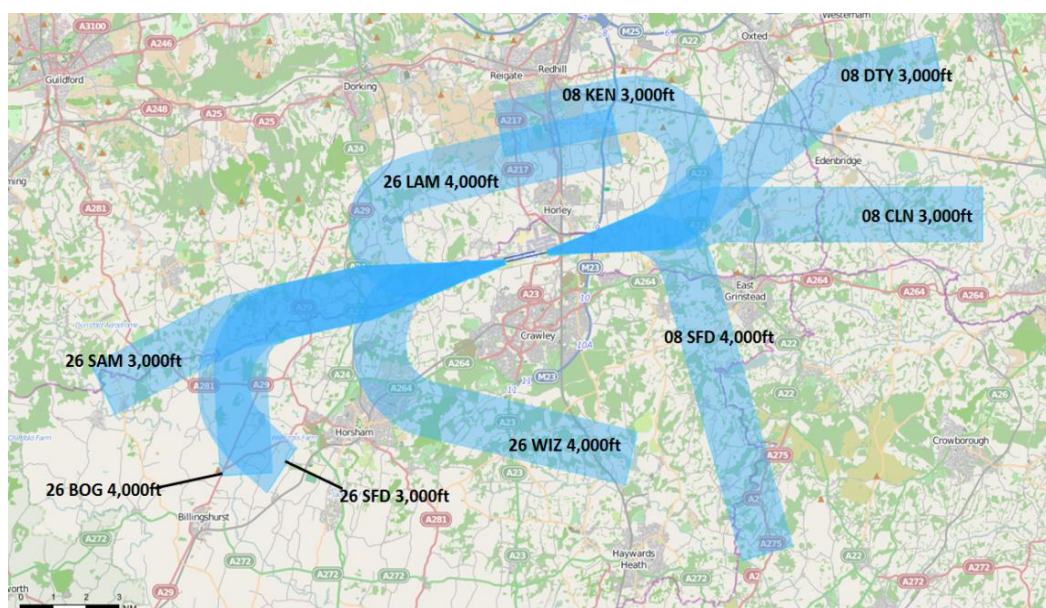
In 2012, Gatwick Airport publicly consulted on the implementation of a more modern form of aircraft navigation called P-RNAV (Precision Route Navigation). After having assessed all consultation feedback, the Civil Aviation Authority (CAA) granted the airport permission to implement P-RNAV on all of our departure routes. Implementing P-RNAV on the published departure routes has resulted in the tracks of departing aircraft being more concentrated within the boundaries of the current NPR's, with one exception. This is the NPR designed 26LAM/Route 4 that heads west then turns back on itself and passes to the north of the airfield. This

route has always presented a challenge for modern jets as it was designed to accommodate propeller-driven aircraft and early jets that were around in the 1960's.

Implementing P-RNAV on this route required aircraft to fly outside of the current NPR. Therefore, as approved by the CAA, aircraft on a P-RNAV departure on this route were not classified as off-track as they were following the published route.

Following the introduction of P-RNAV at Gatwick Airport, the CAA conducted a Post Implementation Review on all routes. The Review has recommended that this particular route (Route 4) be modified so that departing aircraft are compliant and remain within the published NPR swathe. It now requires all Standard Instrument Departure routes (SID's) to be counted in the track keeping statistics whereas previously, the P-RNAV SID's were not included. This modification came into effect on the Route on the 26<sup>th</sup> May 2016 and was monitored for a six month period until the 26<sup>th</sup> November. During this time, Gatwick engaged with the CAA, our airlines, air traffic control and our airspace designers to improve adherence to the amended route. The CAA are currently reviewing the results of the monitoring period along with the public feedback received. There has been a decrease in track keeping since the amendment was introduced due to the inclusion of all SID routes in the statistics; however, we are continuing to work closely with our stakeholders to improve compliance on Route 4.

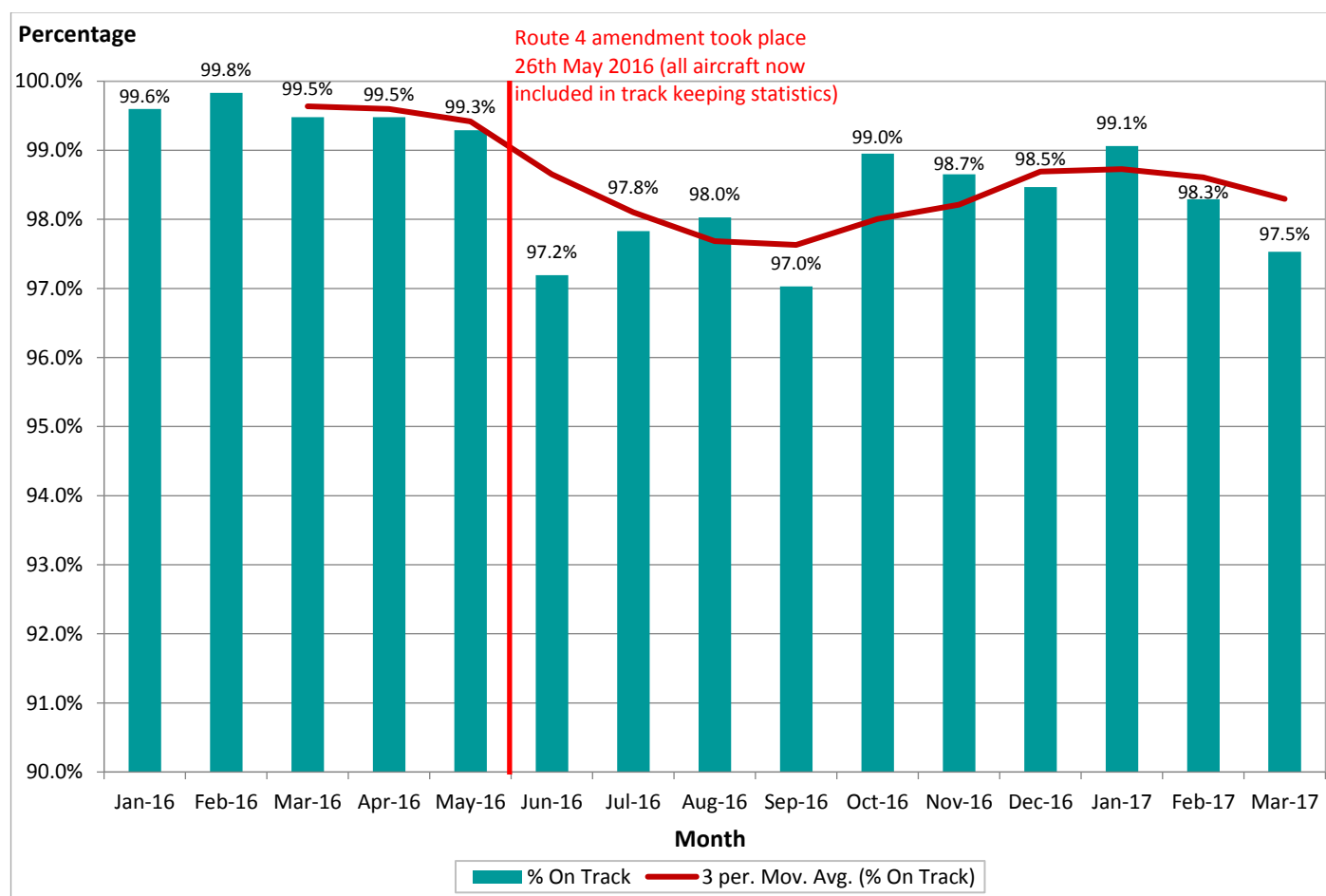
**THE MAP BELOW ILLUSTRATES THE NOISE PREFERENTIAL ROUTES USED BY DEPARTING AIRCRAFT WITH MINIMUM VECTORING ALTITUDE FIGURES**



THE TABLE BELOW ILLUSTRATES TRACK KEEPING PERFORMANCE OVER 15 MONTHS

Month	Total			Westerly			Easterly		
	Deviations	Departures	%	Deviations	Departures	%	Deviations	Departures	%
Jan-16	37	9297	0.40%	28	7392	0.38%	9	1905	0.47%
Feb-16	16	9347	0.17%	12	6086	0.20%	4	3261	0.12%
Mar-16	55	10506	0.52%	50	5944	0.84%	5	4562	0.11%
Apr-16	58	11247	0.52%	55	8239	0.67%	3	3008	0.10%
May-16	91	12758	0.71%	38	5403	0.70%	53	7355	0.72%
Jun-16	362	12877	2.81%	329	7750	4.25%	33	5127	0.64%
Jul-16	302	13915	2.17%	294	13022	2.26%	8	893	0.90%
Aug-16	278	14131	1.97%	257	10627	2.42%	21	3504	0.60%
Sep-16	401	13498	2.97%	397	11428	3.47%	4	2070	0.19%
Oct-16	133	12705	1.05%	115	4688	2.45%	18	8017	0.22%
Nov-16	126	9360	1.35%	118	5818	2.03%	8	3542	0.23%
Dec-16	159	10375	1.53%	139	6604	2.10%	20	3771	0.53%
Jan-17	92	9822	0.94%	80	5570	1.44%	12	4252	0.28%
Feb-17	166	9711	1.71%	162	6443	2.51%	4	3268	0.12%
Mar-17	274	11102	2.47%	270	8853	3.05%	4	2249	0.18%

THE GRAPH BELOW ILLUSTRATES TRACK KEEPING PERFORMANCE OVER 15 MONTHS WITH A TREND LINE



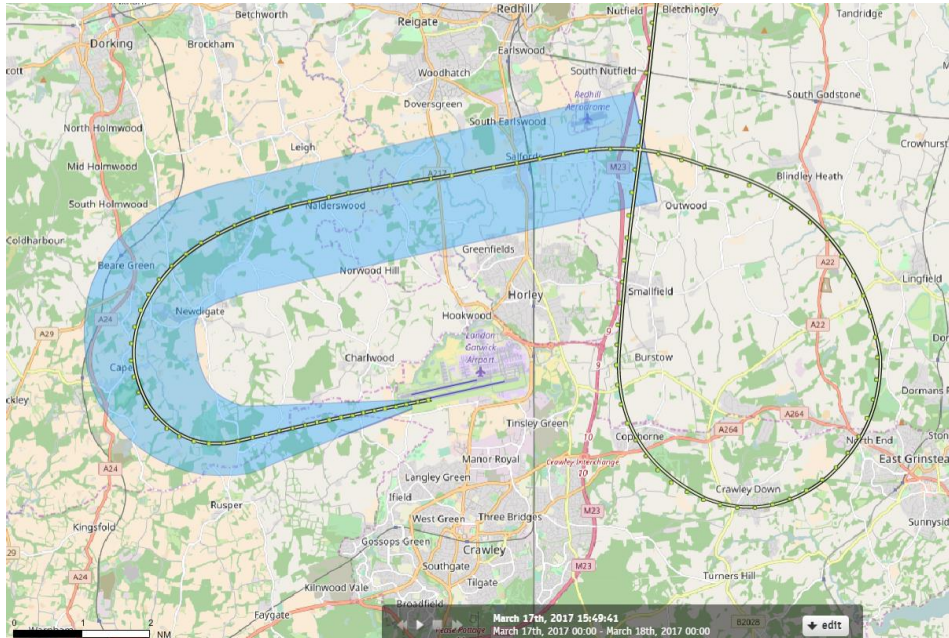


## UNUSUAL TRACKS

Some 'unusual tracks' taken by departing aircraft are recorded by our Noise and Track Keeping system and these can occur for a number of reasons, such as weather avoidance. These can result in the aircraft leaving the NPR

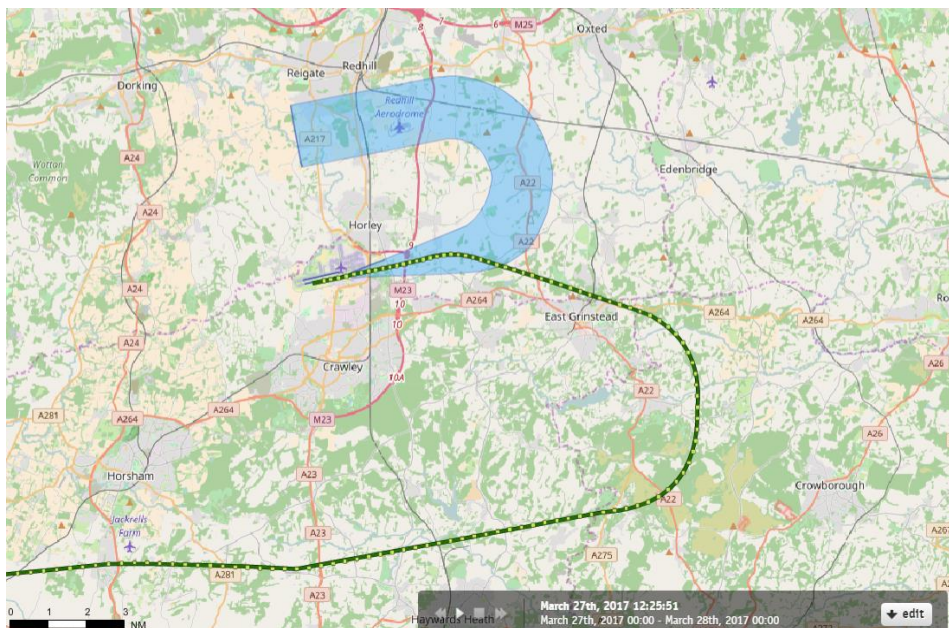
below the required altitude or aircraft that have vectored at the required altitude and then misdirected to avoid conflict with traffic from other airports. All unusual tracks are investigated with the airline concerned.

### THE MAP BELOW SHOWS THE EASYJET AIRCRAFT WHICH FLEW AN UNUSUAL ROUTE ON THE 17<sup>TH</sup> MARCH 2017



This easyJet flight occurred on the 17<sup>th</sup> March 2017 at 15:49. The airline was contacted and the feedback received concluded that the aircraft was diverted by ATC due to airspace congestion which would have restricted its ability to climb to a higher altitude.

### THE MAP BELOW SHOWS THE AIR TRANSAT AIRCRAFT WHICH DEVIATED FROM THE PRESCRIBED NPR ON THE 27<sup>TH</sup> MARCH 2017



This Air Transat flight occurred on the 27<sup>th</sup> March 2017 at 12:25. Air Traffic Control at NATS Swanwick were contacted and they advised that there was an airspace infringement to the north east of Gatwick and thus the Air Transat flight was turned away to avoid conflicting.



# Departures – Over Congested Areas

## THE WIZAD NOISE PREFERENTIAL ROUTE

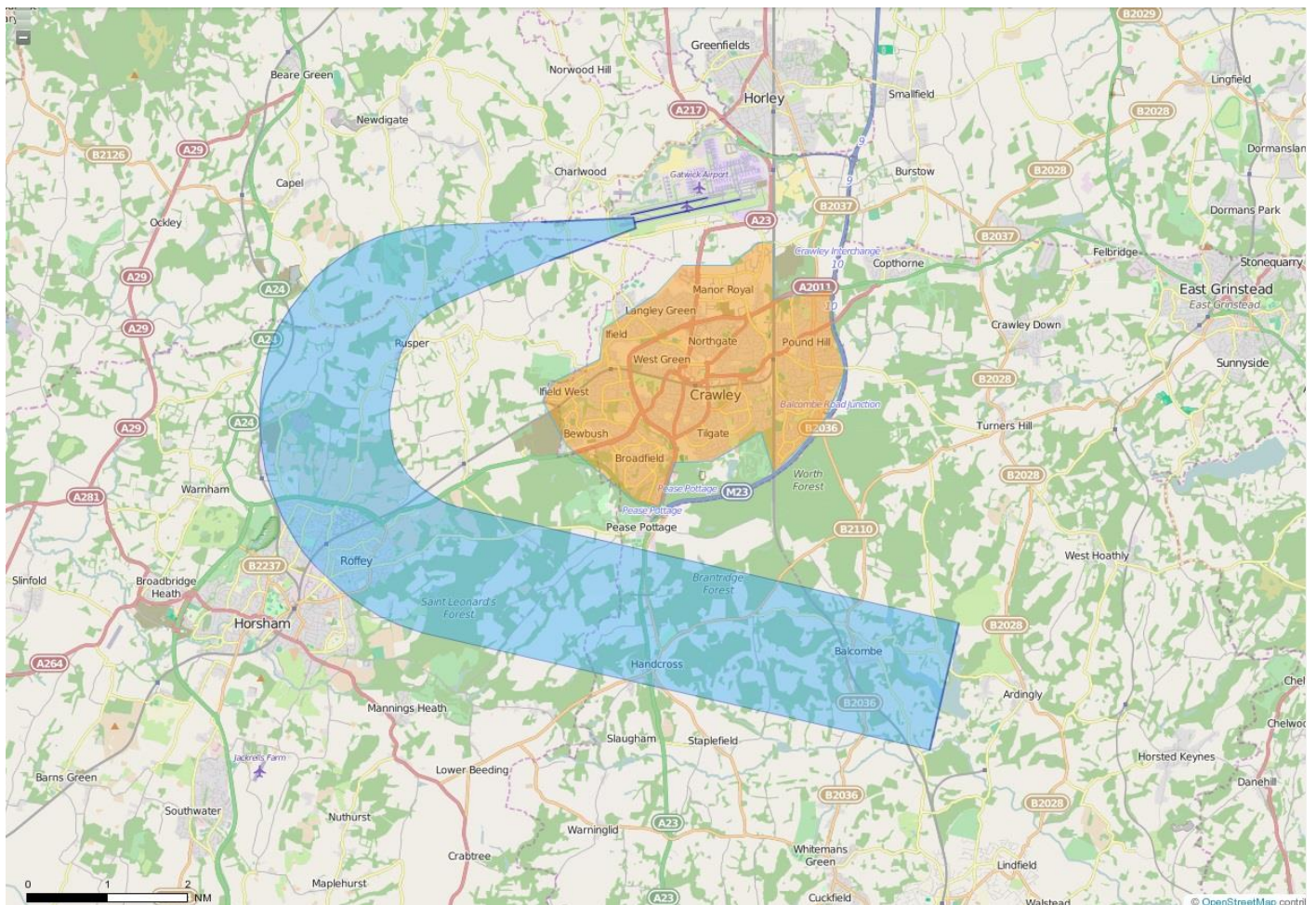
The Wizad Noise Preferential Route was designated by the Government at the same time as all other Gatwick departure routes; however, it is not used on an equal basis with the other routes. It is a Tactical Offload Route and is not usually offered as part of a flight path. If the 26 LAM Route (to the North of Horley) is very busy, Wizad will be offered as a last minute alternative to ease the load.

As it is only a Tactical Offload Route, it is not well known and it is only offered to local pilots and usually used by more modern, high performance aircraft. It will also be used during periods of poor weather when an alternative to the usual routes may be required as aircraft should not fly through thunderstorms.

**EGKK AD 2.21 (8)(c)** *The ATC clearance via Mayfield specified in the second column of the table will not be available between 2300 hours and 0700 hours local time. Aircraft following the Noise Preferential Routing Procedure which relates to that clearance shall not fly over Crawley, Crawley Down or East Grinstead. This is to avoid aircraft noise from departing aircraft over areas of high population at night on the 26 WIZAD NPR.*

**Comment:** During this three month period, there were no departures during the restricted period on the '26 WIZAD' Noise Preferential Route.

## THE MAP BELOW ILLUSTRATES THE CRAWLEY TOWN BOUNDARY WITH NOISE PREFERENTIAL ROUTE '26 WIZAD'



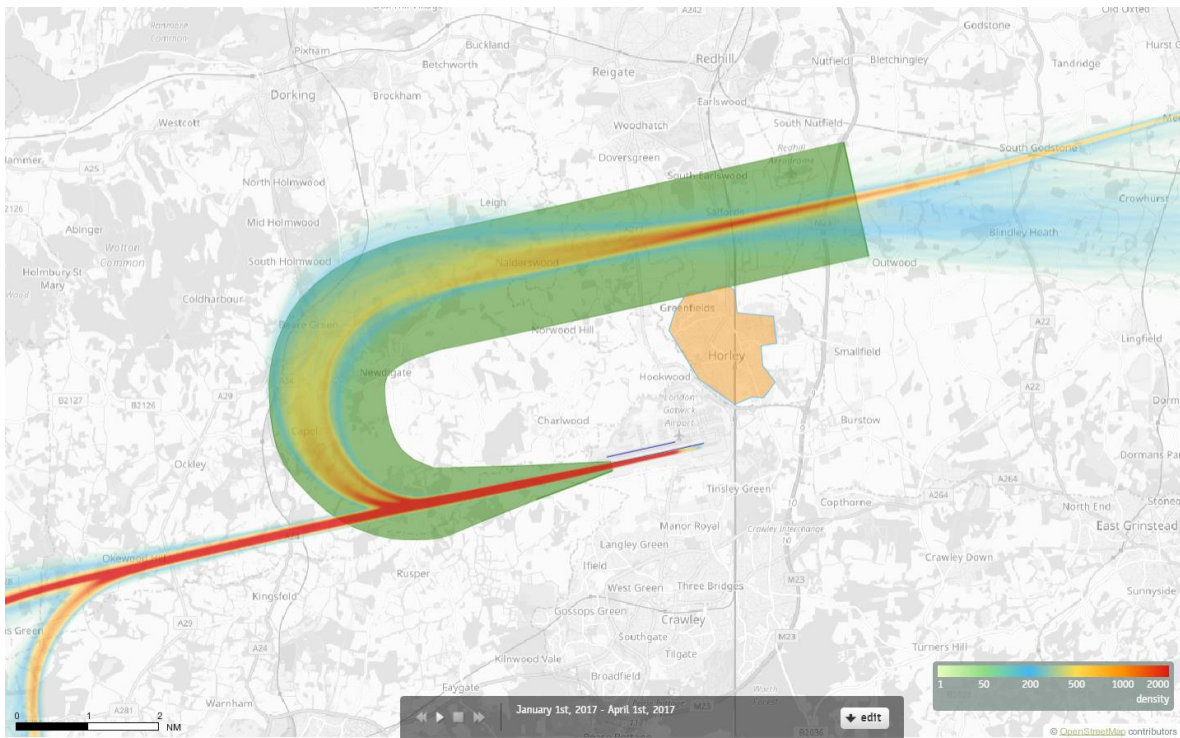


# Overflight of Crawley and Horley

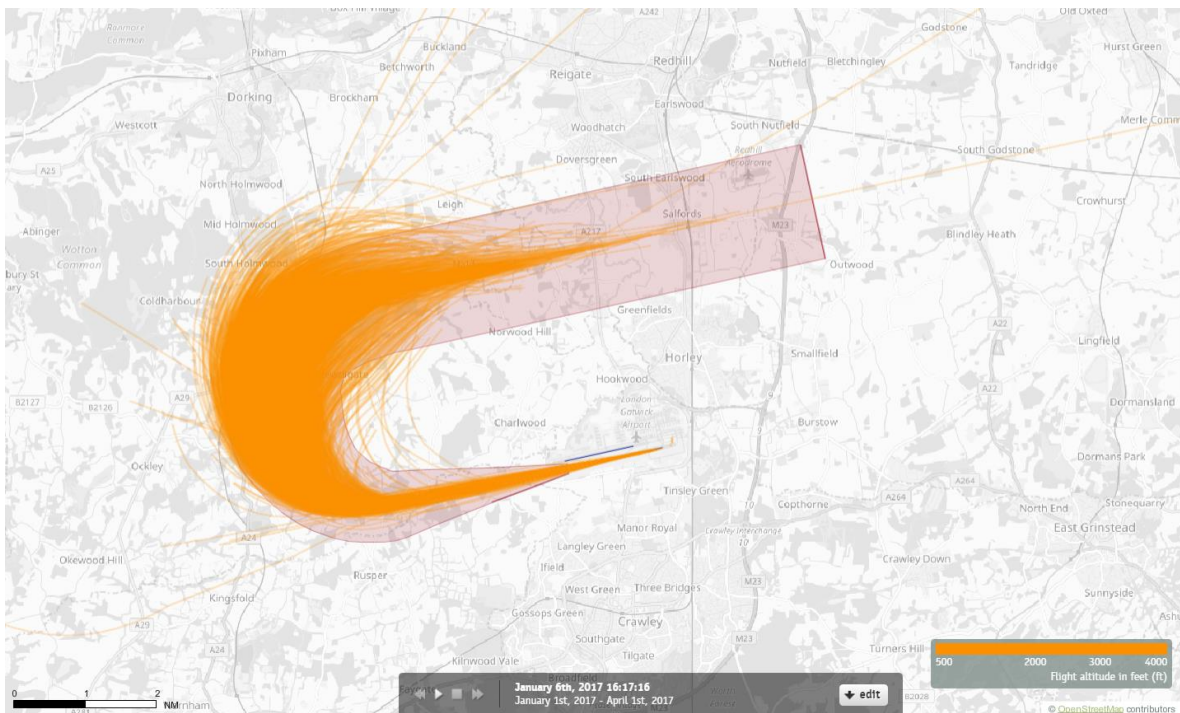
**EGKK AD 2.21 (9)** *After taking off the aircraft shall avoid flying over the congested areas of Horley and Crawley.*  
This is to avoid aircraft noise from departing aircraft over areas of high population.

**Comment:** During this period, there were no departing flights that passed over Crawley.

THE MAP BELOW ILLUSTRATES THE TRACK DENSITY OF DEPARTING AIRCRAFT ON THE ‘26 LAM’ DEPARTURE ROUTE DURING THE THREE MONTH PERIOD WITH HORLEY TOWN HIGHLIGHTED



THE MAP BELOW ILLUSTRATES THE TRACKS OF DEPARTING AIRCRAFT ON THE ‘26 LAM’ DEPARTURE ROUTE USING P-RNAV DURING THE THREE MONTH PERIOD UP TO AN ALTITUDE OF 4,000FT

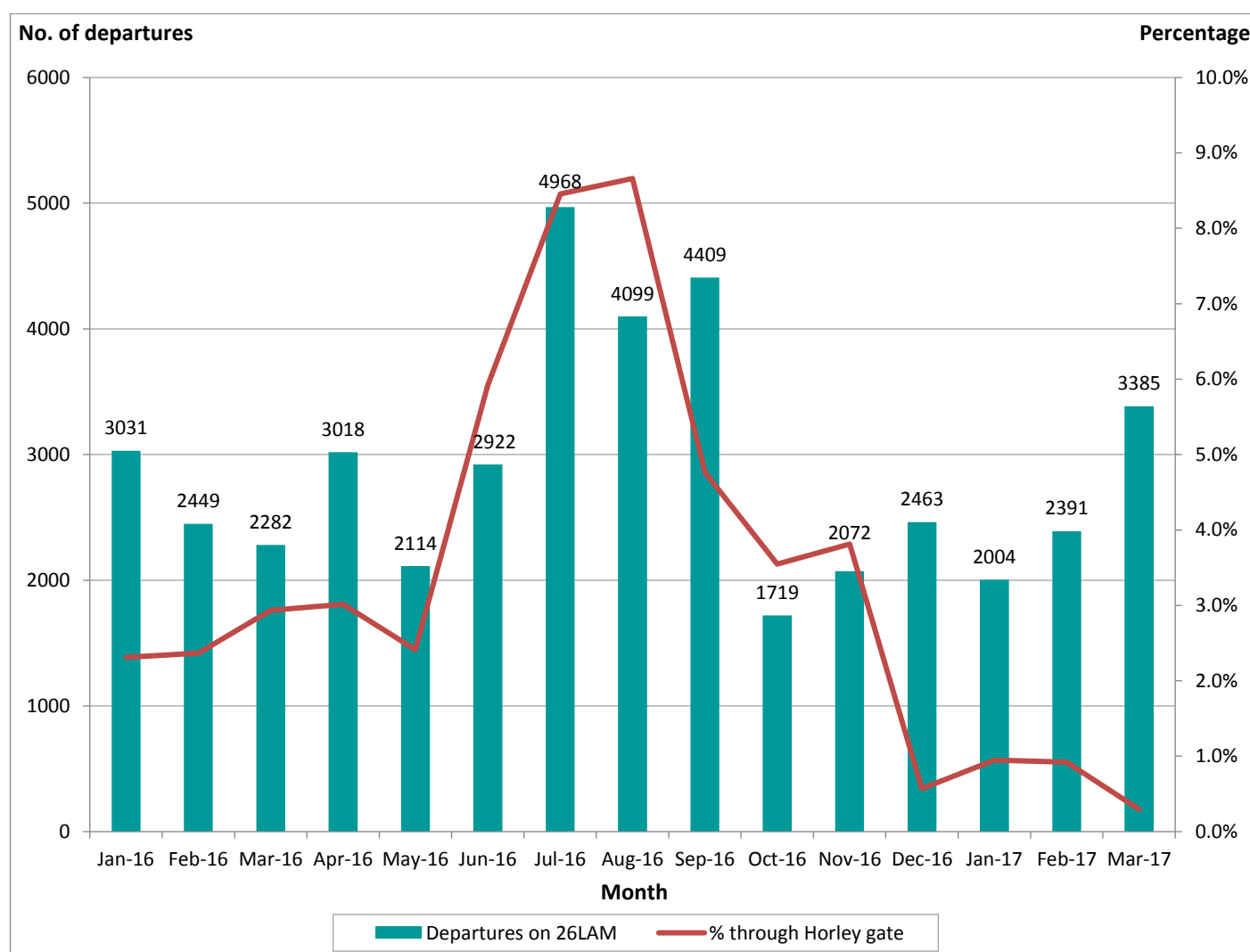




THE TABLE BELOW ILLUSTRATES THE ANALYSIS OF HORLEY OVERFLIGHT

Month	Departures on 26LAM	Horley gate	% through Horley gate	Month	Departures on 26LAM	Horley gate	% through Horley gate	Month	Departures on 26LAM	Horley gate	% through Horley gate
Jan-15	3237	102	3.15%	Jan-16	3031	70	2.31%	Jan-17	2004	19	0.95%
Feb-15	2251	66	2.93%	Feb-16	2449	58	2.37%	Feb-17	2391	22	0.92%
Mar-15	2455	40	1.63%	Mar-16	2282	67	2.94%	Mar-17	3385	10	0.30%
Apr-15	2200	42	1.91%	Apr-16	3018	91	3.02%	Apr-17	-	-	-
May-15	4051	67	1.65%	May-16	2114	51	2.41%	May-17	-	-	-
Jun-15	3688	57	1.55%	Jun-16	2922	173	5.92%	Jun-17	-	-	-
Jul-15	4365	42	0.96%	Jul-16	4968	420	8.45%	Jul-17	-	-	-
Aug-15	3559	38	1.07%	Aug-16	4099	355	8.66%	Aug-17	-	-	-
Sep-15	2838	61	2.15%	Sep-16	4409	210	4.76%	Sep-17	-	-	-
Oct-15	2039	36	1.77%	Oct-16	1719	61	3.55%	Oct-17	-	-	-
Nov-15	3302	78	2.36%	Nov-16	2072	79	3.81%	Nov-17	-	-	-
Dec-15	3707	13	0.35%	Dec-16	2463	14	0.57%	Dec-17	-	-	-

THE GRAPH BELOW ILLUSTRATES THE ANALYSIS OF HORLEY OVERFLIGHT



# Arrivals – Continuous Descent Operations (CDO)

A Continuous Descent Operation (CDO) (formerly known as a CDA) is a noise abatement technique of flight during which a pilot descends at a rate with the intention of achieving a continuous descent to join the glide path at the correct height for the distance. This procedure thereby avoids the need for extended periods of level flight and results in keeping the aircraft higher for longer reducing the need for thrust. In addition to aiding noise reduction, this also reduces fuel burn thereby cutting emissions and producing an overall environmental benefit.

A CDO is a procedure designed to try and avoid prolonged periods of level flight below 7,000ft\*. Studies have determined that elements of prolonged level flight are noisier than when following CDO. The aviation industry is working very hard to improve compliance and an Arrivals Code of Practice (ACoP) has been produced by the Department for Transport which aims to promote the use of CDO as a regular practice for all arriving aircraft:

‘For monitoring purposes, a descent will be deemed to have been continuous provided that no segment of level flight longer than 2.5 nautical miles (nm) occurs below 7,000ft\* QNH and ‘level flight’ is interpreted as any segment of flight having a height change of not more than 50ft over a track distance of 2nm or more, as recorded in the airport Noise and Track Keeping system.’

A CDO is not a precise art and relies on the accuracy of track miles provided by ATC to the flight crew coupled with pilot skill, weather conditions and operational circumstances. Additionally, different aircraft types perform differently requiring varying operating practices to be utilised in order to slow the aircraft down and meet speed restrictions, therefore the procedures in the ACoP are advisory rather than compulsory, so there are no sanctions against pilots or airlines that fail to comply with the measures. Despite this, publication of the ACoP has resulted in significant improvements in CDO achievement at all times of day and night. The FPT are actively working with the airlines to encourage the use of CDO as a best practice method by continually providing monthly reports. Airlines and pilots are keen to adopt this procedure for economic as well as environmental reasons and are active in promoting CDO within their companies.

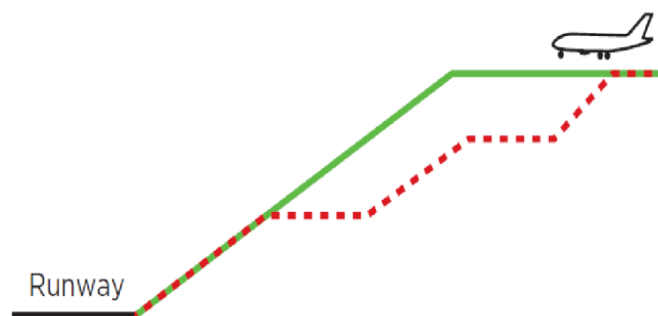
CDO data is measured over three time periods:

- The Core Night period (2330-0600)
- The Day and Shoulder periods (0600–2330)
- The 24-hour period

The following text appears in the UK Aeronautical Information Package (AIP) Noise Abatement Procedures for Gatwick Airport:

**EGKK AD 2.21 (10)** *Where the aircraft is approaching the aerodrome to land it shall, commensurate with its ATC clearance, minimise noise disturbance by the use of continuous descent and low power, low drag operating procedures (referred to in Detailed Procedures for descent clearance in EGKK AD 2.22 of the UK AIP). Where the use of these procedures is not practicable, the aircraft shall maintain as high an altitude as possible. In addition, when descending on initial approach, including in the closing heading, and on intermediate and final approach, thrust reductions should be achieved where possible by maintaining a 'clean' aircraft configuration and by landing with reduced flap, provided that in all the circumstances of the flight this is consistent with safe operation of the aircraft. This is to avoid prolonged periods of level flight and keep aircraft as high as possible for as long as possible.*

\*As a result of the Independent Review of Arrivals, it was recommended (Imm-05) that the CDO monitoring altitude be increased from 6,000ft to 7,000ft as of 1<sup>st</sup> August 2016.

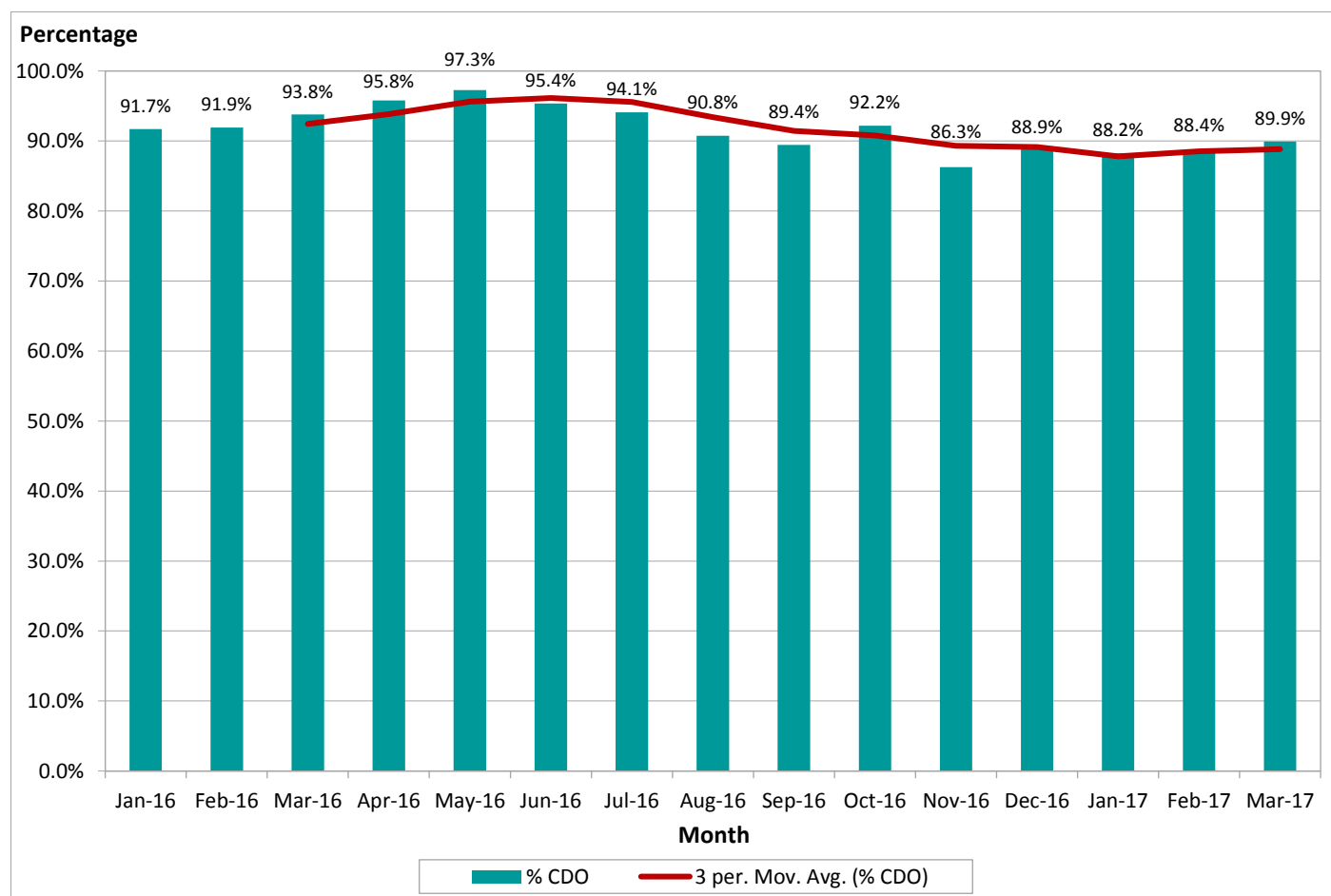


## CORE NIGHT PERIOD (2330-0600)

THE TABLE BELOW ILLUSTRATES THE BREAKDOWN OF THE CDO CORE NIGHT TIME PERIOD

Month	All Arrivals			08 Easterly Arrivals			26 Westerly Arrivals		
	Total	Non CDO	% CDO	Total	Non CDO	% CDO	Total	Non CDO	% CDO
Jan-16	301	25	91.69%	55	0	100.00%	246	25	89.84%
Feb-16	321	26	91.90%	136	10	92.65%	185	16	91.35%
Mar-16	402	25	93.78%	159	11	93.08%	243	14	94.24%
Apr-16	832	35	95.79%	227	3	98.68%	605	32	94.71%
May-16	1204	33	97.26%	764	25	96.73%	440	8	98.18%
Jun-16	1686	78	95.37%	646	25	96.13%	1040	53	94.90%
Jul-16	1915	113	94.10%	118	3	97.46%	1797	110	93.88%
Aug-16	1751	162	90.75%	396	17	95.71%	1355	145	89.30%
Sep-16	1626	172	89.42%	364	23	93.68%	1262	149	88.19%
Oct-16	1141	89	92.20%	700	56	92.43%	441	36	91.84%
Nov-16	240	33	86.25%	102	14	86.27%	138	19	86.23%
Dec-16	506	56	88.93%	116	5	95.69%	390	51	86.92%
Jan-17	391	46	88.24%	150	11	92.67%	241	35	85.48%
Feb-17	370	43	88.38%	121	17	85.95%	249	26	89.56%
Mar-17	447	45	89.93%	125	4	96.80%	322	41	87.27%

THE GRAPH BELOW ILLUSTRATES THE CORE NIGHT TIME CDO COMPLIANCE WITH A TREND LINE

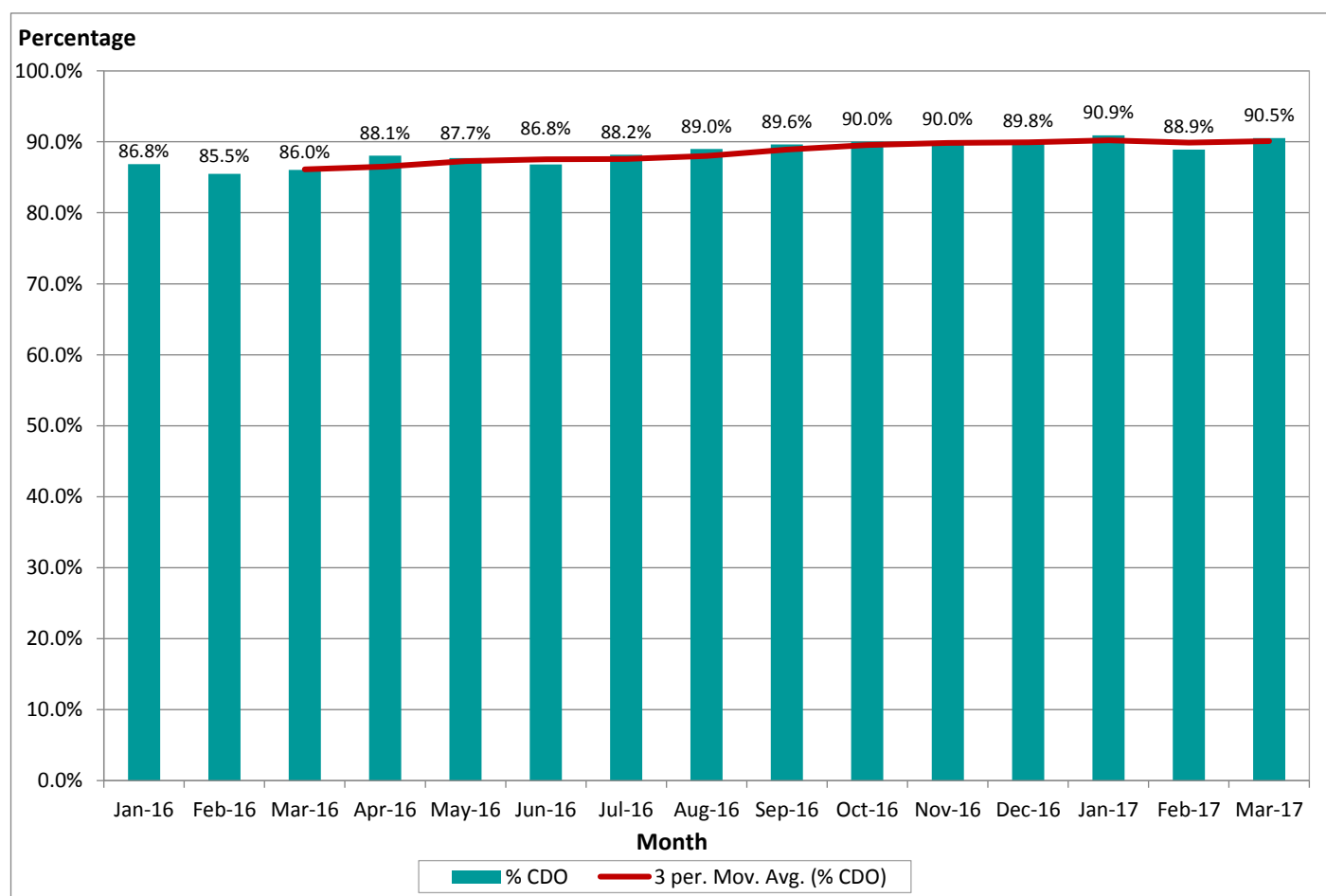


## DAYTIME AND SHOULDER PERIOD CDO ACHIEVEMENT (0600-2330)

THE TABLE BELOW ILLUSTRATES THE BREAKDOWN OF THE CDO DAYTIME AND SHOULDER PERIOD

Month	All Arrivals			08 Easterly Arrivals			26 Westerly Arrivals		
	Total	Non CDO	% CDO	Total	Non CDO	% CDO	Total	Non CDO	% CDO
Jan-16	8951	1178	86.84%	1737	225	87.05%	7214	953	86.79%
Feb-16	9005	1308	85.47%	3070	461	84.98%	5935	947	84.04%
Mar-16	10070	1405	86.05%	4334	588	86.43%	5736	817	85.76%
Apr-16	10359	1237	88.06%	2765	329	88.10%	7594	908	88.04%
May-16	11528	1418	87.70%	6703	866	87.08%	4825	552	88.56%
Jun-16	11130	1466	86.83%	4362	604	86.15%	6768	862	87.26%
Jul-16	11943	1412	88.18%	778	105	86.50%	11165	1307	88.29%
Aug-16	12331	1358	88.99%	2994	313	89.55%	9337	1045	88.81%
Sep-16	11821	1228	89.61%	1804	185	89.75%	10017	1043	89.59%
Oct-16	11554	1155	90.00%	7141	745	89.75%	4413	410	90.71%
Nov-16	9079	912	89.95%	3338	319	90.44%	5741	593	89.67%
Dec-16	9838	1005	89.78%	3447	304	91.18%	6391	701	89.03%
Jan-17	9395	855	90.90%	4085	317	92.24%	5310	538	89.87%
Feb-17	9305	1031	88.92%	3017	342	88.66%	6288	689	89.04%
Mar-17	10587	1004	90.52%	2157	225	89.57%	8430	779	90.76%

THE GRAPH BELOW ILLUSTRATES THE DAY & SHOULDER CDO COMPLIANCE WITH A TREND LINE

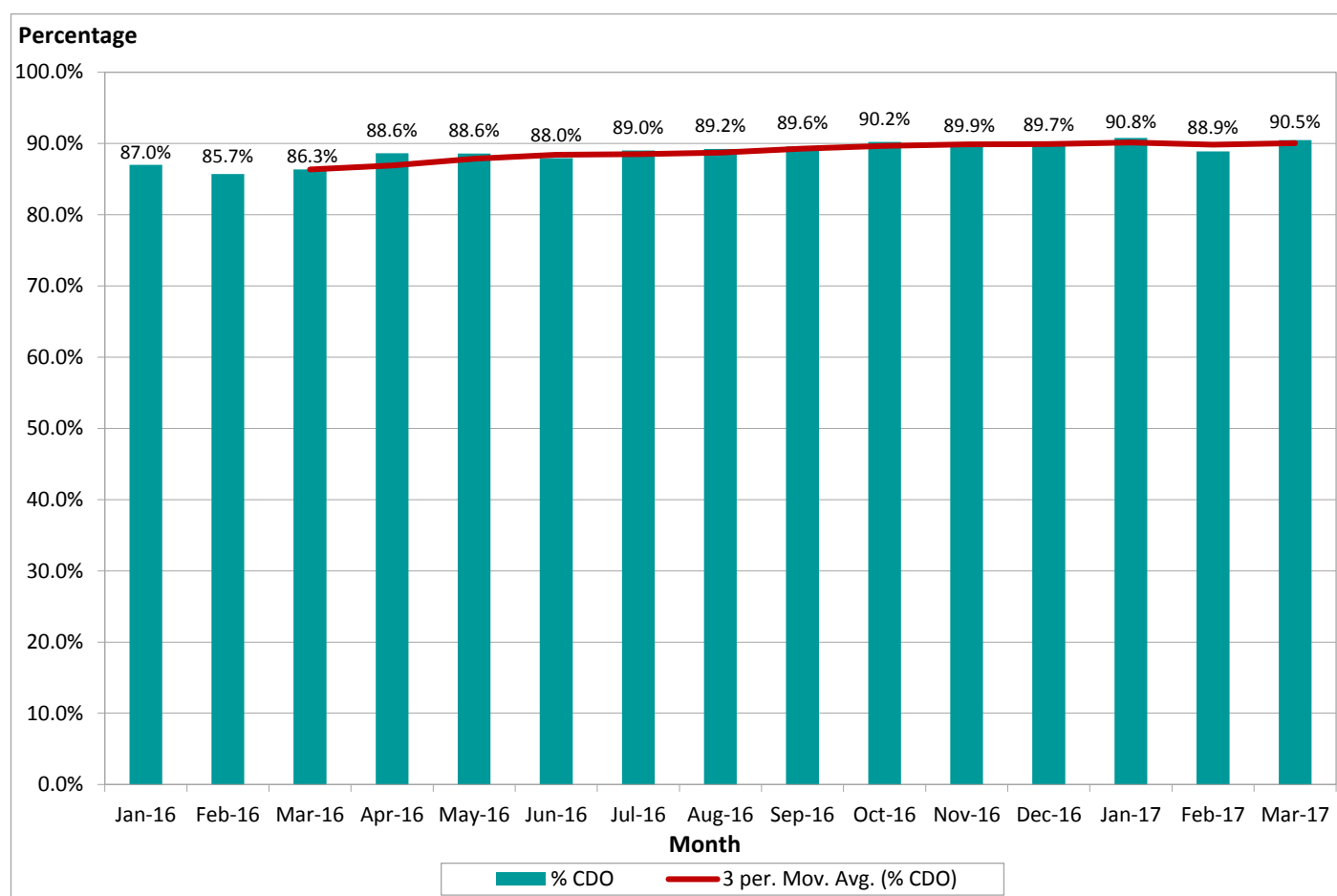


## 24 HOUR PERIOD CDO ACHIEVEMENT

THE TABLE BELOW ILLUSTRATES THE BREAKDOWN OF THE CDO 24 HOUR TIME PERIOD

Month	All Arrivals			08 Easterly Arrivals			26 Westerly Arrivals		
	Total	Non CDO	% CDO	Total	Non CDO	% CDO	Total	Non CDO	% CDO
Jan-16	9252	1203	87.00%	1792	225	87.44%	7460	978	86.89%
Feb-16	9326	1334	85.70%	3206	471	85.31%	6120	863	85.90%
Mar-16	10472	1430	86.34%	4493	599	86.67%	5979	831	86.10%
Apr-16	11191	1272	88.63%	2992	332	88.90%	8199	940	88.54%
May-16	12732	1451	88.60%	7467	891	88.07%	5265	560	89.36%
Jun-16	12816	1544	87.95%	5008	629	87.44%	7808	915	88.28%
Jul-16	13858	1525	89.00%	896	108	87.95%	12962	1417	89.07%
Aug-16	14082	1520	89.21%	3390	330	90.27%	10692	1190	88.87%
Sep-16	13447	1400	89.59%	2168	208	90.41%	11279	1192	89.43%
Oct-16	12695	1244	90.20%	7841	798	89.82%	4854	446	90.81%
Nov-16	9319	945	89.86%	3440	333	90.32%	5879	612	89.59%
Dec-16	10344	1061	89.74%	3563	309	91.33%	6781	752	88.91%
Jan-17	9786	901	90.79%	4235	328	92.26%	5551	573	89.68%
Feb-17	9675	1074	88.90%	3138	359	88.56%	6537	715	89.06%
Mar-17	11034	1049	90.49%	2282	229	89.96%	8752	820	90.63%

THE GRAPH BELOW ILLUSTRATES THE 24 HOUR PERIOD CDO COMPLIANCE WITH A TREND LINE



# Arrivals – Over Congested Areas

## OVERFLIGHT OF CONGESTED AREAS

**AD 2-EGKK1-12 (11)** *Before landing at the aerodrome the aircraft shall maintain as high an altitude as practicable and shall not fly over the congested areas of Crawley, East Grinstead, Horley and Horsham at an altitude of less than 3,000ft (Gatwick QNH) nor over the congested area of Lingfield at an altitude of less than 2,000ft (Gatwick QNH).*

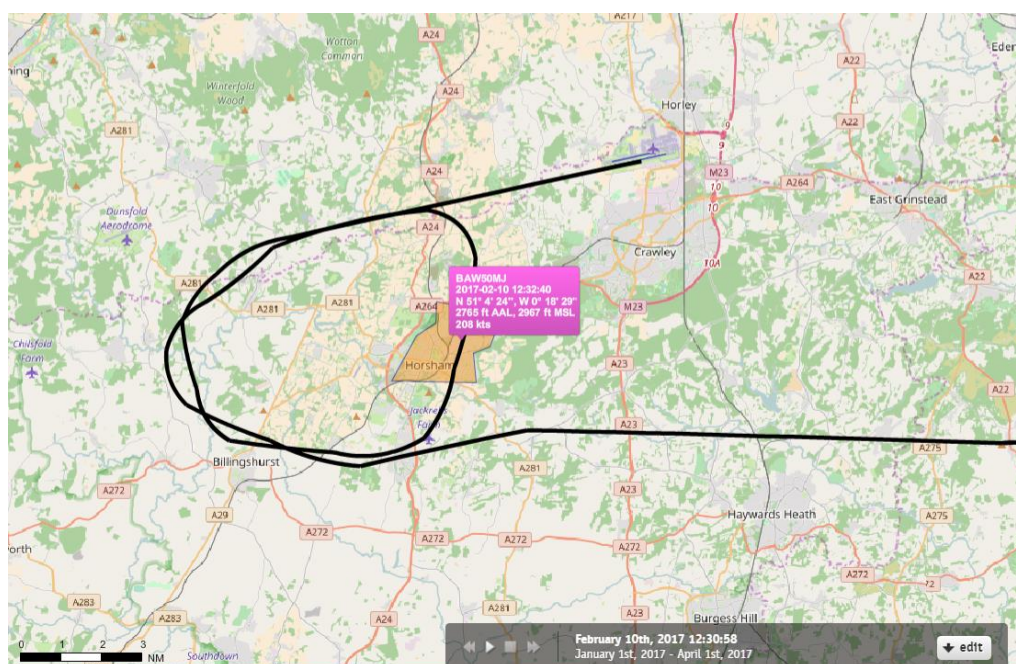
N.B. 2,000ft – (202ft (airfield elevation) + 100ft (radar/ILS tolerance)) = 1,698ft on Airports Noise & Aircraft Tracking System

**Comment:** There were no arriving flights which passed over the towns of Crawley and Horley below the required altitude for this period. The map overleaf illustrates these analysis

zones. A polygon located over the urban area at about 7 nautical miles (nm) from touchdown is normally used to analyse tracks over the Lingfield area.

During the analysis period, there were a total of 50 arrivals that passed through this area. Aircraft tracks were analysed for January, February and March 2017 and with the exception of a small number of go-arounds, there were no flights that passed over Lingfield below the altitude of 1,698ft (2,000ft Gatwick QNH). There was a single arrival that passed over Horsham below the required altitude. This was a British Airways Airbus A319 which passed over Horsham at 2,967ft AMSL. This flight is was investigated with NATS Swanwick and it was confirmed as a missed approach. There were no flights that passed over East Grinstead below the required altitude.

THE MAP BELOW SHOWS THE BRITISH AIRWAYS AIRCRAFT THAT PASSED OVER HORSHAM AT 2,967FT AMSL





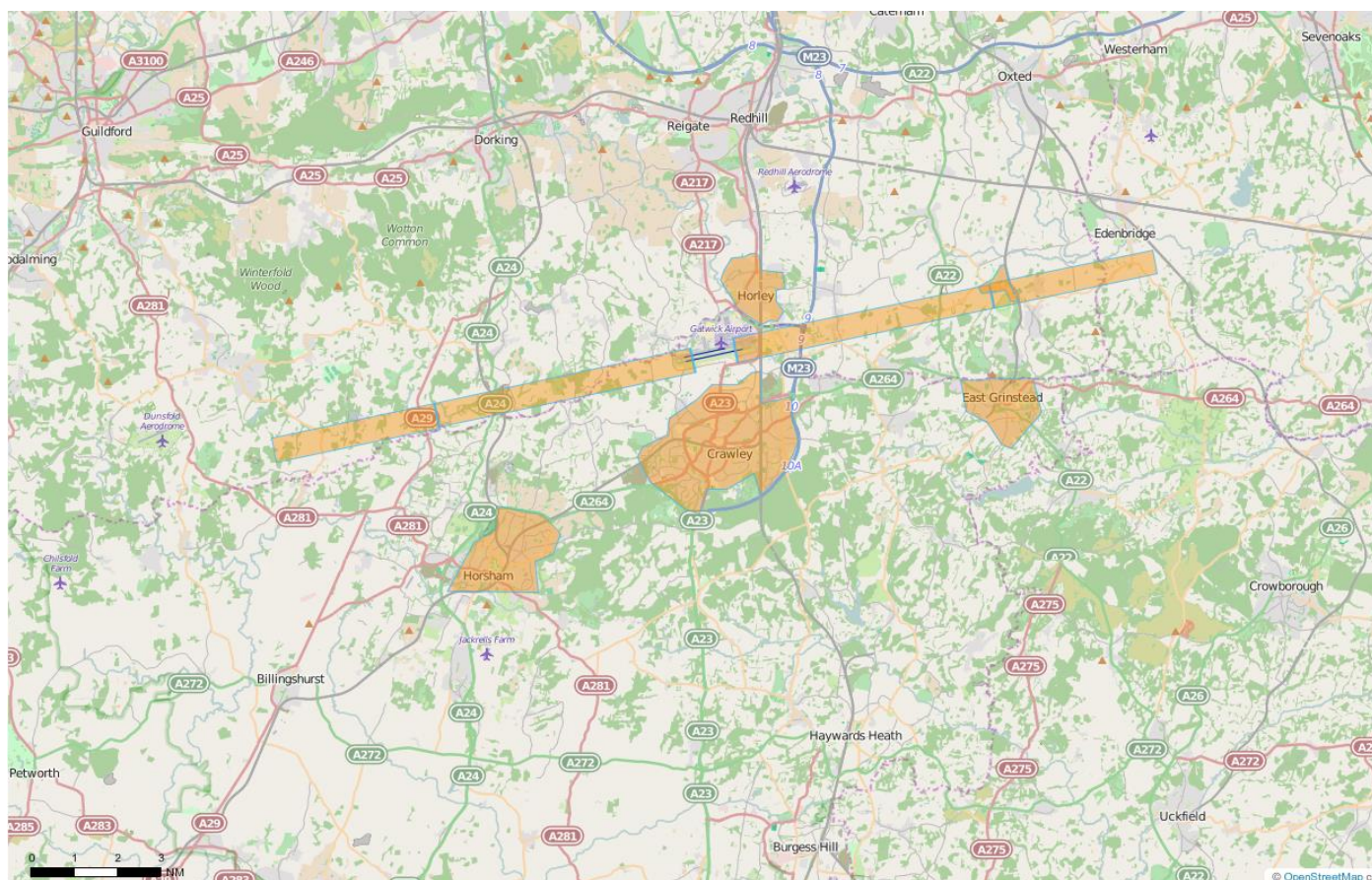
## A) DAY TIME JOINING HEIGHT (0700-2300)

**EGKK AD 2.21 (13(a))** *Where the aircraft is using the ILS in IMC or VMC it shall not descend below 2,000ft (Gatwick QNH) before intercepting the glidepath, nor thereafter fly below the glidepath. This is aimed at keeping aircraft as high as possible for as long as possible.*

The map below shows the congested urban areas, a series of gates running parallel to the extended runway centreline for around 6nm east and west of the airport, used to monitor low arrivals, joining the ILS below 2,000ft.

There were 30,650 arrivals recorded by the Casper NTK system between 1<sup>st</sup> January and 31<sup>st</sup> March 2017. Of these, the number of arrivals that were operating below an altitude of 2,000ft (equivalent to a height in the NTK system of 1,798ft) through one or more of the analysis gates was 94 (0.31%). In addition, there were 13 go-arounds that were not included in this figure. This figure is a sum of both easterly and westerly arrivals joining the ILS.

THE FOLLOWING MAP ILLUSTRATES THE ANALYSIS ZONES USED FOR LATE AND LOW ARRIVALS FOR BOTH ENDS OF THE AIRFIELD AND THE CONGESTED URBAN AREAS



## B) NIGHT TIME JOINING HEIGHT AND DISTANCE (2300-0700)

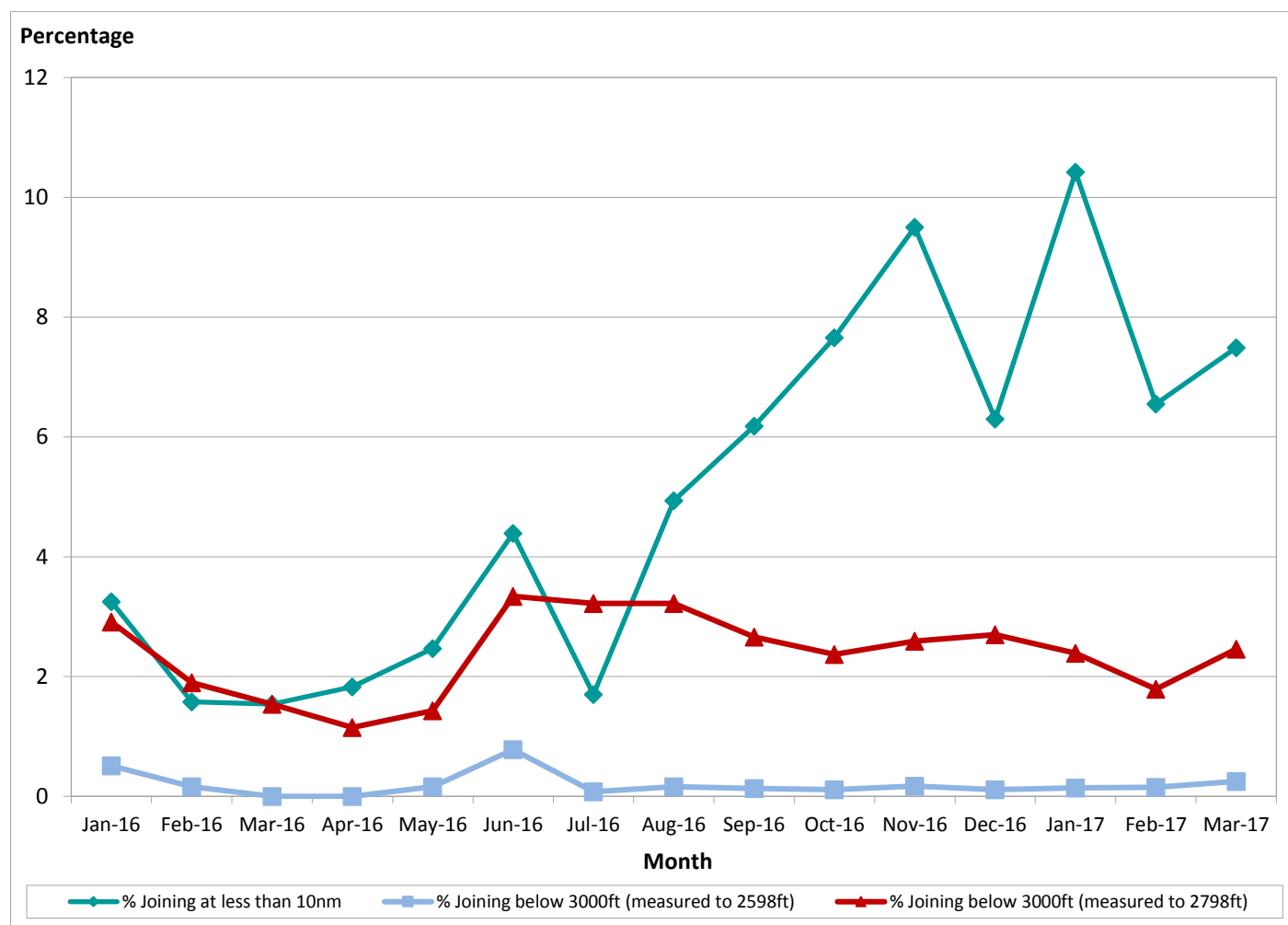
**EGKK AD 2.21 (14)** Aircraft which land at Gatwick Airport - London between the hours of 2300 (local) and 0700 (local), whether or not making use of the ILS localizer and irrespective of weight or type of approach, shall not join the centre-line:

a) below 3000ft, or

b) closer than 10 nm from touchdown.

This aims to keep aircraft higher for longer and avoid overflying areas en route to the ILS below 3,000ft.

THE GRAPH BELOW ILLUSTRATES THE NIGHT TIME JOINING POINTS OVER THE 15 MONTH PERIOD





# Go-Around Statistics 2004 - 2017

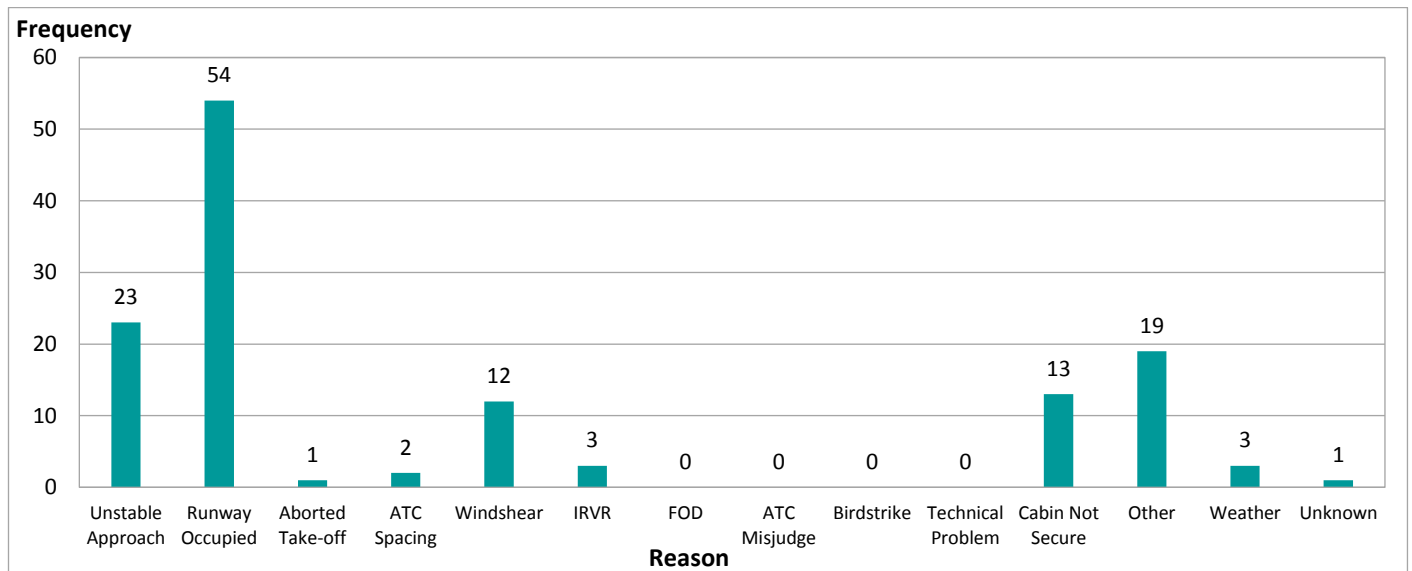
A go-around is a procedure adopted when an arriving aircraft on final approach aborts landing by applying take-off power and climbing away from the airport. It is a set procedure to be followed by the flight crew in the event of an aircraft being unable to land. The procedure is published so that Air Traffic Control (ATC) and the pilots can anticipate where the aircraft will go following the decision to go-around.

The standard missed approach procedure applicable to Gatwick Airport requires aircraft that are aborting their approach to climb to 3,000ft straight ahead, then, on passing 2,000ft or 1DME (distance measuring equipment) (whichever is later), turn heading 180. This may or may not result in aircraft overflying the town of Crawley or outlying areas.

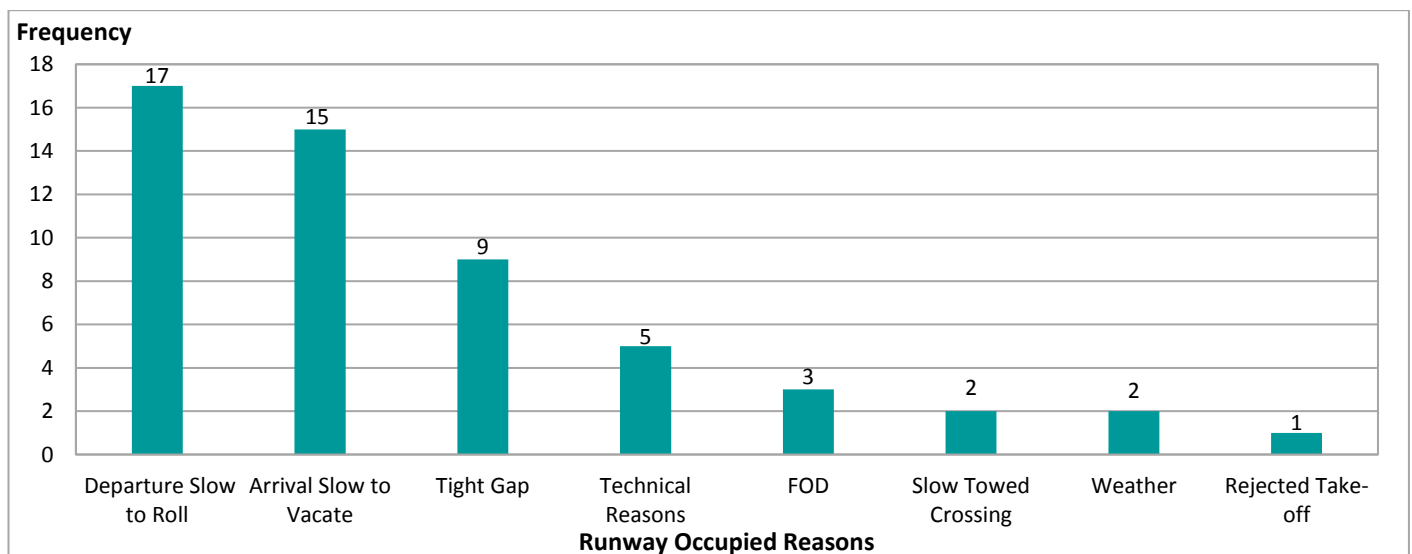
The number and reasons for go-arounds are routinely discussed at FLOPSC meetings and Pilot Forums. All parties are focussed on minimising the number of occasions when a go-around is required, but expect some to occur given the fact that Gatwick is a busy single runway airport.

It should be stated that there are well established standard procedures which both pilots and controllers are trained in and are familiar with. Gatwick Airport Limited, as the airport operator, actively encourages airlines operating at the airport to fly to the best possible environmental standards; however, safety must and always will be the number one priority.

## NATS AND ANS CURRENTLY RECORD GO-AROUNDS UNDER ONE OF THE FOLLOWING CAUSAL FACTORS (JANUARY – MARCH 2017)



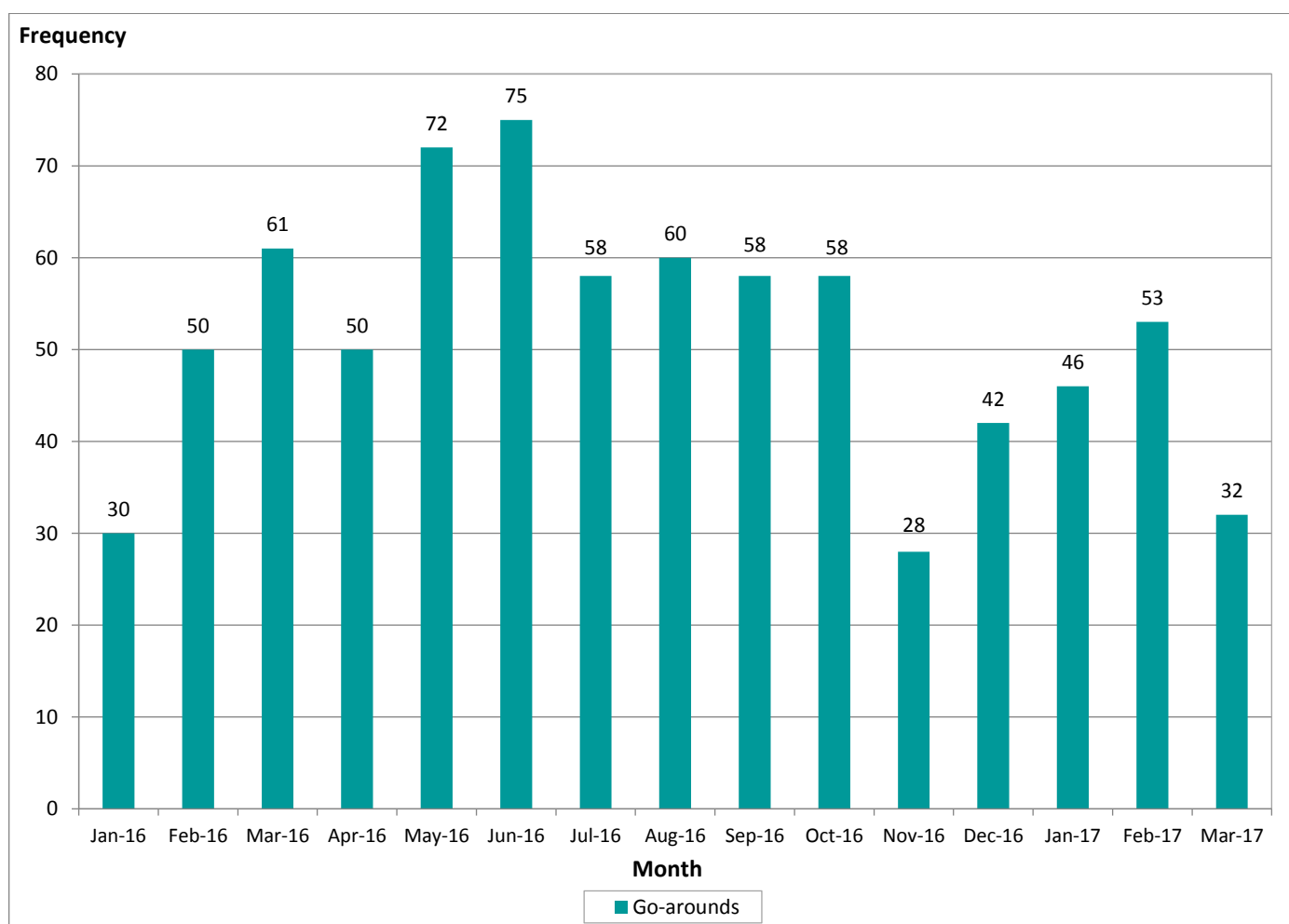
## THE REASONS GIVEN BY ANS FOR GO-AROUNDS DUE TO RUNWAY OCCUPANCY DURING THE THREE MONTH PERIOD



THE TABLE BELOW ILLUSTRATES GO-AROUND STATISTICS 2004 – 2017

Year	Total	Total Arrivals	% of Arrivals
2004	344	124665	0.28
2005	450	129509	0.35
2006	405	130954	0.31
2007	434	133271	0.33
2008	359	131858	0.27
2009	455	125861	0.36
2010	364	120263	0.30
2011	386	125541	0.31
2012	520	123408	0.42
2013	473	125290	0.38
2014	512	129966	0.39
2015	520	133869	0.39
2016	642	139998	0.46
2017	131	30645	0.43

THE GRAPH BELOW ILLUSTRATES TOTAL NUMBER OF GO-AROUNDS PER MONTH (JANUARY – MARCH 2017)



# Night Flights

The Secretary of State, in exercise of his powers under Section 78 of the Civil Aviation Act 1982, has imposed restrictions at Gatwick Airport on aircraft operating at night. These restrictions are in place to limit and mitigate noise disturbance from aircraft operating at night and to prohibit aircraft of specified descriptions from operating, also to limit the number of occasions on which other aircraft may take-off or land.

The night flying restrictions are divided into summer and winter seasons which coincide with the start and end of British Summer Time. They consist of a movement limit and a quota count system. The quota count (QC) means that points are allocated to different aircraft types according to how noisy they are. The noisier the aircraft type, the higher the points allocated. This provides an incentive for airlines to use quieter aircraft types. Aircraft are certified by the International Civil Aviation Organisation (ICAO) according to the noise they produce and are classified separately for both take-off and landing.

For the purposes of night flying operations, the night quota period is defined as the period between 2330-0600 (local time). In addition, there are two further shoulder periods of 2300–2330 and 0600–0700 (local time), where other restrictions apply to the scheduling and operation of aircraft of specified descriptions. The Department for Transport (DfT) has confirmed that the current night flight restrictions will remain in force until October 2017.

Overleaf is an end-of-season report for Winter 2016/17 which ended at 01:00 on the 26<sup>th</sup> March 2017. The total number of movements available for the Winter season was 3250.

## DISPENSATIONS

In accordance with the DfT guidelines, there may be times when an aircraft can be disregarded from the night flight restrictions. As a general rule these are unforeseen circumstances outside the control of either the Airport or airline resulting in the unscheduled use of a night flight slot. Examples of such instances include humanitarian relief flights, emergencies, VIP visits, delays as a result of disruption leading to passenger hardship, Air Traffic Control disruption or airspace closure caused by a volcanic ash cloud. The rules related to dispensations are strictly adhered to and all instances are reported to the DfT within 7 days.

There have been a total of 236 dispensations granted during the Winter 2016/17 period:

- 175 dispensations were granted due to disruption caused by low visibility conditions.
- 31 dispensations were granted due to a French Air Traffic Control strike between 6<sup>th</sup> and 10<sup>th</sup> March 2017.
- 30 dispensations were granted due to adverse weather conditions on the 12<sup>th</sup> December 2016.

## QC4, QC8 and QC16 MOVEMENTS

There have been no QC8 or QC16 movements during either the 'night quota' or 'shoulder periods'. These QC values are not to be scheduled to take off or land between 2300 and 0700. There were 22 unscheduled QC4 movements during the 'night quota period'. QC4 types may not be scheduled to take off or land during this period.

## RESTRICTIONS

Winter	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17
Movements Limits	3250	3250	3250	3250	3250	3250	3250
Quota Points	2060	2000	2000	2000	2000	2000	2000

Summer	2010	2011	2012	2013	2014	2015	2016/17
Movements Limits	12000	11200	11200	11200	11200	11200	11200
Quota Points	6400	6300	6200	6200	6200	6200	6200

## London Gatwick

### AIRPORT MOVEMENTS and QUOTA SUMMARY to WEEK 22 (30 OCTOBER 2016 to 25 MARCH 2017 inc.)

Season Quota Points Limit	2000	Season Movement Limit	3250
Total Quota Points Allowed	2000	Total Movements Allowed	3250

Wk No.	Week Ending Date	QC0.25 No.	QC0.5 No.	QC1 No.	QC2 No.	QC4 No.	QC8 No.	QC16 No.	Total Quota Value	Mvmnts Against Limit	Exmpt Types	Not Cont'd Delays	Not Cont'd Gov't	Not Cont'd Emerg	Total Arrival No.	Total Arrivals %	Total Deps No.	Total Deps %	Total Runway Mvmnts
1	05/11/2016	73	71	19	6	1	0	0	88.75	170	2	0	0	0	151	87.8	21	12.2	172
2	12/11/2016	17	32	13	3	0	0	0	39.25	65	1	0	0	0	58	87.9	8	12.1	66
3	19/11/2016	18	34	15	0	0	0	0	36.50	67	0	0	0	0	58	86.6	9	13.4	67
4	26/11/2016	17	25	14	0	0	0	0	30.75	56	2	0	0	0	50	86.2	8	13.8	58
5	03/12/2016	14	28	13	1	0	0	0	32.50	56	1	0	0	0	50	87.7	7	12.3	57
6	10/12/2016	16	35	17	2	2	0	0	50.50	72	0	19	0	0	81	89.0	10	11.0	91
7	17/12/2016	28	33	21	3	1	0	0	54.50	86	6	3	0	0	77	81.1	18	18.9	95
8	24/12/2016	62	67	27	5	4	0	0	102.00	165	0	30	0	0	164	84.1	31	15.9	195
9	31/12/2016	29	46	17	2	2	0	0	59.25	96	1	110	0	0	167	80.7	40	19.3	207
10	07/01/2017	40	59	17	9	3	0	0	86.50	128	0	0	0	0	101	78.9	27	21.1	128
11	14/01/2017	17	55	18	0	1	0	0	53.75	91	1	30	0	0	106	86.9	16	13.1	122
12	21/01/2017	17	41	15	2	1	0	0	47.75	76	0	0	0	0	66	86.8	10	13.2	76
13	28/01/2017	22	37	18	4	1	0	0	54.00	82	0	7	0	0	69	77.5	20	22.5	89
14	04/02/2017	27	41	12	4	2	0	0	55.25	86	4	6	0	0	86	89.6	10	10.4	96
15	11/02/2017	36	42	14	2	0	0	0	48.00	94	1	0	0	0	86	90.5	9	9.5	95
16	18/02/2017	42	59	15	4	1	0	0	67.00	121	0	0	0	0	105	86.8	16	13.2	121
17	25/02/2017	47	48	25	3	1	0	0	70.75	124	2	0	0	0	103	81.7	23	18.3	126
18	04/03/2017	35	44	19	4	1	0	0	61.75	103	2	0	0	0	87	82.9	18	17.1	105
19	11/03/2017	37	55	16	3	1	0	0	62.75	112	2	31	0	0	129	89.0	16	11.0	145
20	18/03/2017	26	44	16	2	0	0	0	48.50	88	0	0	0	0	79	89.8	9	10.2	88
21	25/03/2017	29	36	15	4	0	0	0	48.25	84	0	0	0	0	72	85.7	12	14.3	84
TOTALS		649	932	356	63	22	0	0	1198.25	2022	25	236	0	0	1945	85.2	338	14.8	2283

Quota Points Available	801.75	Movements Available	1228
Quota % Points Used	59.9	Movements % Used	62.2

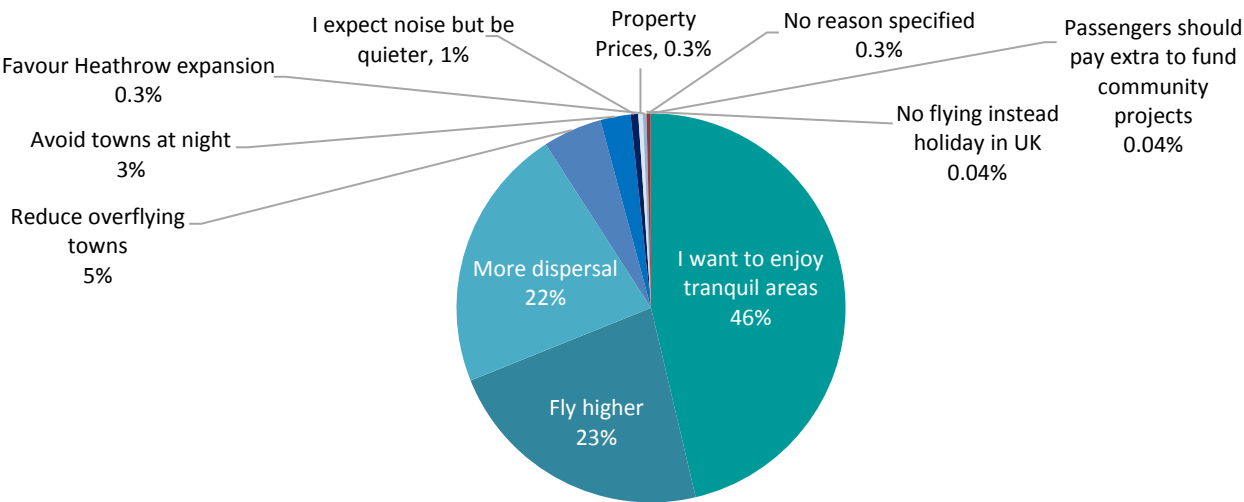
Note 1 Not Cont'd Delays	Delays likely to lead to serious congestion and delays resulting from widespread disruption of Air Traffic.
Note 2 Not Cont'd Gov't	Exemptions granted by Gov't (VIP Passengers, Emergency Relief).
Note 3 Not Cont'd Emerg	Emergency Take-offs and Landing

# Noise Complaints

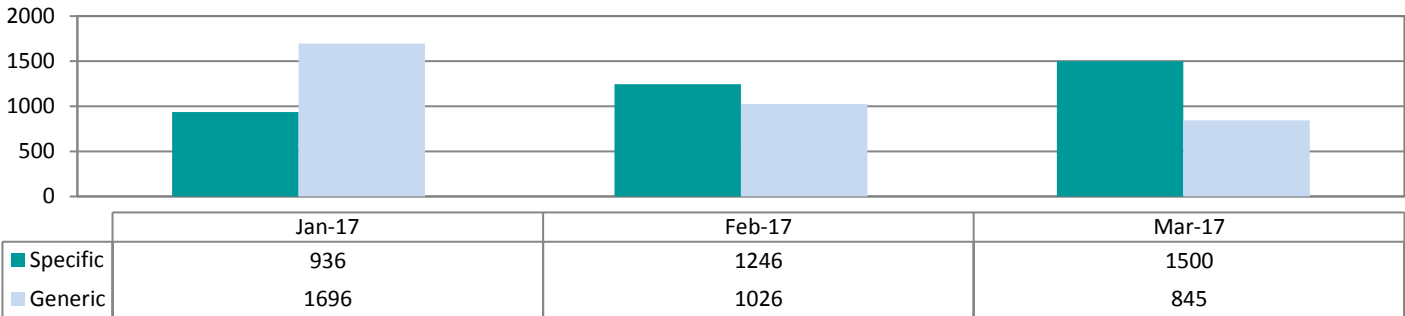
It is important that we understand the issues of noise disturbance from individuals and communities who live around the airport. By studying the complaints we receive and by communicating with the affected towns and villages surrounding the Airport, we believe that this gives us a greater understanding of the issues related to noise.

This means that we can work together to improve the noise climate around the Airport. The complaints we have received are either about specific aircraft events that cause disturbance or generic complaints about airport operations in general. The following charts provide an analysis of the reasons for the numbers of complaints.

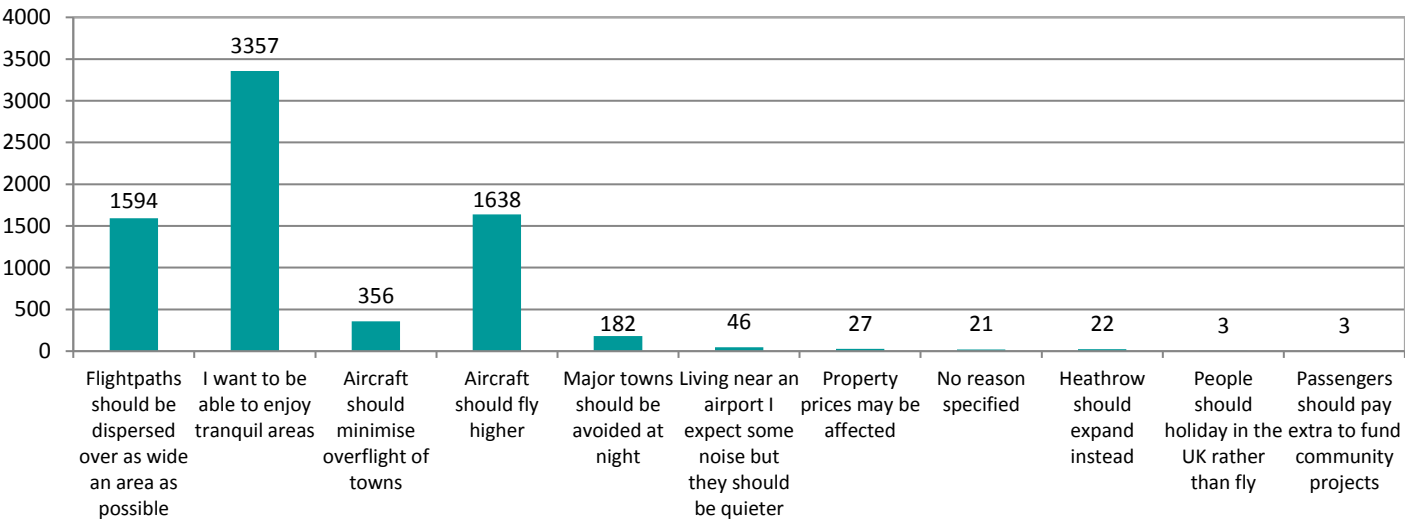
REASON FOR COMPLAINTS BY PERCENTAGE



COMPLAINTS RECORDED BY MONTH



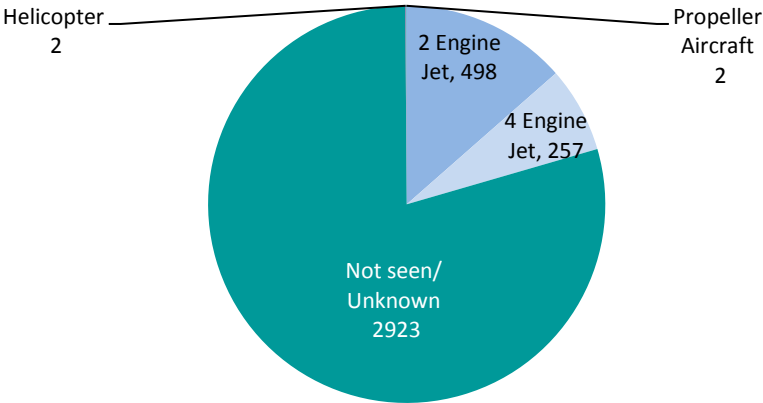
REASON FOR COMPLAINTS BY NUMBER



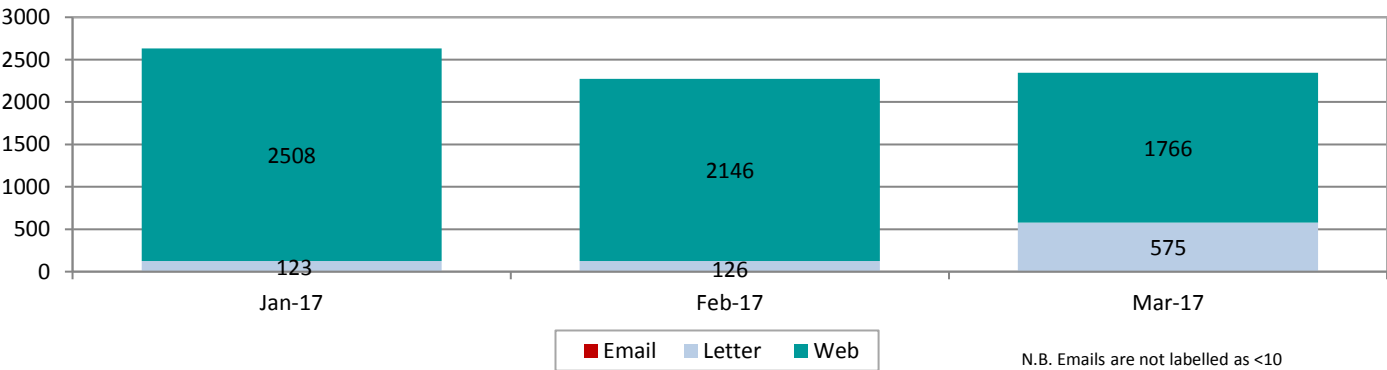
Noise is very subjective and can affect people in different ways. Some people can tolerate a certain noise level whilst it can cause disturbance to others. As well as identifying the issues of noise, it is important to understand the location of each individual complaint.

The charts below provide further analysis of the location of the complainants, the type of aircraft that they have been affected by and the methods of contacting us regarding aircraft noise complaints.

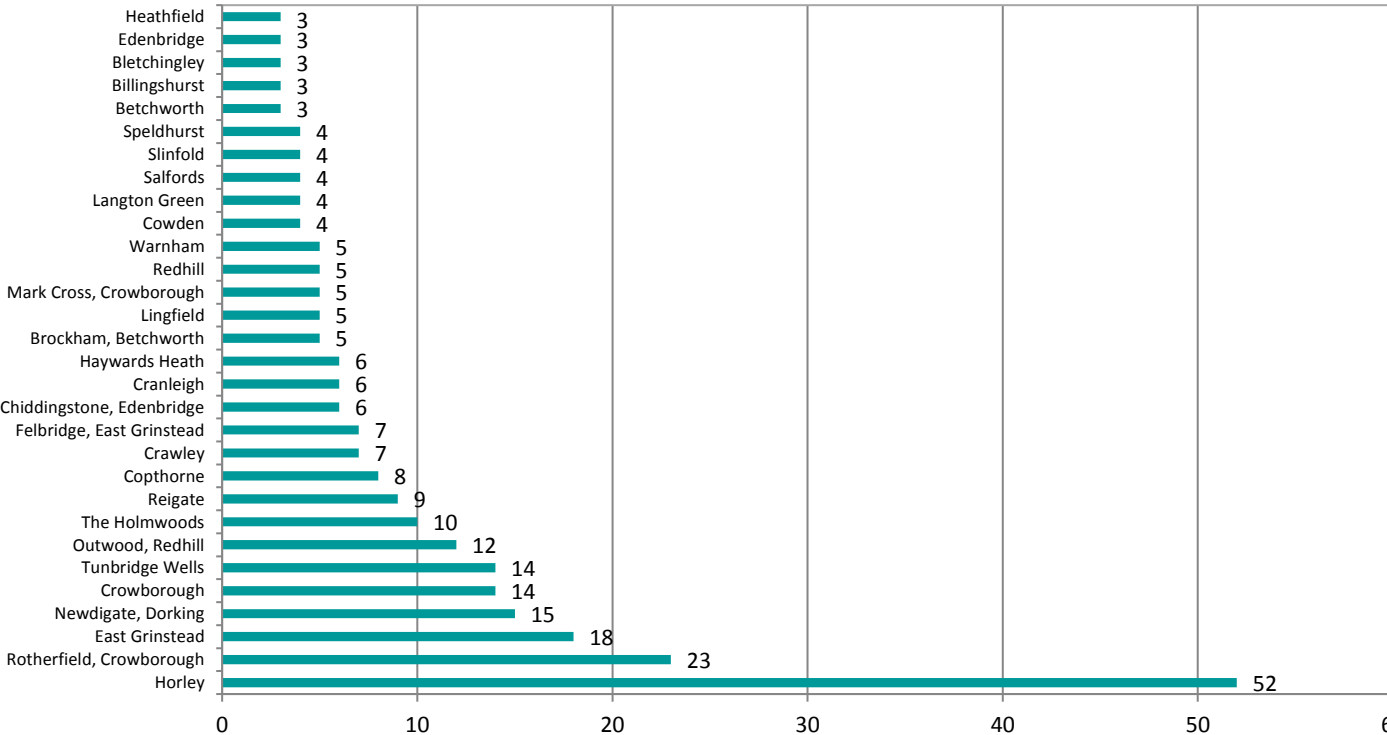
### CATEGORIES OF AIRCRAFT TYPES FROM SPECIFIC COMPLAINTS



### METHOD OF COMPLAINT

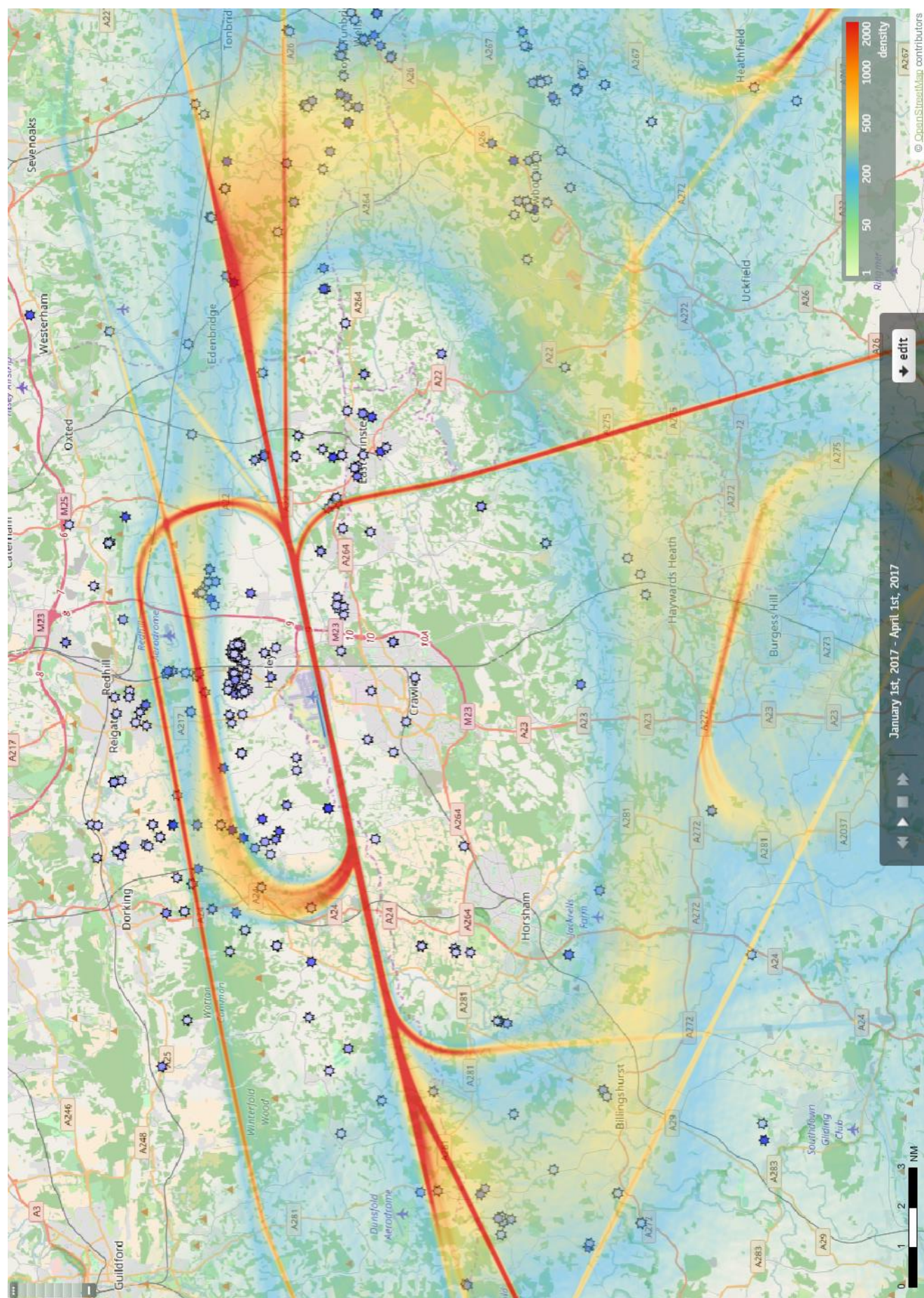


### NUMBER OF INDIVIDUAL COMPLAINANTS BY TOWN/VILLAGE



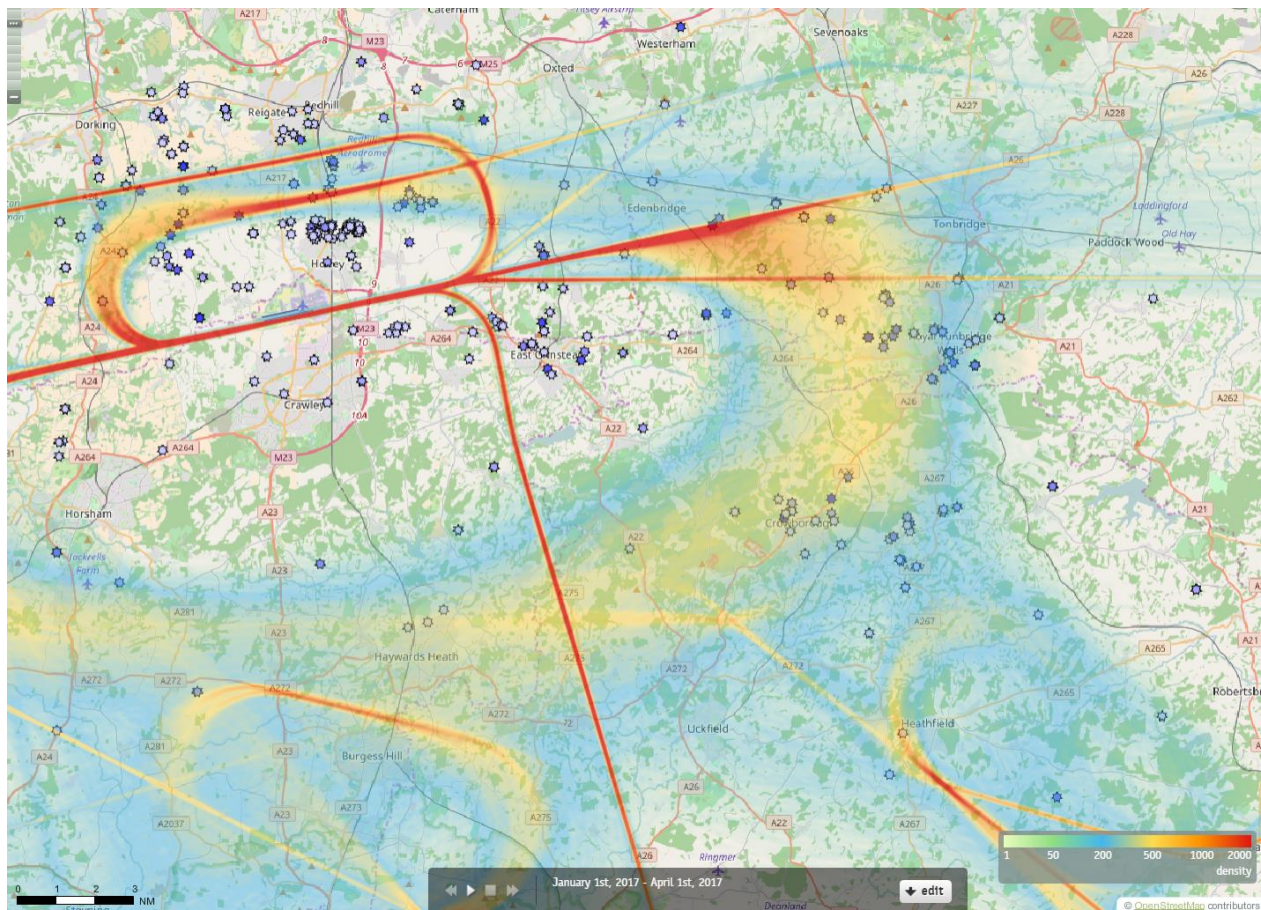


THE MAP BELOW ILLUSTRATES THE LOCATION OF NOISE COMPLAINTS RECEIVED BETWEEN JANUARY – MARCH 2017

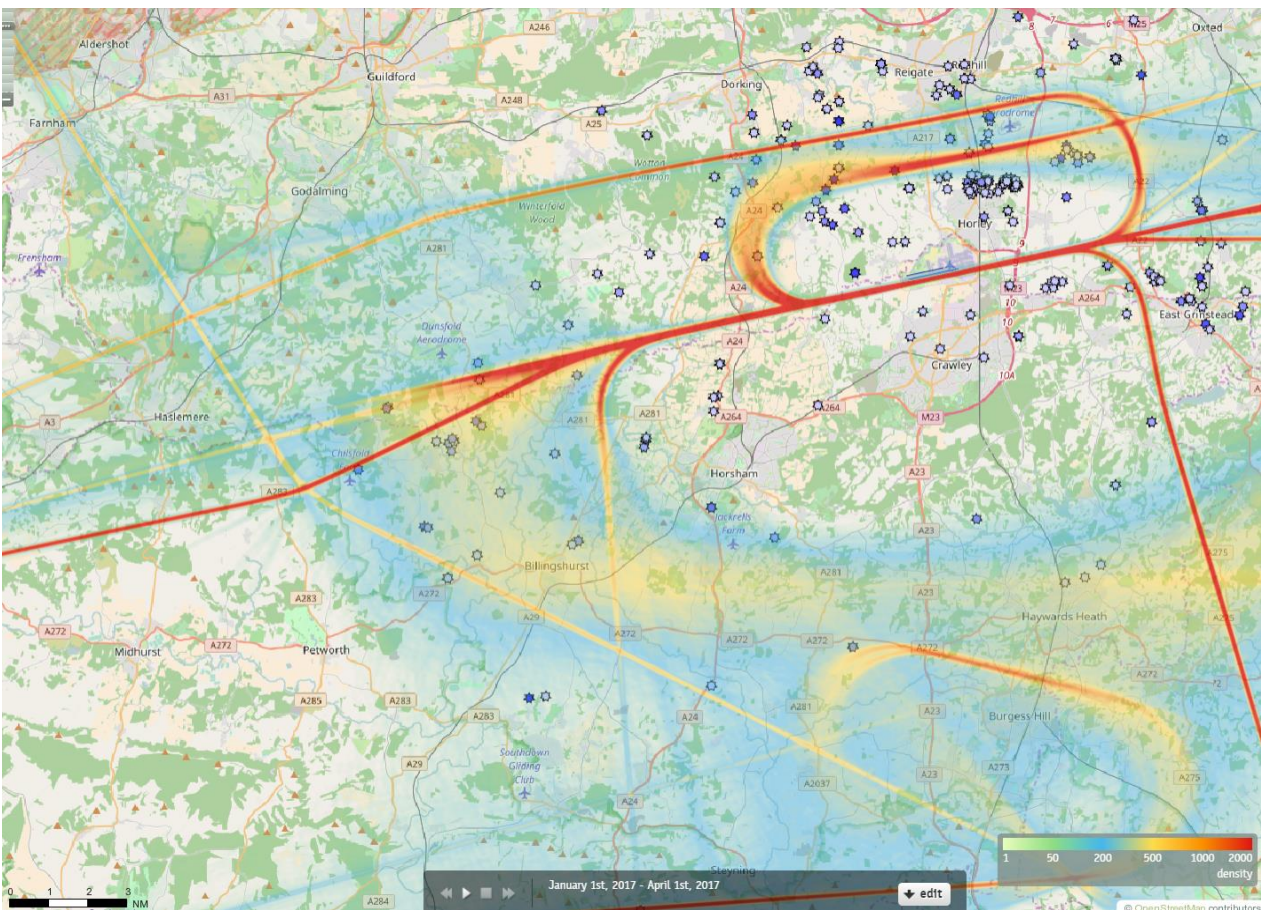




THE MAP BELOW ILLUSTRATES NOISE COMPLAINTS RECEIVED TO THE EAST (JANUARY – MARCH 2017)



THE MAP BELOW ILLUSTRATES NOISE COMPLAINTS RECEIVED TO THE WEST (JANUARY – MARCH 2017)





# Ground Noise Complaints

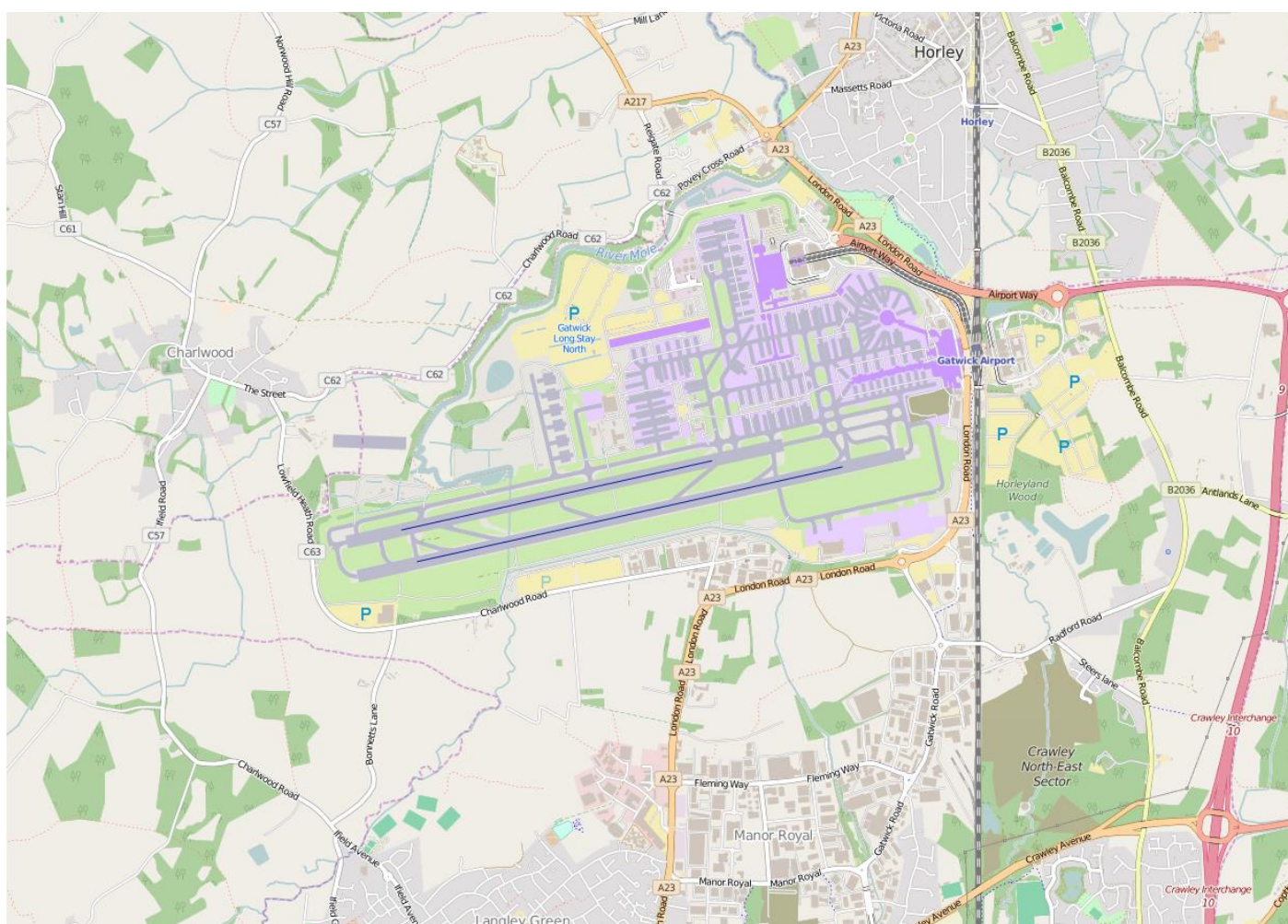
We occasionally receive complaints about disturbance from noise from within the boundary of the airfield. These can be caused by the normal operation of aircraft moving about the airfield, taking off and landing. Additional sources of noise disturbance can be the use of Auxiliary Power Units (APU) by aircraft on stand or the testing of engines following maintenance or repair (engine runs).

Strict regulations exist to minimise this disturbance, which includes a ban on engine running during the night. Details of any ground noise complaints are outlined below.

## Comment:

There were no recorded ground noise complaints during the three month period.

THE MAP BELOW ILLUSTRATES THE GATWICK AIRPORT AIRFIELD



For more information visit us at: <http://www.gatwickairport.com/aircraftnoiseandairspace>

# Glossary

**ACoP** – Arrivals Code of Practice

**AIP** – Aeronautical Information Publication

**AMSL** – Above Mean Sea Level

**ANS** – Air Navigation Solutions

**APU** – Auxiliary Power Unit - A small auxiliary engine on an aircraft used to provide electrical power when the main engines are shut down.

**ATC** – Air Traffic Control

**CAA** – Civil Aviation Authority

**CDO** – Continuous Descent Operations - A noise abatement procedure for arrivals used to avoid periods of level flight, reducing noise and emissions.

**dBA** – A-weighted decibels that takes closest account of human hearing. It is used to measure aircraft noise.

**DfT** – Department for Transport

**DME** – Distance measuring equipment

**EGKK** or **LGW** – London Gatwick Airport

**FLOPSC** – Flight Operations Performance and Safety Committee

**FPT** – Flight Performance Team

**Go-Around** – A go-around is an aborted landing of an aircraft which is on approach to the runway.

**ICAO** – International Civil Aviation Organisation

**ILS** – Instrument Landing System

**IMC** – Instrument Meteorological Conditions

**KPI** – Key Performance Indicators

**Lmax** – Maximum noise level

**NATS** – National Air Traffic Services

**nm** – Nautical Miles

**NPR** – Noise Preferential Route

**NTK** – Noise and Track Keeping monitoring system using Casper.

**P-RNAV** – Precision Route Navigation

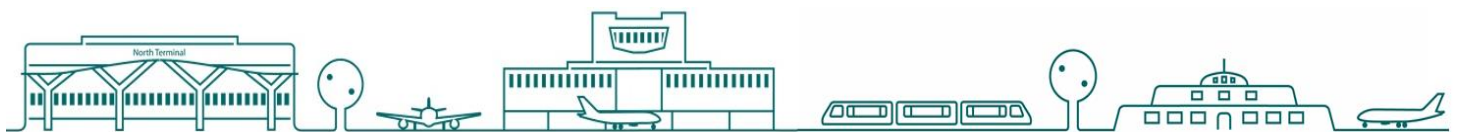
**QC** – Quota Count

**QNH** – The barometric pressure at sea level (QFE is the barometric pressure at the Airport).

**SID** – Standard Instrument Departure - A route out of UK airspace assigned to departing aircraft with an NPR in the first section.

**Vectoring** – Air Traffic Control procedure turning a departure off an NPR onto a more direct heading.

**VMC** – Visual Meteorological Conditions



YOUR LONDON AIRPORT  
*Gatwick*

# Gatwick Airport Flight Performance Report

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This report covers the period  
(1st April – 30th June 2017)



YOUR LONDON AIRPORT  
*Gatwick*

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# Introduction

## ABOUT THIS REPORT

This report is produced by the Gatwick Flight Performance Team (FPT). This team is responsible for recording, investigating and responding to aircraft noise enquiries as well as monitoring airline compliance to noise mitigation measures as detailed in the UK Aeronautical Information Publication (AIP). This department also actively engages with the airlines to improve their adherence to the above noise mitigation measures and in addition manages the night-time restrictions on flying at Gatwick.

This report contains detailed data on aircraft activity at Gatwick including the adherence to the noise mitigation measures detailed in the UK AIP, a report on night flying during the period, and an analysis of noise complaints received during the period.

## KEY MONITORING INDICATORS – 1<sup>st</sup> APRIL – 30<sup>th</sup> JUNE 2017

Parameter		12 month performance averages <sup>1</sup>			
		Year to date (2017)	Previous year (2016)	2011	2006
Track keeping performance (% on track)	▲	98.19% <sup>2</sup>	99.38%	97.47%	98.17% <sup>3</sup>
24hr CDO (% achievement) <sup>4</sup>	▼	89.93%	88.08%	90.49%	80.79%
Day/Shoulder CDO (% achievement)	▼	89.84%	87.40%	90.19%	79.9%
Core night CDO (% achievement)	▼	91.00%	95.24%	93.96%	89.6%
1,000ft Infringements (No.)	▼	0	0	3	11
1,000ft Infringements (No. below 900ft)	▼	0	0	1	6
Departure Noise Infringements (Day)	-	0	0	0	10
Departure Noise Infringements (Night/Shoulder)	▼	2	0	4	2
Individual complainants	▲	1937	1840	343	587
Total noise complaints received <sup>5</sup>	▲	25467	14416	2673	4791
Enquiry response performance target is 95% within 8 days (April to June 2017)	▼	82.63%	80.93%	KPI 95%	
West/East Runway Split (%)	-	69/31	66/34	67/33	68/32

<sup>1</sup> The colour indicates the most recent 12 month performance compared to 2011, with green showing improvement and red a decline in performance.

<sup>2</sup> Track keeping statistics measurement changed on the 26<sup>th</sup> May 2016 due to the Route 4 amendment, all SID's are now included in the total figure.

<sup>3</sup> This figure did not include deviations from prop types or those due to weather.

<sup>4</sup> As a result of the Independent Review of Arrivals, it was recommended (Imm-05) that the CDO monitoring altitude be increased from 6,000ft to 7,000ft as of 1<sup>st</sup> August 2016.

<sup>5</sup> Complaints are recorded in line with our published complaints handling policy. The revised policy, published in November 2014, advised that only one complaint per day is recorded per individual. On the 29<sup>th</sup> September 2016, there was a further revision to our complaints handling policy which now allows individuals to make multiple complaints per day and these will each be recorded.

# Executive Summary

## Performance Headlines

### AIRPORT OPERATIONS

Between 1<sup>st</sup> April and 30<sup>th</sup> June 2017, there were a total of 76,827 fixed wing aircraft movements at Gatwick, an increase in traffic of about 4.2% compared to the same period in 2016. The direction of operation is determined by wind direction and this was split 70% on the westerly runway and 30% on the easterly runway for the period. The rolling 16 year average for the split in runway usage is approximately 68% westerly and 32% easterly.

### NORTHERN RUNWAY (26R/08L) USAGE

Although Gatwick has the main runway and the 'reserve' or northern runway, they cannot be operated simultaneously.

The northern runway is normally only utilised during the night when maintenance on the main runway is planned. During these three months, there were a total of 701 movements from the northern runway.

### TRACK KEEPING

Track keeping performance has decreased slightly compared to the previous year's performance, details of which will follow later in this report. As part of our continuing commitment to increase on-track performance, the FPT also continues to engage with the airlines directly and through the Flight Operations Performance and Safety Committee (FLOPSC) on a range of initiatives to monitor compliance.

### WOULD YOU LIKE TO KNOW MORE ABOUT AIRCRAFT NOISE OR TRACK A FLIGHT?

To track aircraft, see noise readings or make a complaint about aircraft noise at Gatwick you can visit our website: <http://www.gatwickairport.com/aircraftnoiseandairspace>

The website provides detailed maps on aircraft traffic around the airport as well as useful information on noise and statistics on aircraft movements. It also details the work we undertake with others in the aviation industry to try and alleviate the impact of our operations on both the local and wider community.

### CONTINUOUS DESCENT OPERATIONS (CDO) PERFORMANCE

While the Noise and Track Keeping (NTK) system utilises the most up-to-date format of radar data currently available, the

algorithm that measures CDO performance has remained unchanged since the definition was initially defined several years ago. As part of a development project to improve the accuracy of CDO measurement, the Flight Performance Team has worked closely with NATS to upgrade the current algorithm. The core algorithm remains unaltered, although some additional rules have been added with the result that some marginal profiles, previously classified as CDO compliant, will now be re-classified as non-CDO flights. These changes came into effect from May 2015 and the resulting variance in recorded levels of performance is in the order of 1%, therefore we expect to see a minor drop off in recorded performance from this date. Historical observations have consistently shown a reduction in performance during the winter months due to instances of inclement weather.

It is important to note that as recommended by the Independent Review of Arrivals, the altitude at which CDO is measured has changed as of 1<sup>st</sup> August 2016, more details later in the report.

### COMMUNITY NOISE MONITORING

In addition to fixed monitors located close to the ends of the runway, there are currently mobile noise monitors deployed at sites in Lingfield, Rusper, Oakwood Hill, Cowden, South Holmwood, and East Grinstead.

For several years, we have run a programme of noise monitoring to get a better understanding of the levels of aircraft noise in the communities surrounding Gatwick Airport. The noise monitors provide a method of monitoring and recording noise from both aircraft, and background sources. This allows us to evaluate trends and make comparisons between the noise environments at different locations.

### COMPLAINTS

The number of recorded complaints has increased compared to the previous twelve months as well as the number of individuals which have also increased. The past year has been the busiest year in the airport's history and there has also been a large amount of publicity surrounding the potential second runway, and the community issues related to the Route 4 amendment, which may be contributing factors for the number of complaints in 2017.

The postcode areas with the greatest number of enquiries during the three month period were Horley, Tunbridge Wells, Newdigate and Reigate. The number of individual complainants between April and June 2017 was **406**. Complaints about aircraft operations are processed in accordance with our published Complaints Handling Policy. Details of this policy are available on our website.



# Runway Direction

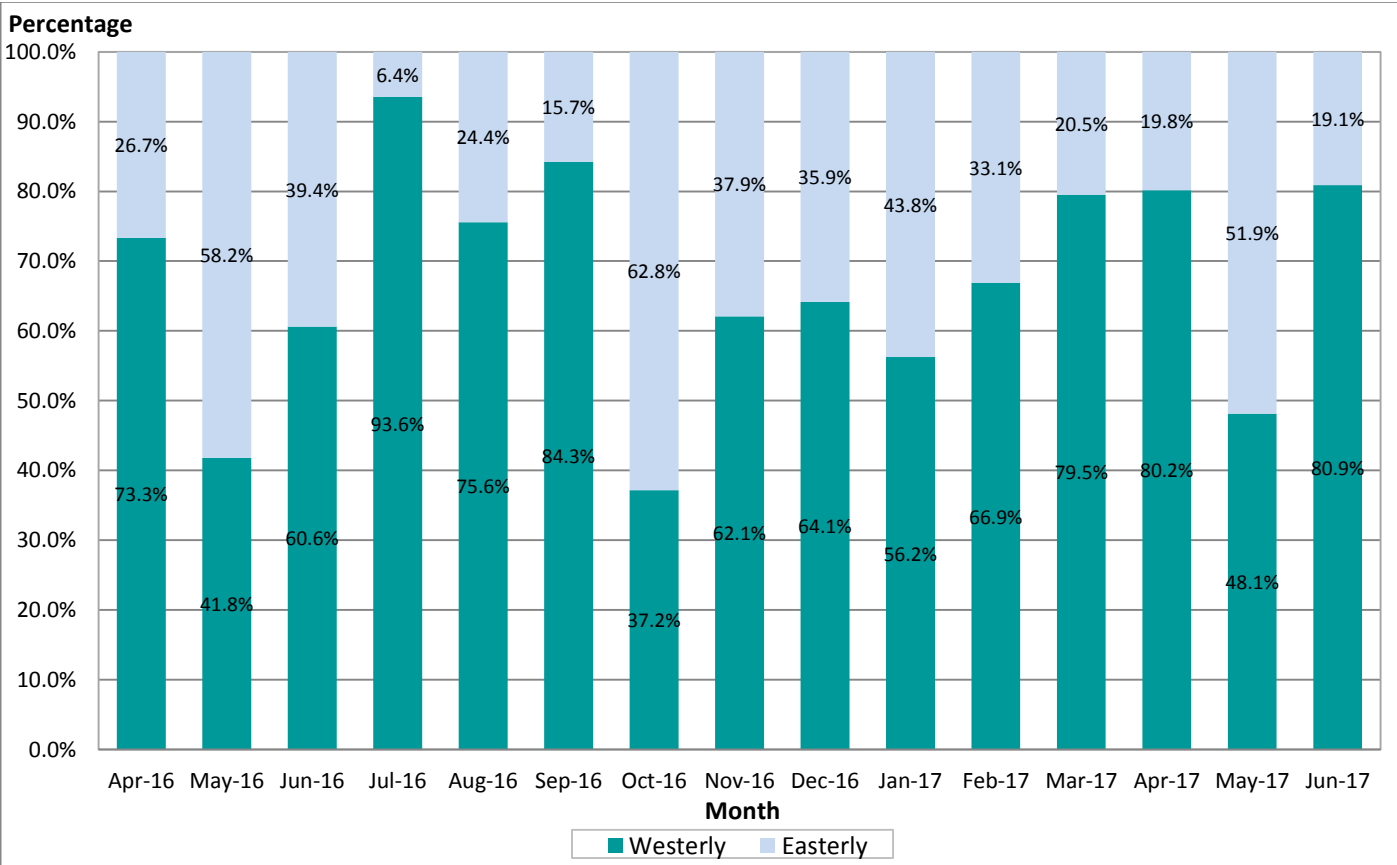
The graph below represents the direction of runway operation at Gatwick. Aircraft operating in a westerly direction take off towards the west and land from the east. Aircraft operating in an easterly direction take off towards the east and land from the west.

Although the long term average is approximately 68:32 in favour of westerly operations, it is not unusual to experience long periods of prolonged operation in either one direction or another.



## RUNWAY DIRECTION SPLIT

THE GRAPH BELOW SHOWS THE SPLIT OVER THE 15 MONTH PERIOD (APRIL 2016 – JUNE 2017)





# The Aeronautical Information Publication

An Aeronautical Information Publication (or AIP) is defined by the International Civil Aviation Organisation (ICAO) as a publication issued by or with the authority of a state and containing aeronautical information of a lasting character essential to air navigation.

It is designed to be a manual containing thorough details of regulations, procedures and other information pertinent to flying aircraft in the particular country to which it relates. It is usually issued by or on behalf of the respective civil aviation administration.

The structure and contents of AIPs are standardized by international agreement through ICAO. AIPs normally have three parts - GEN (general), ENR (en route) and AD (aerodromes).

The Gatwick Aerodrome AIP contains details regarding the noise mitigation measures in place and adherence to these is reported in this section.

## ADHERENCE TO NOISE MITIGATION MEASURES AS DETAILED IN THE GATWICK AIP

Each element of this report is preceded, where applicable, by the relevant Aeronautical Information Publication (AIP) reference and summary text detailing the purpose of the requirement. Data is then presented on current performance.

It should be noted that Gatwick is 202ft above mean sea level (AMSL) and the Noise and Track Keeping system (NTK) measures height relative to Gatwick elevation and not sea level.

References in the AIP are usually above sea level (quoted as Gatwick QNH) and therefore need to be reduced by 202ft to be comparable with heights, as measured by the NTK. For example, the requirement to join the ILS at 3,000ft would equate to 2,798ft in the NTK system.

No account is taken of the variability of heights as measured by the radar which, depending on the distance from the radar head, can be +/- 200ft from that indicated. This is obviously allowed for by NATS and ANS when managing operations.

## Departures - Noise Infringements

### DEPARTURE NOISE LIMITS (DAYTIME)

**EGKK AD 2.21 (3(3))** Subject to sub-paragraphs (5) and (6) below, any aircraft shall, after take-off, be operated in such a way that it will not cause more than 94 dBA L<sub>max</sub> by day (from 0700 to 2300 hours local time) as measured at any noise monitoring terminal at any of the sites referred to in sub-paragraph (2). This is to ensure that departing aircraft do not exceed the stated level during the day.

Year	Number of Day Infringements	Year	Number of Day Infringements
2006	9	2012	0
2007	13	2013	0
2008	2	2014	0
2009	0	2015	0
2010	0	2016	0
2011	0	2017	0

### DEPARTURE NOISE LIMITS (CORE NIGHT & SHOULDERS)

**EGKK AD 2.21 (3(4))** Subject to sub-paragraphs (5) and (6) below, any aircraft shall, after take-off, be operated in such a way that it will not cause more than 89 dBA L<sub>max</sub> by night (from 2300 to 0700 hours local time) and that it will not cause more than 87 dBA L<sub>max</sub> during the night quota period (from 2330 to 0600 hours local time) as measured at any noise monitoring terminal at any of the sites referred to in sub-paragraph (2). This is to ensure that departing aircraft do not exceed the stated levels during the night and shoulder periods.

Year	Number of Night & Shoulder Infringements	Year	Number of Night & Shoulder Infringements
2006	2	2012	0
2007	2	2013	0
2008	2	2014	0
2009	1	2015	0
2010	0	2016	1
2011	4	2017	2

There were 2 night noise infringements both caused by a departing Medview Airlines Boeing 747-412 Series which exceeded the night noise limits on separate occasions on the 3<sup>rd</sup> and 6<sup>th</sup> April 2017. The airline was invoiced a fine of £1000 for both infringements.

# Departures - Initial Climb Performance

**EGKK AD 2.21 (3(1))** *After take-off the aircraft shall be operated in such a way that it is at a height of not less than 1000ft aal (above airfield level) at 6.5 km from start of roll as measured along the departure track of the aircraft. This is to ensure departing aircraft achieve at least that climb gradient in order to reduce the impact on the ground.*

## Comment:

There were no infringements of the 1,000ft rule during the three month period.

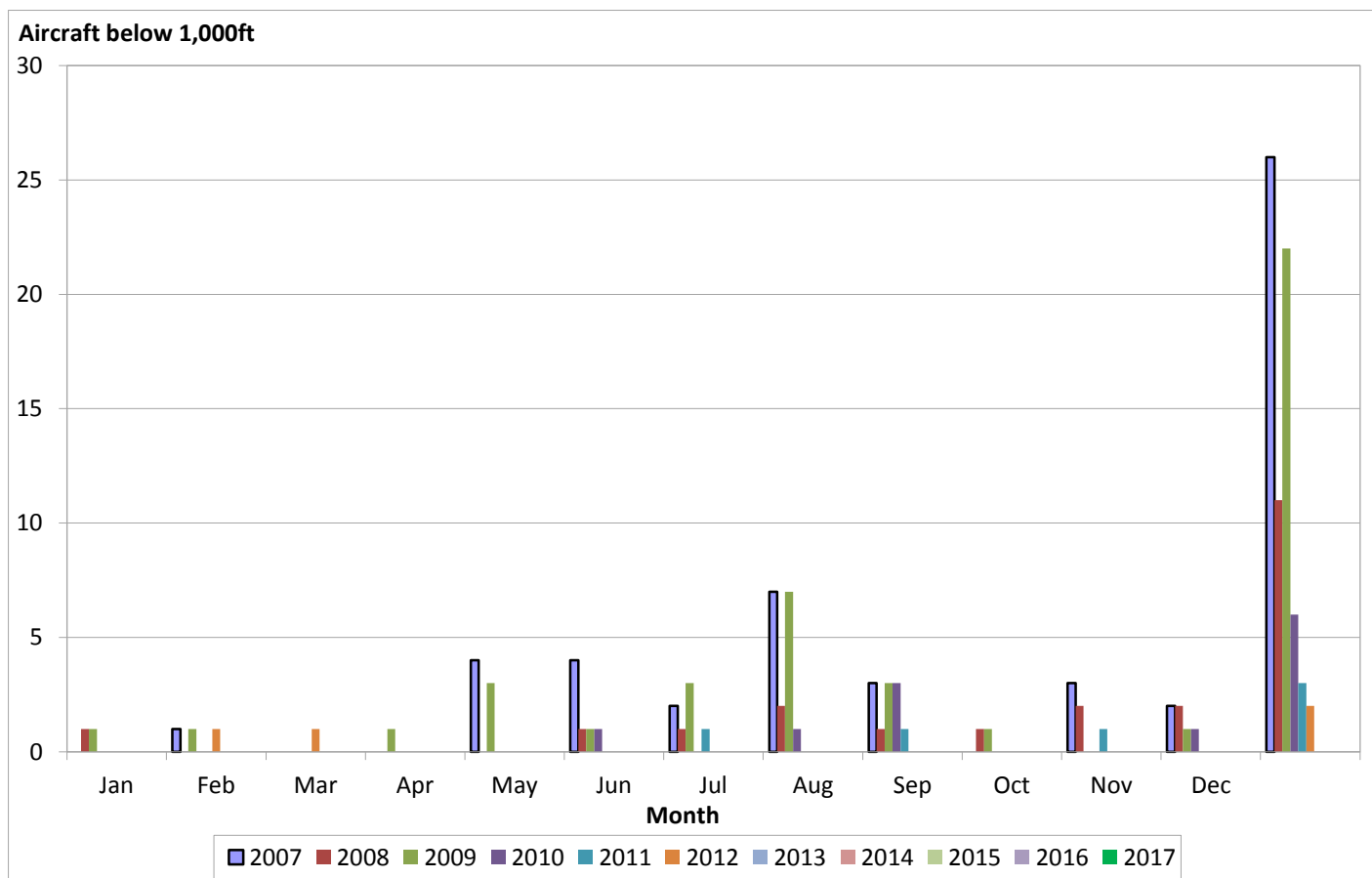
Historically, the summer months are typically the peak period for aircraft failing to meet the 1,000ft requirement, primarily due to the warmer weather which reduces aircraft climb performance.

## 1,000ft INFRINGEMENT TABLE

Year	Total Infringements	Year	Total Infringements
2006	11	2012	2
2007	26	2013	0
2008	11	2014	0
2009	22	2015	0
2010	6	2016	0
2011	3	2017	0

THE GRAPH BELOW ILLUSTRATES 1,000ft INFRINGEMENT PERFORMANCE SINCE 2007

## Initial Climb Performance



# Departures – Track Keeping

All jet aircraft leaving Gatwick Airport should follow flight paths known as Noise Preferential Routes (NPRs) up to a height of 3,000ft or 4,000ft depending on the route. An NPR consists of a 'centreline' and an associate compliance monitoring swathe (3km across, i.e. 1.5km either side of the NPR centreline). These NPR's are mapped below. As long as aircraft remain within the corridor boundaries, they are deemed to be on-track. A map illustrating the Noise Preferential Routes at Gatwick is available below.

Air Traffic Control (ATC) are responsible for the routing of aircraft once airborne and when 3,000 or 4,000ft has been reached, they may give a flight a more direct heading, known as vectoring, off the route. This is subject to certain factors, including weather conditions and other traffic in the vicinity. Flights leaving the route below the required height are automatically tagged and details are sent to the airline for investigation. Our Flight Operations Performance & Safety Committee (FLOPSC) regularly review track keeping performance.

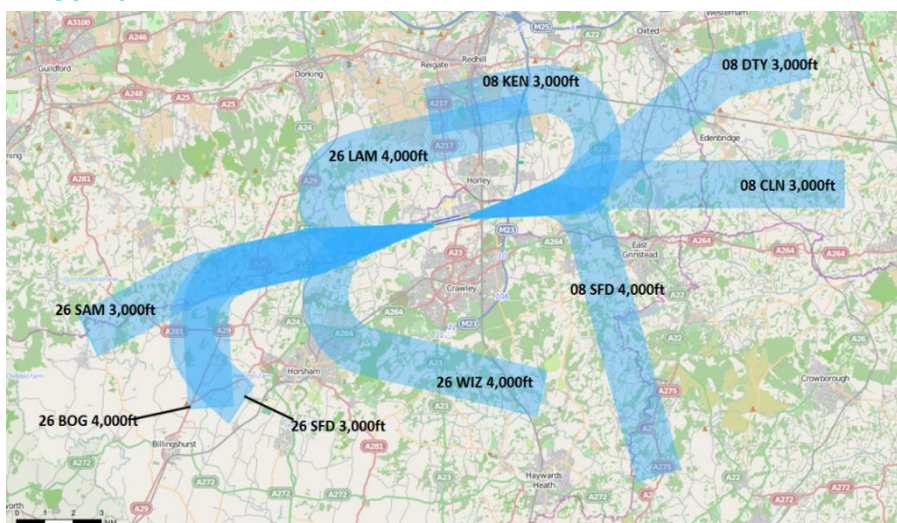
In 2012, Gatwick Airport publicly consulted on the implementation of a more modern form of aircraft navigation called P-RNAV (Precision Route Navigation). After having assessed all consultation feedback, the Civil Aviation Authority (CAA) granted the airport permission to implement P-RNAV on all of our departure routes. Implementing P-RNAV on the published departure routes has resulted in the tracks of departing aircraft being more concentrated within the boundaries of the current NPR's, with one exception. This is the NPR designed 26LAM/Route 4 that heads west then turns back on itself and passes to the north of the airfield. This route has always presented a challenge for modern jets as it was designed to accommodate propeller-driven aircraft and early jets that were around in the 1960's.

Implementing P-RNAV on this route required aircraft to fly outside of the current NPR. Therefore, as approved by the CAA, aircraft on a P-RNAV departure on this route were not classified as off-track as they were following the published route.

Following the introduction of P-RNAV at Gatwick Airport, the CAA conducted a Post Implementation Review (PIR) on all routes. The Review has recommended that this particular route (Route 4) be modified so that departing aircraft are compliant and remain within the published NPR swathe. It now requires all Standard Instrument Departure routes (SID's) to be counted in the track keeping statistics whereas previously, the P-RNAV SID's were not included. The amendment to Route 4 was monitored for a six month period from 26<sup>th</sup> May to 26<sup>th</sup> November 2016. During this time, Gatwick Airport engaged with the CAA, our airlines, Air Traffic Control and our airspace designers to improve adherence to the amended route. Following the PIR, the CAA has concluded that the modified Route 4 SID's achieve a satisfactory replication of the nominal track of the corrected conventional SID. The CAA has therefore decided to confirm the P-RNAV SID designs currently published in the UK Aeronautical Information Publication (AIP) as permanent.

There has also been a modification to our 08CLN/Route 5 NPR which has been in place since the 30<sup>th</sup> March 2017, as advised by the CAA. Previously, aircraft were flying slightly to the south of the NPR centreline and this modification aims to better replicate the existing conventional SID route and bring aircraft back towards the centre. This will be monitored by the CAA for a six month period until the 30<sup>th</sup> September 2017 to ensure the aircraft are operating as anticipated. As with Route 4, Gatwick Airport will engage with the relevant parties to collate feedback and provide track data to the CAA.

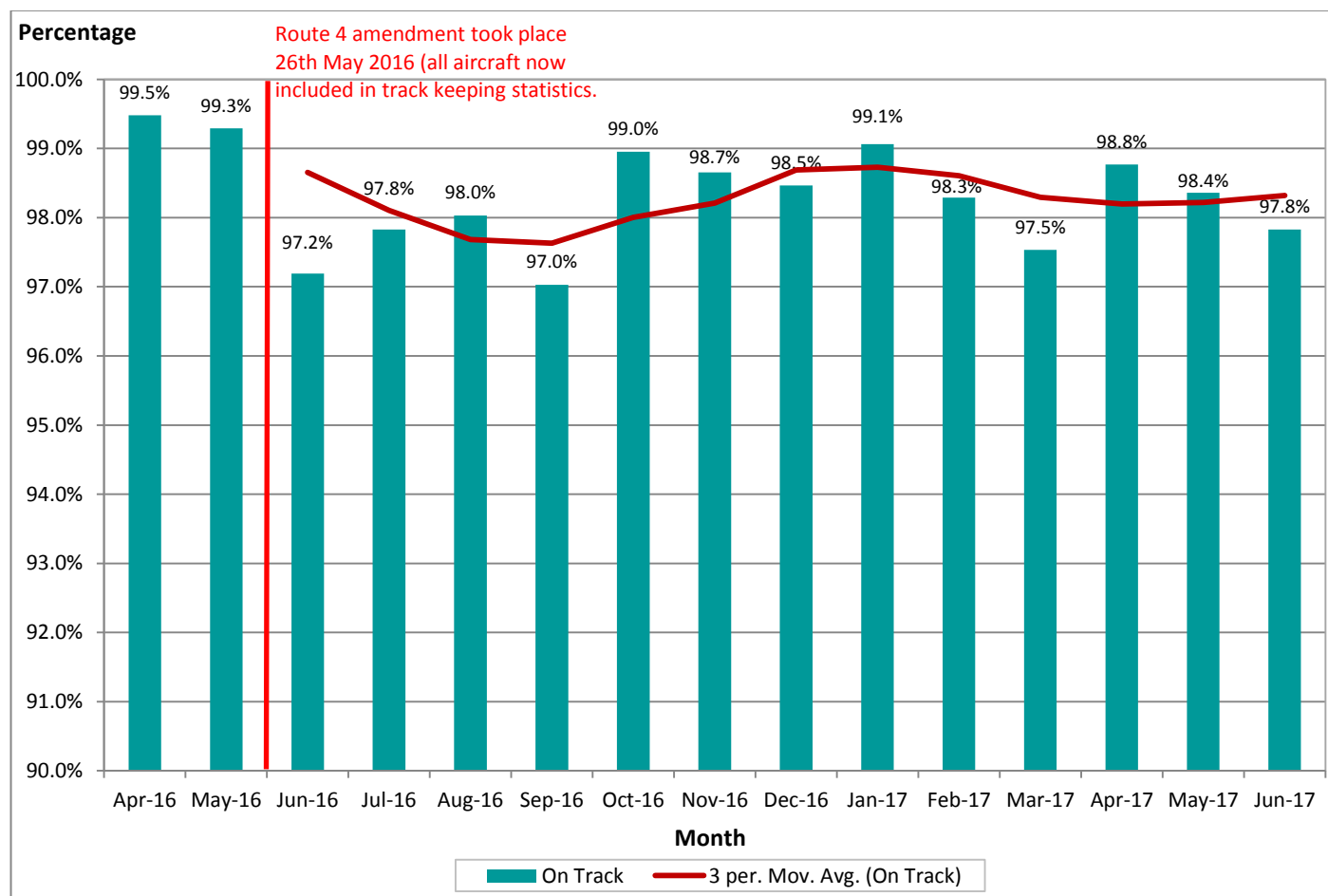
THE MAP BELOW ILLUSTRATES THE NOISE PREFERENTIAL ROUTES USED BY DEPARTING AIRCRAFT WITH MINIMUM VECTORING ALTITUDE FIGURES



THE TABLE BELOW ILLUSTRATES TRACK KEEPING PERFORMANCE OVER 15 MONTHS

Month	Total			Westerly			Easterly		
	Deviations	Departures	%	Deviations	Departures	%	Deviations	Departures	%
Apr-16	58	11247	0.52%	55	8239	0.67%	3	3008	0.10%
May-16	91	12758	0.71%	38	5403	0.70%	53	7355	0.72%
Jun-16	362	12877	2.81%	329	7750	4.25%	33	5127	0.64%
Jul-16	302	13915	2.17%	294	13022	2.26%	8	893	0.90%
Aug-16	278	14131	1.97%	257	10627	2.42%	21	3504	0.60%
Sep-16	401	13498	2.97%	397	11428	3.47%	4	2070	0.19%
Oct-16	133	12705	1.05%	115	4688	2.45%	18	8017	0.22%
Nov-16	126	9360	1.35%	118	5818	2.03%	8	3542	0.23%
Dec-16	159	10375	1.53%	139	6604	2.10%	20	3771	0.53%
Jan-17	92	9822	0.94%	80	5570	1.44%	12	4252	0.28%
Feb-17	166	9711	1.71%	162	6443	2.51%	4	3268	0.12%
Mar-17	274	11102	2.47%	270	8853	3.05%	4	2249	0.18%
Apr-17	146	11862	1.23%	130	9553	1.36%	16	2309	0.69%
May-17	216	13157	1.64%	198	6344	3.12%	18	6813	0.26%
Jun-17	291	13395	2.17%	275	10843	2.54%	16	2552	0.63%

THE GRAPH BELOW ILLUSTRATES TRACK KEEPING PERFORMANCE OVER 15 MONTHS WITH A TREND LINE



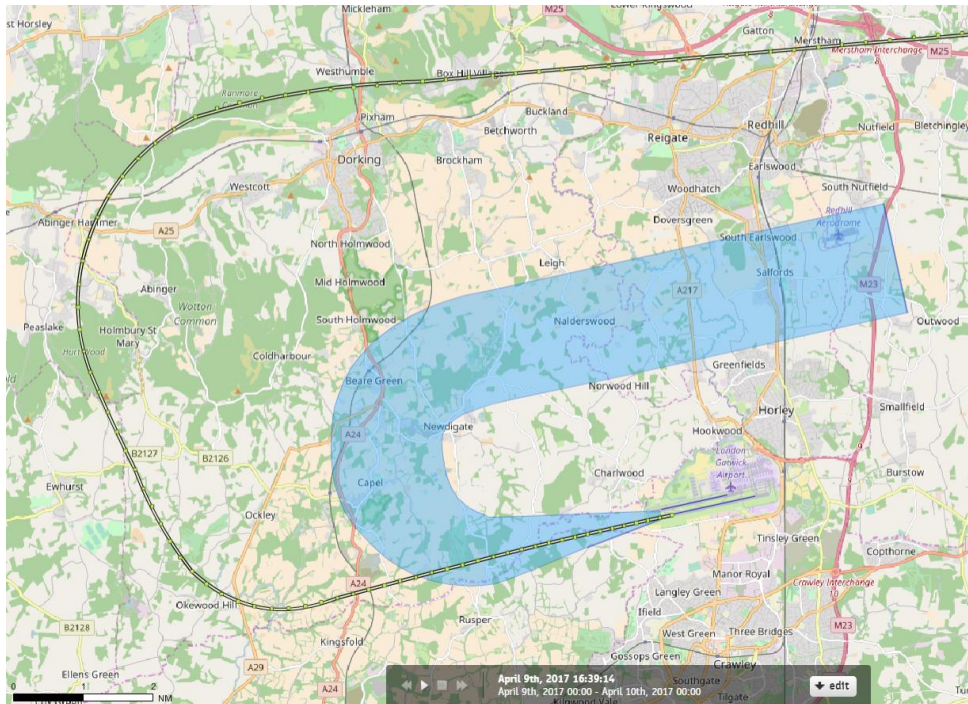


## UNUSUAL TRACKS

Some 'unusual tracks' taken by departing aircraft are recorded by our Noise and Track Keeping system and these can occur for a number of reasons, such as weather avoidance. These can result in the aircraft leaving the NPR

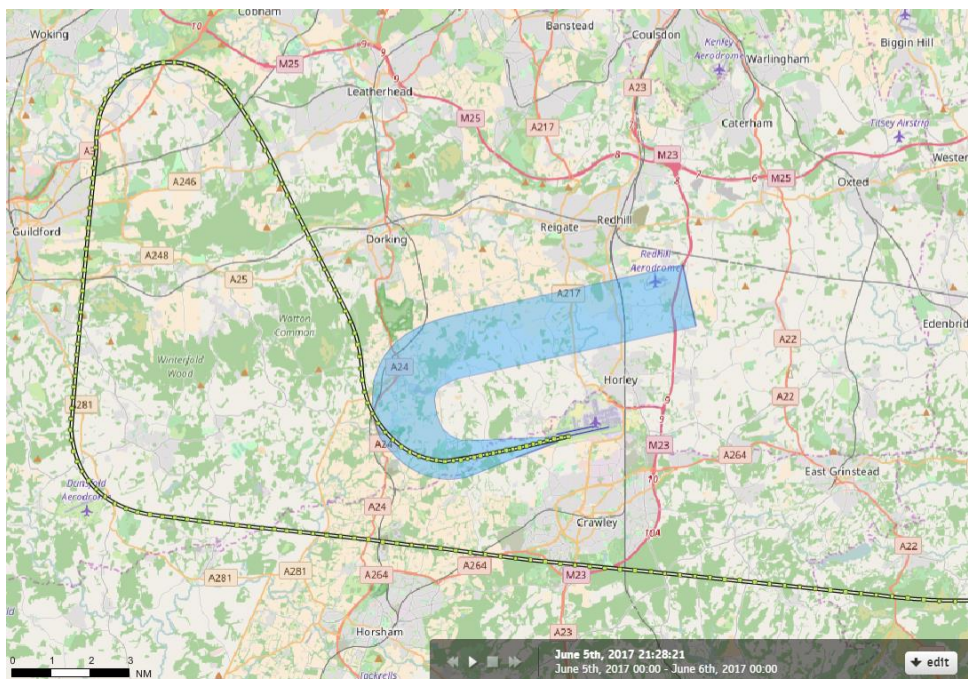
below the required altitude or aircraft that have vectored at the required altitude and then misdirected to avoid conflict with traffic from other airports. All unusual tracks are investigated with the airline concerned.

THE MAP BELOW SHOWS THE EASYJET AIRCRAFT WHICH DEVIATED FROM THE PRESCRIBED NPR ON THE 9<sup>th</sup> APRIL 2017



This easyJet flight occurred on the 9<sup>th</sup> April 2017 at 16:40. The airline was contacted and the feedback received concluded that the aircraft was given extended radar vectors due an airspace infringer to maintain the safety of the aircraft.

THE MAP BELOW SHOWS THE PEGASUS AIRCRAFT WHICH DEVIATED FROM THE PRESCRIBED NPR ON THE 5<sup>th</sup> JUNE 2017



This Pegasus flight occurred on the 5<sup>th</sup> June 2017 at 21:30. A weather report from ANS confirmed that this aircraft was vectored from its intended route due to localised thunderstorm activity further along the route.



# Departures – Over Congested Areas

## THE WIZAD NOISE PREFERENTIAL ROUTE

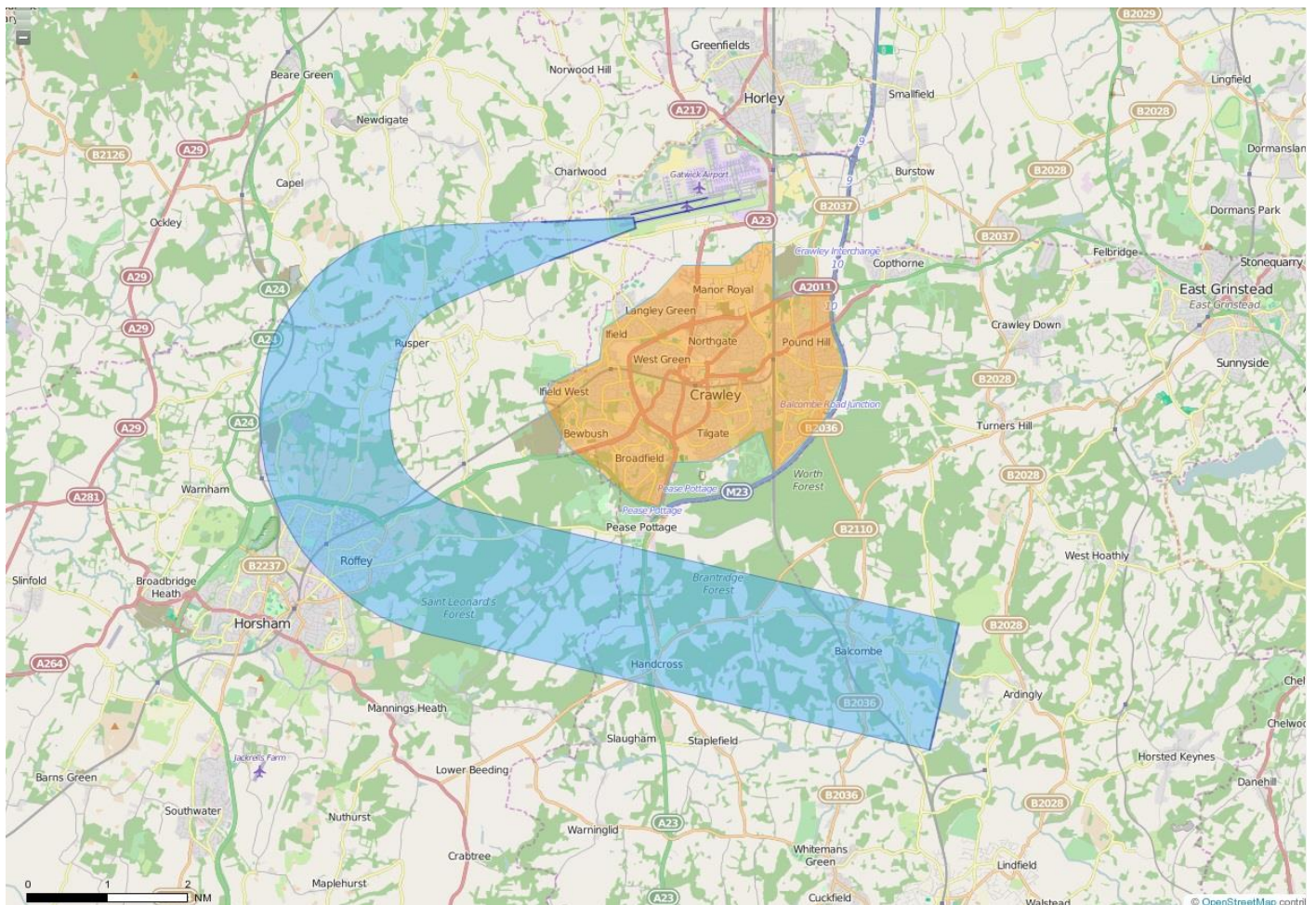
The Wizad Noise Preferential Route was designated by the Government at the same time as all other Gatwick departure routes; however, it is not used on an equal basis with the other routes. It is a Tactical Offload Route and is not usually offered as part of a flight path. If the 26 LAM Route (to the North of Horley) is very busy, Wizad will be offered as a last minute alternative to ease the load.

As it is only a Tactical Offload Route, it is not well known and it is only offered to local pilots and usually used by more modern, high performance aircraft. It will also be used during periods of poor weather when an alternative to the usual routes may be required as aircraft should not fly through thunderstorms.

**EGKK AD 2.21 (8)(c)** *The ATC clearance via Mayfield specified in the second column of the table will not be available between 2300 hours and 0700 hours local time. Aircraft following the Noise Preferential Routing Procedure which relates to that clearance shall not fly over Crawley, Crawley Down or East Grinstead. This is to avoid aircraft noise from departing aircraft over areas of high population at night on the 26 WIZAD NPR.*

**Comment:** During this three month period, there were no departures during the restricted period on the '26 WIZAD' Noise Preferential Route.

## THE MAP BELOW ILLUSTRATES THE CRAWLEY TOWN BOUNDARY WITH NOISE PREFERENTIAL ROUTE '26 WIZAD'





# Overflight of Crawley and Horley

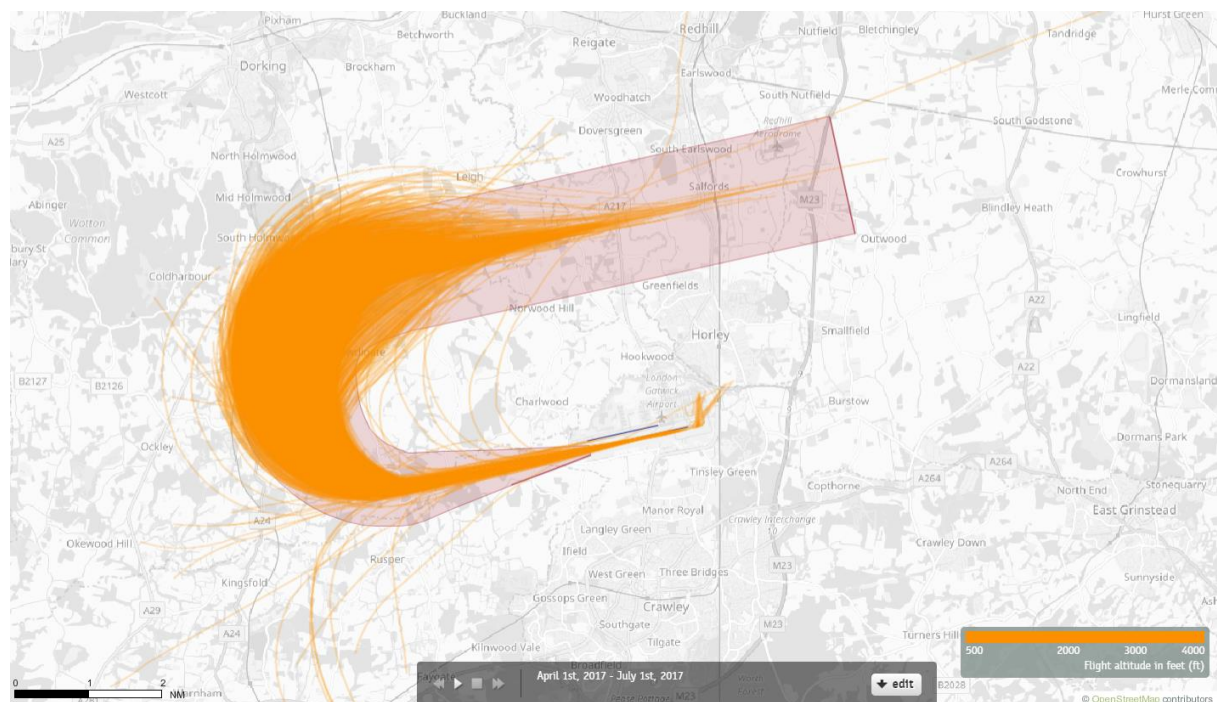
**EGKK AD 2.21 (9)** *After taking off the aircraft shall avoid flying over the congested areas of Horley and Crawley.*  
This is to avoid aircraft noise from departing aircraft over areas of high population.

**Comment:** During this period, there were no departing flights that passed over Crawley.

THE MAP BELOW ILLUSTRATES THE TRACK DENSITY OF DEPARTING AIRCRAFT ON THE ‘26 LAM’ DEPARTURE ROUTE DURING THE THREE MONTH PERIOD WITH HORLEY TOWN HIGHLIGHTED



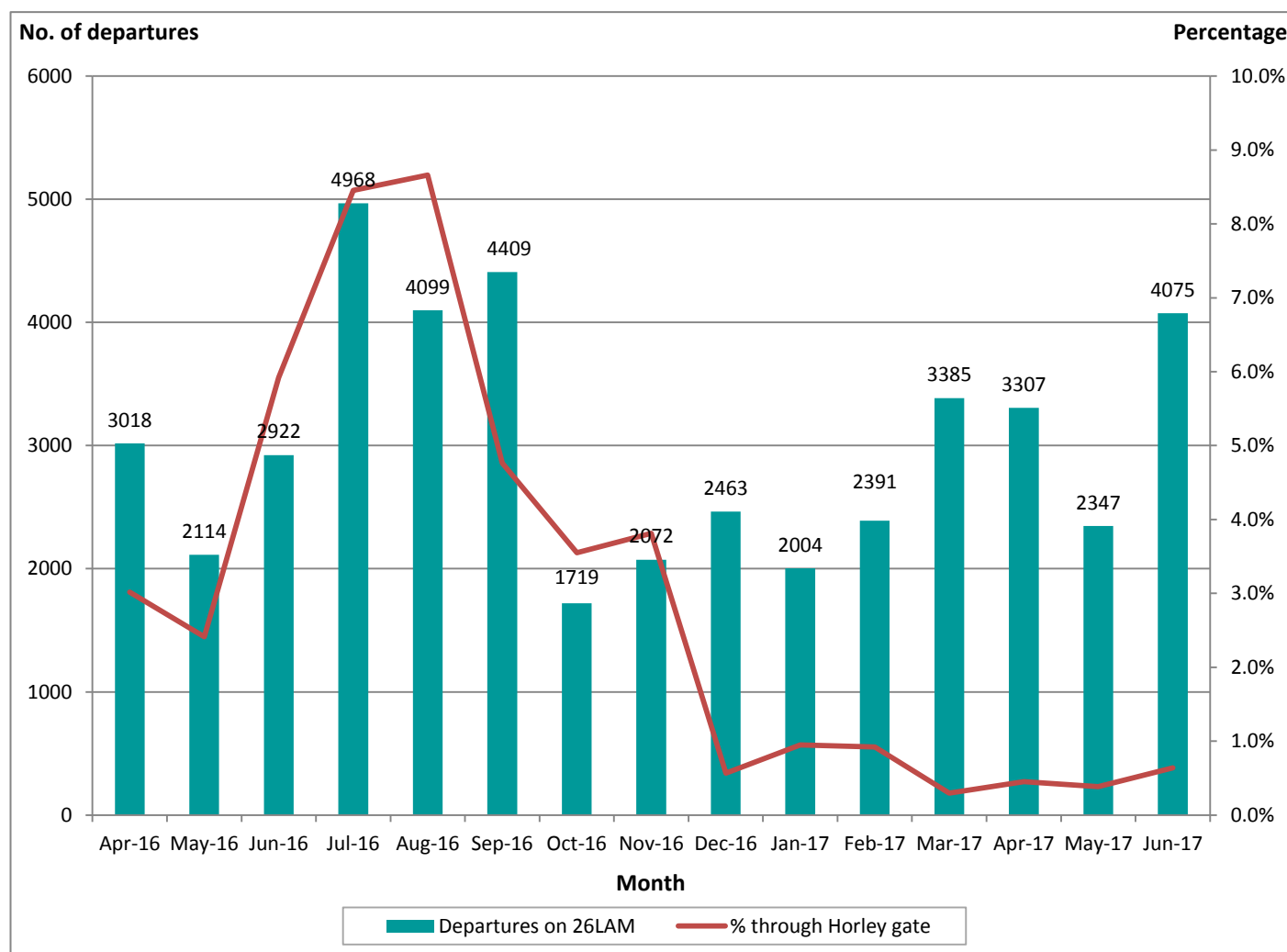
THE MAP BELOW ILLUSTRATES THE TRACKS OF DEPARTING AIRCRAFT ON THE ‘26 LAM’ DEPARTURE ROUTE USING P-RNAV DURING THE THREE MONTH PERIOD UP TO AN ALTITUDE OF 4,000FT



THE TABLE BELOW ILLUSTRATES THE ANALYSIS OF HORLEY OVERFLIGHT

Month	Departures on 26LAM	Horley gate	% through Horley gate	Month	Departures on 26LAM	Horley gate	% through Horley gate	Month	Departures on 26LAM	Horley gate	% through Horley gate
Jan-15	3237	102	3.15%	Jan-16	3031	70	2.31%	Jan-17	2004	19	0.95%
Feb-15	2251	66	2.93%	Feb-16	2449	58	2.37%	Feb-17	2391	22	0.92%
Mar-15	2455	40	1.63%	Mar-16	2282	67	2.94%	Mar-17	3385	10	0.30%
Apr-15	2200	42	1.91%	Apr-16	3018	91	3.02%	Apr-17	3307	15	0.45%
May-15	4051	67	1.65%	May-16	2114	51	2.41%	May-17	2347	9	0.38%
Jun-15	3688	57	1.55%	Jun-16	2922	173	5.92%	Jun-17	4075	26	0.64%
Jul-15	4365	42	0.96%	Jul-16	4968	420	8.45%	Jul-17	-	-	-
Aug-15	3559	38	1.07%	Aug-16	4099	355	8.66%	Aug-17	-	-	-
Sep-15	2838	61	2.15%	Sep-16	4409	210	4.76%	Sep-17	-	-	-
Oct-15	2039	36	1.77%	Oct-16	1719	61	3.55%	Oct-17	-	-	-
Nov-15	3302	78	2.36%	Nov-16	2072	79	3.81%	Nov-17	-	-	-
Dec-15	3707	13	0.35%	Dec-16	2463	14	0.57%	Dec-17	-	-	-

THE GRAPH BELOW ILLUSTRATES THE ANALYSIS OF HORLEY OVERFLIGHT



# Arrivals – Continuous Descent Operations (CDO)

A Continuous Descent Operation (CDO) (formerly known as a CDA) is a noise abatement technique of flight during which a pilot descends at a rate with the intention of achieving a continuous descent to join the glide path at the correct height for the distance. This procedure thereby avoids the need for extended periods of level flight and results in keeping the aircraft higher for longer reducing the need for thrust. In addition to aiding noise reduction, this also reduces fuel burn thereby cutting emissions and producing an overall environmental benefit.

A CDO is a procedure designed to try and avoid prolonged periods of level flight below 7,000ft\*. Studies have determined that elements of prolonged level flight are noisier than when following CDO. The aviation industry is working very hard to improve compliance and an Arrivals Code of Practice (ACoP) has been produced by the Department for Transport which aims to promote the use of CDO as a regular practice for all arriving aircraft:

‘For monitoring purposes, a descent will be deemed to have been continuous provided that no segment of level flight longer than 2.5 nautical miles (nm) occurs below 7,000ft\* QNH and ‘level flight’ is interpreted as any segment of flight having a height change of not more than 50ft over a track distance of 2nm or more, as recorded in the airport Noise and Track Keeping system.’

A CDO is not a precise art and relies on the accuracy of track miles provided by ATC to the flight crew coupled with pilot skill, weather conditions and operational circumstances. Additionally, different aircraft types perform differently requiring varying operating practices to be utilised in order to slow the aircraft down and meet speed restrictions, therefore the procedures in the ACoP are advisory rather than compulsory, so there are no sanctions against pilots or airlines that fail to comply with the measures. Despite this, publication of the ACoP has resulted in significant improvements in CDO achievement at all times of day and night. The FPT are actively working with the airlines to encourage the use of CDO as a best practice method by continually providing monthly reports. Airlines and pilots are keen to adopt this procedure for economic as well as environmental reasons and are active in promoting CDO within their companies.

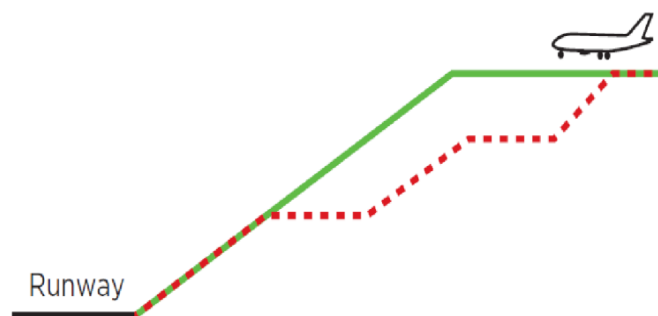
CDO data is measured over three time periods:

- The Core Night period (2330-0600)
- The Day and Shoulder periods (0600–2330)
- The 24-hour period

The following text appears in the UK Aeronautical Information Package (AIP) Noise Abatement Procedures for Gatwick Airport:

**EGKK AD 2.21 (10)** *Where the aircraft is approaching the aerodrome to land it shall, commensurate with its ATC clearance, minimise noise disturbance by the use of continuous descent and low power, low drag operating procedures (referred to in Detailed Procedures for descent clearance in EGKK AD 2.22 of the UK AIP). Where the use of these procedures is not practicable, the aircraft shall maintain as high an altitude as possible. In addition, when descending on initial approach, including in the closing heading, and on intermediate and final approach, thrust reductions should be achieved where possible by maintaining a 'clean' aircraft configuration and by landing with reduced flap, provided that in all the circumstances of the flight this is consistent with safe operation of the aircraft. This is to avoid prolonged periods of level flight and keep aircraft as high as possible for as long as possible.*

\*As a result of the Independent Review of Arrivals, it was recommended (Imm-05) that the CDO monitoring altitude be increased from 6,000ft to 7,000ft as of 1<sup>st</sup> August 2016.

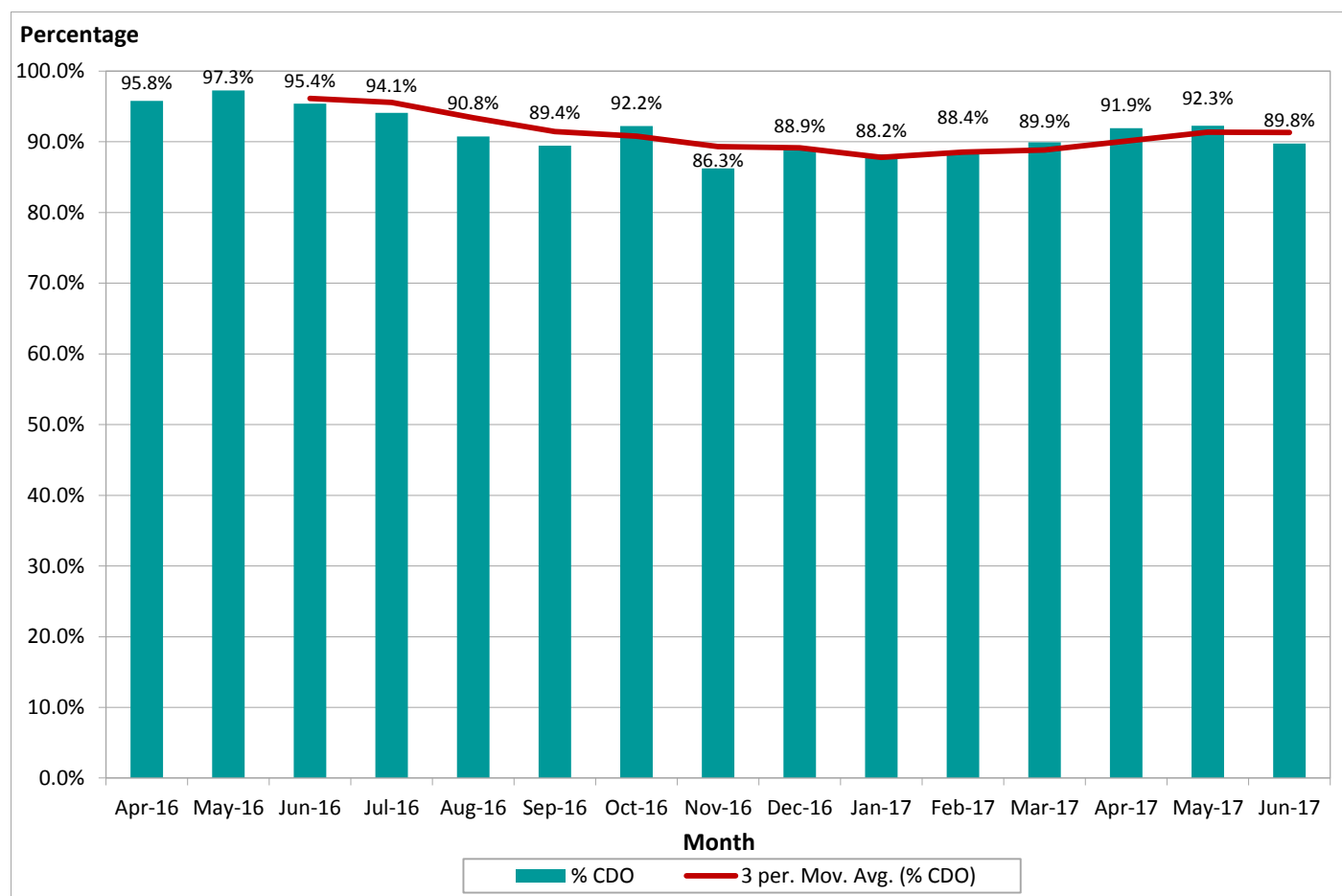


## CORE NIGHT PERIOD (2330-0600)

THE TABLE BELOW ILLUSTRATES THE BREAKDOWN OF THE CDO CORE NIGHT TIME PERIOD

Month	All Arrivals			08 Easterly Arrivals			26 Westerly Arrivals		
	Total	Non CDO	% CDO	Total	Non CDO	% CDO	Total	Non CDO	% CDO
<b>Apr-16</b>	832	35	95.79%	227	3	98.68%	605	32	94.71%
<b>May-16</b>	1204	33	97.26%	764	25	96.73%	440	8	98.18%
<b>Jun-16</b>	1686	78	95.37%	646	25	96.13%	1040	53	94.90%
<b>Jul-16</b>	1915	113	94.10%	118	3	97.46%	1797	110	93.88%
<b>Aug-16</b>	1751	162	90.75%	396	17	95.71%	1355	145	89.30%
<b>Sep-16</b>	1626	172	89.42%	364	23	93.68%	1262	149	88.19%
<b>Oct-16</b>	1141	89	92.20%	700	56	92.43%	441	36	91.84%
<b>Nov-16</b>	240	33	86.25%	102	14	86.27%	138	19	86.23%
<b>Dec-16</b>	506	56	88.93%	116	5	95.69%	390	51	86.92%
<b>Jan-17</b>	391	46	88.24%	150	11	92.67%	241	35	85.48%
<b>Feb-17</b>	370	43	88.38%	121	17	85.95%	249	26	89.56%
<b>Mar-17</b>	447	45	89.93%	125	4	96.80%	322	41	87.27%
<b>Apr-17</b>	779	63	91.91%	214	12	94.39%	565	51	90.97%
<b>May-17</b>	1266	98	92.26%	664	64	90.36%	602	34	94.35%
<b>Jun-17</b>	1512	155	89.75%	266	23	91.35%	1246	132	89.41%

THE GRAPH BELOW ILLUSTRATES THE CORE NIGHT TIME CDO COMPLIANCE WITH A TREND LINE



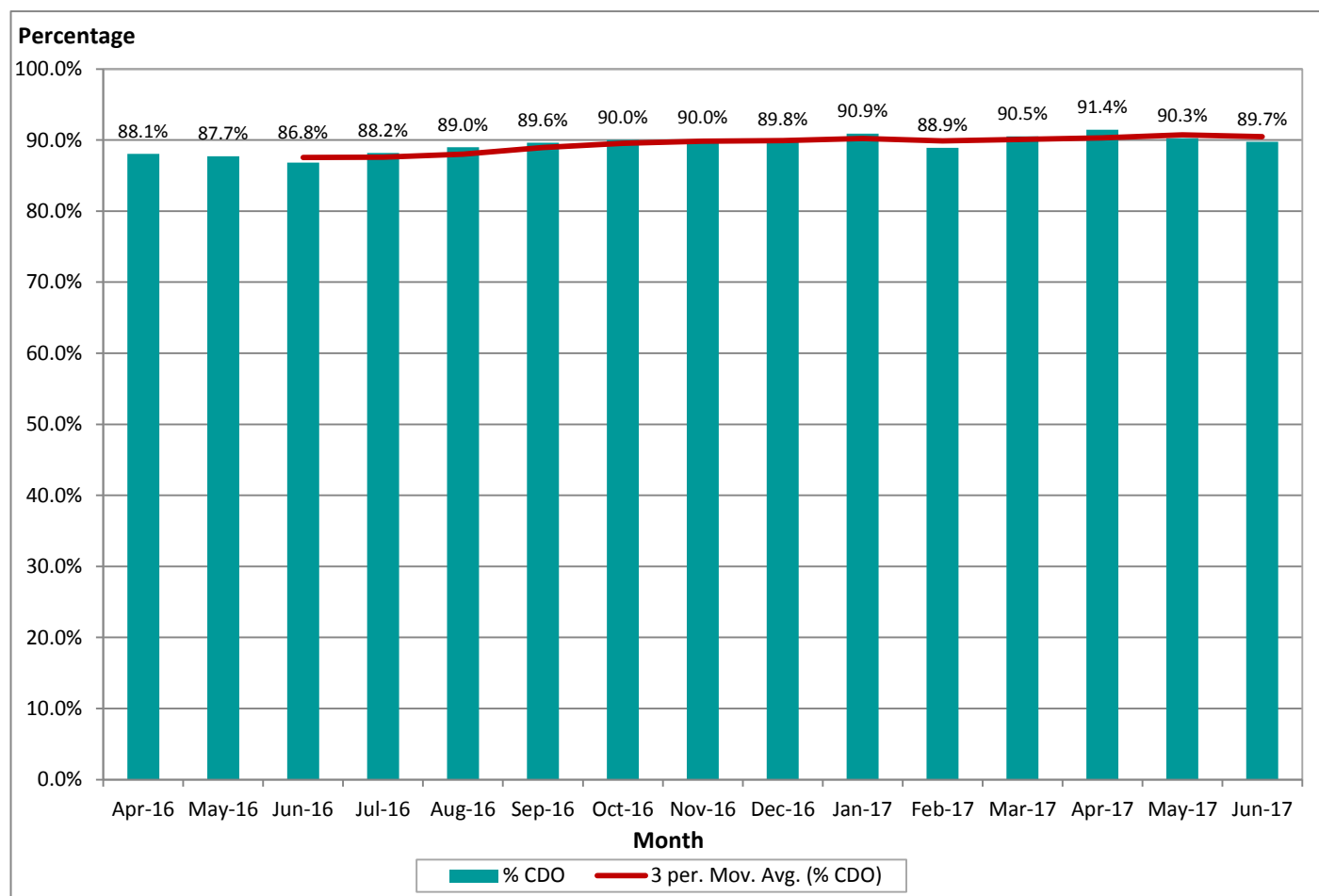


## DAYTIME AND SHOULDER PERIOD CDO ACHIEVEMENT (0600-2330)

THE TABLE BELOW ILLUSTRATES THE BREAKDOWN OF THE CDO DAYTIME AND SHOULDER PERIOD

All Arrivals				08 Easterly Arrivals			26 Westerly Arrivals		
Month	Total	Non CDO	% CDO	Total	Non CDO	% CDO	Total	Non CDO	% CDO
Apr-16	10359	1237	88.06%	2765	329	88.10%	7594	908	88.04%
May-16	11528	1418	87.70%	6703	866	87.08%	4825	552	88.56%
Jun-16	11130	1466	86.83%	4362	604	86.15%	6768	862	87.26%
Jul-16	11943	1412	88.18%	778	105	86.50%	11165	1307	88.29%
Aug-16	12331	1358	88.99%	2994	313	89.55%	9337	1045	88.81%
Sep-16	11821	1228	89.61%	1804	185	89.75%	10017	1043	89.59%
Oct-16	11554	1155	90.00%	7141	745	89.75%	4413	410	90.71%
Nov-16	9079	912	89.95%	3338	319	90.44%	5741	593	89.67%
Dec-16	9838	1005	89.78%	3447	304	91.18%	6391	701	89.03%
Jan-17	9395	855	90.90%	4085	317	92.24%	5310	538	89.87%
Feb-17	9305	1031	88.92%	3017	342	88.66%	6288	689	89.04%
Mar-17	10587	1004	90.52%	2157	225	89.57%	8430	779	90.76%
Apr-17	11016	943	91.44%	2159	193	91.06%	8857	750	91.53%
May-17	11873	1154	90.28%	6104	600	90.17%	5769	554	90.40%
Jun-17	11902	1222	89.73%	2288	204	91.08%	9614	1018	89.41%

THE GRAPH BELOW ILLUSTRATES THE DAY & SHOULDER CDO COMPLIANCE WITH A TREND LINE

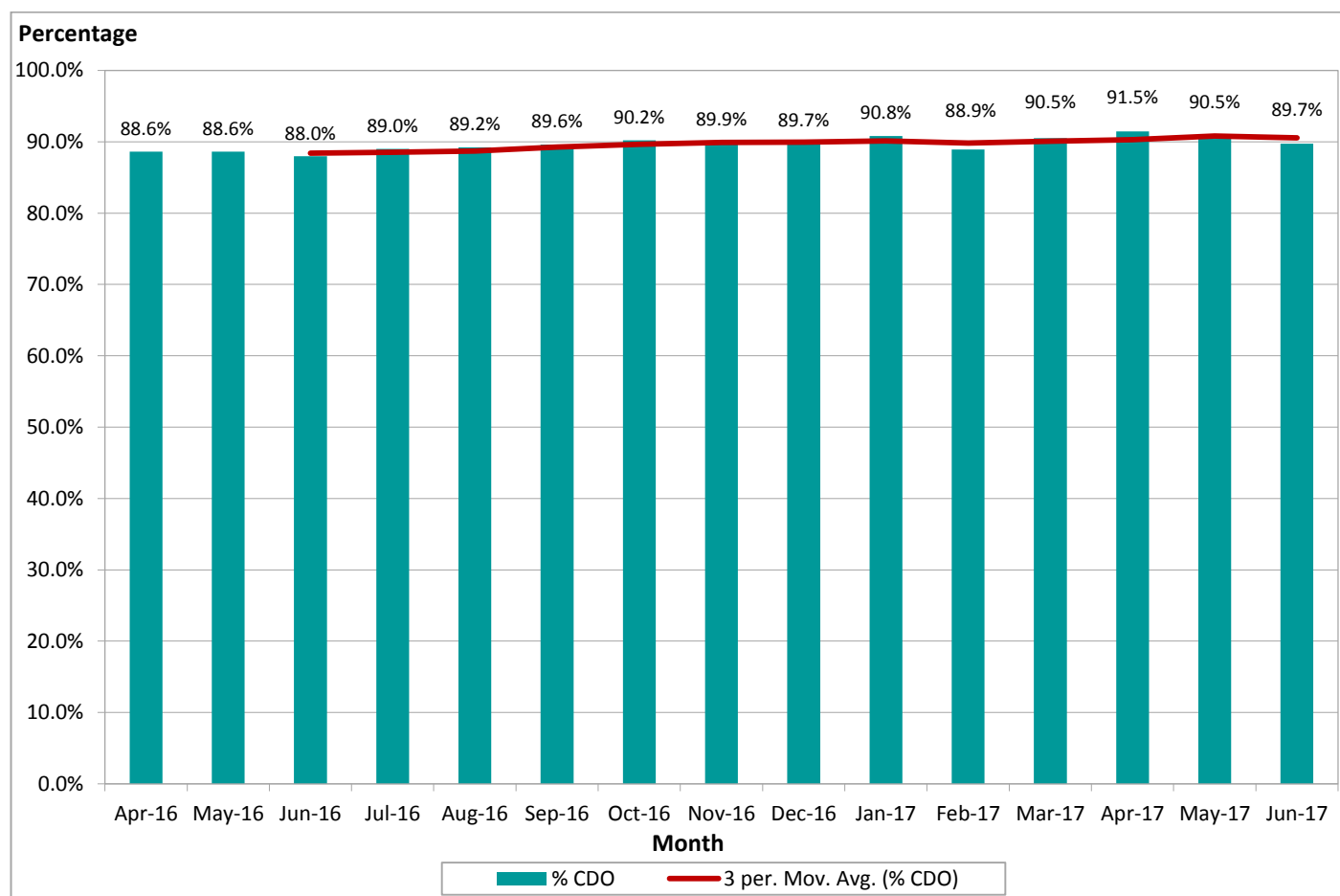


## 24 HOUR PERIOD CDO ACHIEVEMENT

THE TABLE BELOW ILLUSTRATES THE BREAKDOWN OF THE CDO 24 HOUR TIME PERIOD

Month	All Arrivals			08 Easterly Arrivals			26 Westerly Arrivals		
	Total	Non CDO	% CDO	Total	Non CDO	% CDO	Total	Non CDO	% CDO
<b>Apr-16</b>	11191	1272	88.63%	2992	332	88.90%	8199	940	88.54%
<b>May-16</b>	12732	1451	88.60%	7467	891	88.07%	5265	560	89.36%
<b>Jun-16</b>	12816	1544	87.95%	5008	629	87.44%	7808	915	88.28%
<b>Jul-16</b>	13858	1525	89.00%	896	108	87.95%	12962	1417	89.07%
<b>Aug-16</b>	14082	1520	89.21%	3390	330	90.27%	10692	1190	88.87%
<b>Sep-16</b>	13447	1400	89.59%	2168	208	90.41%	11279	1192	89.43%
<b>Oct-16</b>	12695	1244	90.20%	7841	798	89.82%	4854	446	90.81%
<b>Nov-16</b>	9319	945	89.86%	3440	333	90.32%	5879	612	89.59%
<b>Dec-16</b>	10344	1061	89.74%	3563	309	91.33%	6781	752	88.91%
<b>Jan-17</b>	9786	901	90.79%	4235	328	92.26%	5551	573	89.68%
<b>Feb-17</b>	9675	1074	88.90%	3138	359	88.56%	6537	715	89.06%
<b>Mar-17</b>	11034	1049	90.49%	2282	229	89.96%	8752	820	90.63%
<b>Apr-17</b>	11795	1006	91.47%	2373	205	91.36%	9422	801	91.50%
<b>May-17</b>	13139	1252	90.47%	6768	664	90.19%	6371	588	90.77%
<b>Jun-17</b>	13414	1377	89.73%	2554	227	91.11%	10860	1150	89.41%

THE GRAPH BELOW ILLUSTRATES THE 24 HOUR PERIOD CDO COMPLIANCE WITH A TREND LINE



# Arrivals – Over Congested Areas

## OVERFLIGHT OF CONGESTED AREAS

**AD 2-EGKK1-12 (11)** *Before landing at the aerodrome the aircraft shall maintain as high an altitude as practicable and shall not fly over the congested areas of Crawley, East Grinstead, Horley and Horsham at an altitude of less than 3,000ft (Gatwick QNH) nor over the congested area of Lingfield at an altitude of less than 2,000ft (Gatwick QNH).*

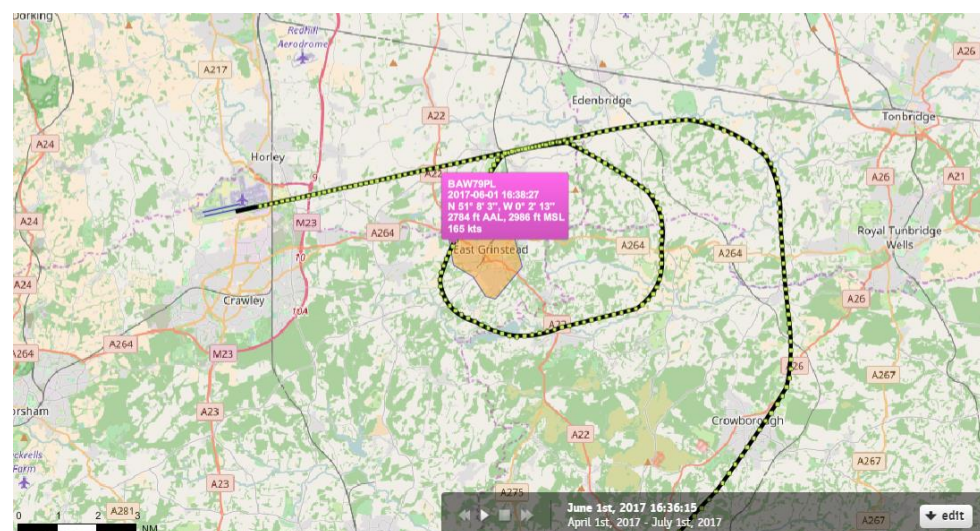
N.B. 2,000ft – (202ft (airfield elevation) + 100ft (radar/ILS tolerance)) = 1,698ft on Airports Noise & Aircraft Tracking System

**Comment:** There were no arriving flights which passed over the towns of Crawley, Horley or Horsham below the required altitude for this period. The map overleaf illustrates these analysis zones. A polygon located over the urban area at

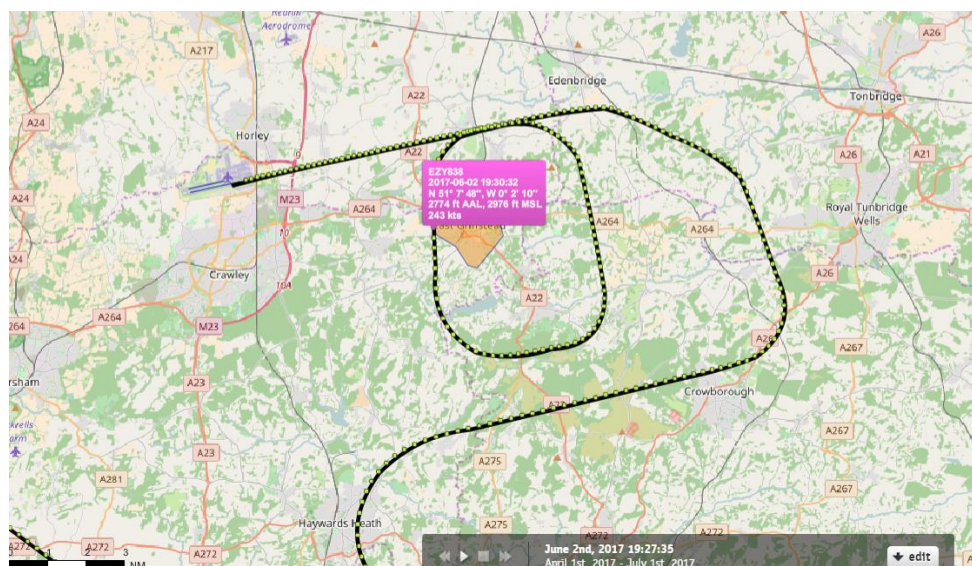
about 7 nautical miles (nm) from touchdown is normally used to analyse tracks over the Lingfield area.

During the analysis period, there were a total of 81 arrivals that passed through this area. Aircraft tracks were analysed for April, May and June 2017 and with the exception of a small number of go-arounds, there were no flights that passed over Lingfield below the altitude of 1,698ft (2,000ft Gatwick QNH). There were two arrivals that passed over East Grinstead below the required altitude. The first was a British Airways Airbus A319 which passed over East Grinstead at 2,986ft AMSL. The second was an easyJet A320 which passed over the town at 2,976ft AMSL. These flights were both investigated with NATS Swanwick and they were confirmed as missed approaches.

## THE MAP BELOW SHOWS THE BRITISH AIRWAYS AIRCRAFT THAT PASSED OVER EAST GRINSTEAD AT 2,986FT AMSL



## THE MAP BELOW SHOWS THE EASYJET AIRCRAFT THAT PASSED OVER EAST GRINSTEAD AT 2,976FT AMSL





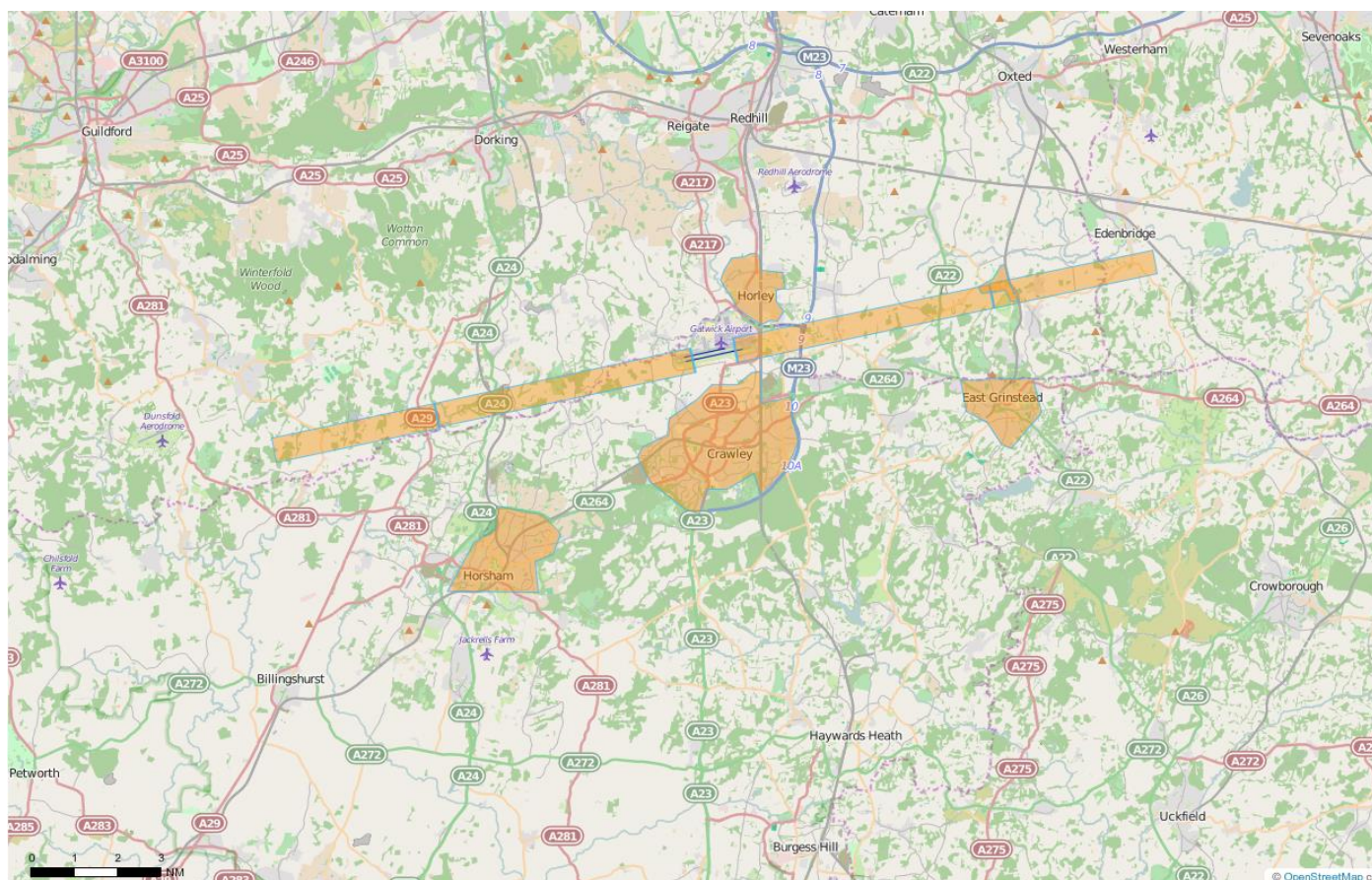
## A) DAY TIME JOINING HEIGHT (0700-2300)

**EGKK AD 2.21 (13(a))** *Where the aircraft is using the ILS in IMC or VMC it shall not descend below 2,000ft (Gatwick QNH) before intercepting the glidepath, nor thereafter fly below the glidepath. This is aimed at keeping aircraft as high as possible for as long as possible.*

The map below shows the congested urban areas, a series of gates running parallel to the extended runway centreline for around 6nm east and west of the airport, used to monitor low arrivals, joining the ILS below 2,000ft.

There were 38,414 arrivals recorded by the Casper NTK system between 1<sup>st</sup> April and 30<sup>th</sup> June 2017. Of these, the number of arrivals that were operating below an altitude of 2,000ft (equivalent to a height in the NTK system of 1,798ft) through one or more of the analysis gates was 124 (0.32%). In addition, there were 20 go-arounds that were not included in this figure. This figure is a sum of both easterly and westerly arrivals joining the ILS.

THE FOLLOWING MAP ILLUSTRATES THE ANALYSIS ZONES USED FOR LATE AND LOW ARRIVALS FOR BOTH ENDS OF THE AIRFIELD AND THE CONGESTED URBAN AREAS





## B) NIGHT TIME JOINING HEIGHT AND DISTANCE (2300-0700)

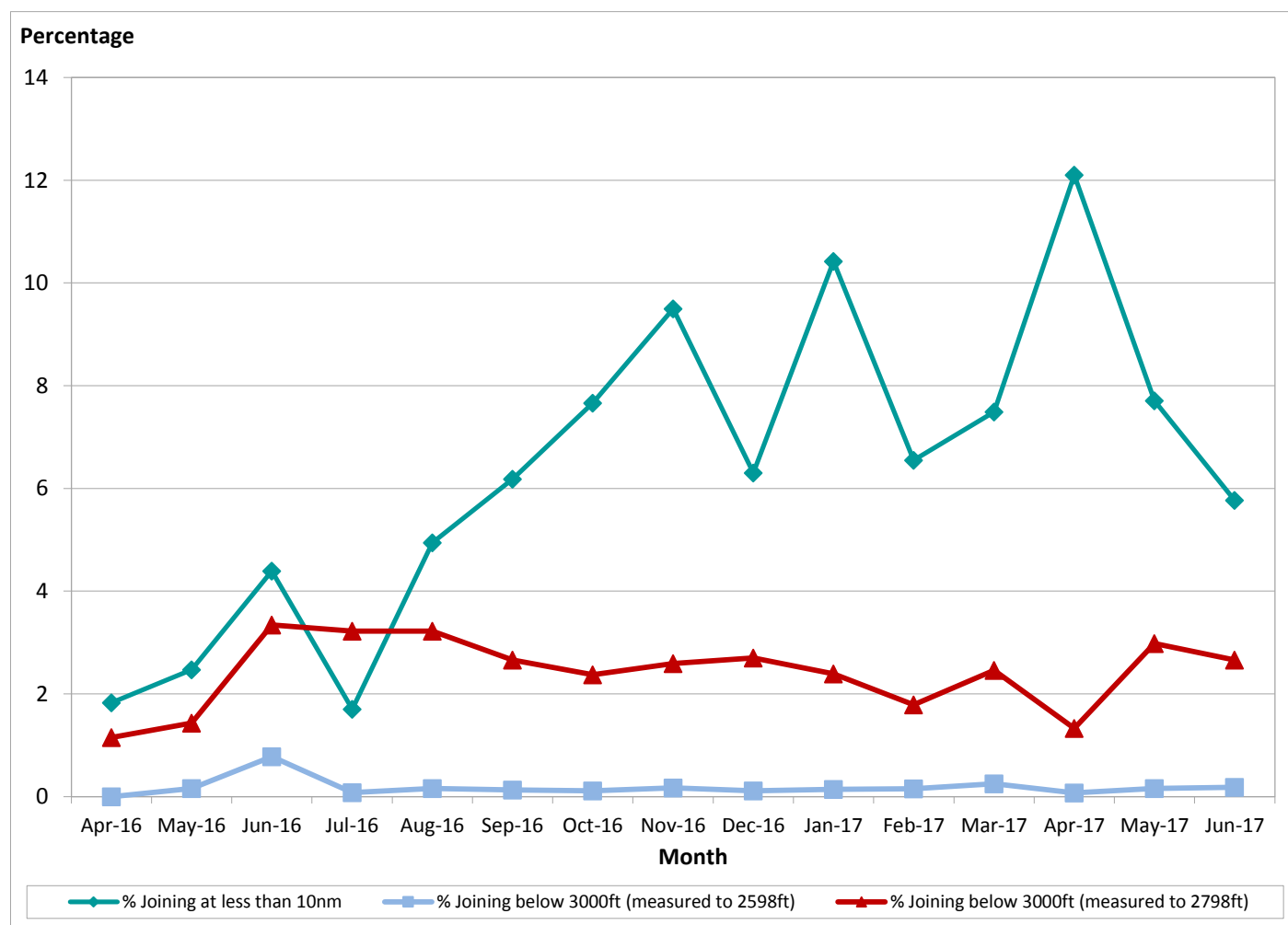
**EGKK AD 2.21 (14)** Aircraft which land at Gatwick Airport - London between the hours of 2300 (local) and 0700 (local), whether or not making use of the ILS localizer and irrespective of weight or type of approach, shall not join the centre-line:

a) below 3000ft, or

b) closer than 10 nm from touchdown.

This aims to keep aircraft higher for longer and avoid overflying areas en route to the ILS below 3,000ft.

THE GRAPH BELOW ILLUSTRATES THE NIGHT TIME JOINING POINTS OVER THE 15 MONTH PERIOD



# Go-Around Statistics 2004 - 2017

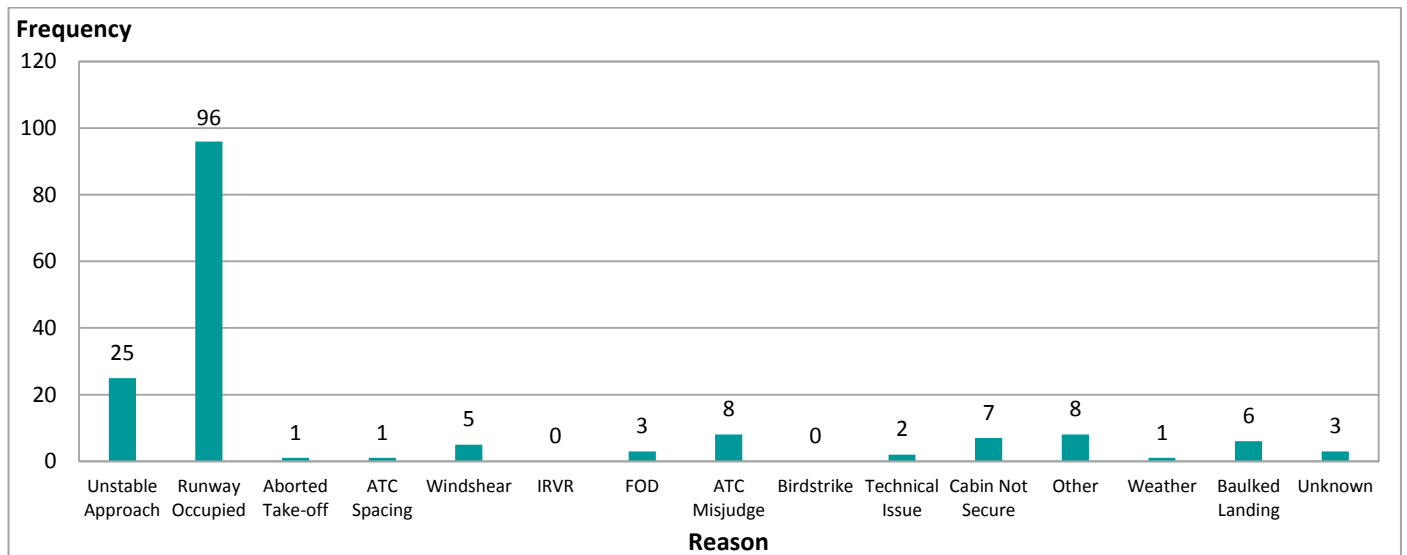
A go-around is a procedure adopted when an arriving aircraft on final approach aborts landing by applying take-off power and climbing away from the airport. It is a set procedure to be followed by the flight crew in the event of an aircraft being unable to land. The procedure is published so that Air Traffic Control (ATC) and the pilots can anticipate where the aircraft will go following the decision to go-around.

The standard missed approach procedure applicable to Gatwick Airport requires aircraft that are aborting their approach to climb to 3,000ft straight ahead, then, on passing 2,000ft or 1DME (distance measuring equipment) (whichever is later), turn heading 180. This may or may not result in aircraft overflying the town of Crawley or outlying areas.

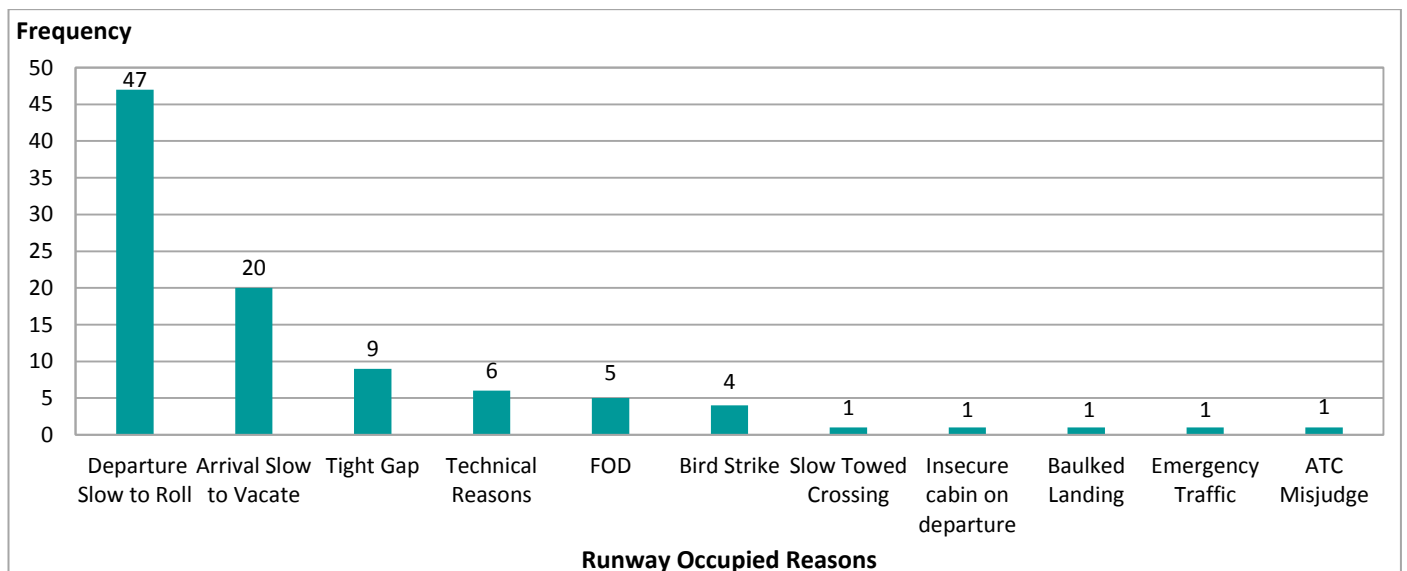
The number and reasons for go-arounds are routinely discussed at FLOPSC meetings and Pilot Forums. All parties are focussed on minimising the number of occasions when a go-around is required, but expect some to occur given the fact that Gatwick is a busy single runway airport.

It should be stated that there are well established standard procedures which both pilots and controllers are trained in and are familiar with. Gatwick Airport Limited, as the airport operator, actively encourages airlines operating at the airport to fly to the best possible environmental standards; however, safety must and always will be the number one priority.

## NATS AND ANS CURRENTLY RECORD GO-AROUNDS UNDER ONE OF THE FOLLOWING CAUSAL FACTORS (APRIL - JUNE 2017)



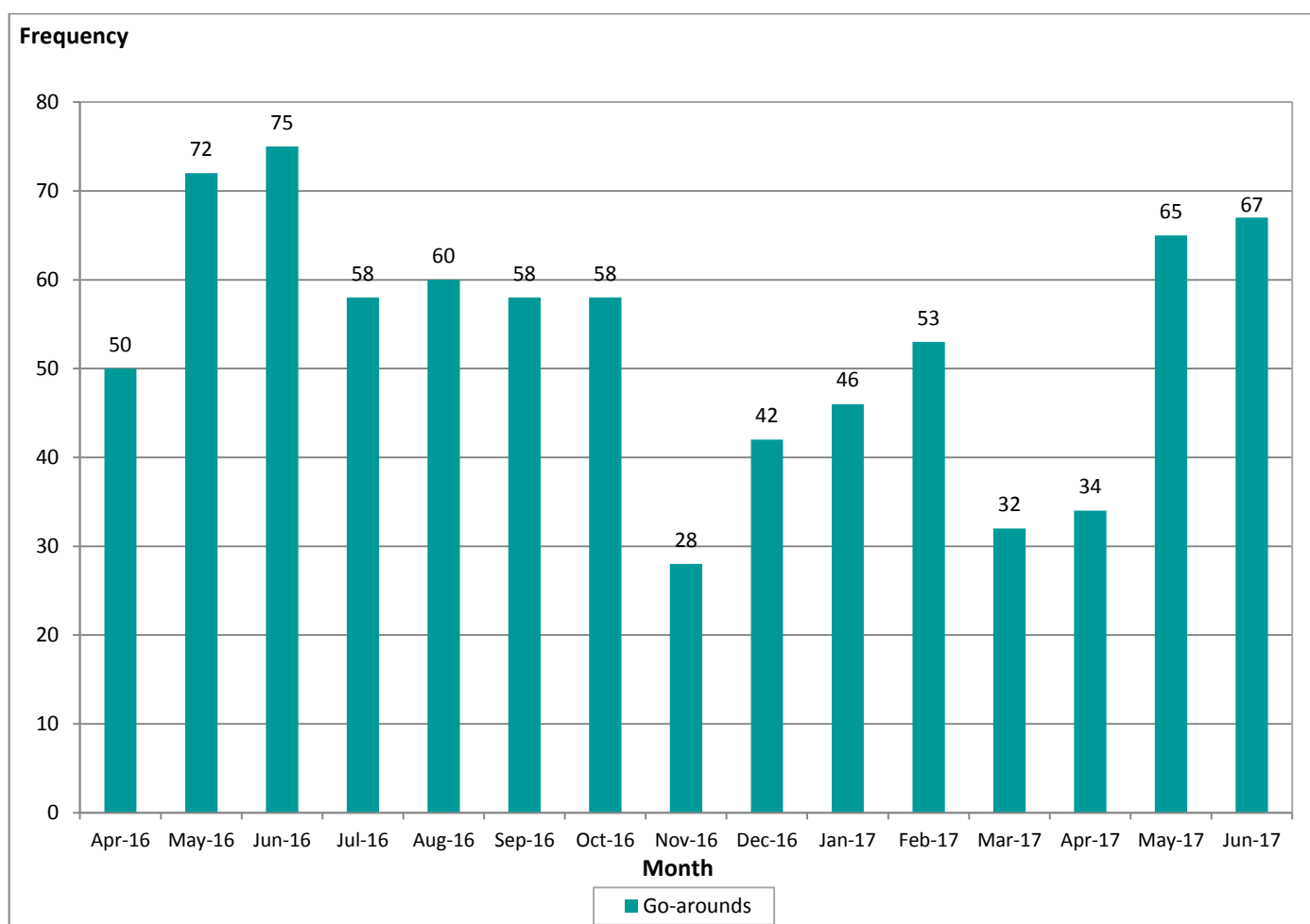
## THE REASONS GIVEN BY ANS FOR GO-AROUNDS DUE TO RUNWAY OCCUPANCY DURING THE THREE MONTH PERIOD



THE TABLE BELOW ILLUSTRATES GO-AROUND STATISTICS 2004 – 2017

Year	Total	Total Arrivals	% of Arrivals
2004	344	124665	0.28
2005	450	129509	0.35
2006	405	130954	0.31
2007	434	133271	0.33
2008	359	131858	0.27
2009	455	125861	0.36
2010	364	120263	0.30
2011	386	125541	0.31
2012	520	123408	0.42
2013	473	125290	0.38
2014	512	129966	0.39
2015	520	133869	0.39
2016	642	139998	0.46
2017	297	69048	0.43

THE GRAPH BELOW ILLUSTRATES TOTAL NUMBER OF GO-AROUNDS PER MONTH (APRIL - JUNE 2017)



# Night Flights

The Secretary of State, in exercise of his powers under Section 78 of the Civil Aviation Act 1982, has imposed restrictions at Gatwick Airport on aircraft operating at night. These restrictions are in place to limit and mitigate noise disturbance from aircraft operating at night and to prohibit aircraft of specified descriptions from operating, also to limit the number of occasions on which other aircraft may take-off or land.

The night flying restrictions are divided into summer and winter seasons which coincide with the start and end of British Summer Time. They consist of a movement limit and a quota count system. The quota count (QC) means that points are allocated to different aircraft types according to how noisy they are. The noisier the aircraft type, the higher the points allocated. This provides an incentive for airlines to use quieter aircraft types. Aircraft are certified by the International Civil Aviation Organisation (ICAO) according to the noise they produce and are classified separately for both take-off and landing.

For the purposes of night flying operations, the night quota period is defined as the period between 2330-0600 (local time). In addition, there are two further shoulder periods of 2300–2330 and 0600–0700 (local time), where other restrictions apply to the scheduling and operation of aircraft of specified descriptions. The Department for Transport (DfT) has confirmed that the current night flight restrictions will remain in force until October 2017.

Overleaf is a mid-season report for summer 2017 which began at 01:00 on the 26<sup>th</sup> March 2017. The total number of movements available for the summer season is 11525 which includes a 10% carry over of the unused quota from the winter season.

## RESTRICTIONS

Winter	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17
Movements Limits	3250	3250	3250	3250	3250	3250	3250
Quota Points	2060	2000	2000	2000	2000	2000	2000

Summer	2010	2011	2012	2013	2014	2015	2016/17
Movements Limits	12000	11200	11200	11200	11200	11200	11200
Quota Points	6400	6300	6200	6200	6200	6200	6200

## DISPENSATIONS

In accordance with the DfT guidelines, there may be times when an aircraft can be disregarded from the night flight restrictions. As a general rule these are unforeseen circumstances outside the control of either the Airport or airline resulting in the unscheduled use of a night flight slot. Examples of such instances include humanitarian relief flights, emergencies, VIP visits, delays as a result of disruption leading to passenger hardship, Air Traffic Control disruption or airspace closure caused by a volcanic ash cloud. The rules related to dispensations are strictly adhered to and all instances are reported to the DfT within 7 days.

There have been a total of 132 dispensations granted during this summer 2017 season:

- 82 dispensations were granted due to disruption caused by adverse weather conditions.
- 44 dispensations were granted due to disruption caused by low visibility conditions.
- 4 dispensations were granted due to the closure of the runway at Tenerife South Airport caused by runway damage from a landing aircraft leading to knock on effects for Gatwick arrivals and departures.
- 2 dispensations were granted for medical emergencies on the 28<sup>th</sup> and 29<sup>th</sup> May 2017.

## QC4, QC8 and QC16 MOVEMENTS

There have been no QC8 or QC16 movements during either the 'night quota' or 'shoulder periods'. These QC values are not to be scheduled to take off or land between 2300 and 0700. There were 12 unscheduled QC4 movements during the 'night quota period'. QC4 types may not be scheduled to take off or land during this period.



## London Gatwick

### AIRPORT MOVEMENTS and QUOTA SUMMARY to WEEK 14 (26 MARCH 2017 TO 01 JULY 2017 inc.)

Season Quota Points Limit	6400	Season Movement Limit	11525
Total Quota Points Allowed	6400	Total Movements Allowed	11525

Wk No.	Week Ending Date	QC0.25 No.	QC0.5 No.	QC1 No.	QC2 No.	QC4 No.	QC8 No.	QC16 No.	Total Quota Value	Mvmnts Against Limit	Exmpt Types	Not Cont'd Delays	Not Cont'd Gov't	Not Cont'd Emerg	Total Arrival No.	Total Arrivals %	Total Deps No.	Total Deps %	Total Runway Mvmnts
1	01/04/2017	98	63	13	0	2	0	0	77.00	176	1	0	0	0	148	83.6	29	16.4	177
2	08/04/2017	91	68	14	0	2	0	0	78.75	175	1	10	0	0	158	84.9	28	15.1	186
3	15/04/2017	116	65	11	1	2	0	0	82.50	195	0	15	0	0	188	89.5	22	10.5	210
4	22/04/2017	117	68	20	0	2	0	0	91.25	207	2	0	0	0	184	88.0	25	12.0	209
5	29/04/2017	138	58	16	0	2	0	0	87.50	214	1	0	0	0	184	85.6	31	14.4	215
6	06/05/2017	153	76	18	1	0	0	0	96.25	248	0	0	0	0	225	90.7	23	9.3	248
7	13/05/2017	179	89	26	1	0	0	0	117.25	295	0	0	0	0	265	89.8	30	10.2	295
8	20/05/2017	174	94	30	0	0	0	0	120.50	298	1	8	0	0	276	89.9	31	10.1	307
9	27/05/2017	224	106	41	0	0	0	0	150.00	371	0	6	0	0	335	88.9	42	11.1	377
10	03/06/2017	214	107	36	1	1	0	0	149.00	359	0	46	0	0	357	88.1	48	11.9	405
11	10/06/2017	226	125	32	2	0	0	0	155.00	385	2	7	0	0	348	88.3	46	11.7	394
12	17/06/2017	225	119	43	2	0	0	0	162.75	389	0	0	0	0	333	85.6	56	14.4	389
13	24/06/2017	228	114	30	1	0	0	0	146.00	373	0	26	0	0	341	85.5	58	14.5	399
14	01/07/2017	269	126	35	2	1	0	0	173.25	433	0	14	0	0	393	87.9	54	12.1	447
<b>TOTALS</b>		<b>2452</b>	<b>1278</b>	<b>365</b>	<b>11</b>	<b>12</b>	<b>0</b>	<b>0</b>	<b>1687.00</b>	<b>4118</b>	<b>8</b>	<b>132</b>	<b>0</b>	<b>0</b>	<b>3735</b>	<b>87.7</b>	<b>523</b>	<b>12.3</b>	<b>4258</b>

Quota Points Available	4713.00	Movements Available	7407
Quota % Points Used	26.4	Movements % Used	35.7

Note 1 Not Cont'd Delays

Note 2 Not Cont'd Gov't

Note 3 Not Cont'd Emerg

Delays likely to lead to serious congestion and delays resulting from widespread disruption of Air Traffic.

Exemptions granted by Gov't (VIP Passengers, Emergency Relief).

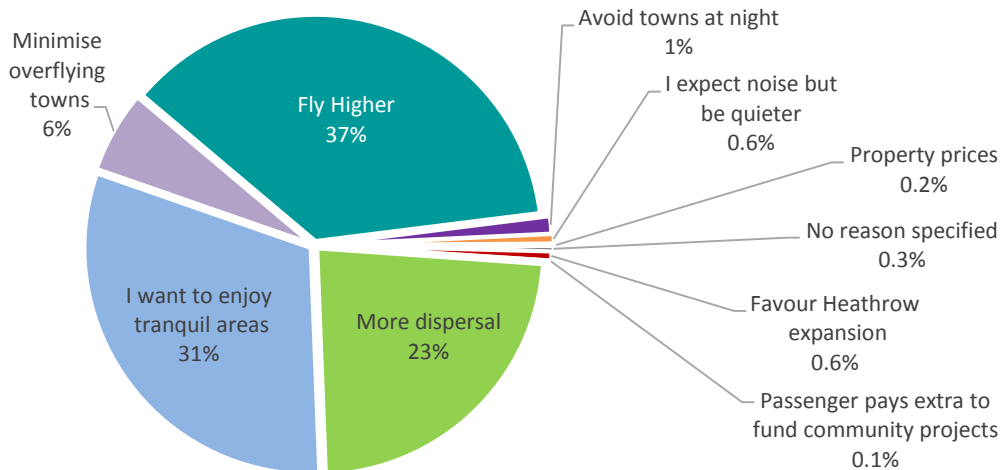
Emergency Take-offs and Landing

# Noise Complaints

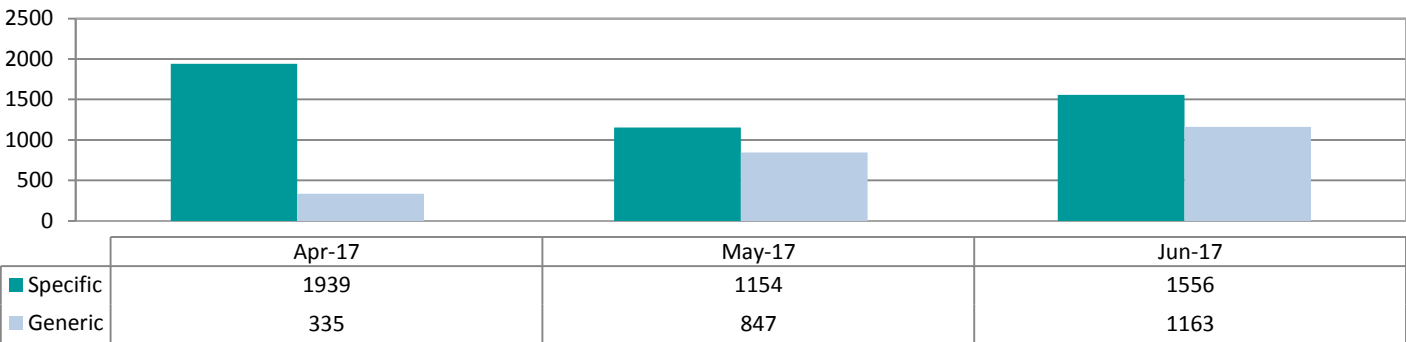
It is important that we understand the issues of noise disturbance from individuals and communities who live around the airport. By studying the complaints we receive and by communicating with the affected towns and villages surrounding the Airport, we believe that this gives us a greater understanding of the issues related to noise.

This means that we can work together to improve the noise climate around the Airport. The complaints we have received are either about specific aircraft events that cause disturbance or generic complaints about airport operations in general. The following charts provide an analysis of the reasons for the numbers of complaints.

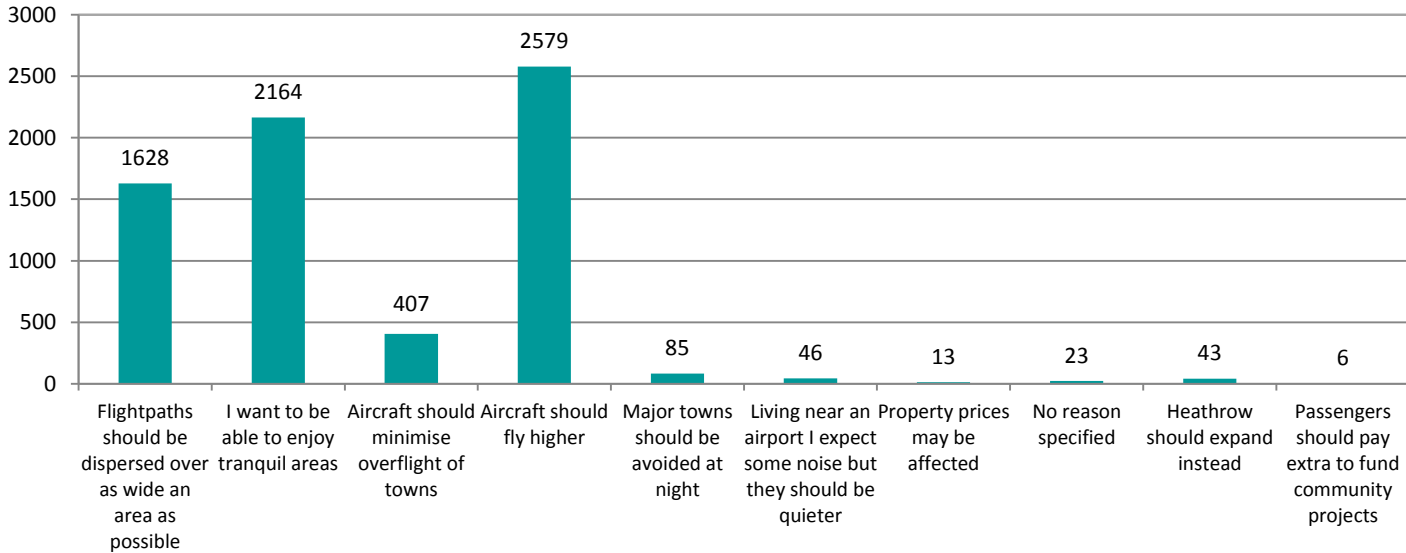
PERCENTAGE OF COMPLAINT STATEMENTS MOST AGREED WITH



COMPLAINTS RECORDED BY MONTH



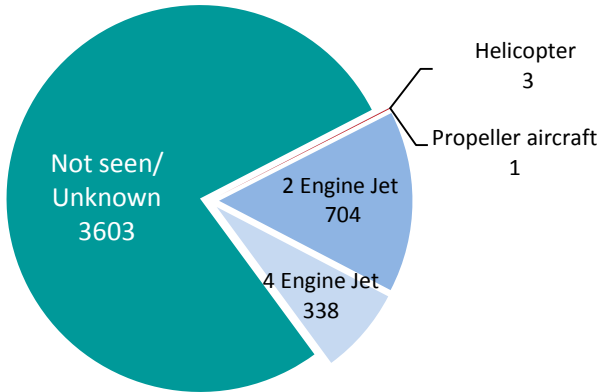
NUMBER OF COMPLAINT STATEMENTS MOST AGREED WITH



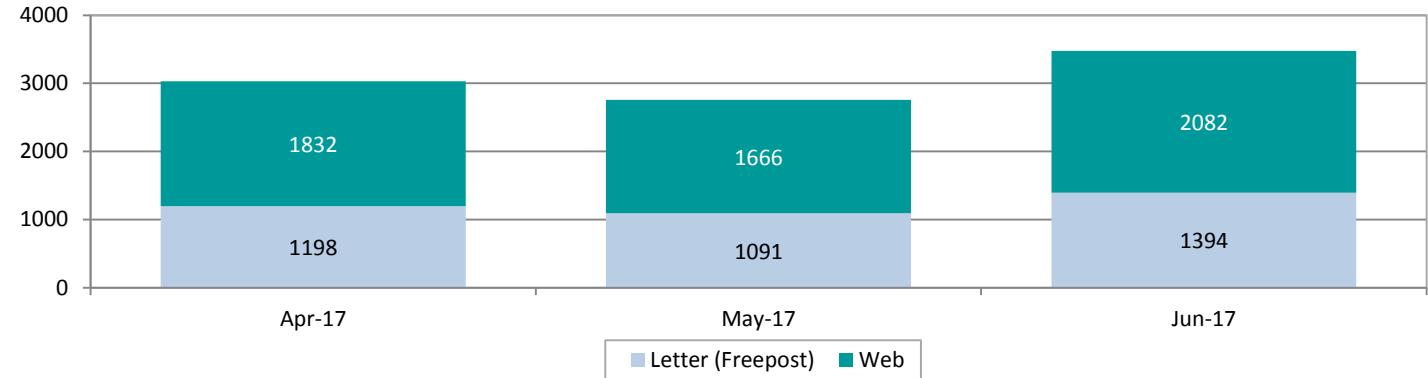
Noise is very subjective and can affect people in different ways. Some people can tolerate a certain noise level whilst it can cause disturbance to others. As well as identifying the issues of noise, it is important to understand the location of each individual complaint.

The charts below provide further analysis of the categories of aircraft types and the method of complaint and the location of individual complainants.

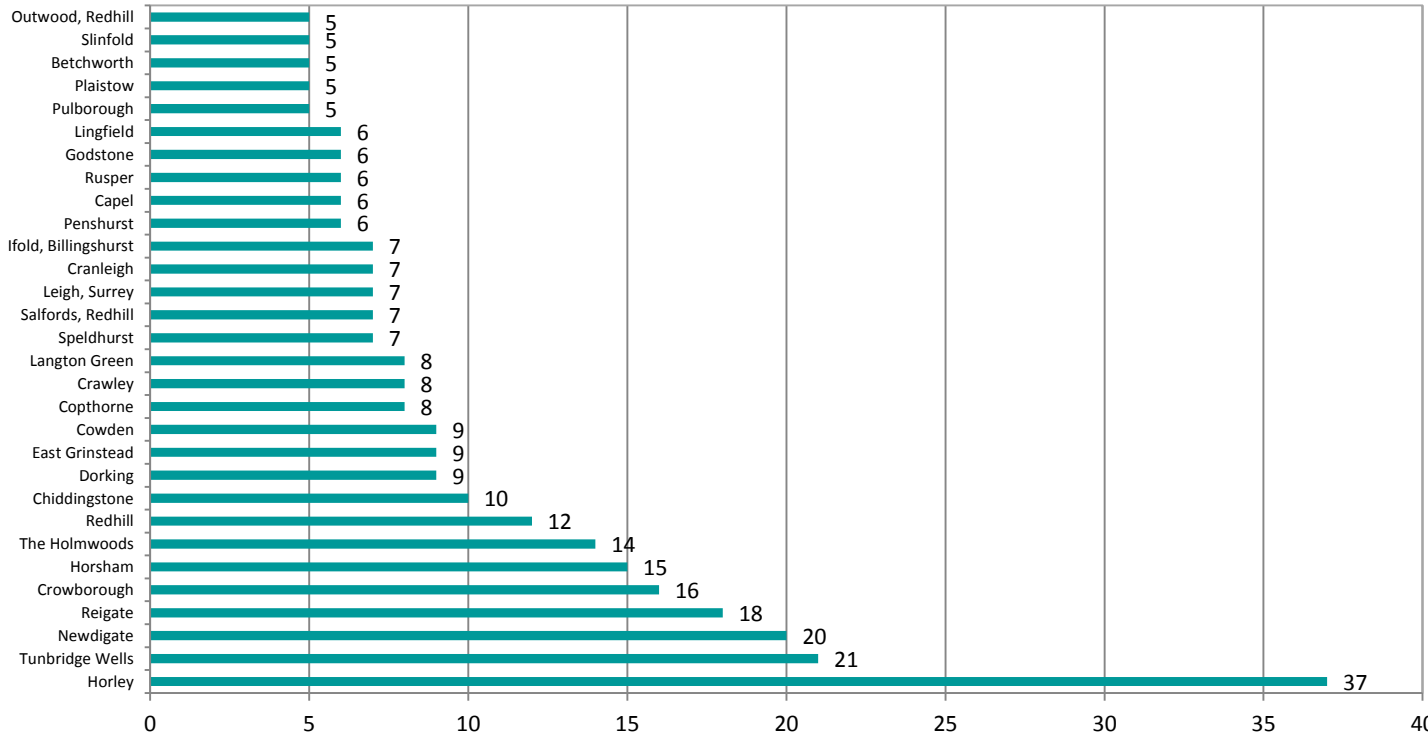
### CATEGORIES OF AIRCRAFT TYPES FROM SPECIFIC COMPLAINTS



### METHOD OF COMPLAINT

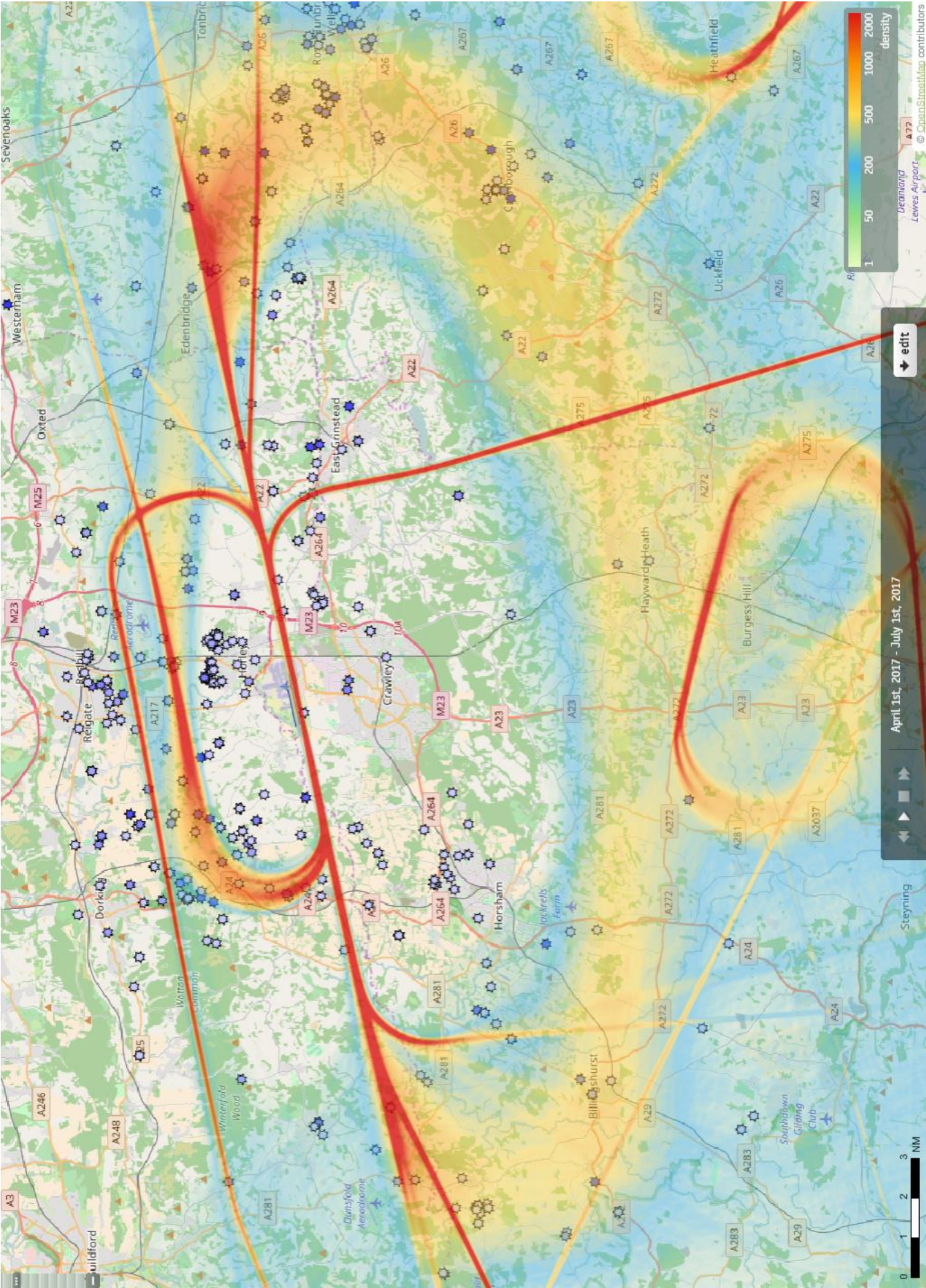


### NUMBER OF INDIVIDUAL COMPLAINANTS BY TOWN/VILLAGE



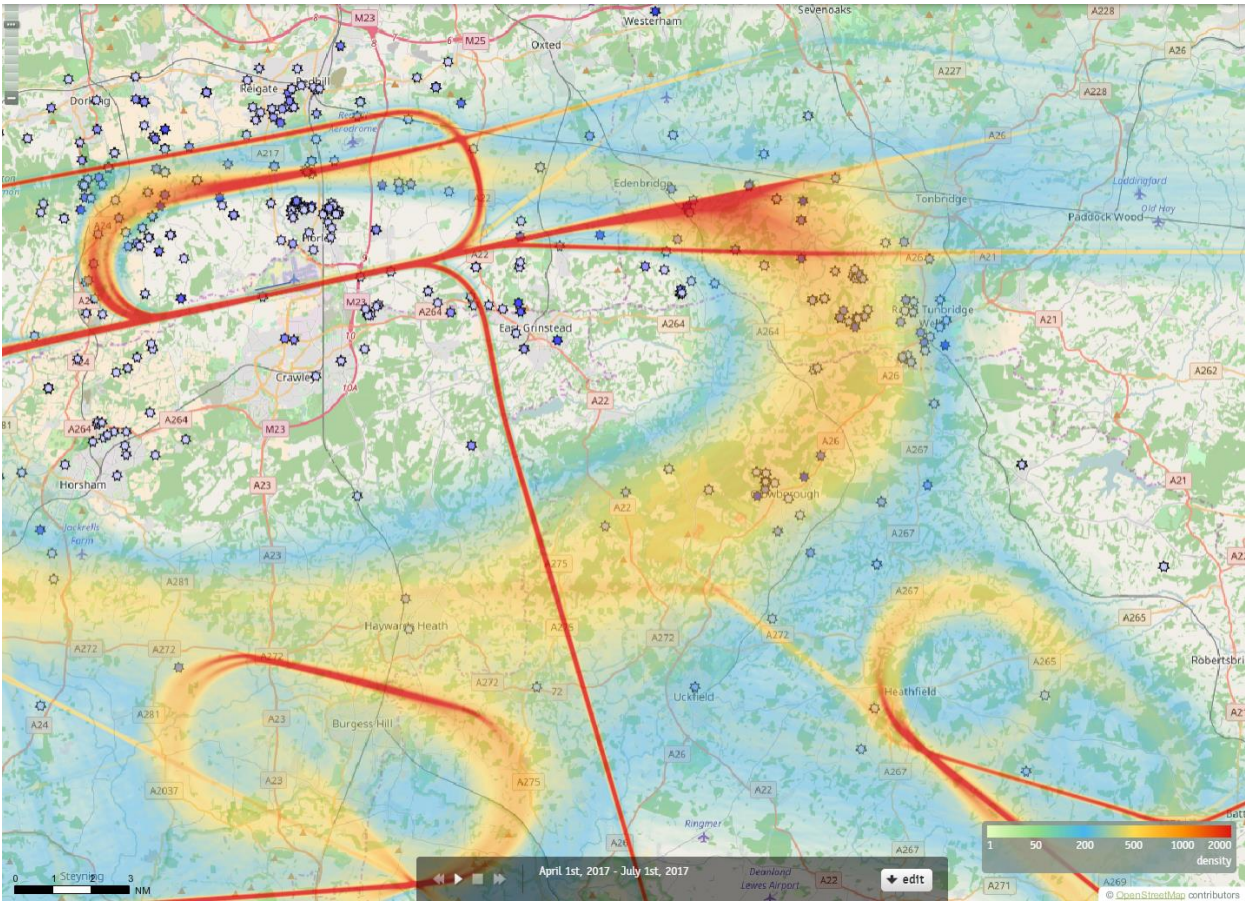


THE MAP BELOW ILLUSTRATES THE LOCATION OF NOISE COMPLAINTS RECEIVED BETWEEN APRIL - JUNE 2017

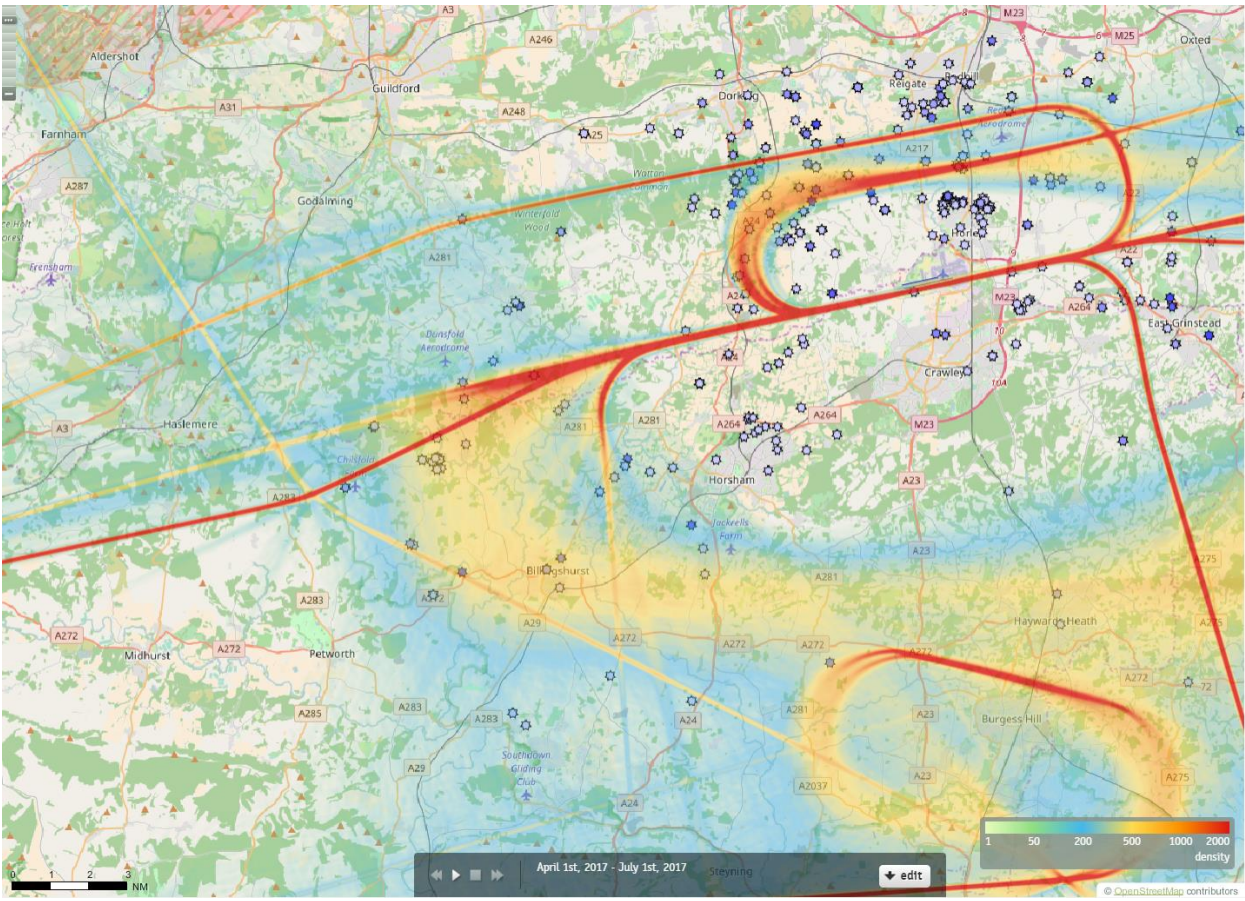




THE MAP BELOW ILLUSTRATES NOISE COMPLAINTS RECEIVED TO THE EAST (APRIL - JUNE 2017)



THE MAP BELOW ILLUSTRATES NOISE COMPLAINTS RECEIVED TO THE WEST (APRIL - JUNE 2017)





# Ground Noise Complaints

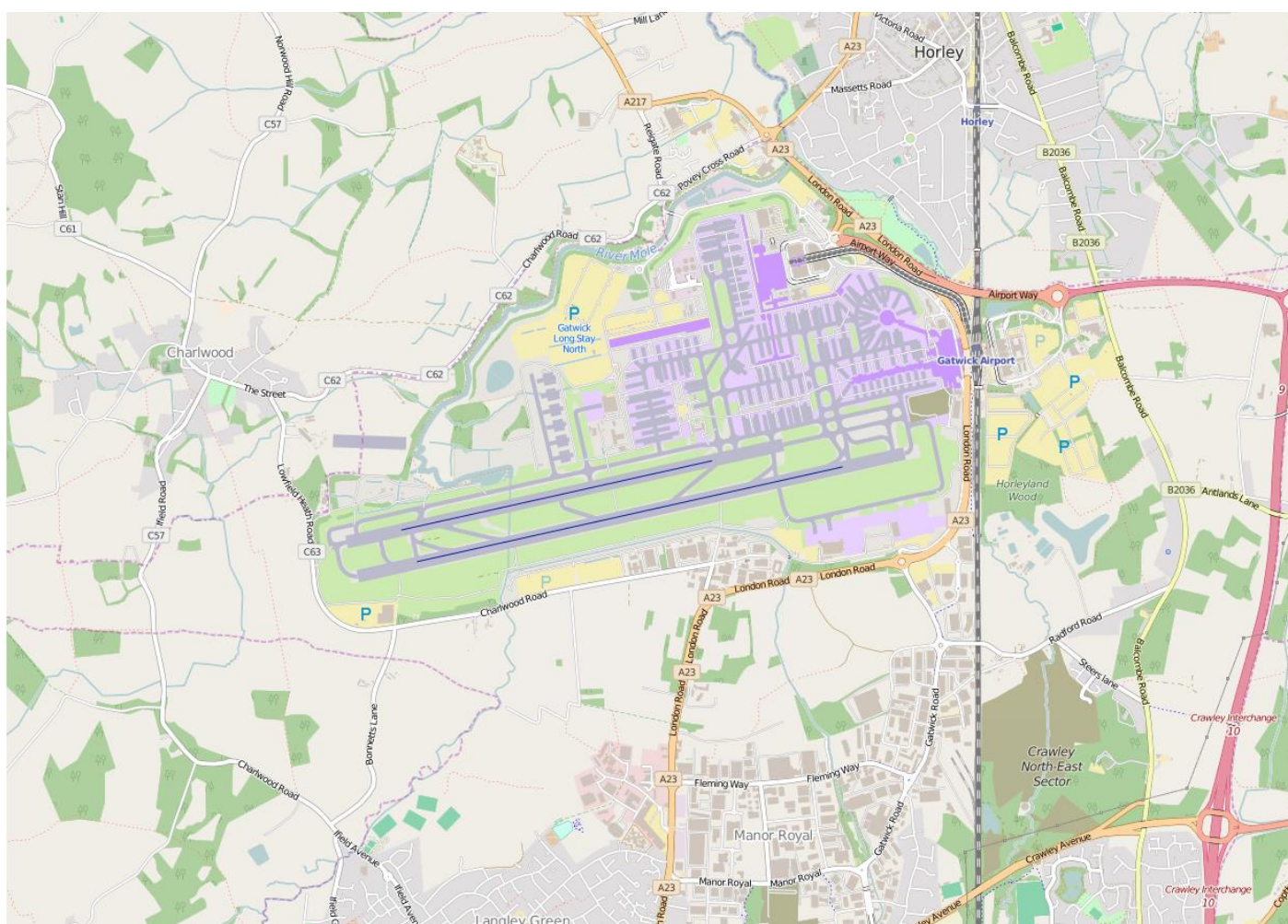
We occasionally receive complaints about disturbance from noise from within the boundary of the airfield. These can be caused by the normal operation of aircraft moving about the airfield, taking off and landing. Additional sources of noise disturbance can be the use of Auxiliary Power Units (APU) by aircraft on stand or the testing of engines following maintenance or repair (engine runs).

Strict regulations exist to minimise this disturbance, which includes a ban on engine running during the night. Details of any ground noise complaints are outlined below.

## Comment:

There were no recorded ground noise complaints during the three month period.

THE MAP BELOW ILLUSTRATES THE GATWICK AIRPORT AIRFIELD



For more information visit us at: <http://www.gatwickairport.com/aircraftnoiseandairspace>

# Glossary

**ACoP** – Arrivals Code of Practice

**AIP** – Aeronautical Information Publication

**AMSL** – Above Mean Sea Level

**ANS** – Air Navigation Solutions

**APU** – Auxiliary Power Unit - A small auxiliary engine on an aircraft used to provide electrical power when the main engines are shut down.

**ATC** – Air Traffic Control

**CAA** – Civil Aviation Authority

**CDO** – Continuous Descent Operations - A noise abatement procedure for arrivals used to avoid periods of level flight, reducing noise and emissions.

**dBA** – A-weighted decibels that takes closest account of human hearing. It is used to measure aircraft noise.

**DfT** – Department for Transport

**DME** – Distance measuring equipment

**EGKK** or **LGW** – London Gatwick Airport

**FLOPSC** – Flight Operations Performance and Safety Committee

**FPT** – Flight Performance Team

**Go-Around** – A go-around is an aborted landing of an aircraft which is on approach to the runway.

**ICAO** – International Civil Aviation Organisation

**ILS** – Instrument Landing System

**IMC** – Instrument Meteorological Conditions

**KPI** – Key Performance Indicators

**Lmax** – Maximum noise level

**NATS** – National Air Traffic Services

**nm** – Nautical Miles

**NPR** – Noise Preferential Route

**NTK** – Noise and Track Keeping monitoring system using Casper.

**P-RNAV** – Precision Route Navigation

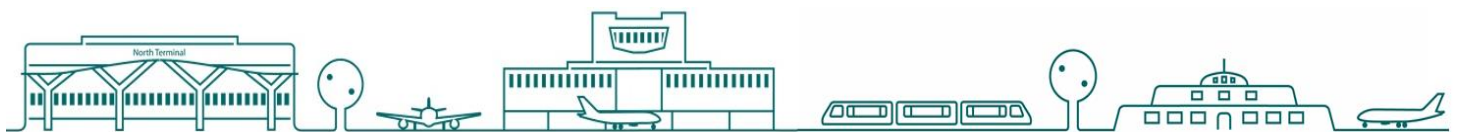
**QC** – Quota Count

**QNH** – The barometric pressure at sea level (QFE is the barometric pressure at the Airport).

**SID** – Standard Instrument Departure - A route out of UK airspace assigned to departing aircraft with an NPR in the first section.

**Vectoring** – Air Traffic Control procedure turning a departure off an NPR onto a more direct heading.

**VMC** – Visual Meteorological Conditions



YOUR LONDON AIRPORT  
*Gatwick*



# Gatwick Airport Flight Performance Report

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This report covers the period  
(1st July – 30th September 2017)



YOUR LONDON AIRPORT  
*Gatwick*

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# Introduction

## ABOUT THIS REPORT

This report is produced by the Gatwick Flight Performance Team (FPT). This team is responsible for recording, investigating and responding to aircraft noise enquiries as well as monitoring airline compliance to noise mitigation measures as detailed in the UK Aeronautical Information Publication (AIP). This department also actively engages with the airlines to improve their adherence to the above noise mitigation measures and in addition manages the night-time restrictions on flying at Gatwick.

This report contains detailed data on aircraft activity at Gatwick including the adherence to the noise mitigation measures detailed in the UK AIP, a report on night flying during the period, and an analysis of noise complaints received during the period.

## KEY MONITORING INDICATORS – 1<sup>st</sup> JULY – 30<sup>th</sup> SEPTEMBER 2017

Parameter		12 month performance averages <sup>1</sup>			
		Year to date (2017)	Previous year (2016)	2011	2006
Track keeping performance (% on track)	▲	98.21% <sup>2</sup>	99.78%	97.47%	98.17% <sup>3</sup>
24hr CDO (% achievement) <sup>4</sup>	▼	90.43%	88.08%	90.49%	80.79%
Day/Shoulder CDO (% achievement)	▲	90.40%	87.55%	90.19%	79.9%
Core night CDO (% achievement)	▼	90.77%	93.68%	93.96%	89.6%
1,000ft Infringements (No.)	▼	0	0	3	11
1,000ft Infringements (No. below 900ft)	▼	0	0	1	6
Departure Noise Infringements (Day)	-	0	0	0	10
Departure Noise Infringements (Night/Shoulder)	▼	0	0	4	2
Individual complainants	▲	1233	2363	343	587
Total noise complaints received <sup>5</sup>	▲	24716	18265	2673	4791
Enquiry response performance target is 95% within 8 days (July to September 2017)	▼	86.32%	52.30%	KPI 95%	
West/East Runway Split (%)	-	69/31	71/29	67/33	68/32

<sup>1</sup> The colour indicates the most recent 12 month performance compared to 2011, with green showing improvement and red a decline in performance.

<sup>2</sup> Track keeping statistics measurement changed on the 26<sup>th</sup> May 2016 due to the Route 4 amendment, all SID's are now included in the total figure.

<sup>3</sup> This figure did not include deviations from prop types or those due to weather.

<sup>4</sup> As a result of the Independent Review of Arrivals, it was recommended (Imm-05) that the CDO monitoring altitude be increased from 6,000ft to 7,000ft as of 1<sup>st</sup> August 2016.

<sup>5</sup> Complaints are recorded in line with our published complaints handling policy. The revised policy, published in November 2014, advised that only one complaint per day is recorded per individual. On the 29<sup>th</sup> September 2016, there was a further revision to our complaints handling policy which now allows individuals to make multiple complaints per day and these will each be recorded.

# Executive Summary

## Performance Headlines

### AIRPORT OPERATIONS

Between 1<sup>st</sup> July and 30<sup>th</sup> September 2017, there were a total of 83,711 fixed wing aircraft movements at Gatwick, an increase in traffic of about 0.8% compared to the same period in 2016. The direction of operation is determined by wind direction and this was split 81% on the westerly runway and 19% on the easterly runway for the period. The rolling 16 year average for the split in runway usage is approximately 68% westerly and 32% easterly.

### NORTHERN RUNWAY (26R/08L) USAGE

Although Gatwick has the main runway and the 'reserve' or northern runway, they cannot be operated simultaneously.

The northern runway is normally only utilised during the night when maintenance on the main runway is planned. During these three months, there were a total of 1,460 movements from the northern runway.

### TRACK KEEPING

Track keeping performance has decreased slightly compared to the previous year's performance, details of which will follow later in this report. As part of our continuing commitment to increase on-track performance, the FPT also continues to engage with the airlines directly and through the Flight Operations Performance and Safety Committee (FLOPSC) on a range of initiatives to monitor compliance.

### WOULD YOU LIKE TO KNOW MORE ABOUT AIRCRAFT NOISE OR TRACK A FLIGHT?

To track aircraft, see noise readings or make a complaint about aircraft noise at Gatwick you can visit our website: <http://www.gatwickairport.com/aircraftnoiseandairspace>

The website provides detailed maps on aircraft traffic around the airport as well as useful information on noise and statistics on aircraft movements. It also details the work we undertake with others in the aviation industry to try and alleviate the impact of our operations on both the local and wider community.

### CONTINUOUS DESCENT OPERATIONS (CDO) PERFORMANCE

While the Noise and Track Keeping (NTK) system utilises the most up-to-date format of radar data currently available, the

algorithm that measures CDO performance has remained unchanged since the definition was initially defined several years ago. As part of a development project to improve the accuracy of CDO measurement, the Flight Performance Team has worked closely with NATS to upgrade the current algorithm. The core algorithm remains unaltered, although some additional rules have been added with the result that some marginal profiles, previously classified as CDO compliant, will now be re-classified as non-CDO flights. These changes came into effect from May 2015 and the resulting variance in recorded levels of performance is in the order of 1%, therefore we expect to see a minor drop off in recorded performance from this date. Historical observations have consistently shown a reduction in performance during the winter months due to instances of inclement weather.

It is important to note that as recommended by the Independent Review of Arrivals, the altitude at which CDO is measured has changed as of 1<sup>st</sup> August 2016, more details later in the report.

### COMMUNITY NOISE MONITORING

In addition to fixed monitors located close to the ends of the runway, there are currently mobile noise monitors deployed at sites in Lingfield, Rusper, Oakwood Hill, Cowden and South Holmwood.

For several years, we have run a programme of noise monitoring to get a better understanding of the levels of aircraft noise in the communities surrounding Gatwick Airport. The noise monitors provide a method of monitoring and recording noise from both aircraft, and background sources. This allows us to evaluate trends and make comparisons between the noise environments at different locations.

### COMPLAINTS

The number of recorded complaints has increased compared to the previous twelve months, however the number of complainants has decreased. The past year has been the busiest year in the airport's history and there has also been a large amount of publicity surrounding the potential second runway, and the community issues related to the Route 4 amendment, which may be contributing factors for the number of complaints in 2017.

The postcode areas with the greatest number of enquiries during the three month period were Horley, Newdigate, Tunbridge Wells and Crawley. The number of individual complainants between July and September 2017 was **520**. Complaints about aircraft operations are processed in accordance with our published Complaints Handling Policy. Details of this policy are available on our website.



# Runway Direction

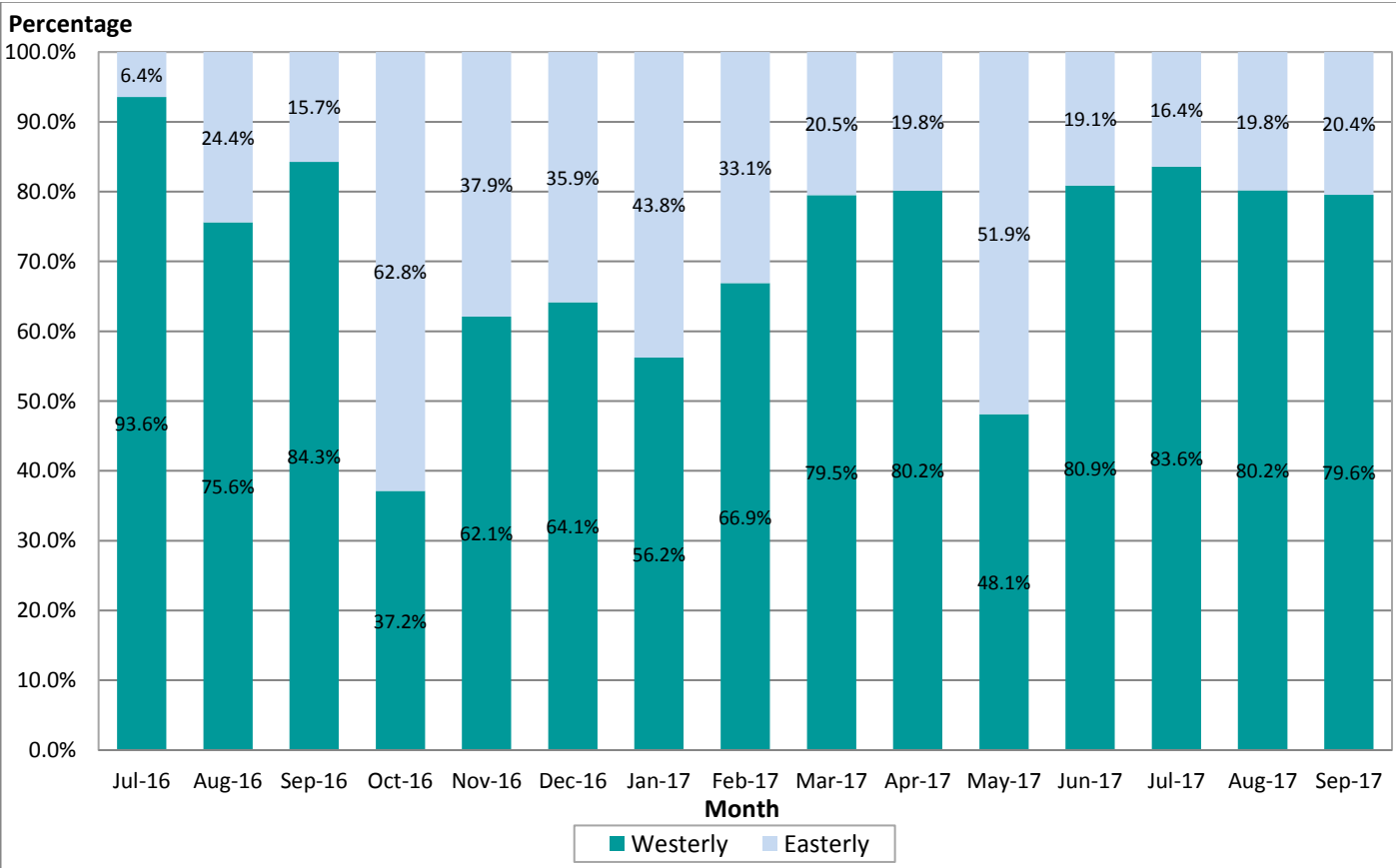
The graph below represents the direction of runway operation at Gatwick. Aircraft operating in a westerly direction take off towards the west and land from the east. Aircraft operating in an easterly direction take off towards the east and land from the west.

Although the long term average is approximately 68:32 in favour of westerly operations, it is not unusual to experience long periods of prolonged operation in either one direction or another.



## RUNWAY DIRECTION SPLIT

THE GRAPH BELOW SHOWS THE SPLIT OVER THE 15 MONTH PERIOD (JULY 2016 – SEPTEMBER 2017)



# The Aeronautical Information Publication

An Aeronautical Information Publication (or AIP) is defined by the International Civil Aviation Organisation (ICAO) as a publication issued by or with the authority of a state and containing aeronautical information of a lasting character essential to air navigation.

It is designed to be a manual containing thorough details of regulations, procedures and other information pertinent to flying aircraft in the particular country to which it relates. It is usually issued by or on behalf of the respective civil aviation administration.

The structure and contents of AIPs are standardized by international agreement through ICAO. AIPs normally have three parts - GEN (general), ENR (en route) and AD (aerodromes).

The Gatwick Aerodrome AIP contains details regarding the noise mitigation measures in place and adherence to these is reported in this section.

## ADHERENCE TO NOISE MITIGATION MEASURES AS DETAILED IN THE GATWICK AIP

Each element of this report is preceded, where applicable, by the relevant Aeronautical Information Publication (AIP) reference and summary text detailing the purpose of the requirement. Data is then presented on current performance.

It should be noted that Gatwick is 202ft above mean sea level (AMSL) and the Noise and Track Keeping system (NTK) measures height relative to Gatwick elevation and not sea level.

References in the AIP are usually above sea level (quoted as Gatwick QNH) and therefore need to be reduced by 202ft to be comparable with heights, as measured by the NTK. For example, the requirement to join the ILS at 3,000ft would equate to 2,798ft in the NTK system.

No account is taken of the variability of heights as measured by the radar which, depending on the distance from the radar head, can be +/- 200ft from that indicated. This is obviously allowed for by NATS and ANS when managing operations.

# Departures - Noise Infringements

## DEPARTURE NOISE LIMITS (DAYTIME)

**EGKK AD 2.21 (3(3))** *Subject to sub-paragraphs (5) and (6) below, any aircraft shall, after take-off, be operated in such a way that it will not cause more than 94 dBA Lmax by day (from 0700 to 2300 hours local time) as measured at any noise monitoring terminal at any of the sites referred to in sub-paragraph (2). This is to ensure that departing aircraft do not exceed the stated level during the day.*

Year	Number of Day Infringements	Year	Number of Day Infringements
2006	9	2012	0
2007	13	2013	0
2008	2	2014	0
2009	0	2015	0
2010	0	2016	0
2011	0	2017	0

## DEPARTURE NOISE LIMITS (CORE NIGHT & SHOULDERS)

**EGKK AD 2.21 (3(4))** *Subject to sub-paragraphs (5) and (6) below, any aircraft shall, after take-off, be operated in such a way that it will not cause more than 89 dBA Lmax by night (from 2300 to 0700 hours local time) and that it will not cause more than 87 dBA Lmax during the night quota period (from 2330 to 0600 hours local time) as measured at any noise monitoring terminal at any of the sites referred to in sub-paragraph (2). This is to ensure that departing aircraft do not exceed the stated levels during the night and shoulder periods.*

Year	Number of Night & Shoulder Infringements	Year	Number of Night & Shoulder Infringements
2006	2	2012	0
2007	2	2013	0
2008	2	2014	0
2009	1	2015	0
2010	0	2016	1
2011	4	2017	2

# Departures - Initial Climb Performance

**EGKK AD 2.21 (3(1))** *After take-off the aircraft shall be operated in such a way that it is at a height of not less than 1000ft aal (above airfield level) at 6.5 km from start of roll as measured along the departure track of the aircraft. This is to ensure departing aircraft achieve at least that climb gradient in order to reduce the impact on the ground.*

## Comment:

There were no infringements of the 1,000ft rule during the three month period.

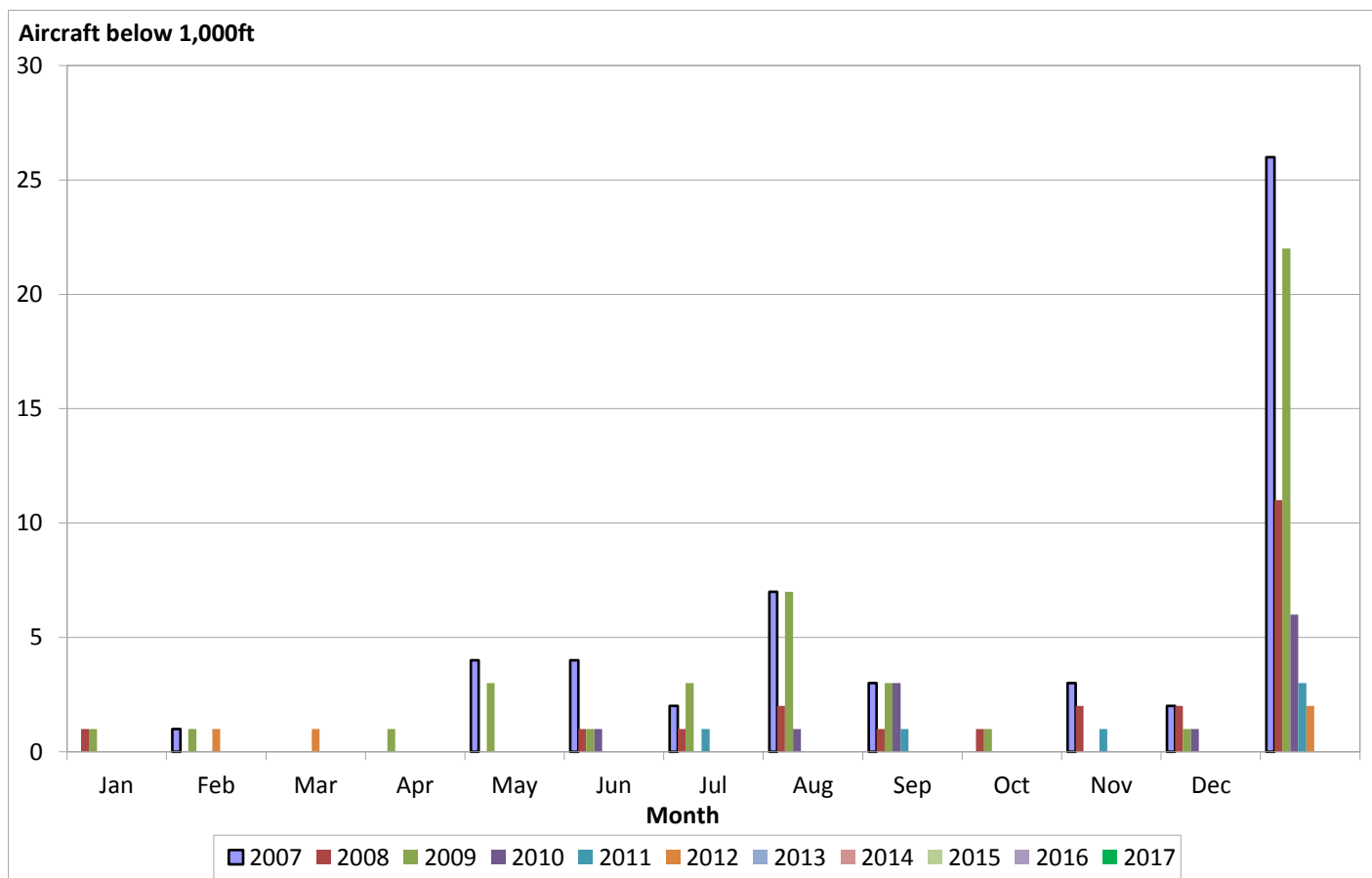
Historically, the summer months are typically the peak period for aircraft failing to meet the 1,000ft requirement, primarily due to the warmer weather which reduces aircraft climb performance.

## 1,000ft INFRINGEMENT TABLE

Year	Total Infringements	Year	Total Infringements
2006	11	2012	2
2007	26	2013	0
2008	11	2014	0
2009	22	2015	0
2010	6	2016	0
2011	3	2017	0

THE GRAPH BELOW ILLUSTRATES 1,000ft INFRINGEMENT PERFORMANCE SINCE 2007

## Initial Climb Performance



# Departures – Track Keeping

All jet aircraft leaving Gatwick Airport should follow flight paths known as Noise Preferential Routes (NPRs) up to a height of 3,000ft or 4,000ft depending on the route. An NPR consists of a 'centreline' and an associate compliance monitoring swathe (3km across, i.e. 1.5km either side of the NPR centreline). These NPR's are mapped below. As long as aircraft remain within the corridor boundaries, they are deemed to be on-track. A map illustrating the Noise Preferential Routes at Gatwick is available below.

Air Traffic Control (ATC) are responsible for the routing of aircraft once airborne and when 3,000 or 4,000ft has been reached, they may give a flight a more direct heading, known as vectoring, off the route. This is subject to certain factors, including weather conditions and other traffic in the vicinity. Flights leaving the route below the required height are automatically tagged and details are sent to the airline for investigation. Our Flight Operations Performance & Safety Committee (FLOPSC) regularly review track keeping performance.

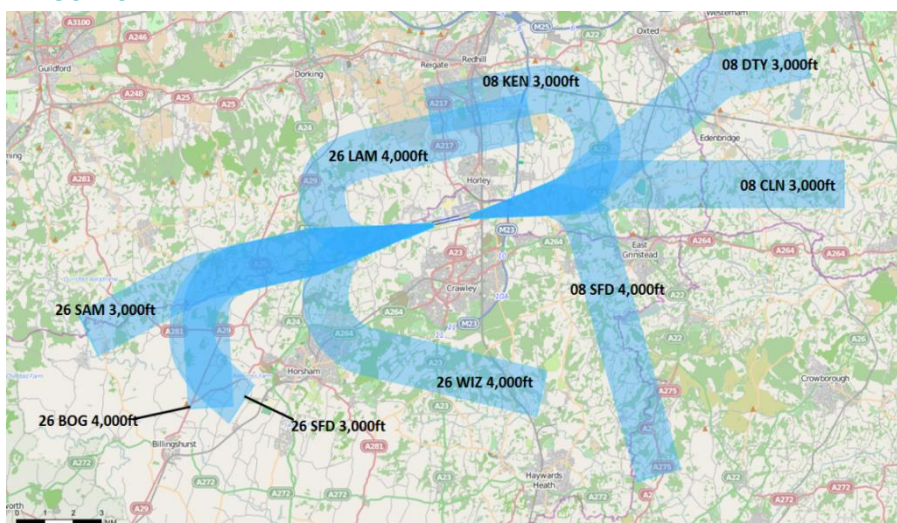
In 2012, Gatwick Airport publicly consulted on the implementation of a more modern form of aircraft navigation called P-RNAV (Precision Route Navigation). After having assessed all consultation feedback, the Civil Aviation Authority (CAA) granted the airport permission to implement P-RNAV on all of our departure routes. Implementing P-RNAV on the published departure routes has resulted in the tracks of departing aircraft being more concentrated within the boundaries of the current NPR's, with one exception. This is the NPR designed 26LAM/Route 4 that heads west then turns back on itself and passes to the north of the airfield. This route has always presented a challenge for modern jets as it was designed to accommodate propeller-driven aircraft and early jets that were around in the 1960's.

Implementing P-RNAV on this route required aircraft to fly outside of the current NPR. Therefore, as approved by the CAA, aircraft on a P-RNAV departure on this route were not classified as off-track as they were following the published route.

Following the introduction of P-RNAV at Gatwick Airport, the CAA conducted a Post Implementation Review (PIR) on all routes. The Review has recommended that this particular route (Route 4) be modified so that departing aircraft are compliant and remain within the published NPR swathe. It now requires all Standard Instrument Departure routes (SID's) to be counted in the track keeping statistics whereas previously, the P-RNAV SID's were not included. The amendment to Route 4 was monitored for a six month period from 26<sup>th</sup> May to 26<sup>th</sup> November 2016. During this time, Gatwick Airport engaged with the CAA, our airlines, Air Traffic Control and our airspace designers to improve adherence to the amended route. Following the PIR, the CAA has concluded that the modified Route 4 SID's achieve a satisfactory replication of the nominal track of the corrected conventional SID. The CAA has therefore decided to confirm the P-RNAV SID designs currently published in the UK Aeronautical Information Publication (AIP) as permanent.

There has also been a modification to our 08CLN/Route 5 NPR which has been in place since the 30<sup>th</sup> March 2017, as advised by the CAA. Previously, aircraft were flying slightly to the south of the NPR centreline and this modification aims to better replicate the existing conventional SID route and bring aircraft back towards the centre. This was monitored by the CAA for a six month period until the 30<sup>th</sup> September 2017 to ensure the aircraft were operating as anticipated. As with Route 4, Gatwick Airport has engaged with the relevant parties to collate feedback and provide track data to the CAA.

THE MAP BELOW ILLUSTRATES THE NOISE PREFERENTIAL ROUTES USED BY DEPARTING AIRCRAFT WITH MINIMUM VECTORING ALTITUDE FIGURES

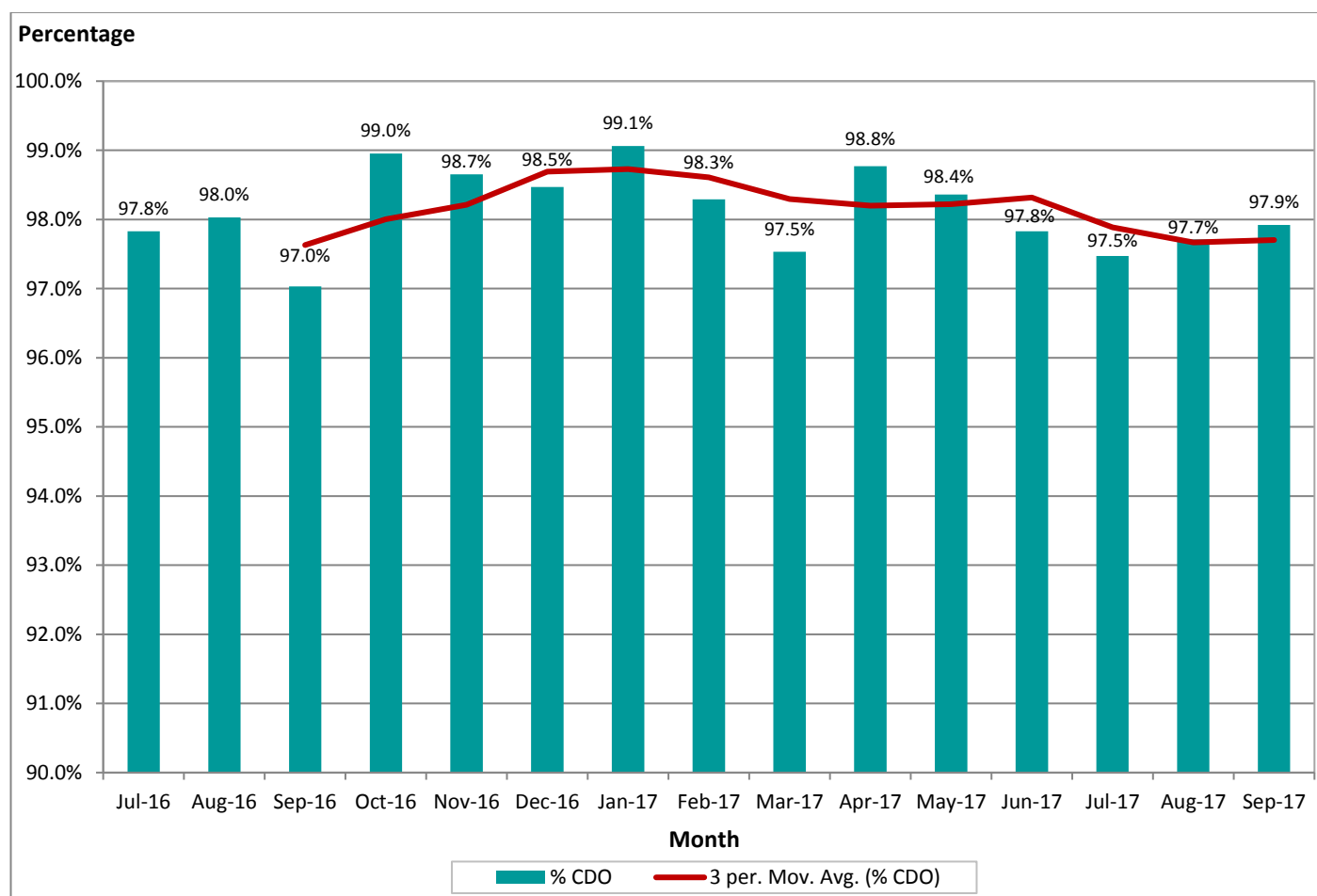




THE TABLE BELOW ILLUSTRATES TRACK KEEPING PERFORMANCE OVER 15 MONTHS

Month	Total			Westerly			Easterly		
	Deviations	Departures	%	Deviations	Departures	%	Deviations	Departures	%
Jul-16	302	13915	2.17%	294	13022	2.26%	8	893	0.90%
Aug-16	278	14131	1.97%	257	10627	2.42%	21	3504	0.60%
Sep-16	401	13498	2.97%	397	11428	3.47%	4	2070	0.19%
Oct-16	133	12705	1.05%	115	4688	2.45%	18	8017	0.22%
Nov-16	126	9360	1.35%	118	5818	2.03%	8	3542	0.23%
Dec-16	159	10375	1.53%	139	6604	2.10%	20	3771	0.53%
Jan-17	92	9822	0.94%	80	5570	1.44%	12	4252	0.28%
Feb-17	166	9711	1.71%	162	6443	2.51%	4	3268	0.12%
Mar-17	274	11102	2.47%	270	8853	3.05%	4	2249	0.18%
Apr-17	146	11862	1.23%	130	9553	1.36%	16	2309	0.69%
May-17	216	13157	1.64%	198	6344	3.12%	18	6813	0.26%
Jun-17	291	13395	2.17%	275	10843	2.54%	16	2552	0.63%
Jul-17	355	14029	2.53%	340	11681	2.91%	15	2348	0.64%
Aug-17	325	14202	2.29%	318	11368	2.80%	7	2834	0.25%
Sep-17	283	13604	2.08%	266	10834	2.46%	17	2770	0.61%

THE GRAPH BELOW ILLUSTRATES TRACK KEEPING PERFORMANCE OVER 15 MONTHS WITH A TREND LINE

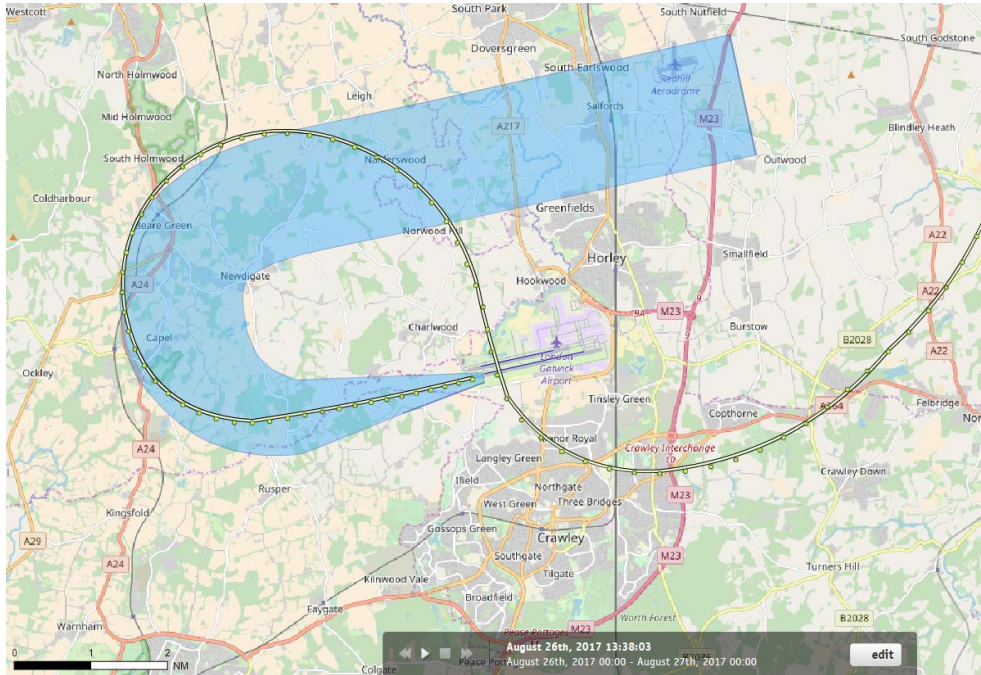


## UNUSUAL TRACKS

Some 'unusual tracks' taken by departing aircraft are recorded by our Noise and Track Keeping system and these can occur for a number of reasons, such as weather avoidance. These can result in the aircraft leaving the NPR

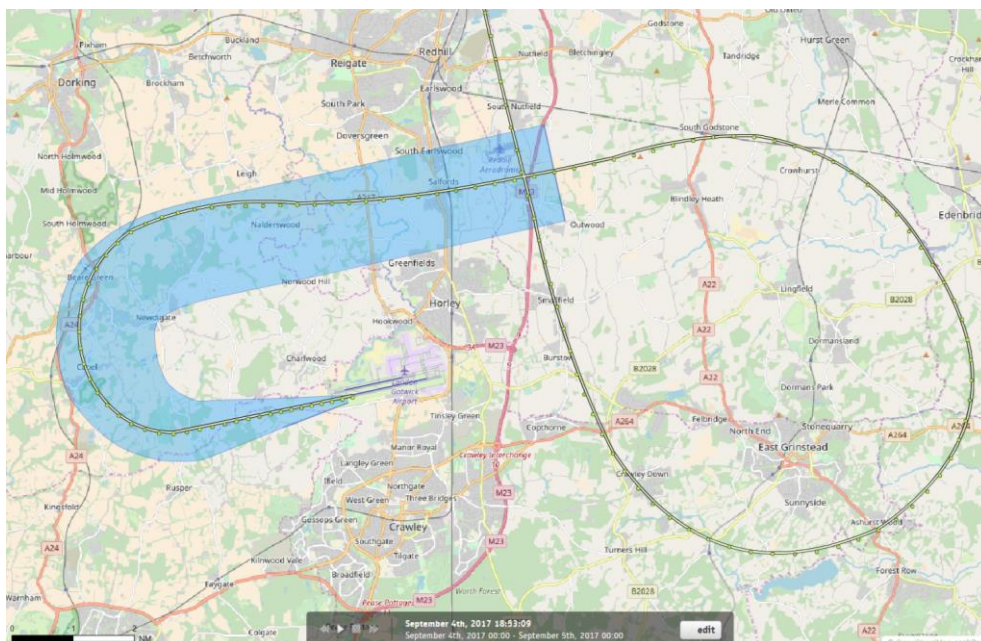
below the required altitude or aircraft that have vectored at the required altitude and then misdirected to avoid conflict with traffic from other airports. All unusual tracks are investigated with the airline concerned.

### THE MAP BELOW SHOWS THE ICELANDAIR AIRCRAFT WHICH DEVIATED FROM THE PRESCRIBED NPR ON THE 26<sup>th</sup> AUGUST 2017



This Icelandair flight occurred on the 26<sup>th</sup> August 2017 at 13:37. NATS Swanwick was contacted regarding this deviation and they are currently investigating why this aircraft diverted south.

### THE MAP BELOW SHOWS THE EASYJET AIRCRAFT WHICH DEVIATED FROM THE PRESCRIBED NPR ON THE 4<sup>th</sup> SEPTEMBER 2017



This easyJet flight occurred on the 4<sup>th</sup> September 2017 at 18:52. NATS Swanwick explained that this aircraft was vectored in this direction due to airspace congestion with London City Airport. They added that this is not unusual as it is a standard safety practice to vector the aircraft away from potential air traffic conflicts.



# Departures – Over Congested Areas

## THE WIZAD NOISE PREFERENTIAL ROUTE

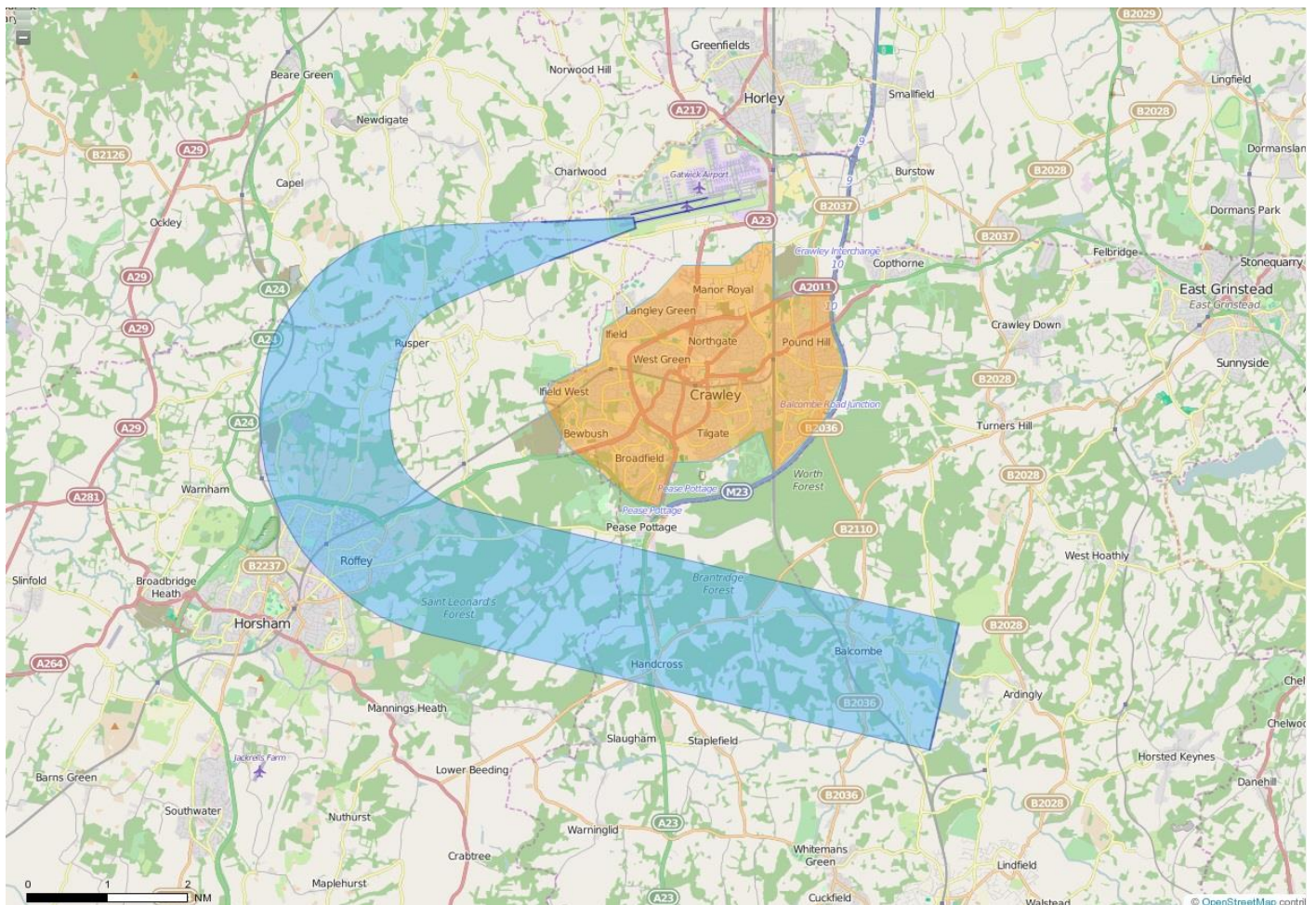
The Wizad Noise Preferential Route was designated by the Government at the same time as all other Gatwick departure routes; however, it is not used on an equal basis with the other routes. It is a Tactical Offload Route and is not usually offered as part of a flight path. If the 26 LAM Route (to the North of Horley) is very busy, Wizad will be offered as a last minute alternative to ease the load.

As it is only a Tactical Offload Route, it is not well known and it is only offered to local pilots and usually used by more modern, high performance aircraft. It will also be used during periods of poor weather when an alternative to the usual routes may be required as aircraft should not fly through thunderstorms.

**EGKK AD 2.21 (8)(c)** *The ATC clearance via Mayfield specified in the second column of the table will not be available between 2300 hours and 0700 hours local time. Aircraft following the Noise Preferential Routing Procedure which relates to that clearance shall not fly over Crawley, Crawley Down or East Grinstead. This is to avoid aircraft noise from departing aircraft over areas of high population at night on the 26 WIZAD NPR.*

**Comment:** During this three month period, there were no departures during the restricted period on the '26 WIZAD' Noise Preferential Route.

## THE MAP BELOW ILLUSTRATES THE CRAWLEY TOWN BOUNDARY WITH NOISE PREFERENTIAL ROUTE '26 WIZAD'



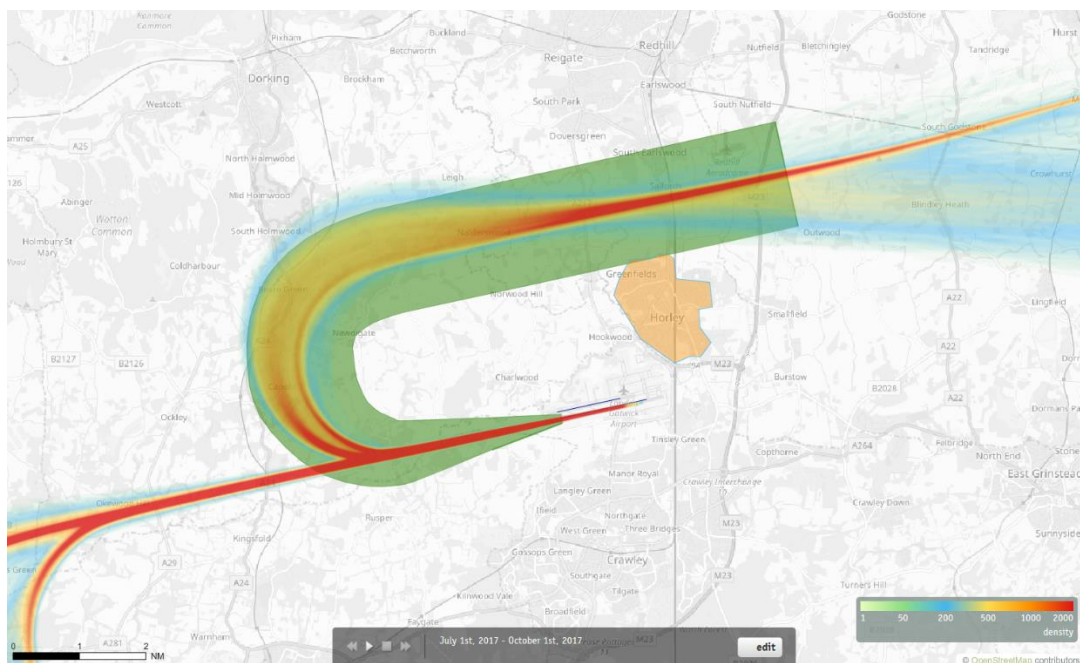
# Overflight of Crawley and Horley

**EGKK AD 2.21 (9)** *After taking off the aircraft shall avoid flying over the congested areas of Horley and Crawley.*  
This is to avoid aircraft noise from departing aircraft over areas of high population.

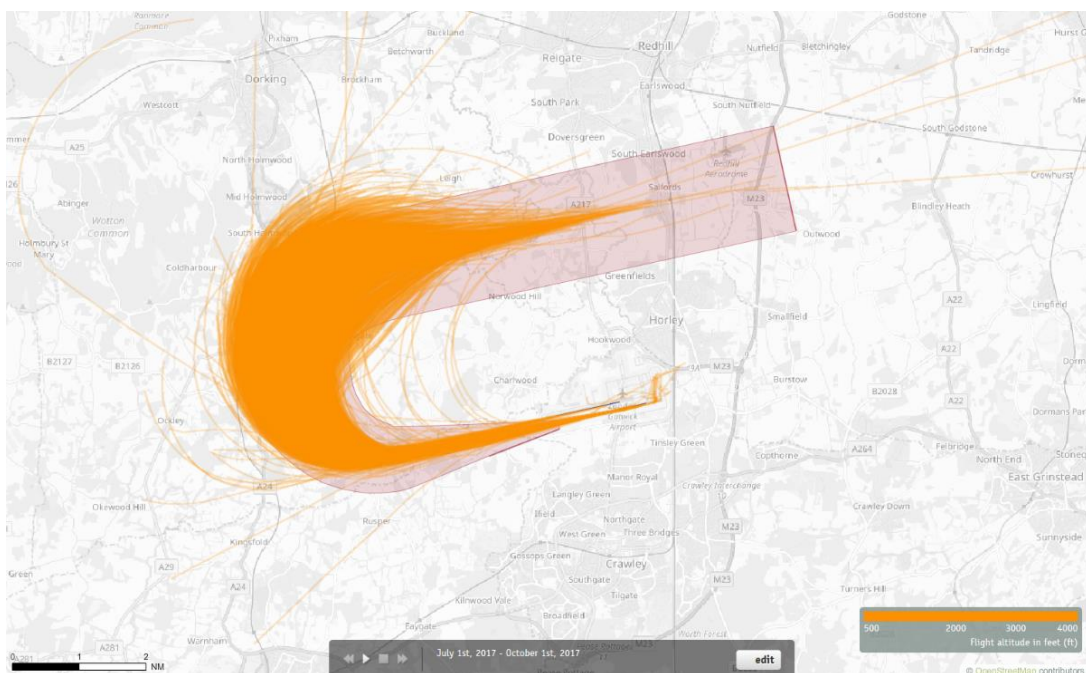
**Comment:** During this period, there were two departing flights that passed over Crawley. These were confirmed to be the result of weather deviations due to thunderstorm activity.

It should also be noted that although Casper Noiselab does not show tracks relating to other airports, Horley does experience overflight from Heathrow Airport traffic.

THE MAP BELOW ILLUSTRATES THE TRACK DENSITY OF DEPARTING AIRCRAFT ON THE '26 LAM' DEPARTURE ROUTE DURING THE THREE MONTH PERIOD WITH HORLEY TOWN HIGHLIGHTED



THE MAP BELOW ILLUSTRATES THE TRACKS OF DEPARTING AIRCRAFT ON THE '26 LAM' DEPARTURE ROUTE USING P-RNAV DURING THE THREE MONTH PERIOD UP TO AN ALTITUDE OF 4,000FT

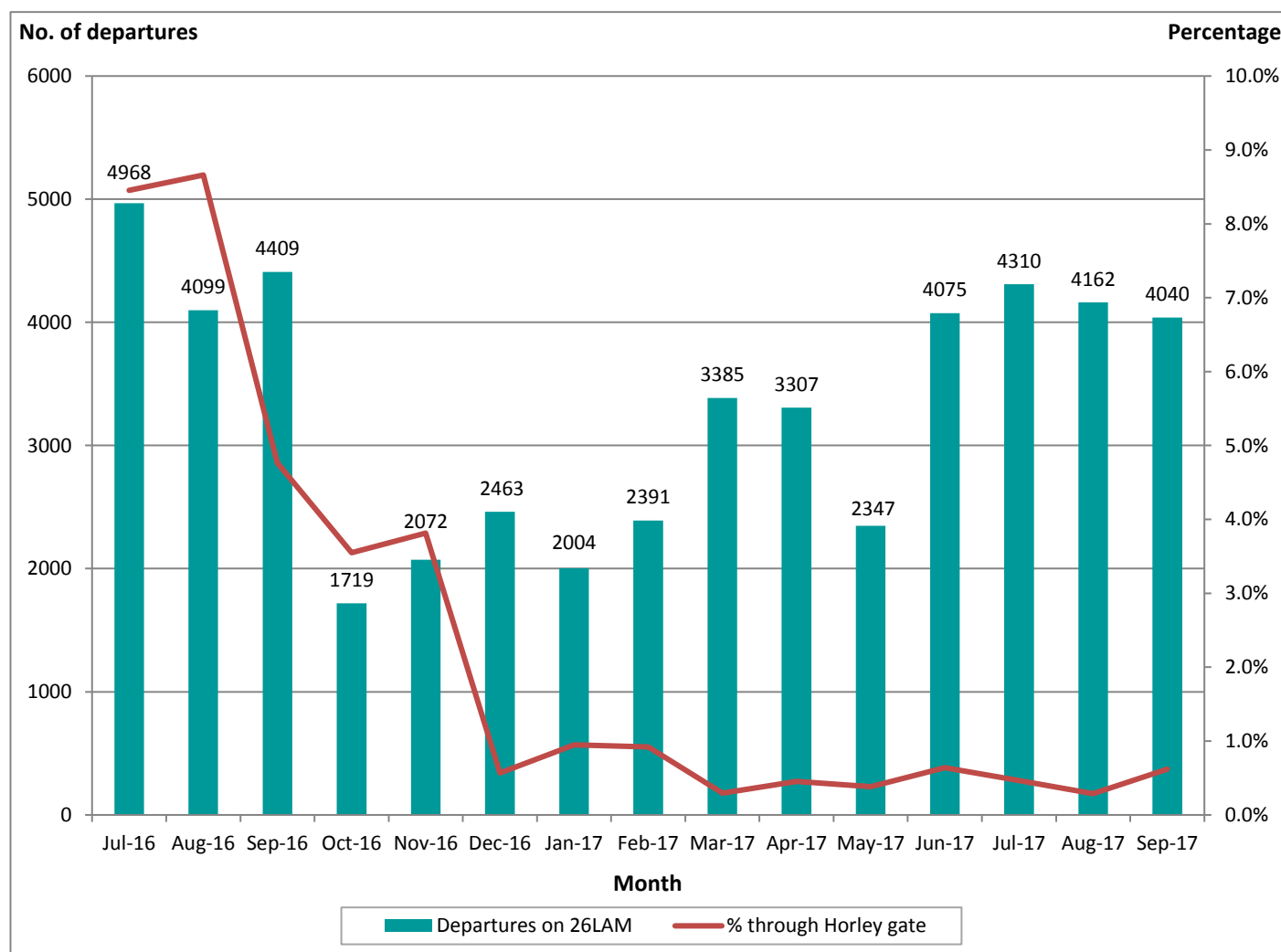




THE TABLE BELOW ILLUSTRATES THE ANALYSIS OF HORLEY OVERFLIGHT

Month	Departures on 26LAM	Horley gate	% through Horley gate	Month	Departures on 26LAM	Horley gate	% through Horley gate	Month	Departures on 26LAM	Horley gate	% through Horley gate
Jan-15	3237	102	3.15%	Jan-16	3031	70	2.31%	Jan-17	2004	19	0.95%
Feb-15	2251	66	2.93%	Feb-16	2449	58	2.37%	Feb-17	2391	22	0.92%
Mar-15	2455	40	1.63%	Mar-16	2282	67	2.94%	Mar-17	3385	10	0.30%
Apr-15	2200	42	1.91%	Apr-16	3018	91	3.02%	Apr-17	3307	15	0.45%
May-15	4051	67	1.65%	May-16	2114	51	2.41%	May-17	2347	9	0.38%
Jun-15	3688	57	1.55%	Jun-16	2922	173	5.92%	Jun-17	4075	26	0.64%
Jul-15	4365	42	0.96%	Jul-16	4968	420	8.45%	Jul-17	4310	20	0.46%
Aug-15	3559	38	1.07%	Aug-16	4099	355	8.66%	Aug-17	4162	12	0.29%
Sep-15	2838	61	2.15%	Sep-16	4409	210	4.76%	Sep-17	4040	25	0.62%
Oct-15	2039	36	1.77%	Oct-16	1719	61	3.55%	Oct-17	-	-	-
Nov-15	3302	78	2.36%	Nov-16	2072	79	3.81%	Nov-17	-	-	-
Dec-15	3707	13	0.35%	Dec-16	2463	14	0.57%	Dec-17	-	-	-

THE GRAPH BELOW ILLUSTRATES THE ANALYSIS OF HORLEY OVERFLIGHT



# Arrivals – Continuous Descent Operations (CDO)

A Continuous Descent Operation (CDO) (formerly known as a CDA) is a noise abatement technique of flight during which a pilot descends at a rate with the intention of achieving a continuous descent to join the glide path at the correct height for the distance. This procedure thereby avoids the need for extended periods of level flight and results in keeping the aircraft higher for longer reducing the need for thrust. In addition to aiding noise reduction, this also reduces fuel burn thereby cutting emissions and producing an overall environmental benefit.

A CDO is a procedure designed to try and avoid prolonged periods of level flight below 7,000ft\*. Studies have determined that elements of prolonged level flight are noisier than when following CDO. The aviation industry is working very hard to improve compliance and an Arrivals Code of Practice (ACoP) has been produced by the Department for Transport which aims to promote the use of CDO as a regular practice for all arriving aircraft:

‘For monitoring purposes, a descent will be deemed to have been continuous provided that no segment of level flight longer than 2.5 nautical miles (nm) occurs below 7,000ft\* QNH and ‘level flight’ is interpreted as any segment of flight having a height change of not more than 50ft over a track distance of 2nm or more, as recorded in the airport Noise and Track Keeping system.’

A CDO is not a precise art and relies on the accuracy of track miles provided by ATC to the flight crew coupled with pilot skill, weather conditions and operational circumstances. Additionally, different aircraft types perform differently requiring varying operating practices to be utilised in order to slow the aircraft down and meet speed restrictions, therefore the procedures in the ACoP are advisory rather than compulsory, so there are no sanctions against pilots or airlines that fail to comply with the measures. Despite this, publication of the ACoP has resulted in significant improvements in CDO achievement at all times of day and night. The FPT are actively working with the airlines to encourage the use of CDO as a best practice method by continually providing monthly reports. Airlines and pilots are keen to adopt this procedure for economic as well as environmental reasons and are active in promoting CDO within their companies.

CDO data is measured over three time periods:

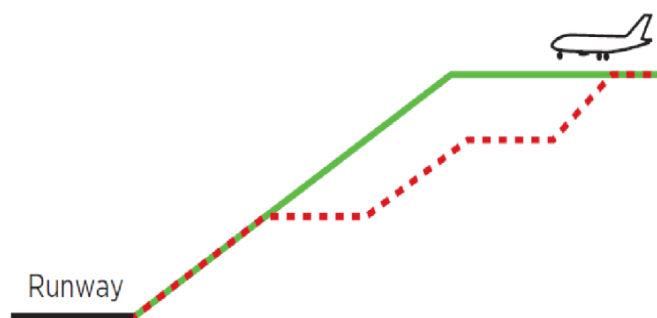
- The Core Night period (2330-0600)
- The Day and Shoulder periods (0600–2330)
- The 24-hour period

The following text appears in the UK Aeronautical Information Package (AIP) Noise Abatement Procedures for Gatwick Airport:

**EGKK AD 2.21 (10)** *Where the aircraft is approaching the aerodrome to land it shall, commensurate with its ATC clearance, minimise noise disturbance by the use of continuous descent and low power, low drag operating procedures (referred to in Detailed Procedures for descent clearance in EGKK AD 2.22 of the UK AIP). Where the use of these procedures is not practicable, the aircraft shall maintain as high an altitude as possible. In addition, when descending on initial approach, including in the closing heading, and on intermediate and final approach, thrust reductions should be achieved where possible by maintaining a ‘clean’ aircraft configuration and by landing with reduced flap, provided that in all the circumstances of the flight this is consistent with safe operation of the aircraft. This is to avoid prolonged periods of level flight and keep aircraft as high as possible for as long as possible.*

\*As a result of the Independent Review of Arrivals, it was recommended (Imm-05) that the CDO monitoring altitude be increased from 6,000ft to 7,000ft as of 1<sup>st</sup> August 2016.

\*\*Due to the increase in the usage of northern runway operations during the core night period during the last 3 months, this has had an impact on the CDO performance during this time.

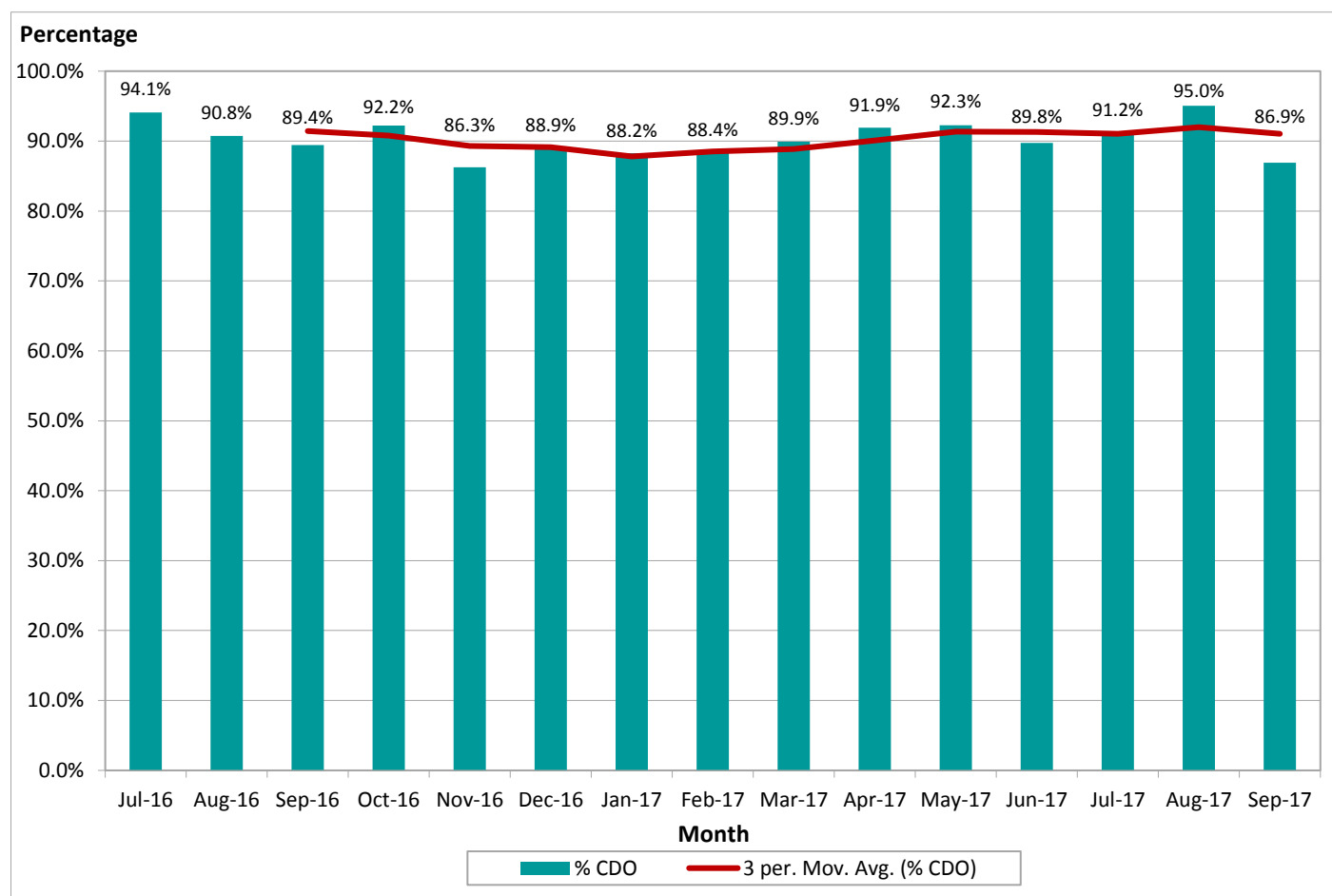


## CORE NIGHT PERIOD (2330-0600)

THE TABLE BELOW ILLUSTRATES THE BREAKDOWN OF THE CDO CORE NIGHT TIME PERIOD

Month	All Arrivals			08 Easterly Arrivals			26 Westerly Arrivals		
	Total	Non CDO	% CDO	Total	Non CDO	% CDO	Total	Non CDO	% CDO
<b>Jul-16</b>	1915	113	94.10%	118	3	97.46%	1797	110	93.88%
<b>Aug-16</b>	1751	162	90.75%	396	17	95.71%	1355	145	89.30%
<b>Sep-16</b>	1626	172	89.42%	364	23	93.68%	1262	149	88.19%
<b>Oct-16</b>	1141	89	92.20%	700	56	92.43%	441	36	91.84%
<b>Nov-16</b>	240	33	86.25%	102	14	86.27%	138	19	86.23%
<b>Dec-16</b>	506	56	88.93%	116	5	95.69%	390	51	86.92%
<b>Jan-17</b>	391	46	88.24%	150	11	92.67%	241	35	85.48%
<b>Feb-17</b>	370	43	88.38%	121	17	85.95%	249	26	89.56%
<b>Mar-17</b>	447	45	89.93%	125	4	96.80%	322	41	87.27%
<b>Apr-17</b>	779	63	91.91%	214	12	94.39%	565	51	90.97%
<b>May-17</b>	1266	98	92.26%	664	64	90.36%	602	34	94.35%
<b>Jun-17</b>	1512	155	89.75%	266	23	91.35%	1246	132	89.41%
<b>Jul-17</b>	1834	162	91.17%	252	37	85.32%	1582	125	92.10%
<b>Aug-17</b>	1715	85	95.04%	330	21	93.64%	1385	64	95.38%
<b>Sep-17</b>	1733	227	86.90%	390	42	89.23%	1343	185	86.22%

THE GRAPH BELOW ILLUSTRATES THE CORE NIGHT TIME CDO COMPLIANCE WITH A TREND LINE

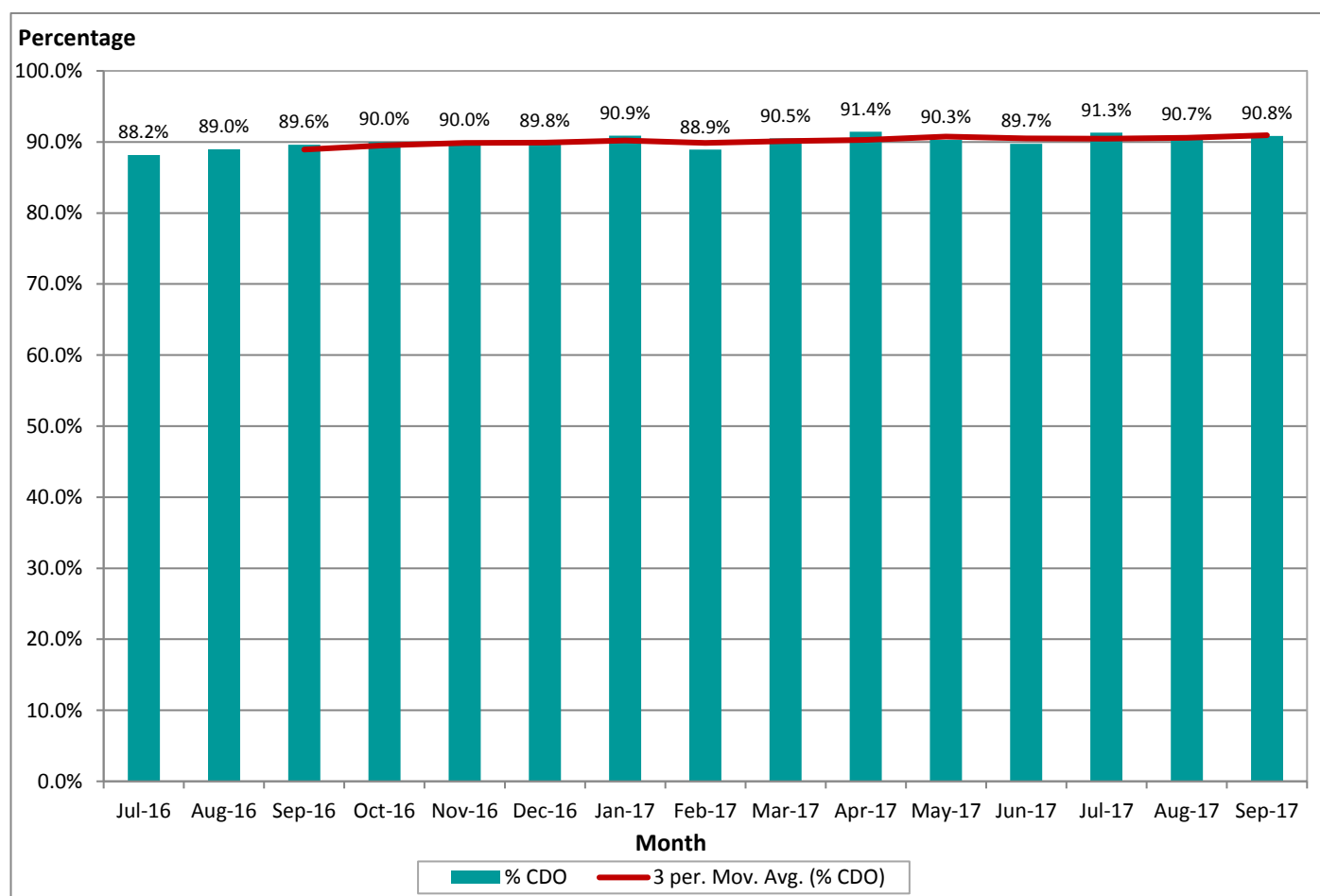


## DAYTIME AND SHOULDER PERIOD CDO ACHIEVEMENT (0600-2330)

THE TABLE BELOW ILLUSTRATES THE BREAKDOWN OF THE CDO DAYTIME AND SHOULDER PERIOD

All Arrivals				08 Easterly Arrivals			26 Westerly Arrivals		
Month	Total	Non CDO	% CDO	Total	Non CDO	% CDO	Total	Non CDO	% CDO
Jul-16	11943	1412	88.18%	778	105	86.50%	11165	1307	88.29%
Aug-16	12331	1358	88.99%	2994	313	89.55%	9337	1045	88.81%
Sep-16	11821	1228	89.61%	1804	185	89.75%	10017	1043	89.59%
Oct-16	11554	1155	90.00%	7141	745	89.75%	4413	410	90.71%
Nov-16	9079	912	89.95%	3338	319	90.44%	5741	593	89.67%
Dec-16	9838	1005	89.78%	3447	304	91.18%	6391	701	89.03%
Jan-17	9395	855	90.90%	4085	317	92.24%	5310	538	89.87%
Feb-17	9305	1031	88.92%	3017	342	88.66%	6288	689	89.04%
Mar-17	10587	1004	90.52%	2157	225	89.57%	8430	779	90.76%
Apr-17	11016	943	91.44%	2159	193	91.06%	8857	750	91.53%
May-17	11873	1154	90.28%	6104	600	90.17%	5769	554	90.40%
Jun-17	11902	1222	89.73%	2288	204	91.08%	9614	1018	89.41%
Jul-17	12221	1061	91.32%	2016	199	90.13%	10205	862	91.55%
Aug-17	12483	1164	90.68%	2446	263	89.25%	10037	901	91.02%
Sep-17	11879	1089	90.83%	2381	181	92.40%	9498	908	90.44%

THE GRAPH BELOW ILLUSTRATES THE DAY & SHOULDER CDO COMPLIANCE WITH A TREND LINE



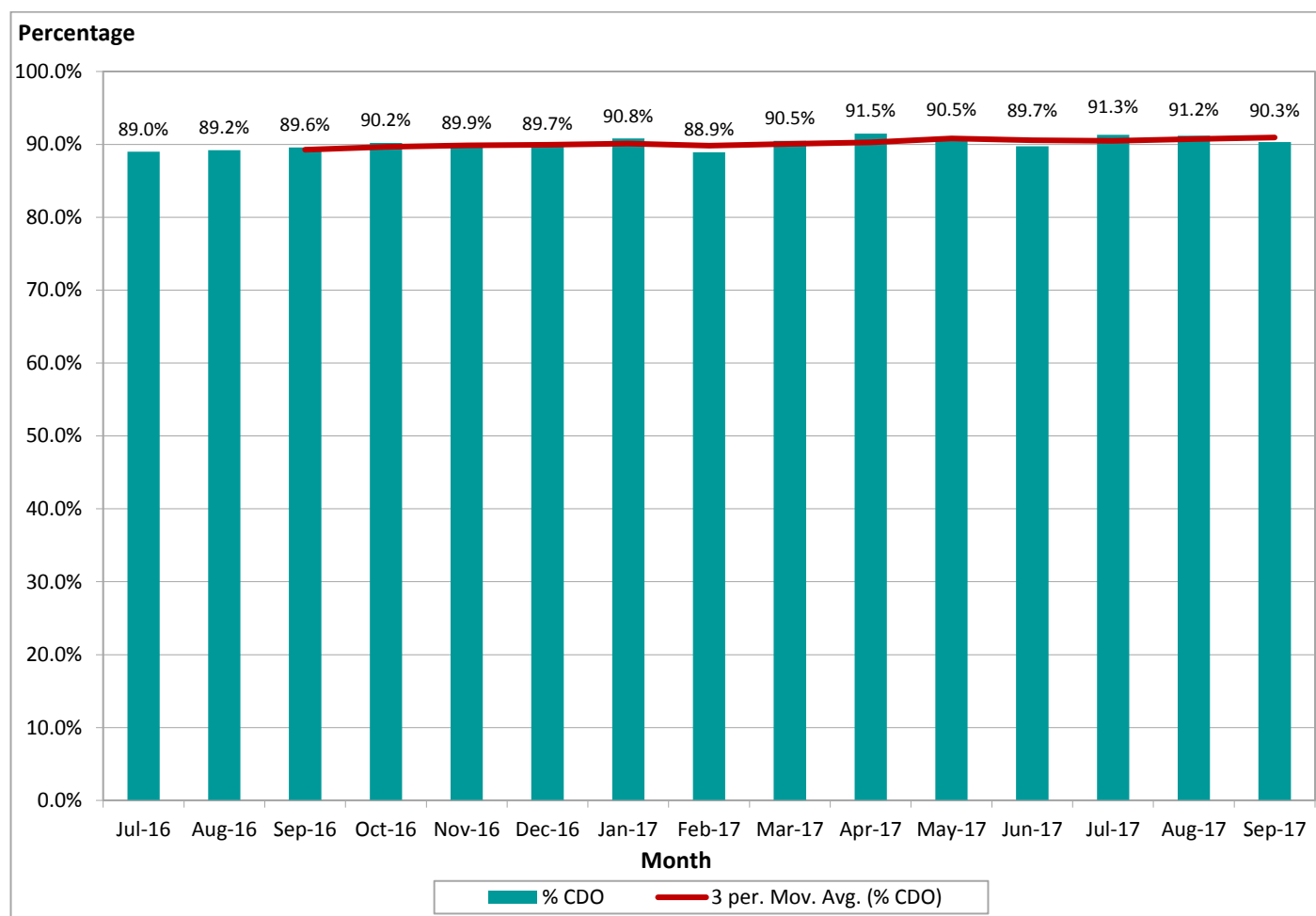


## 24 HOUR PERIOD CDO ACHIEVEMENT

THE TABLE BELOW ILLUSTRATES THE BREAKDOWN OF THE CDO 24 HOUR TIME PERIOD

Month	All Arrivals			08 Easterly Arrivals			26 Westerly Arrivals		
	Total	Non CDO	% CDO	Total	Non CDO	% CDO	Total	Non CDO	% CDO
<b>Jul-16</b>	13858	1525	89.00%	896	108	87.95%	12962	1417	89.07%
<b>Aug-16</b>	14082	1520	89.21%	3390	330	90.27%	10692	1190	88.87%
<b>Sep-16</b>	13447	1400	89.59%	2168	208	90.41%	11279	1192	89.43%
<b>Oct-16</b>	12695	1244	90.20%	7841	798	89.82%	4854	446	90.81%
<b>Nov-16</b>	9319	945	89.86%	3440	333	90.32%	5879	612	89.59%
<b>Dec-16</b>	10344	1061	89.74%	3563	309	91.33%	6781	752	88.91%
<b>Jan-17</b>	9786	901	90.79%	4235	328	92.26%	5551	573	89.68%
<b>Feb-17</b>	9675	1074	88.90%	3138	359	88.56%	6537	715	89.06%
<b>Mar-17</b>	11034	1049	90.49%	2282	229	89.96%	8752	820	90.63%
<b>Apr-17</b>	11795	1006	91.47%	2373	205	91.36%	9422	801	91.50%
<b>May-17</b>	13139	1252	90.47%	6768	664	90.19%	6371	588	90.77%
<b>Jun-17</b>	13414	1377	89.73%	2554	227	91.11%	10860	1150	89.41%
<b>Jul-17</b>	14055	1223	91.30%	2268	236	89.59%	11787	987	91.63%
<b>Aug-17</b>	14198	1249	91.20%	2776	284	89.77%	11422	965	91.55%
<b>Sep-17</b>	13612	1316	90.33%	2771	223	91.95%	10841	1093	89.92%

THE GRAPH BELOW ILLUSTRATES THE 24 HOUR PERIOD CDO COMPLIANCE WITH A TREND LINE



# Arrivals – Over Congested Areas

## OVERFLIGHT OF CONGESTED AREAS

**AD 2-EGKK1-12 (11)** *Before landing at the aerodrome the aircraft shall maintain as high an altitude as practicable and shall not fly over the congested areas of Crawley, East Grinstead, Horley and Horsham at an altitude of less than 3,000ft (Gatwick QNH) nor over the congested area of Lingfield at an altitude of less than 2,000ft (Gatwick QNH).*

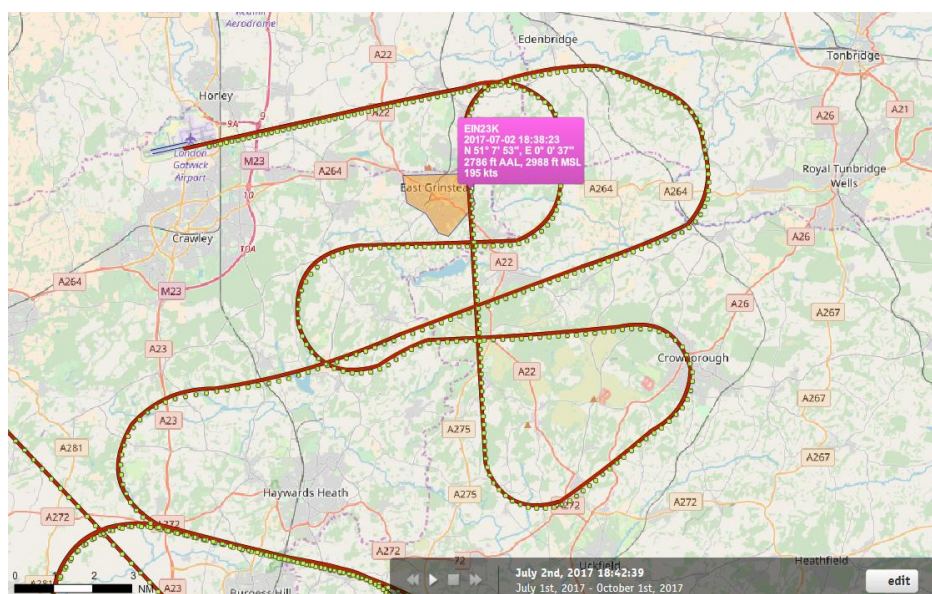
N.B. 2,000ft – (202ft (airfield elevation) + 100ft (radar/ILS tolerance)) = 1,698ft on Airports Noise & Aircraft Tracking System

**Comment:** There were no arriving flights which passed over the towns of Crawley or Horley below the required altitude

for this period. The map overleaf illustrates these analysis zones. A polygon located over the urban area at about 7 nautical miles (nm) from touchdown is normally used to analyse tracks over the Lingfield area.

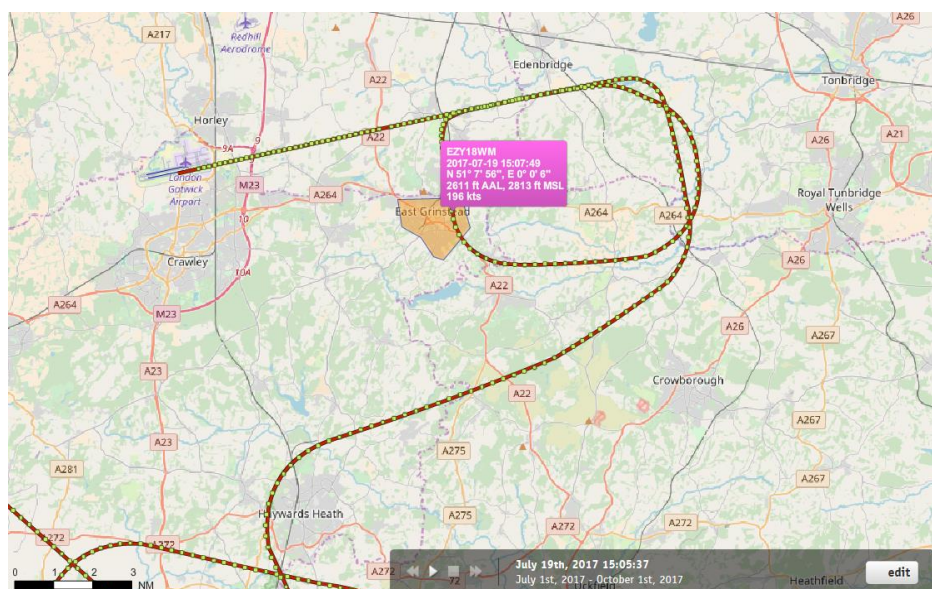
During the analysis period, there were a total of 62 arrivals that passed through this area. Aircraft tracks were analysed for July, August and September 2017 and with the exception of a small number of go-arounds, there were no flights that passed over Lingfield below the altitude of 1,698ft (2,000ft Gatwick QNH). There were two arrivals that passed over East Grinstead and two arrivals that passed over Horsham below the required altitude.

## THE MAP BELOW SHOWS THE AER LINGUS AIRCRAFT THAT PASSED OVER EAST GRINSTEAD AT 2,988FT AMSL



This Aer Lingus flight occurred on the 2<sup>nd</sup> July 2017 at 18:38. This was confirmed as a missed approach.

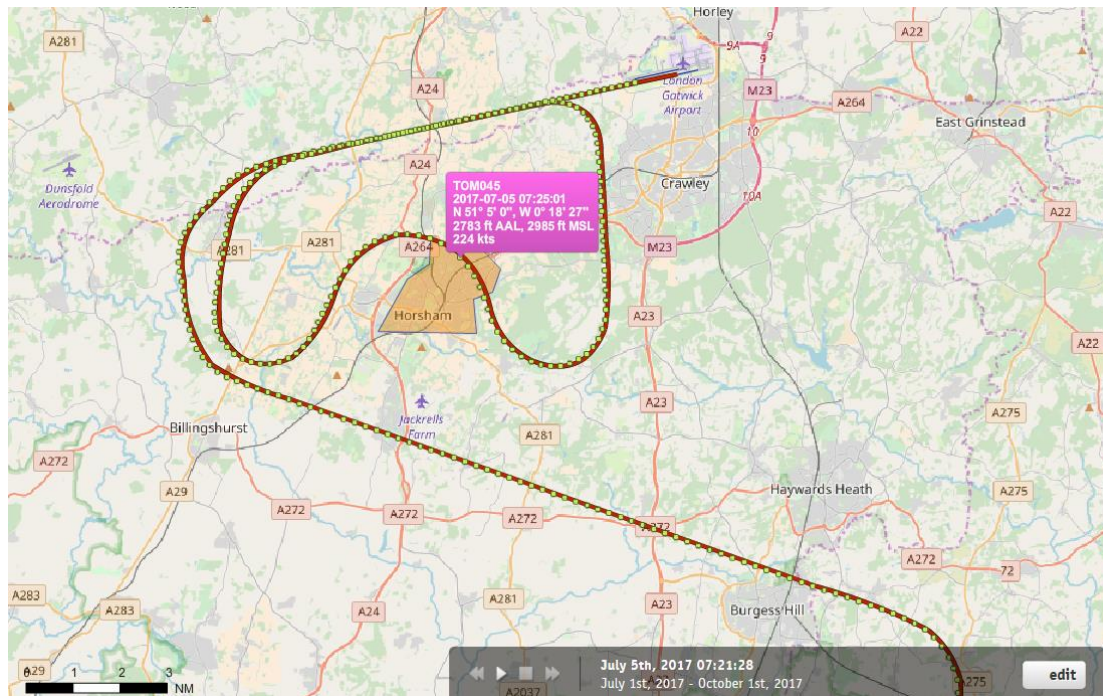
## THE MAP BELOW SHOWS THE EASYJET AIRCRAFT THAT PASSED OVER EAST GRINSTEAD AT 2,813FT AMSL



This easyJet flight occurred on the 19<sup>th</sup> July 2017 at 15:07. This was confirmed as a missed approach.

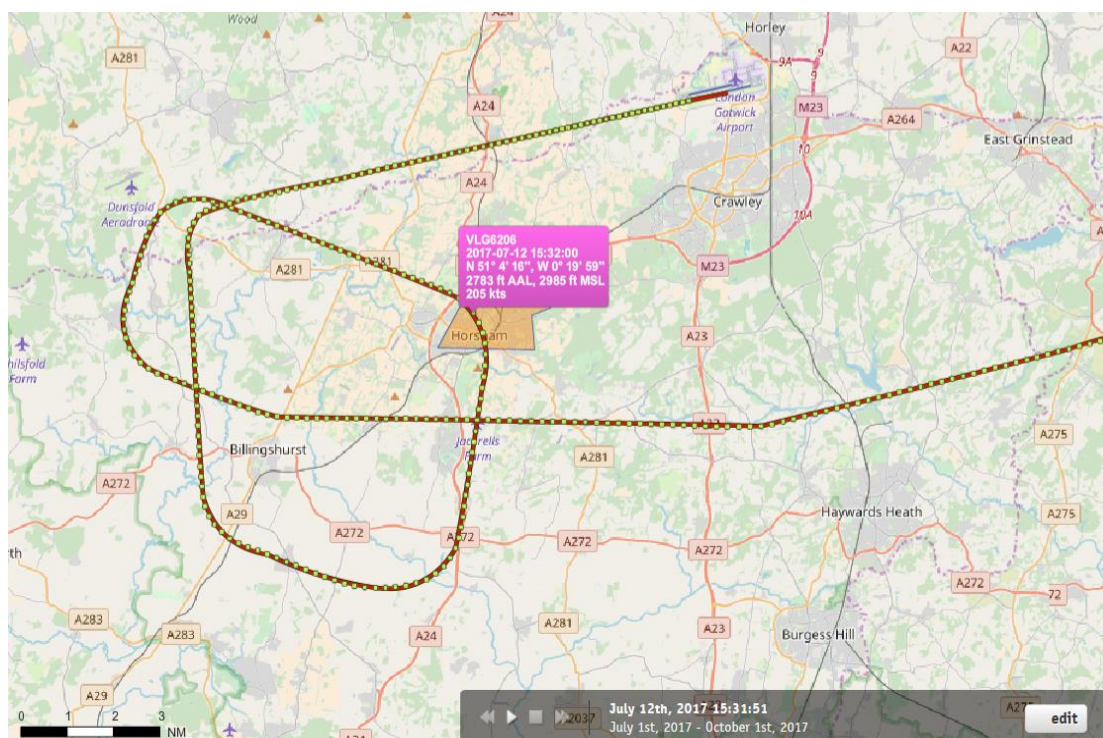


## THE MAP BELOW SHOWS THE THOMSON AIRCRAFT THAT PASSED OVER HORSHAM AT 2,985FT AMSL



This Thomson flight occurred on the 5<sup>th</sup> July 2017 at 07:25. It was confirmed as a go-around due to the previous arrival being slow to vacate from the runway.

## THE MAP BELOW SHOWS THE VUELING AIRCRAFT WHICH PASSED OVER HORSHAM AT 2,985FT AMSL



This Vueling flight occurred on the 12<sup>th</sup> July 2017 at 15:32. It was confirmed as a missed approach.



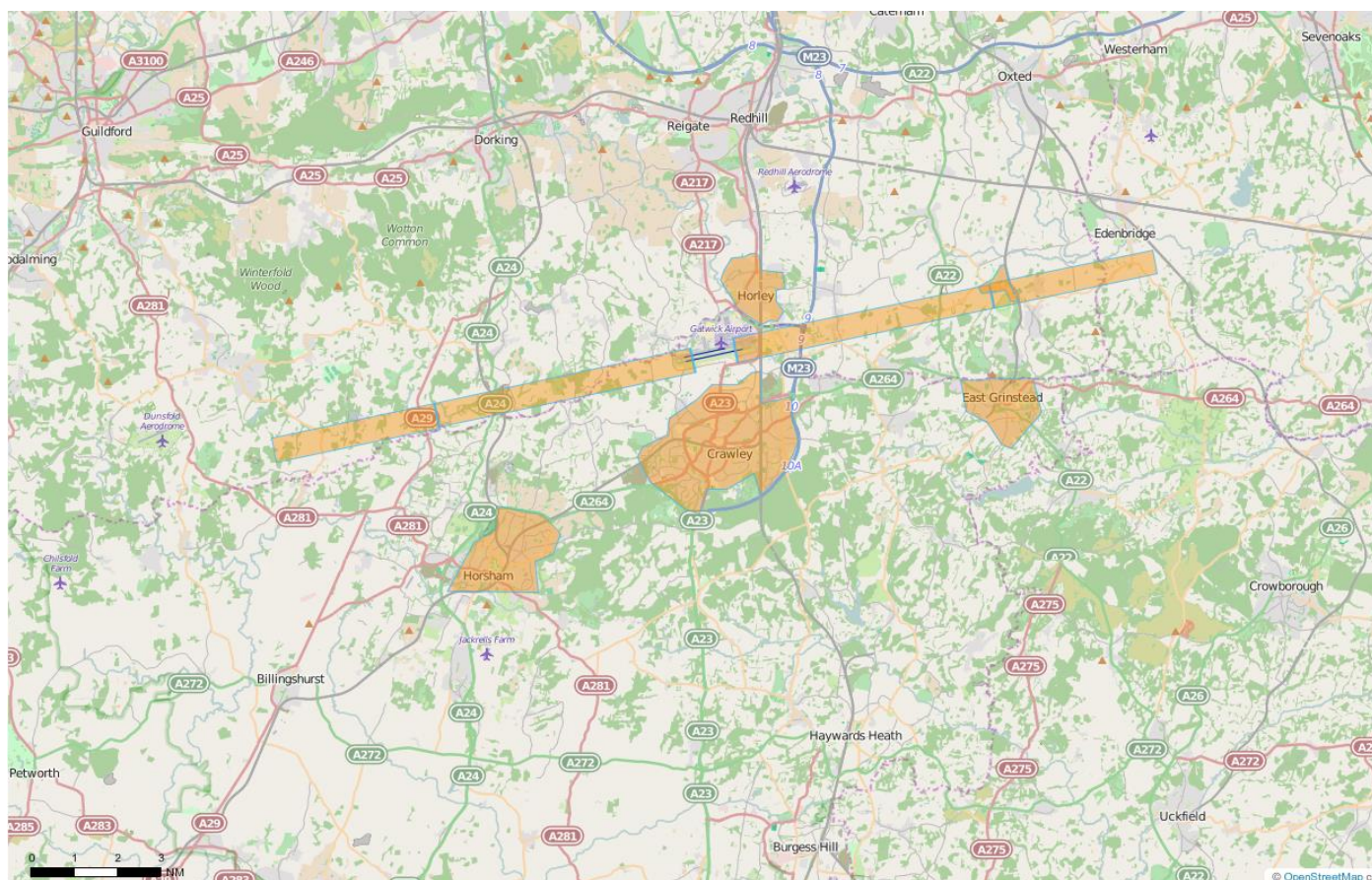
## A) DAY TIME JOINING HEIGHT (0700-2300)

**EGKK AD 2.21 (13(a))** *Where the aircraft is using the ILS in IMC or VMC it shall not descend below 2,000ft (Gatwick QNH) before intercepting the glidepath, nor thereafter fly below the glidepath. This is aimed at keeping aircraft as high as possible for as long as possible.*

The map below shows the congested urban areas, a series of gates running parallel to the extended runway centreline for around 6nm east and west of the airport, used to monitor low arrivals, joining the ILS below 2,000ft.

There were 41,877 arrivals recorded by the Casper NTK system between 1<sup>st</sup> July and 30<sup>th</sup> September 2017. Of these, the number of arrivals that were operating below an altitude of 2,000ft (equivalent to a height in the NTK system of 1,798ft) through one or more of the analysis gates was 120 (0.28%). In addition, there were 28 go-arounds that were not included in this figure. This figure is a sum of both easterly and westerly arrivals joining the ILS.

THE FOLLOWING MAP ILLUSTRATES THE ANALYSIS ZONES USED FOR LATE AND LOW ARRIVALS FOR BOTH ENDS OF THE AIRFIELD AND THE CONGESTED URBAN AREAS





## B) NIGHT TIME JOINING HEIGHT AND DISTANCE (2300-0700)

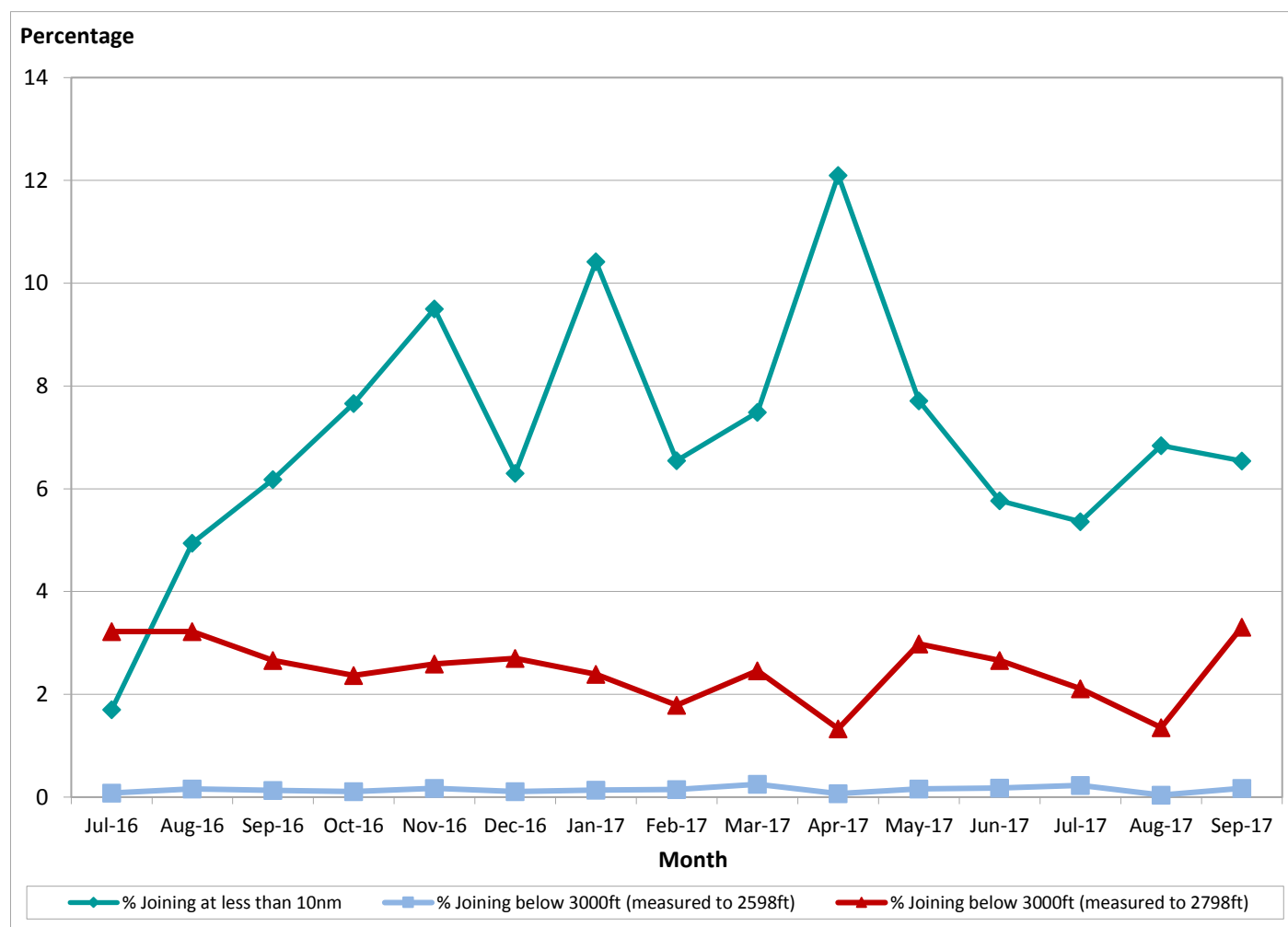
**EGKK AD 2.21 (14)** Aircraft which land at Gatwick Airport - London between the hours of 2300 (local) and 0700 (local), whether or not making use of the ILS localizer and irrespective of weight or type of approach, shall not join the centre-line:

a) below 3000ft, or

b) closer than 10 nm from touchdown.

This aims to keep aircraft higher for longer and avoid overflying areas en route to the ILS below 3,000ft.

THE GRAPH BELOW ILLUSTRATES THE NIGHT TIME JOINING POINTS OVER THE 15 MONTH PERIOD



# Go-Around Statistics 2004 - 2017

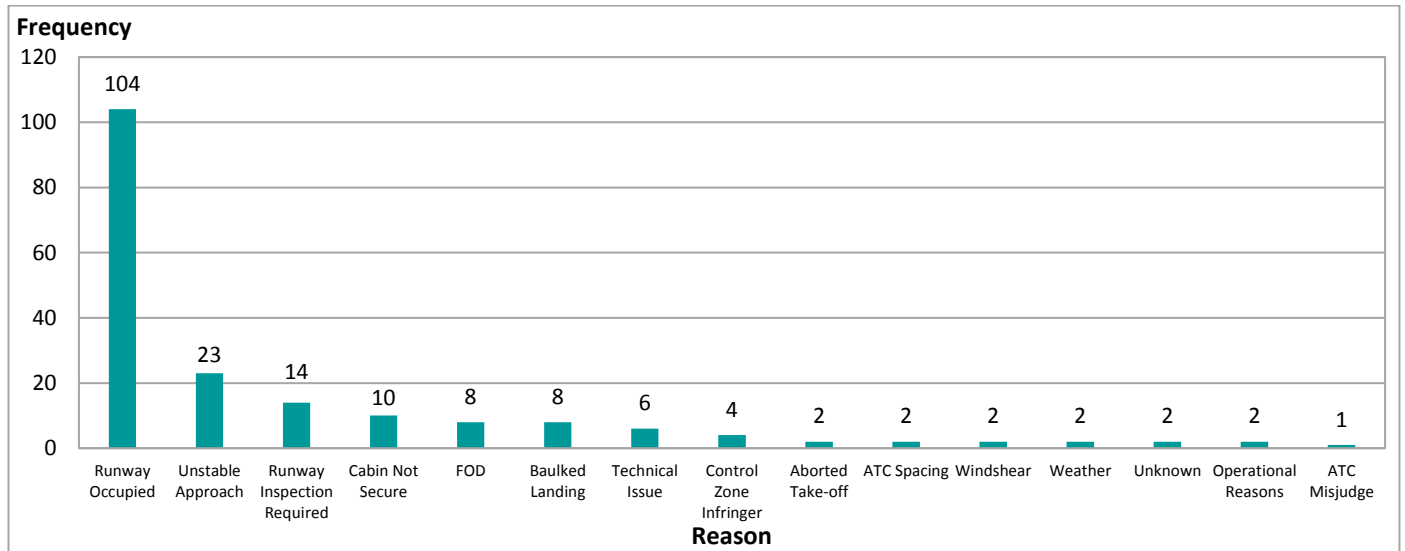
A go-around is a procedure adopted when an arriving aircraft on final approach aborts landing by applying take-off power and climbing away from the airport. It is a set procedure to be followed by the flight crew in the event of an aircraft being unable to land. The procedure is published so that Air Traffic Control (ATC) and the pilots can anticipate where the aircraft will go following the decision to go-around.

The standard missed approach procedure applicable to Gatwick Airport requires aircraft that are aborting their approach to climb to 3,000ft straight ahead, then, on passing 2,000ft or 1DME (distance measuring equipment) (whichever is later), turn heading 180. This may or may not result in aircraft overflying the town of Crawley or outlying areas.

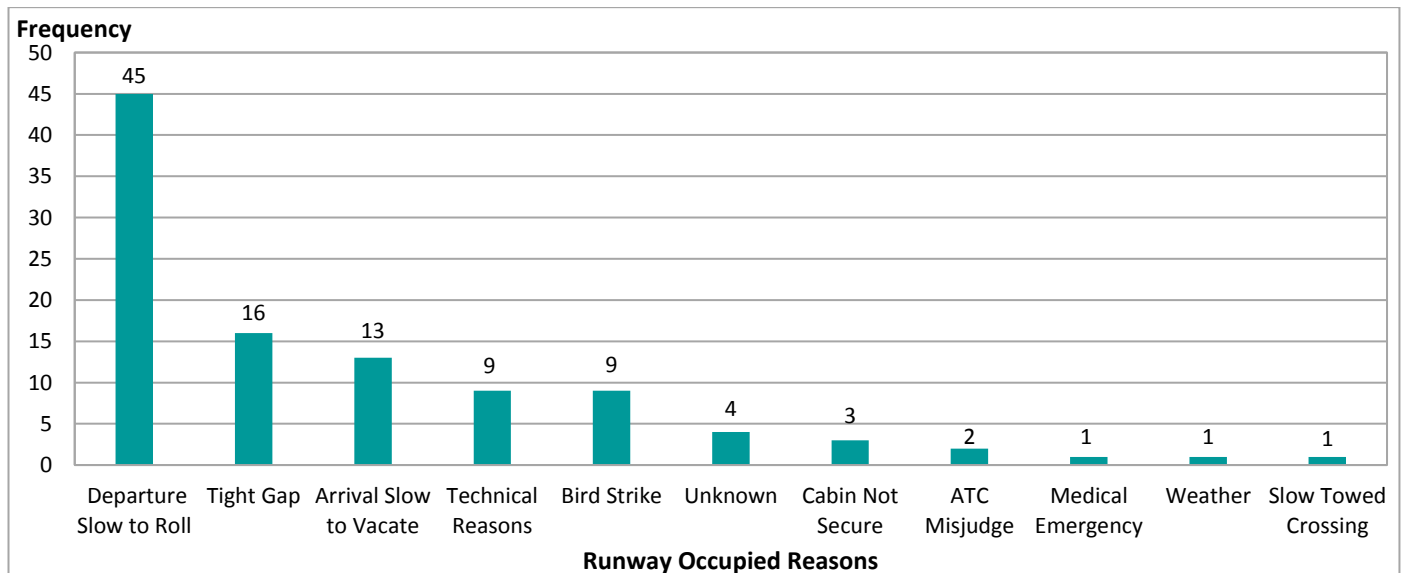
The number and reasons for go-arounds are routinely discussed at FLOPSC meetings and Pilot Forums. All parties are focussed on minimising the number of occasions when a go-around is required, but expect some to occur given the fact that Gatwick is a busy single runway airport.

It should be stated that there are well established standard procedures which both pilots and controllers are trained in and are familiar with. Gatwick Airport Limited, as the airport operator, actively encourages airlines operating at the airport to fly to the best possible environmental standards; however, safety must and always will be the number one priority.

## NATS AND ANS CURRENTLY RECORD GO-AROUNDS UNDER ONE OF THE FOLLOWING CAUSAL FACTORS (JULY - SEPTEMBER 2017)



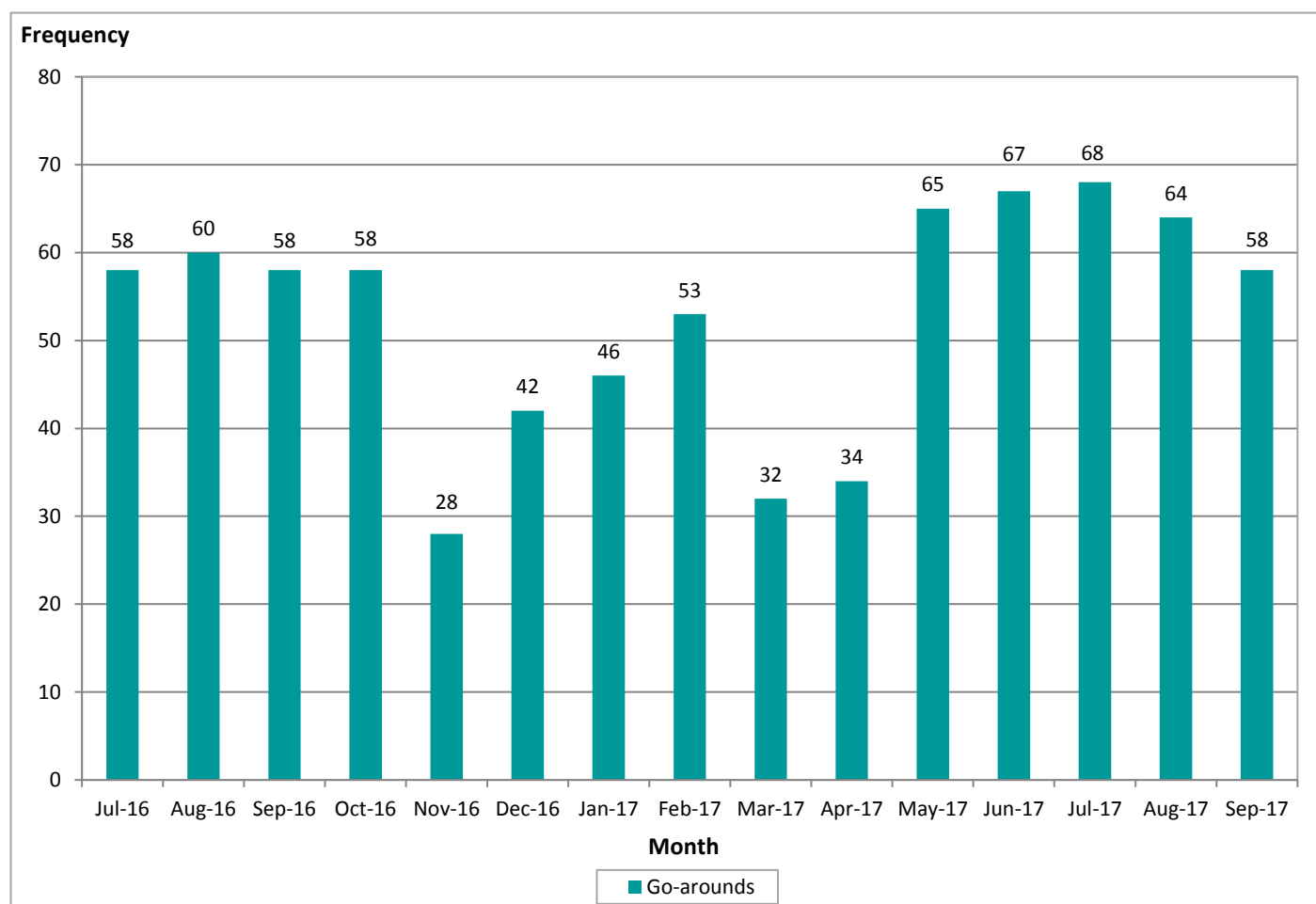
## THE REASONS GIVEN BY ANS FOR GO-AROUNDS DUE TO RUNWAY OCCUPANCY DURING THE THREE MONTH PERIOD



THE TABLE BELOW ILLUSTRATES GO-AROUND STATISTICS 2004 – 2017

Year	Total	Total Arrivals	% of Arrivals
2004	344	124665	0.28
2005	450	129509	0.35
2006	405	130954	0.31
2007	434	133271	0.33
2008	359	131858	0.27
2009	455	125861	0.36
2010	364	120263	0.30
2011	386	125541	0.31
2012	520	123408	0.42
2013	473	125290	0.38
2014	512	129966	0.39
2015	520	133869	0.39
2016	642	139998	0.46
2017	487	110878	0.44

THE GRAPH BELOW ILLUSTRATES TOTAL NUMBER OF GO-AROUNDS PER MONTH (JULY - SEPTEMBER 2017)



# Night Flights

The Secretary of State, in exercise of his powers under Section 78 of the Civil Aviation Act 1982, has imposed restrictions at Gatwick Airport on aircraft operating at night. These restrictions are in place to limit and mitigate noise disturbance from aircraft operating at night and to prohibit aircraft of specified descriptions from operating, also to limit the number of occasions on which other aircraft may take-off or land.

The night flying restrictions are divided into summer and winter seasons which coincide with the start and end of British Summer Time. They consist of a movement limit and a quota count system. The quota count (QC) means that points are allocated to different aircraft types according to how noisy they are. The noisier the aircraft type, the higher the points allocated. This provides an incentive for airlines to use quieter aircraft types. Aircraft are certified by the International Civil Aviation Organisation (ICAO) according to the noise they produce and are classified separately for both take-off and landing.

For the purposes of night flying operations, the night quota period is defined as the period between 2330-0600 (local time). In addition, there are two further shoulder periods of 2300–2330 and 0600–0700 (local time), where other restrictions apply to the scheduling and operation of aircraft of specified descriptions. The Department for Transport (DfT) has confirmed that the current night flight restrictions will remain in force until October 2017.

Overleaf is a mid-season report for summer 2017 which began at 01:00 on the 26<sup>th</sup> March 2017. The total number of movements available for the summer season is 11525 which includes a 10% carry over of the unused quota from the winter season.

## DISPENSATIONS

In accordance with the DfT guidelines, there may be times when an aircraft can be disregarded from the night flight

restrictions. As a general rule these are unforeseen circumstances outside the control of either the Airport or airline resulting in the unscheduled use of a night flight slot. Examples of such instances include humanitarian relief flights, emergencies, VIP visits, delays as a result of disruption leading to passenger hardship, Air Traffic Control disruption or airspace closure caused by a volcanic ash cloud. The rules related to dispensations are strictly adhered to and all instances are reported to the DfT within 7 days.

There have been a total of 395 dispensations granted during this summer 2017 season:

- 230 dispensations were granted due to disruption caused by adverse weather conditions.
- 73 dispensations were granted due to suspended runway movements due to a burst tyre on departure.
- 54 dispensations were granted due to disruption caused by low visibility conditions.
- 22 dispensations were granted due to a French ATC strike leading to knock on delays.
- 6 dispensations were granted due to a drone observation leading to suspended runway movements.
- 4 dispensations were granted due to flights being rescheduled as a result of Hurricane Irma in the Caribbean.
- 4 dispensations were granted due to the closure of the runway at Tenerife South Airport caused by runway damage from a landing aircraft leading to knock on effects for Gatwick arrivals and departures.
- 2 dispensations were granted for medical emergencies.

## QC4, QC8 and QC16 MOVEMENTS

There have been no QC8 or QC16 movements during either the 'night quota' or 'shoulder periods'. These QC values are not to be scheduled to take off or land between 2300 and 0700. There were 25 unscheduled QC4 movements during the 'night quota period'. QC4 types may not be scheduled to take off or land during this period.

## RESTRICTIONS

Winter	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17
Movements Limits	3250	3250	3250	3250	3250	3250	3250
Quota Points	2060	2000	2000	2000	2000	2000	2000
Summer	2010	2011	2012	2013	2014	2015	2016/17
Movements Limits	12000	11200	11200	11200	11200	11200	11200
Quota Points	6400	6300	6200	6200	6200	6200	6200



## London Gatwick

### AIRPORT MOVEMENTS and QUOTA SUMMARY to WEEK 27 (26 MARCH 2017 TO 30 SEPTEMBER 2017 inc.)

Season Quota Points Limit 6200 Season Movement Limit 11200  
 Total Quota Points Allowed 6400 Total Movements Allowed 11525

Wk No.	Week Ending Date	QC0.25 No.	QC0.5 No.	QC1 No.	QC2 No.	QC4 No.	QC8 No.	QC16 No.	Total Quota Value	Mvmnts Against Limit	Exmpt Types	Not Cont'd Delays	Not Cont'd Gov't	Not Cont'd Emerg	Total Arrival No.	Total Arrivals %	Total Deps No.	Total Deps %	Total Runway Mvmnts
1	01/04/2017	98	63	13	0	2	0	0	77.00	176	1	0	0	0	148	83.6	29	16.4	177
2	08/04/2017	91	68	14	0	2	0	0	78.75	175	1	10	0	0	158	84.9	28	15.1	186
3	15/04/2017	116	65	11	1	2	0	0	82.50	195	0	15	0	0	188	89.5	22	10.5	210
4	22/04/2017	117	68	20	0	2	0	0	91.25	207	2	0	0	0	184	88.0	25	12.0	209
5	29/04/2017	138	58	16	0	2	0	0	87.50	214	1	0	0	0	184	85.6	31	14.4	215
6	06/05/2017	153	76	18	1	0	0	0	96.25	248	0	0	0	0	225	90.7	23	9.3	248
7	13/05/2017	179	89	26	1	0	0	0	117.25	295	0	0	0	0	265	89.8	30	10.2	295
8	20/05/2017	174	94	30	0	0	0	0	120.50	298	1	8	0	0	276	89.9	31	10.1	307
9	27/05/2017	224	106	41	0	0	0	0	150.00	371	0	6	0	0	335	88.9	42	11.1	377
10	03/06/2017	214	107	36	1	1	0	0	149.00	359	0	46	0	0	357	88.1	48	11.9	405
11	10/06/2017	226	125	32	2	0	0	0	155.00	385	2	7	0	0	348	88.3	46	11.7	394
12	17/06/2017	225	119	43	2	0	0	0	162.75	389	0	0	0	0	333	85.6	56	14.4	389
13	24/06/2017	228	114	30	1	0	0	0	146.00	373	0	26	0	0	341	85.5	58	14.5	399
14	01/07/2017	269	126	35	2	1	0	0	173.25	433	0	14	0	0	393	87.9	54	12.1	447
15	08/07/2017	241	127	32	1	0	0	0	157.75	401	1	6	0	0	352	86.3	56	13.7	408
16	15/07/2017	277	128	33	2	0	0	0	170.25	440	5	7	0	0	390	86.3	62	13.7	452
17	22/07/2017	256	138	36	5	2	0	0	187.00	437	9	104	0	0	449	81.6	101	18.4	550
18	29/07/2017	325	126	54	0	2	0	0	206.25	507	4	11	0	0	453	86.8	69	13.2	522
19	05/08/2017	295	129	41	1	1	0	0	185.25	467	9	6	0	0	414	85.9	68	14.1	482
20	12/08/2017	291	135	47	1	1	0	0	193.25	475	5	14	0	0	420	85.0	74	15.0	494
21	19/08/2017	244	134	40	2	0	0	0	172.00	420	6	12	0	0	378	86.3	60	13.7	438
22	26/08/2017	252	139	33	2	3	0	0	181.50	429	5	0	0	0	376	86.8	57	13.2	433
23	02/09/2017	247	125	46	1	2	0	0	180.25	421	6	34	0	0	390	84.6	71	15.4	461
24	09/09/2017	255	123	36	2	1	0	0	169.25	417	4	16	0	0	379	86.7	58	13.3	437
25	16/09/2017	291	142	33	6	0	0	0	188.75	472	5	52	0	0	467	88.3	62	11.7	529
26	23/09/2017	281	124	37	5	1	0	0	183.25	448	8	0	0	0	397	87.1	59	12.9	456
27	30/09/2017	256	123	37	4	0	0	0	170.50	420	4	0	0	0	364	85.8	60	14.2	424
<b>TOTALS</b>		<b>5963</b>	<b>2971</b>	<b>870</b>	<b>43</b>	<b>25</b>	<b>0</b>	<b>0</b>	<b>4032.25</b>	<b>9872</b>	<b>78</b>	<b>394</b>	<b>0</b>	<b>0</b>	<b>8964</b>	<b>86.7</b>	<b>1380</b>	<b>13.3</b>	<b>10344</b>

Quota Points Available 2367.75

Quota % Points Used 63.0

Note 1 Not Cont'd Delays

Note 2 Not Cont'd Gov't

Note 3 Not Cont'd Emerg

Movements Available

Movements % Used

1653

85.7

Delays likely to lead to serious congestion and delays resulting from widespread disruption of Air Traffic.

Exemptions granted by Gov't (VIP Passengers, Emergency Relief).

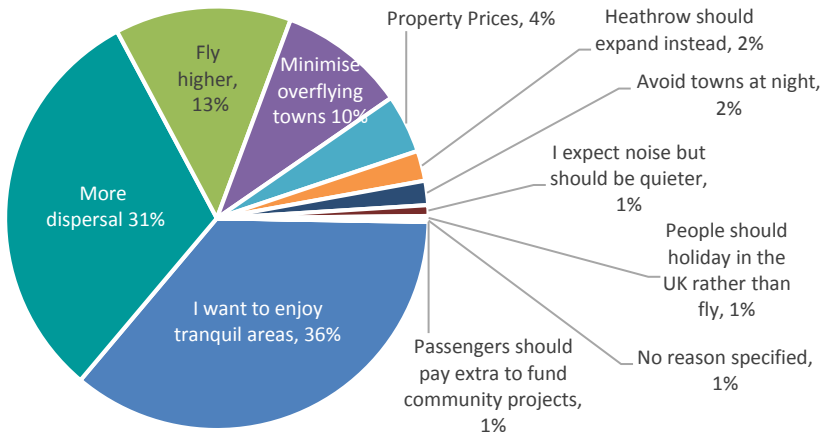
Emergency Take-offs and Landing

# Noise Complaints

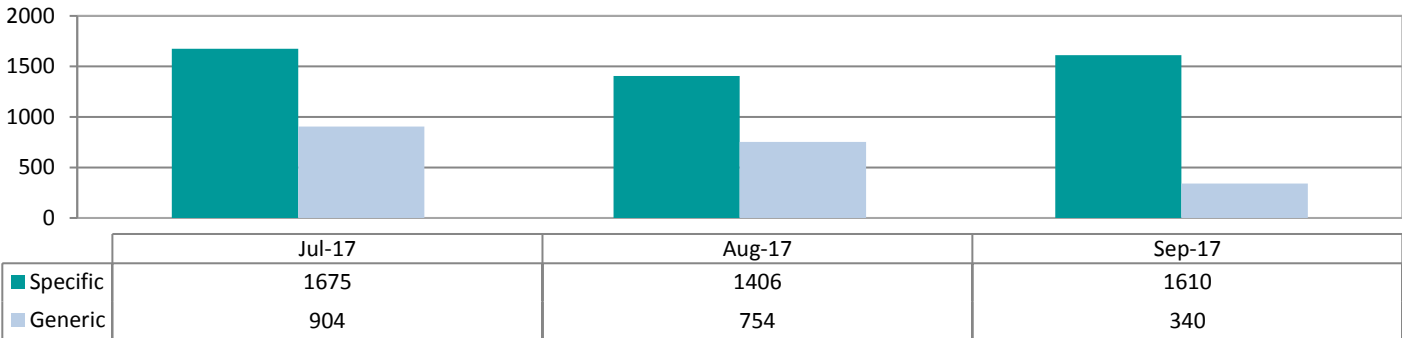
It is important that we understand the issues of noise disturbance from individuals and communities who live around the airport. By studying the complaints we receive and by communicating with the affected towns and villages surrounding the Airport, we believe that this gives us a greater understanding of the issues related to noise.

This means that we can work together to improve the noise climate around the Airport. The complaints we have received are either about specific aircraft events that cause disturbance or generic complaints about airport operations in general. The following charts provide an analysis of the reasons for the numbers of complaints.

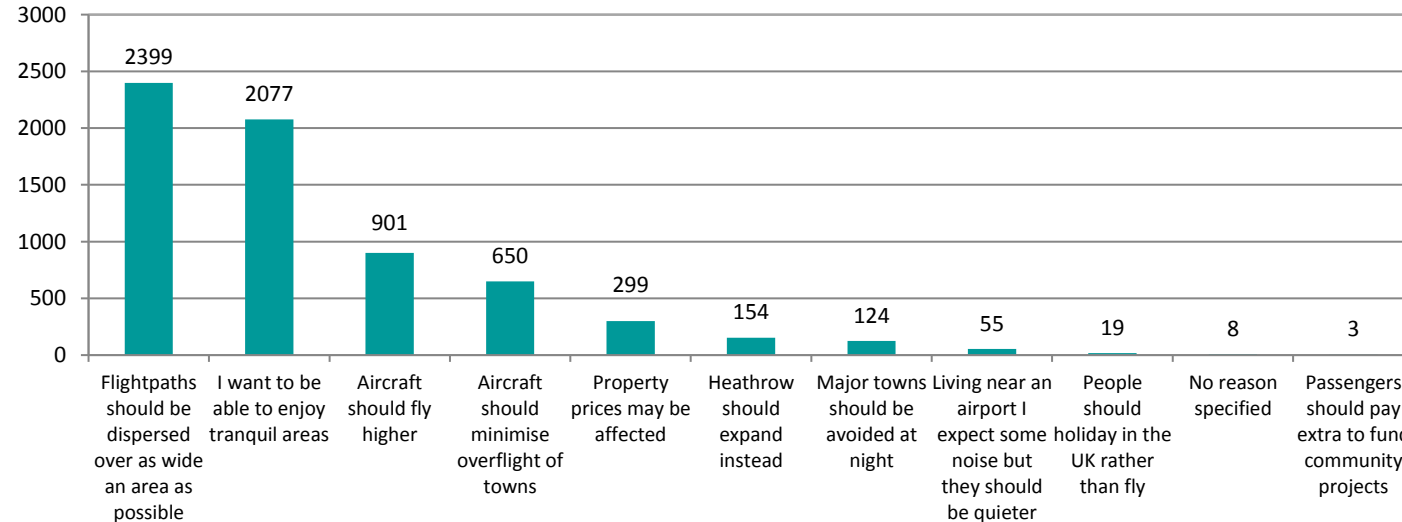
PERCENTAGE OF COMPLAINT STATEMENTS MOST AGREED WITH



COMPLAINTS RECORDED BY MONTH



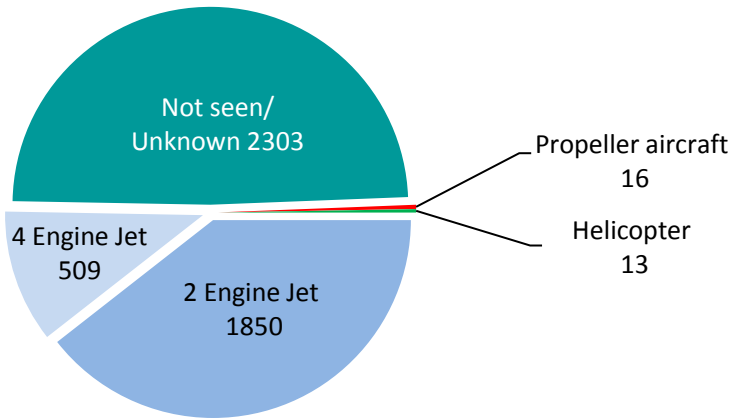
NUMBER OF COMPLAINT STATEMENTS MOST AGREED WITH



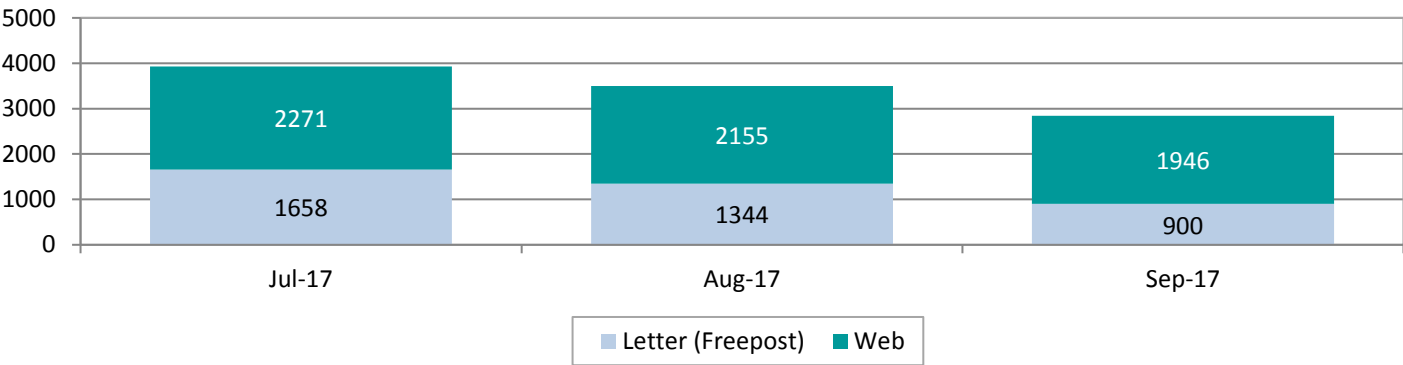
Noise is very subjective and can affect people in different ways. Some people can tolerate a certain noise level whilst it can cause disturbance to others. As well as identifying the issues of noise, it is important to understand the location of each individual complaint.

The charts below provide further analysis of the categories of aircraft types and the method of complaint and the location of individual complainants.

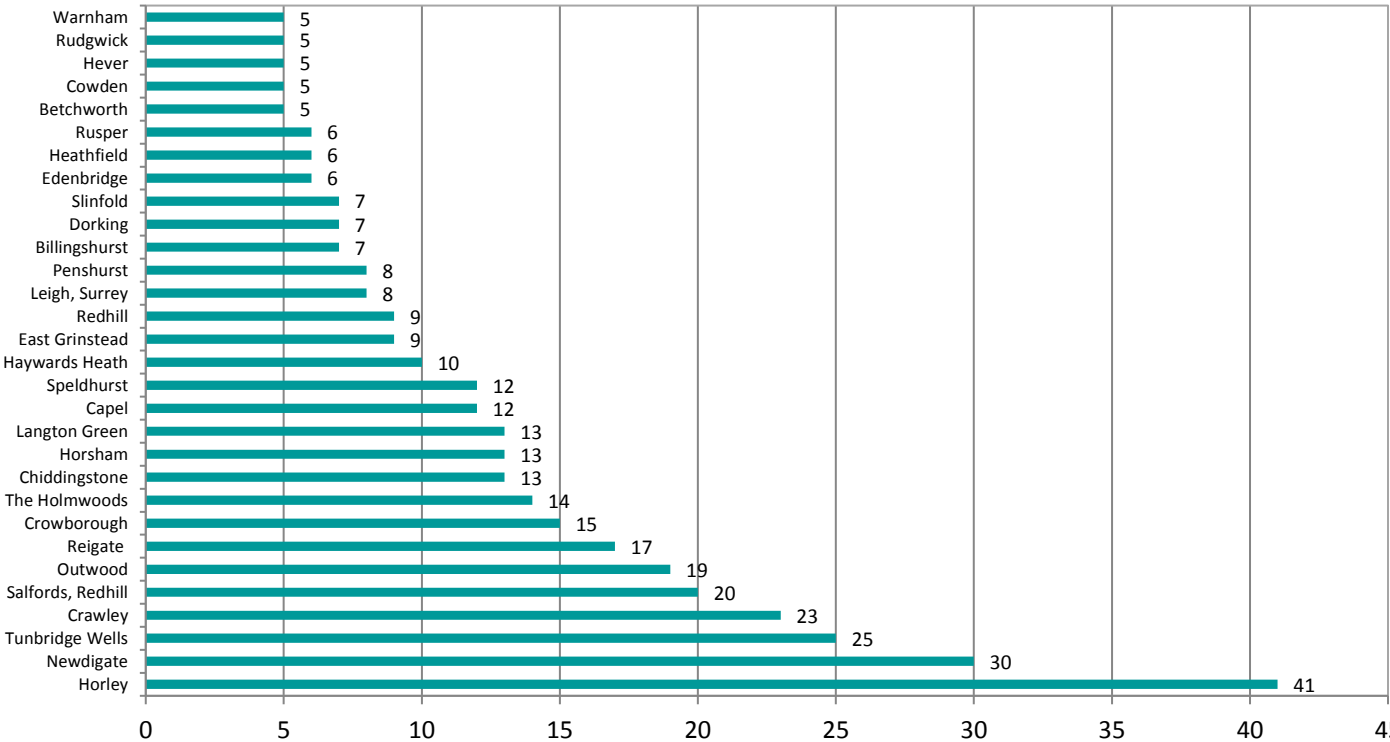
### CATEGORIES OF AIRCRAFT TYPES FROM SPECIFIC COMPLAINTS



### METHOD OF COMPLAINT

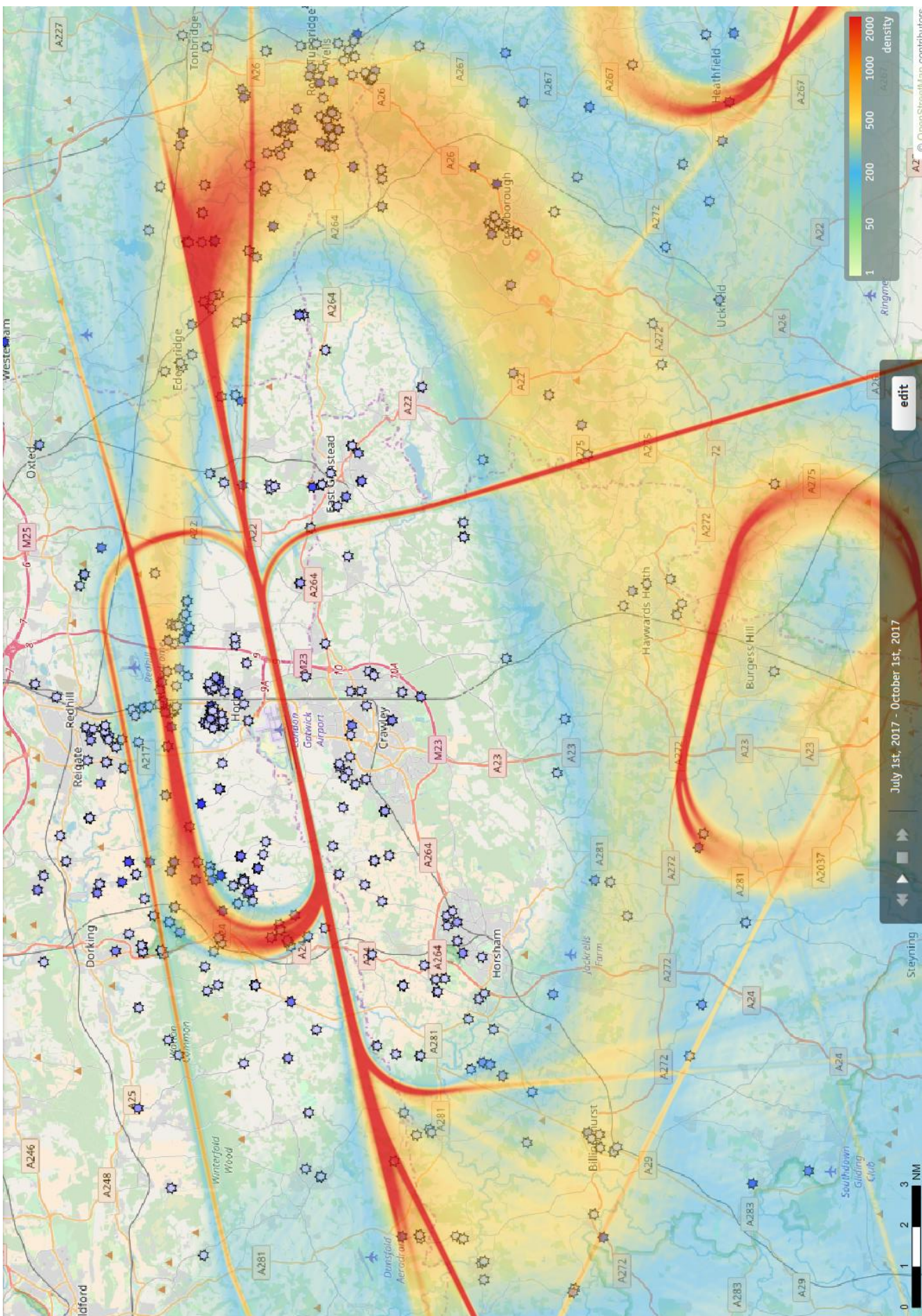


### NUMBER OF INDIVIDUAL COMPLAINANTS BY TOWN/VILLAGE



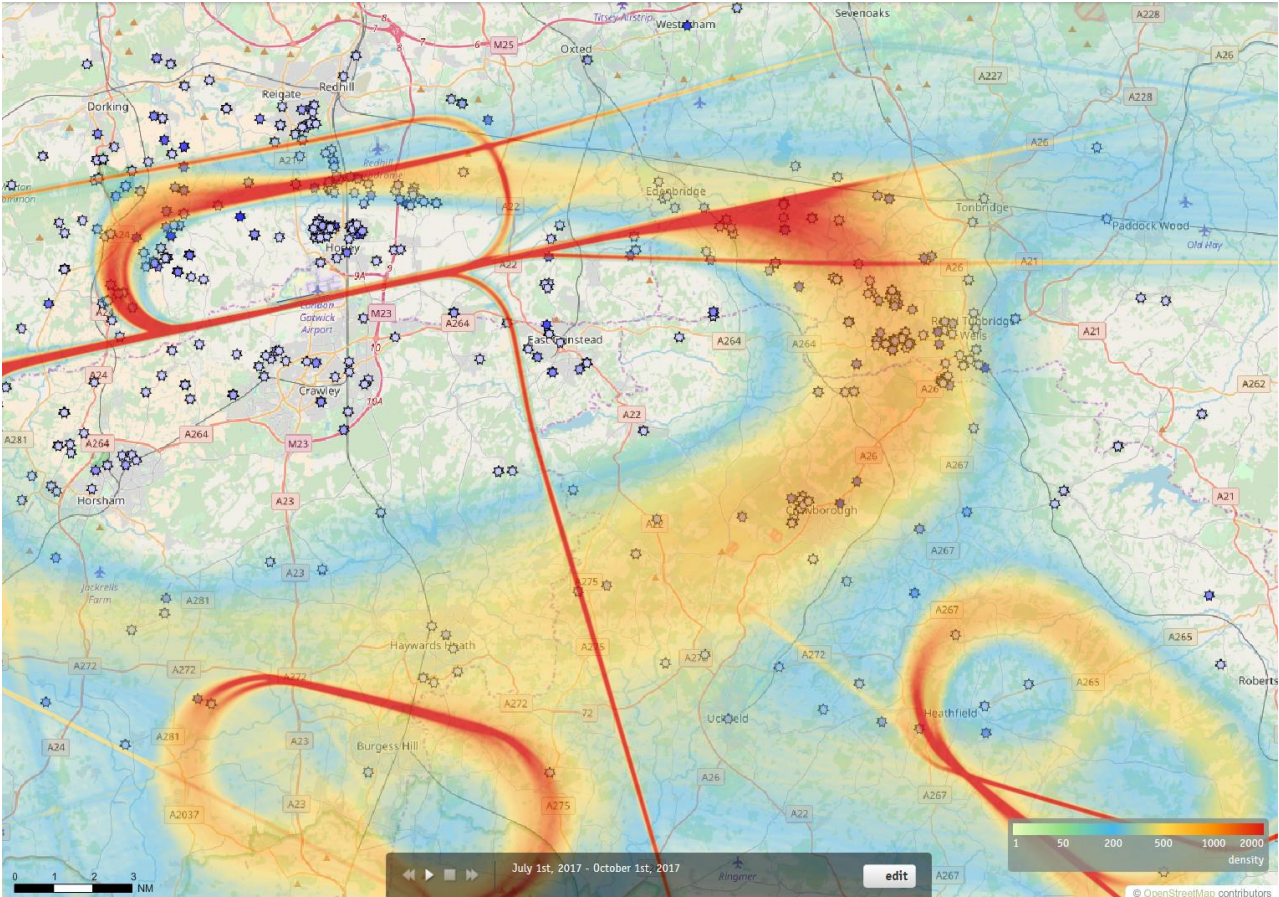


THE MAP BELOW ILLUSTRATES THE LOCATION OF NOISE COMPLAINTS RECEIVED BETWEEN JULY - SEPTEMBER 2017

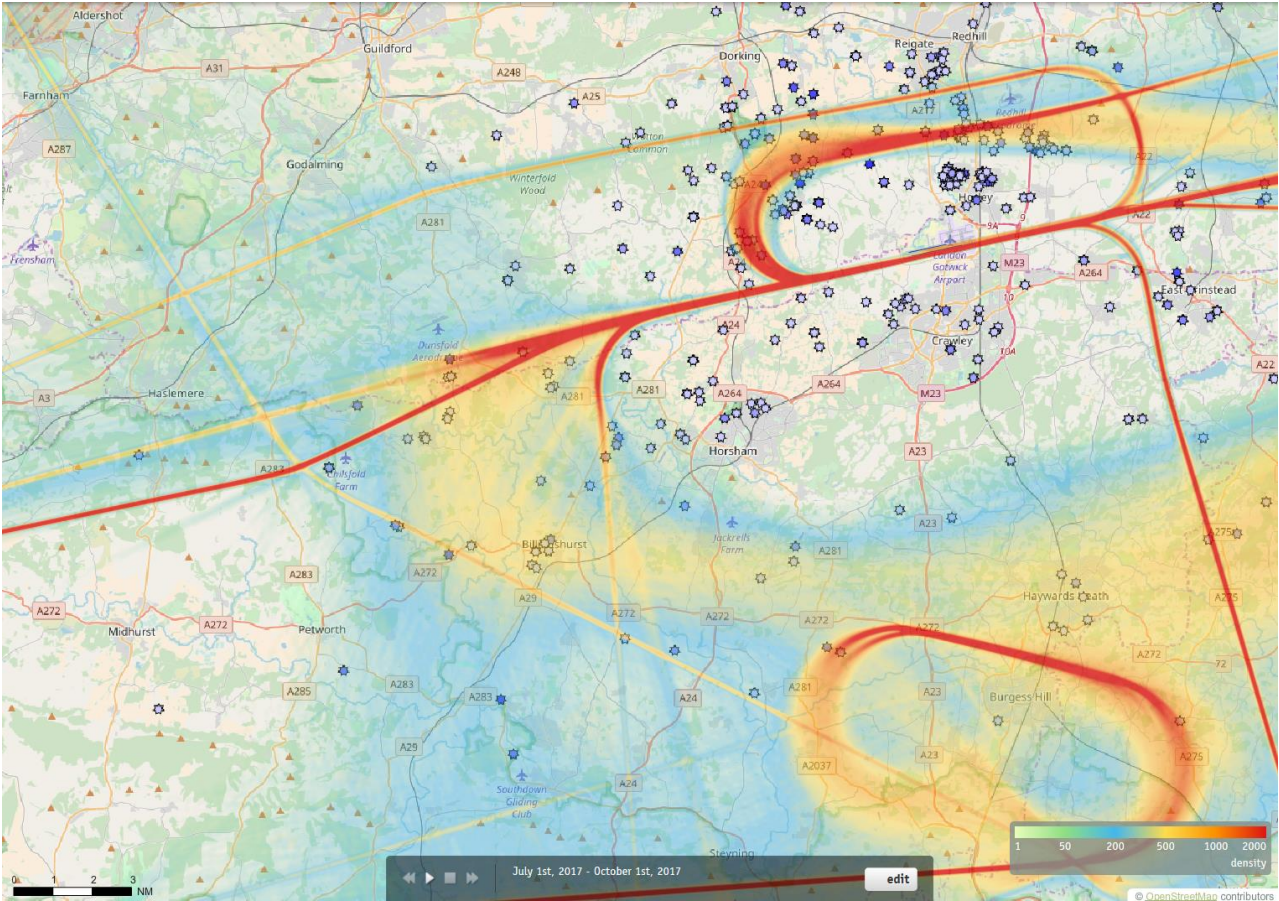




THE MAP BELOW ILLUSTRATES NOISE COMPLAINTS RECEIVED TO THE EAST (JULY – SEPTEMBER 2017)



THE MAP BELOW ILLUSTRATES NOISE COMPLAINTS RECEIVED TO THE WEST (JULY - SEPTEMBER 2017)





# Ground Noise Complaints

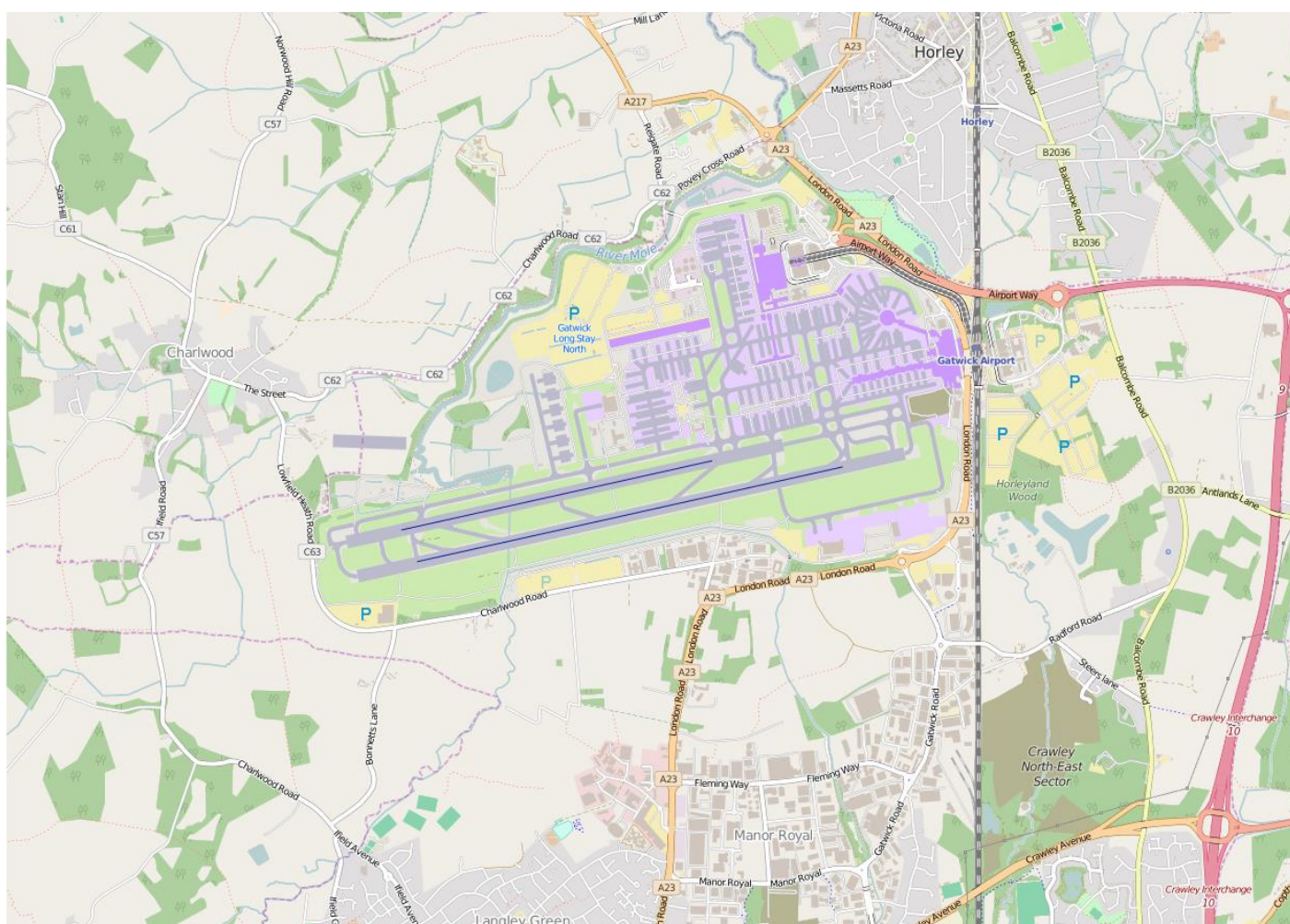
We occasionally receive complaints about disturbance from noise from within the boundary of the airfield. These can be caused by the normal operation of aircraft moving about the airfield, taking off and landing. Additional sources of noise disturbance can be the use of Auxiliary Power Units (APU) by aircraft on stand or the testing of engines following maintenance or repair (engine runs).

Strict regulations exist to minimise this disturbance, which includes a ban on engine running during the night. Details of any ground noise complaints are outlined below.

## Comment:

There were no recorded ground noise complaints during the three month period.

THE MAP BELOW ILLUSTRATES THE GATWICK AIRPORT AIRFIELD



For more information visit us at: <http://www.gatwickairport.com/aircraftnoiseandairspace>

# Glossary

**ACoP** – Arrivals Code of Practice

**AIP** – Aeronautical Information Publication

**AMSL** – Above Mean Sea Level

**ANS** – Air Navigation Solutions

**APU** – Auxiliary Power Unit - A small auxiliary engine on an aircraft used to provide electrical power when the main engines are shut down.

**ATC** – Air Traffic Control

**CAA** – Civil Aviation Authority

**CDO** – Continuous Descent Operations - A noise abatement procedure for arrivals used to avoid periods of level flight, reducing noise and emissions.

**dBA** – A-weighted decibels that takes closest account of human hearing. It is used to measure aircraft noise.

**DfT** – Department for Transport

**DME** – Distance measuring equipment

**EGKK** or **LGW** – London Gatwick Airport

**FLOPSC** – Flight Operations Performance and Safety Committee

**FPT** – Flight Performance Team

**Go-Around** – A go-around is an aborted landing of an aircraft which is on approach to the runway.

**ICAO** – International Civil Aviation Organisation

**ILS** – Instrument Landing System

**IMC** – Instrument Meteorological Conditions

**KPI** – Key Performance Indicators

**Lmax** – Maximum noise level

**NATS** – National Air Traffic Services

**nm** – Nautical Miles

**NPR** – Noise Preferential Route

**NTK** – Noise and Track Keeping monitoring system using Casper.

**P-RNAV** – Precision Route Navigation

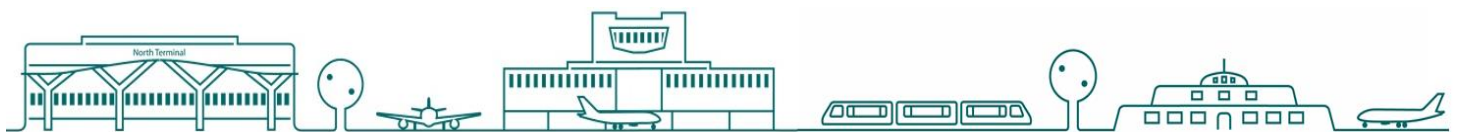
**QC** – Quota Count

**QNH** – The barometric pressure at sea level (QFE is the barometric pressure at the Airport).

**SID** – Standard Instrument Departure - A route out of UK airspace assigned to departing aircraft with an NPR in the first section.

**Vectoring** – Air Traffic Control procedure turning a departure off an NPR onto a more direct heading.

**VMC** – Visual Meteorological Conditions



YOUR LONDON AIRPORT  
*Gatwick*



# Gatwick Airport Flight Performance Report

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This report covers the period  
(1st October – 31st December 2017)



YOUR LONDON AIRPORT  
*Gatwick*

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# Introduction

## ABOUT THIS REPORT

This report is produced by the Gatwick Flight Performance Team (FPT). This team is responsible for recording, investigating and responding to aircraft noise enquiries as well as monitoring airline compliance to noise mitigation measures as detailed in the UK Aeronautical Information Publication (AIP). This department also actively engages with the airlines to improve their adherence to the above noise mitigation measures and in addition manages the night-time restrictions on flying at Gatwick.

This report contains detailed data on aircraft activity at Gatwick including the adherence to the noise mitigation measures detailed in the UK AIP, a report on night flying during the period, and an analysis of noise complaints received during the period.

## KEY MONITORING INDICATORS – 1<sup>st</sup> OCTOBER – 31<sup>st</sup> DECEMBER 2017

Parameter		12 month performance averages <sup>1</sup>			
		Year to date (2017)	Previous year (2016)	2011	2006
Track keeping performance (% on track)	▲	98.06% <sup>2</sup>	98.56%	97.47%	98.17% <sup>3</sup>
24hr CDO (% achievement) <sup>4</sup>	▼	90.48%	88.58%	90.49%	80.79%
Day/Shoulder CDO (% achievement)	▲	90.56%	88.18%	90.19%	79.9%
Core night CDO (% achievement)	▼	89.60%	92.90%	93.96%	89.6%
1,000ft Infringements (No.)	▼	0	0	3	11
1,000ft Infringements (No. below 900ft)	▼	0	0	1	6
Departure Noise Infringements (Day)	-	0	0	0	10
Departure Noise Infringements (Night/Shoulder)	▼	2	1	4	2
Individual complainants	▲	997	2324	343	587
Total noise complaints received <sup>5</sup>	▲	24658	17715	2673	4791
Enquiry response performance target is 95% within 8 days (October to December 2017)	▲	99.89%	46.55%	KPI 95%	
West/East Runway Split (%)	-	78/22	67/33	67/33	68/32

<sup>1</sup> The colour indicates the most recent 12 month performance compared to 2011, with green showing improvement and red a decline in performance.

<sup>2</sup> Track keeping statistics measurement changed on the 26<sup>th</sup> May 2016 due to the Route 4 amendment, all SID's are now included in the total figure.

<sup>3</sup> This figure did not include deviations from prop types or those due to weather.

<sup>4</sup> As a result of the Independent Review of Arrivals, it was recommended (Imm-05) that the CDO monitoring altitude be increased from 6,000ft to 7,000ft as of 1<sup>st</sup> August 2016.

<sup>5</sup> Complaints are recorded in line with our published complaints handling policy. The revised policy, published in November 2014, advised that only one complaint per day is recorded per individual. On the 29<sup>th</sup> September 2016, there was a further revision to our complaints handling policy which now allows individuals to make multiple complaints per day and these will each be recorded.

# Executive Summary

## Performance Headlines

### AIRPORT OPERATIONS

Between 1<sup>st</sup> October and 31<sup>st</sup> December 2017, there were a total of 64,192 fixed wing aircraft movements at Gatwick, a decrease in traffic of about 1.1% compared to the same period in 2016. The direction of operation is determined by wind direction and this was split 93% on the westerly runway and 7% on the easterly runway for the period. The rolling 16 year average for the split in runway usage is approximately 68% westerly and 32% easterly.

### NORTHERN RUNWAY (26R/08L) USAGE

Although Gatwick has the main runway and the ‘reserve’ or northern runway, they cannot be operated simultaneously.

The northern runway is normally only utilised during the night when maintenance on the main runway is planned. During these three months, there were a total of 1,290 movements from the northern runway.

### TRACK KEEPING

Track keeping performance has decreased slightly compared to the previous year’s performance, details of which will follow later in this report. As part of our continuing commitment to increase on-track performance, the FPT also continues to engage with the airlines directly and through the Flight Operations Performance and Safety Committee (FLOPSC) on a range of initiatives to monitor compliance.

### WOULD YOU LIKE TO KNOW MORE ABOUT AIRCRAFT NOISE OR TRACK A FLIGHT?

To track aircraft, see noise readings or make a complaint about aircraft noise at Gatwick you can visit our website: <http://www.gatwickairport.com/aircraftnoiseandairspace>

The website provides detailed maps on aircraft traffic around the airport as well as useful information on noise and statistics on aircraft movements. It also details the work we undertake with others in the aviation industry to try and alleviate the impact of our operations on both the local and wider community.

### CONTINUOUS DESCENT OPERATIONS (CDO) PERFORMANCE

While the Noise and Track Keeping (NTK) system utilises the most up-to-date format of radar data currently available, the

algorithm that measures CDO performance has remained unchanged since the definition was initially defined several years ago. As part of a development project to improve the accuracy of CDO measurement, the Flight Performance Team has worked closely with NATS to upgrade the current algorithm. The core algorithm remains unaltered, although some additional rules have been added with the result that some marginal profiles, previously classified as CDO compliant, will now be re-classified as non-CDO flights. These changes came into effect from May 2015 and the resulting variance in recorded levels of performance is in the order of 1%, therefore we expect to see a minor drop off in recorded performance from this date. Historical observations have consistently shown a reduction in performance during the winter months due to instances of inclement weather.

It is important to note that as recommended by the Independent Review of Arrivals, the altitude at which CDO is measured has changed as of 1<sup>st</sup> August 2016, more details later in the report.

### COMMUNITY NOISE MONITORING

In addition to fixed monitors located close to the ends of the runway, there are currently mobile noise monitors deployed at sites in Lingfield, Rusper, Oakwood Hill, Cowden and South Holmwood.

For several years, we have run a programme of noise monitoring to get a better understanding of the levels of aircraft noise in the communities surrounding Gatwick Airport. The noise monitors provide a method of monitoring and recording noise from both aircraft, and background sources. This allows us to evaluate trends and make comparisons between the noise environments at different locations.

### COMPLAINTS

The number of recorded complaints has increased compared to the previous twelve months, however the number of complainants has decreased. The past year has been the busiest year in the airport’s history and there has also been a large amount of publicity surrounding the potential second runway, and the community issues related to the Route 4 amendment, which may be contributing factors for the number of complaints in 2017.

The postcode areas with the greatest number of enquiries during the three month period were Outwood, Horley and Newdigate. The number of individual complainants between October and December was **256**. Complaints about aircraft operations are processed in accordance with our published Complaints Handling Policy. Details of this policy are available on our website.



# Runway Direction

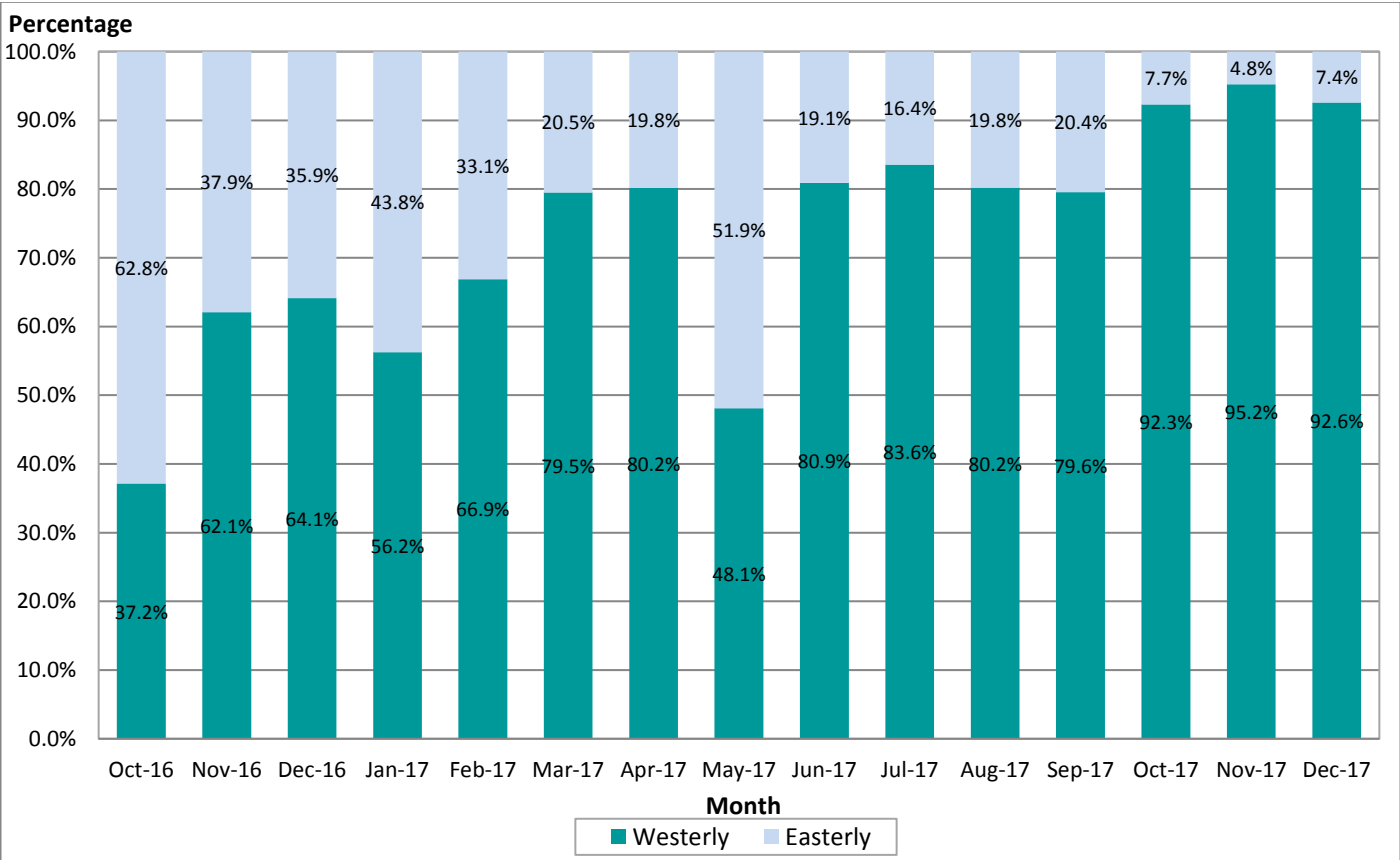
The graph below represents the direction of runway operation at Gatwick. Aircraft operating in a westerly direction take off towards the west and land from the east. Aircraft operating in an easterly direction take off towards the east and land from the west.

Although the long term average is approximately 68:32 in favour of westerly operations, it is not unusual to experience long periods of prolonged operation in either one direction or another.



## RUNWAY DIRECTION SPLIT

THE GRAPH BELOW SHOWS THE SPLIT OVER THE 15 MONTH PERIOD (OCTOBER 2016 – DECEMBER 2017)



# The Aeronautical Information Publication

An Aeronautical Information Publication (or AIP) is defined by the International Civil Aviation Organisation (ICAO) as a publication issued by or with the authority of a state and containing aeronautical information of a lasting character essential to air navigation.

It is designed to be a manual containing thorough details of regulations, procedures and other information pertinent to flying aircraft in the particular country to which it relates. It is usually issued by or on behalf of the respective civil aviation administration.

The structure and contents of AIPs are standardized by international agreement through ICAO. AIPs normally have three parts - GEN (general), ENR (en route) and AD (aerodromes).

The Gatwick Aerodrome AIP contains details regarding the noise mitigation measures in place and adherence to these is reported in this section.

## ADHERENCE TO NOISE MITIGATION MEASURES AS DETAILED IN THE GATWICK AIP

Each element of this report is preceded, where applicable, by the relevant Aeronautical Information Publication (AIP) reference and summary text detailing the purpose of the requirement. Data is then presented on current performance.

It should be noted that Gatwick is 202ft above mean sea level (AMSL) and the Noise and Track Keeping system (NTK) measures height relative to Gatwick elevation and not sea level.

References in the AIP are usually above sea level (quoted as Gatwick QNH) and therefore need to be reduced by 202ft to be comparable with heights, as measured by the NTK. For example, the requirement to join the ILS at 3,000ft would equate to 2,798ft in the NTK system.

No account is taken of the variability of heights as measured by the radar which, depending on the distance from the radar head, can be +/- 200ft from that indicated. This is obviously allowed for by NATS and ANS when managing operations.

# Departures - Noise Infringements

## DEPARTURE NOISE LIMITS (DAYTIME)

**EGKK AD 2.21 (3(3))** Subject to sub-paragraphs (5) and (6) below, any aircraft shall, after take-off, be operated in such a way that it will not cause more than 94 dBA L<sub>max</sub> by day (from 0700 to 2300 hours local time) as measured at any noise monitoring terminal at any of the sites referred to in sub-paragraph (2). This is to ensure that departing aircraft do not exceed the stated level during the day.

Year	Number of Day Infringements	Year	Number of Day Infringements
2006	9	2012	0
2007	13	2013	0
2008	2	2014	0
2009	0	2015	0
2010	0	2016	0
2011	0	2017	0

## DEPARTURE NOISE LIMITS (CORE NIGHT & SHOULDERS)

**EGKK AD 2.21 (3(4))** Subject to sub-paragraphs (5) and (6) below, any aircraft shall, after take-off, be operated in such a way that it will not cause more than 89 dBA L<sub>max</sub> by night (from 2300 to 0700 hours local time) and that it will not cause more than 87 dBA L<sub>max</sub> during the night quota period (from 2330 to 0600 hours local time) as measured at any noise monitoring terminal at any of the sites referred to in sub-paragraph (2). This is to ensure that departing aircraft do not exceed the stated levels during the night and shoulder periods.

Year	Number of Night & Shoulder Infringements	Year	Number of Night & Shoulder Infringements
2006	2	2012	0
2007	2	2013	0
2008	2	2014	0
2009	1	2015	0
2010	0	2016	1
2011	4	2017	2

# Departures - Initial Climb Performance

**EGKK AD 2.21 (3(1))** *After take-off the aircraft shall be operated in such a way that it is at a height of not less than 1000ft aal (above airfield level) at 6.5 km from start of roll as measured along the departure track of the aircraft. This is to ensure departing aircraft achieve at least that climb gradient in order to reduce the impact on the ground.*

## Comment:

There were no infringements of the 1,000ft rule during the three month period.

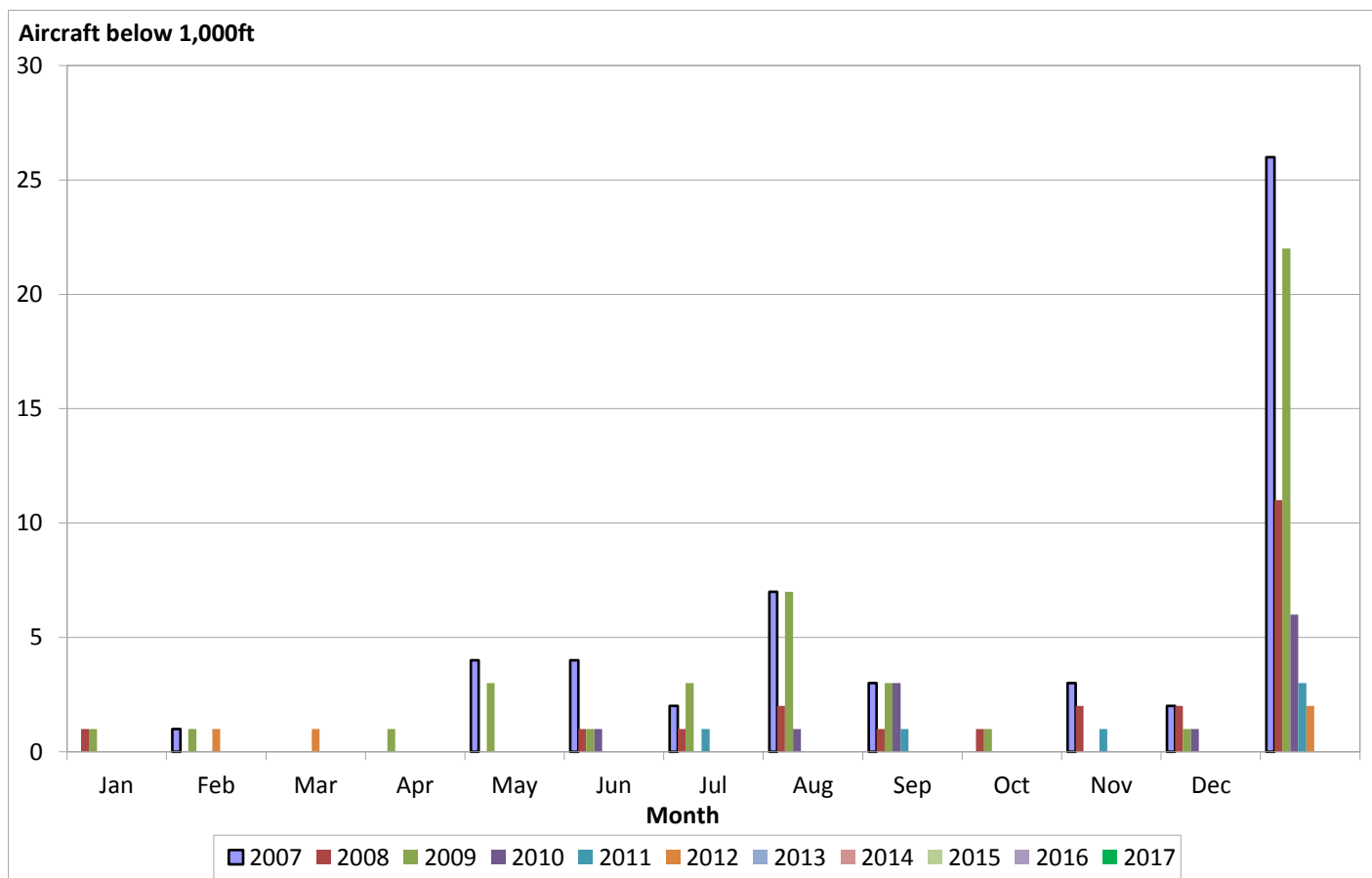
Historically, the summer months are typically the peak period for aircraft failing to meet the 1,000ft requirement, primarily due to the warmer weather which reduces aircraft climb performance.

## 1,000ft INFRINGEMENT TABLE

Year	Total Infringements	Year	Total Infringements
2006	11	2012	2
2007	26	2013	0
2008	11	2014	0
2009	22	2015	0
2010	6	2016	0
2011	3	2017	0

THE GRAPH BELOW ILLUSTRATES 1,000ft INFRINGEMENT PERFORMANCE SINCE 2007

## Initial Climb Performance



# Departures – Track Keeping

All jet aircraft leaving Gatwick Airport should follow flight paths known as Noise Preferential Routes (NPRs) up to a height of 3,000ft or 4,000ft depending on the route. An NPR consists of a 'centreline' and an associate compliance monitoring swathe (3km across, i.e. 1.5km either side of the NPR centreline). These NPR's are mapped below. As long as aircraft remain within the corridor boundaries, they are deemed to be on-track. A map illustrating the Noise Preferential Routes at Gatwick is available below.

Air Traffic Control (ATC) are responsible for the routing of aircraft once airborne and when 3,000 or 4,000ft has been reached, they may give a flight a more direct heading, known as vectoring, off the route. This is subject to certain factors, including weather conditions and other traffic in the vicinity. Flights leaving the route below the required height are automatically tagged and details are sent to the airline for investigation. Our Flight Operations Performance & Safety Committee (FLOPSC) regularly review track keeping performance.

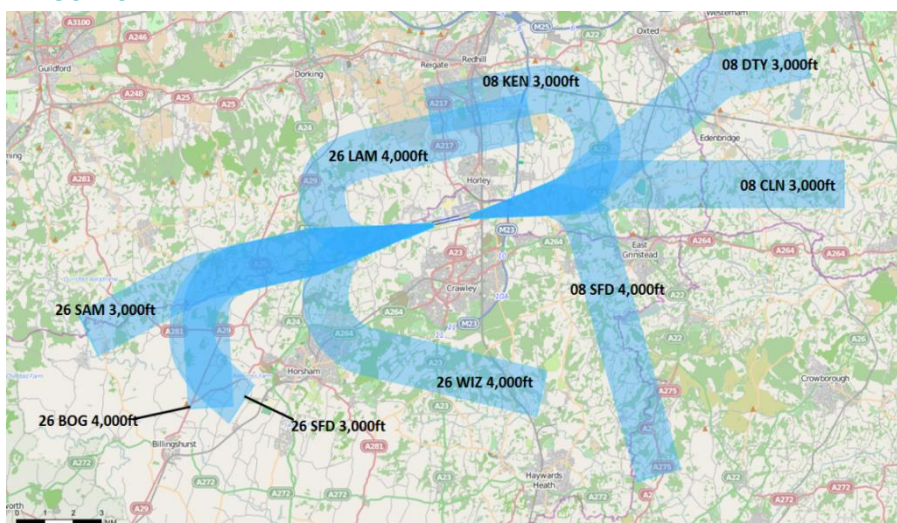
In 2012, Gatwick Airport publicly consulted on the implementation of a more modern form of aircraft navigation called P-RNAV (Precision Route Navigation). After having assessed all consultation feedback, the Civil Aviation Authority (CAA) granted the airport permission to implement P-RNAV on all of our departure routes. Implementing P-RNAV on the published departure routes has resulted in the tracks of departing aircraft being more concentrated within the boundaries of the current NPR's, with one exception. This is the NPR designed 26LAM/Route 4 that heads west then turns back on itself and passes to the north of the airfield. This route has always presented a challenge for modern jets as it was designed to accommodate propeller-driven aircraft and early jets that were around in the 1960's.

Implementing P-RNAV on this route required aircraft to fly outside of the current NPR. Therefore, as approved by the CAA, aircraft on a P-RNAV departure on this route were not classified as off-track as they were following the published route.

Following the introduction of P-RNAV at Gatwick Airport, the CAA conducted a Post Implementation Review (PIR) on all routes. The Review has recommended that this particular route (Route 4) be modified so that departing aircraft are compliant and remain within the published NPR swathe. It now requires all Standard Instrument Departure routes (SID's) to be counted in the track keeping statistics whereas previously, the P-RNAV SID's were not included. The amendment to Route 4 was monitored for a six month period from 26<sup>th</sup> May to 26<sup>th</sup> November 2016. During this time, Gatwick Airport engaged with the CAA, our airlines, Air Traffic Control and our airspace designers to improve adherence to the amended route. Following the PIR, the CAA has concluded that the modified Route 4 SID's achieve a satisfactory replication of the nominal track of the corrected conventional SID. The CAA has therefore decided to confirm the P-RNAV SID designs currently published in the UK Aeronautical Information Publication (AIP) as permanent.

There has also been a modification to our 08CLN/Route 5 NPR which has been in place since the 30<sup>th</sup> March 2017, as advised by the CAA. Previously, aircraft were flying slightly to the south of the NPR centreline and this modification aims to better replicate the existing conventional SID route and bring aircraft back towards the centre. This was monitored by the CAA for a six month period until the 30<sup>th</sup> September 2017 to ensure the aircraft were operating as anticipated. As with Route 4, Gatwick Airport engaged with the relevant parties to collate feedback and provide track data to the CAA.

THE MAP BELOW ILLUSTRATES THE NOISE PREFERENTIAL ROUTES USED BY DEPARTING AIRCRAFT WITH MINIMUM VECTORING ALTITUDE FIGURES

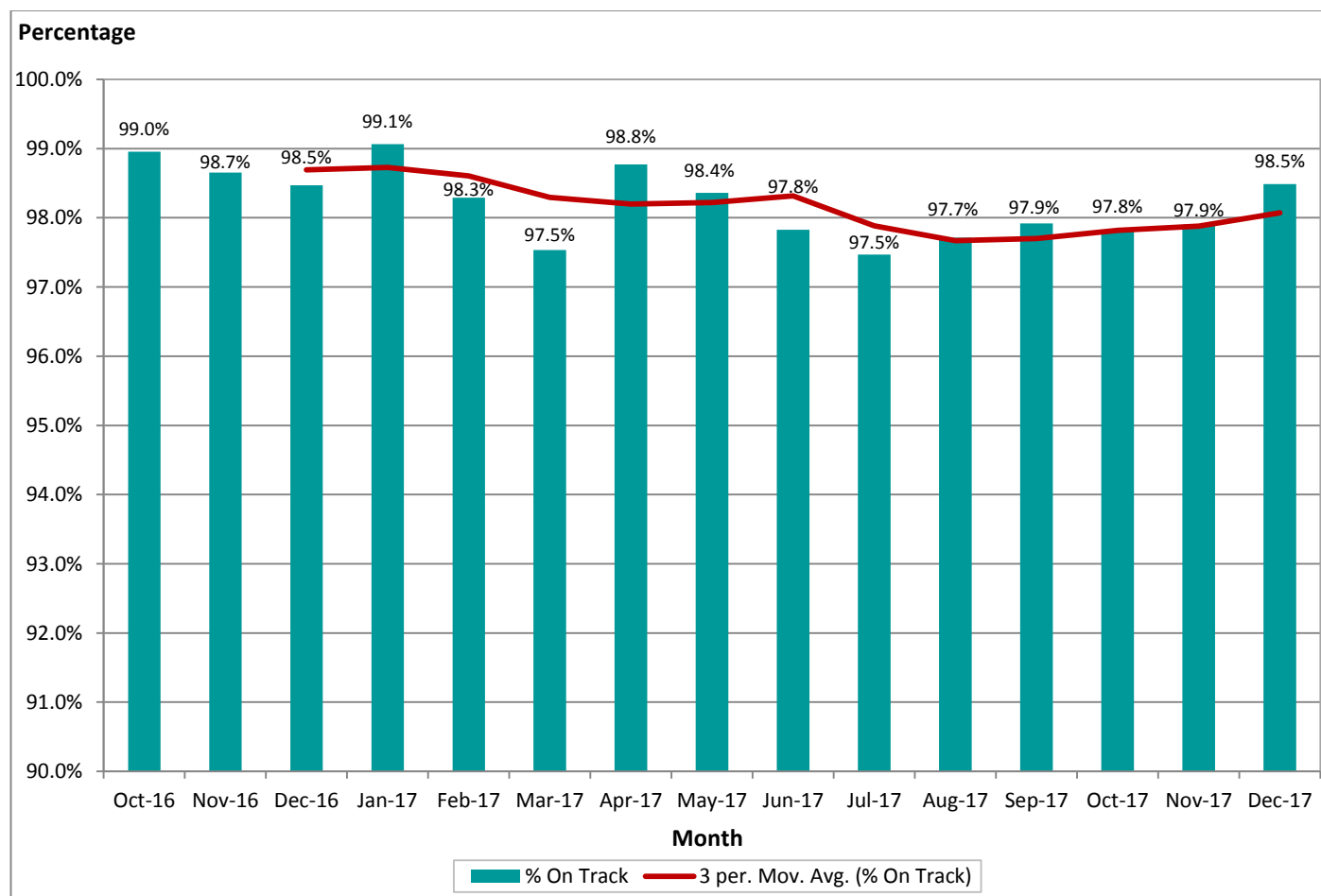




THE TABLE BELOW ILLUSTRATES TRACK KEEPING PERFORMANCE OVER 15 MONTHS

Month	Total			Westerly			Easterly		
	Deviations	Departures	%	Deviations	Departures	%	Deviations	Departures	%
Oct-16	133	12705	1.05%	115	4688	2.45%	18	8017	0.22%
Nov-16	126	9360	1.35%	118	5818	2.03%	8	3542	0.23%
Dec-16	159	10375	1.53%	139	6604	2.10%	20	3771	0.53%
Jan-17	92	9822	0.94%	80	5570	1.44%	12	4252	0.28%
Feb-17	166	9711	1.71%	162	6443	2.51%	4	3268	0.12%
Mar-17	274	11102	2.47%	270	8853	3.05%	4	2249	0.18%
Apr-17	146	11862	1.23%	130	9553	1.36%	16	2309	0.69%
May-17	216	13157	1.64%	198	6344	3.12%	18	6813	0.26%
Jun-17	291	13395	2.17%	275	10843	2.54%	16	2552	0.63%
Jul-17	355	14029	2.53%	340	11681	2.91%	15	2348	0.64%
Aug-17	325	14202	2.29%	318	11368	2.80%	7	2834	0.25%
Sep-17	283	13604	2.08%	266	10834	2.46%	17	2770	0.61%
Oct-17	273	12547	2.18%	269	11577	2.32%	4	970	0.41%
Nov-17	195	9288	2.10%	194	8832	2.20%	1	456	0.22%
Dec-17	155	10234	1.51%	154	9478	1.62%	1	756	0.13%

THE GRAPH BELOW ILLUSTRATES TRACK KEEPING PERFORMANCE OVER 15 MONTHS WITH A TREND LINE

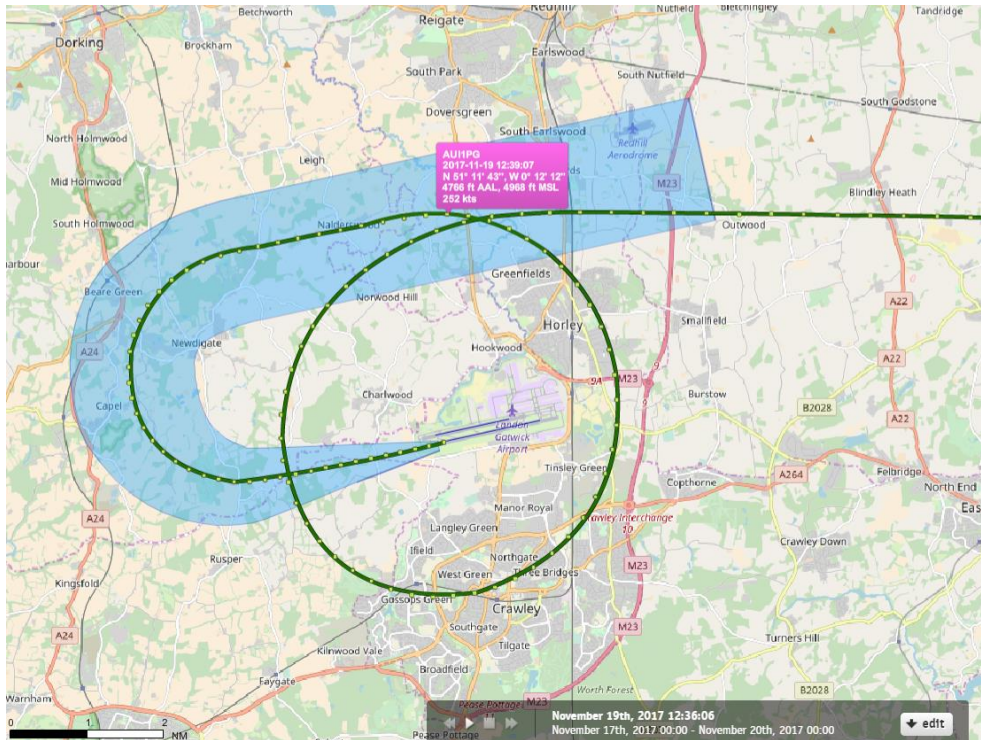


## UNUSUAL TRACKS

Some 'unusual tracks' taken by departing aircraft are recorded by our Noise and Track Keeping system and these can occur for a number of reasons, such as weather avoidance. These can result in the aircraft leaving the NPR

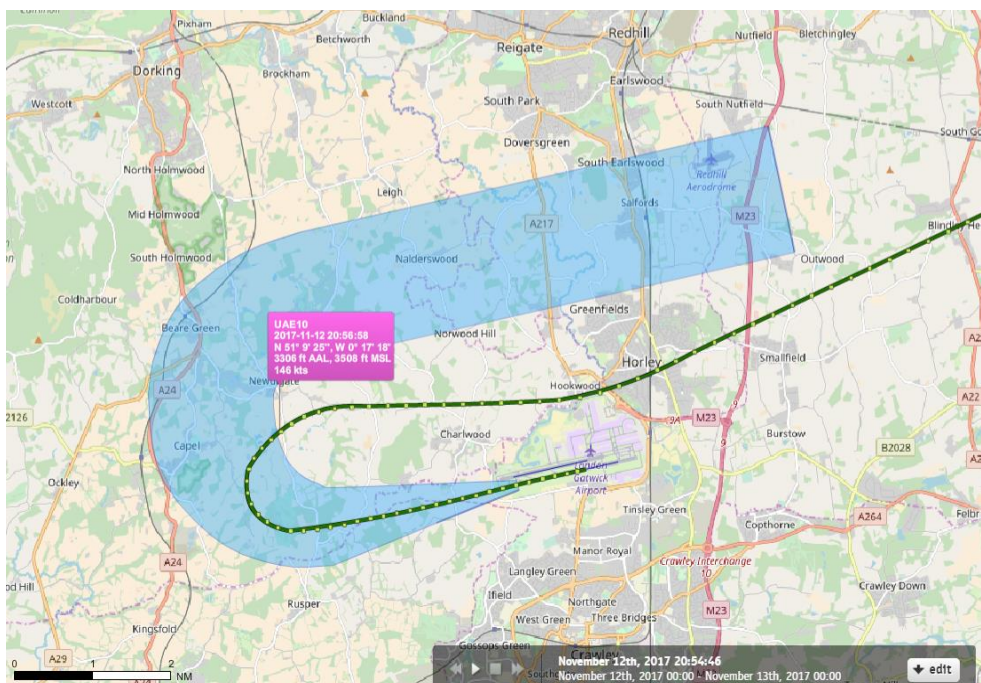
below the required altitude or aircraft that have vectored at the required altitude and then misdirected to avoid conflict with traffic from other airports. All unusual tracks are investigated with the airline concerned.

THE MAP BELOW SHOWS THE UKRAINE AIRCRAFT WHICH DEVIATED FROM THE PRESCRIBED NPR ON THE 19<sup>th</sup> NOVEMBER 2017



This Ukraine International Airlines flight occurred on the 19<sup>th</sup> November 2017 at 12:35. NATS Swanwick was contacted regarding this deviation and they explained that there was miscommunication between ATC and the pilot and the wrong heading was given. This was quickly corrected and no other air traffic was affected.

THE MAP BELOW SHOWS THE EMIRATES AIRCRAFT WHICH DEVIATED FROM THE PRESCRIBED NPR ON THE 12<sup>th</sup> NOVEMBER 2017



This Emirates flight occurred on the 12<sup>th</sup> November 2017 at 20:54. The Deputy Chief Pilot on the aircraft at the time explained that there was misdirection from ATC and although there were strong westerly winds during the turn, this had minimal impact on the tracking.



# Departures – Over Congested Areas

## THE WIZAD NOISE PREFERENTIAL ROUTE

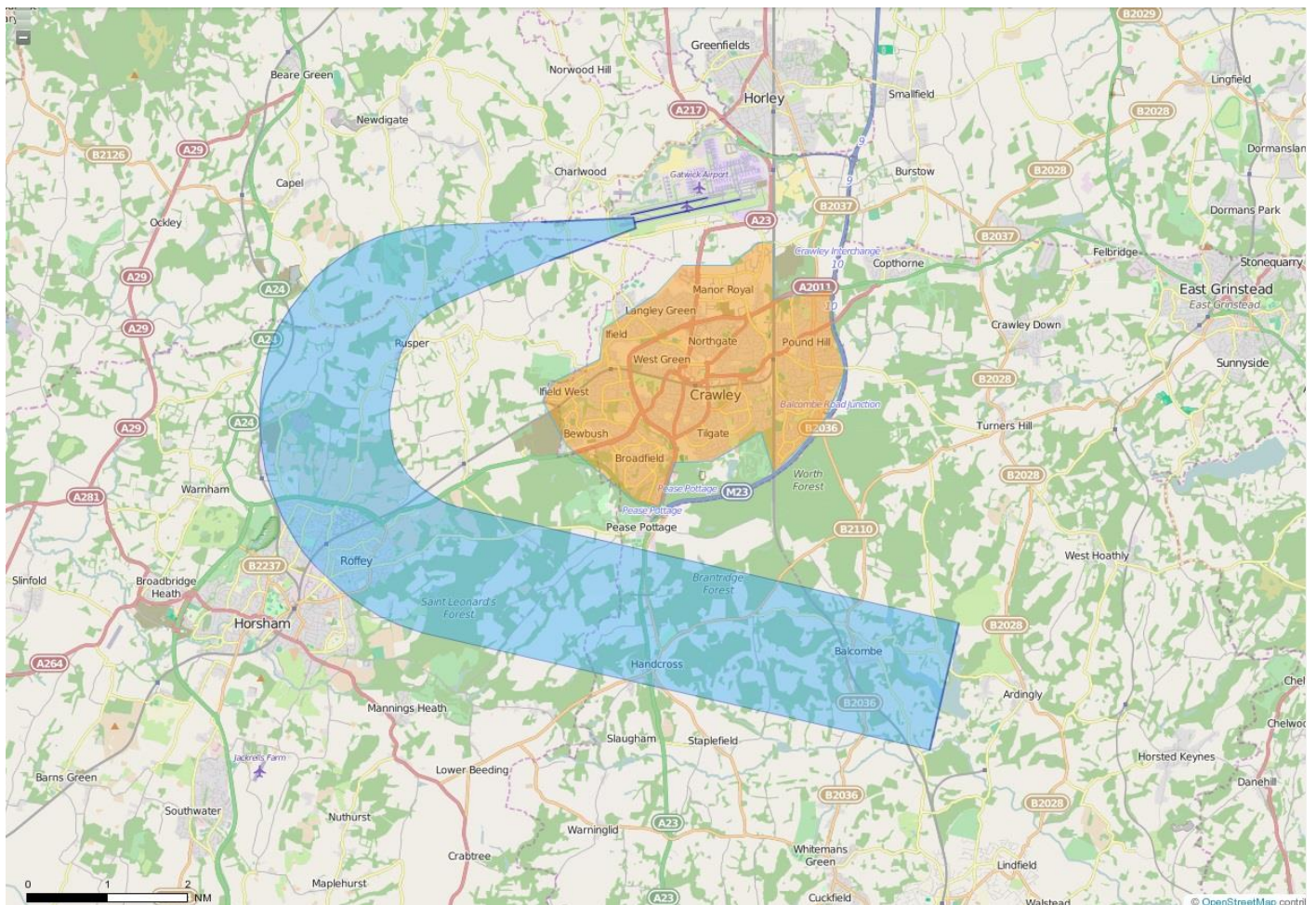
The Wizad Noise Preferential Route was designated by the Government at the same time as all other Gatwick departure routes; however, it is not used on an equal basis with the other routes. It is a Tactical Offload Route and is not usually offered as part of a flight path. If the 26 LAM Route (to the North of Horley) is very busy, Wizad will be offered as a last minute alternative to ease the load.

As it is only a Tactical Offload Route, it is not well known and it is only offered to local pilots and usually used by more modern, high performance aircraft. It will also be used during periods of poor weather when an alternative to the usual routes may be required as aircraft should not fly through thunderstorms.

**EGKK AD 2.21 (8)(c)** *The ATC clearance via Mayfield specified in the second column of the table will not be available between 2300 hours and 0700 hours local time. Aircraft following the Noise Preferential Routing Procedure which relates to that clearance shall not fly over Crawley, Crawley Down or East Grinstead. This is to avoid aircraft noise from departing aircraft over areas of high population at night on the 26 WIZAD NPR.*

**Comment:** During this three month period, there were no departures during the restricted period on the '26 WIZAD' Noise Preferential Route.

## THE MAP BELOW ILLUSTRATES THE CRAWLEY TOWN BOUNDARY WITH NOISE PREFERENTIAL ROUTE '26 WIZAD'



# Overflight of Crawley and Horley

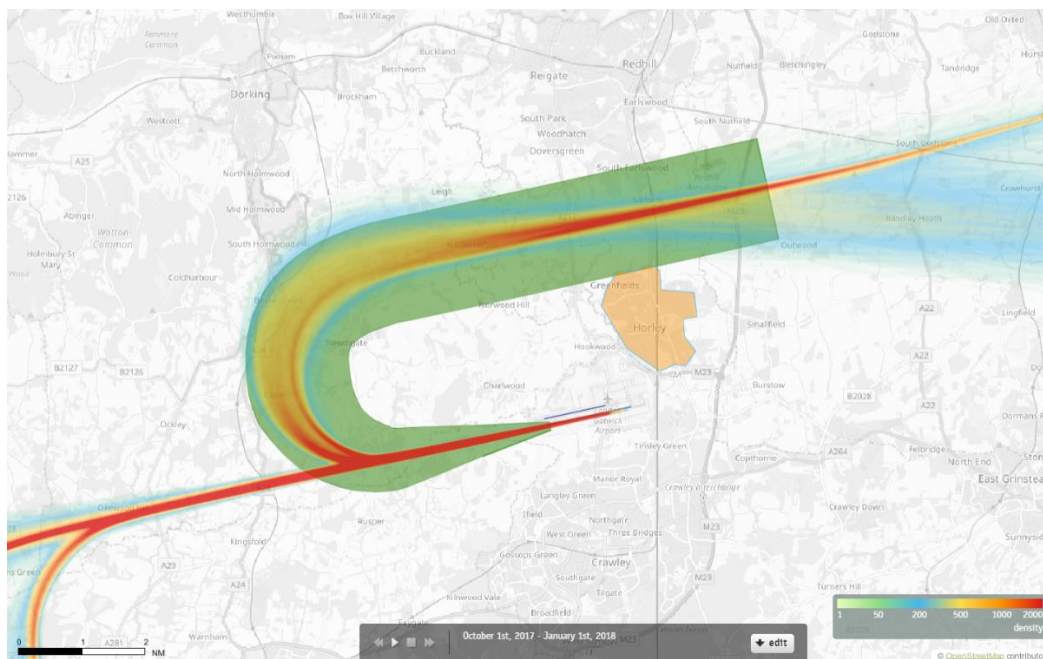
**EGKK AD 2.21 (9)** *After taking off the aircraft shall avoid flying over the congested areas of Horley and Crawley.*

This is to avoid aircraft noise from departing aircraft over areas of high population.

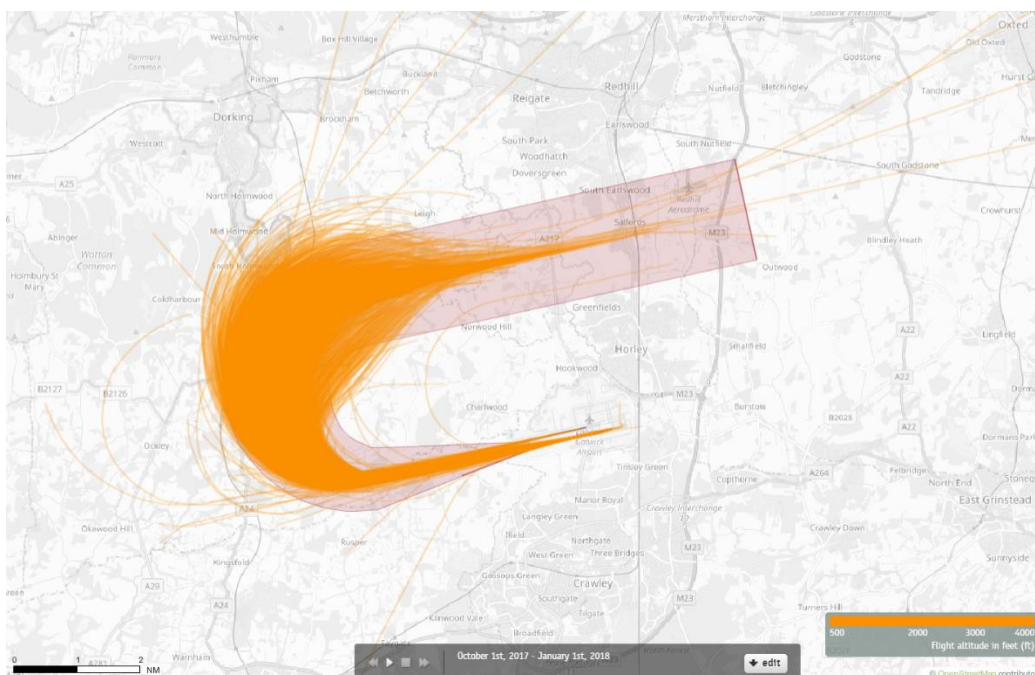
**Comment:** During this period, there was a single departing flight that passed over Crawley. This was the unusual Ukraine International Airlines track explained earlier in the report.

It should also be noted that although Casper Noiselab does not show tracks relating to other airports, Horley does experience overflight from Heathrow Airport traffic.

THE MAP BELOW ILLUSTRATES THE TRACK DENSITY OF DEPARTING AIRCRAFT ON THE '26 LAM' DEPARTURE ROUTE DURING THE THREE MONTH PERIOD WITH HORLEY TOWN HIGHLIGHTED



THE MAP BELOW ILLUSTRATES THE TRACKS OF DEPARTING AIRCRAFT ON THE '26 LAM' DEPARTURE ROUTE USING P-RNAV DURING THE THREE MONTH PERIOD UP TO AN ALTITUDE OF 4,000FT

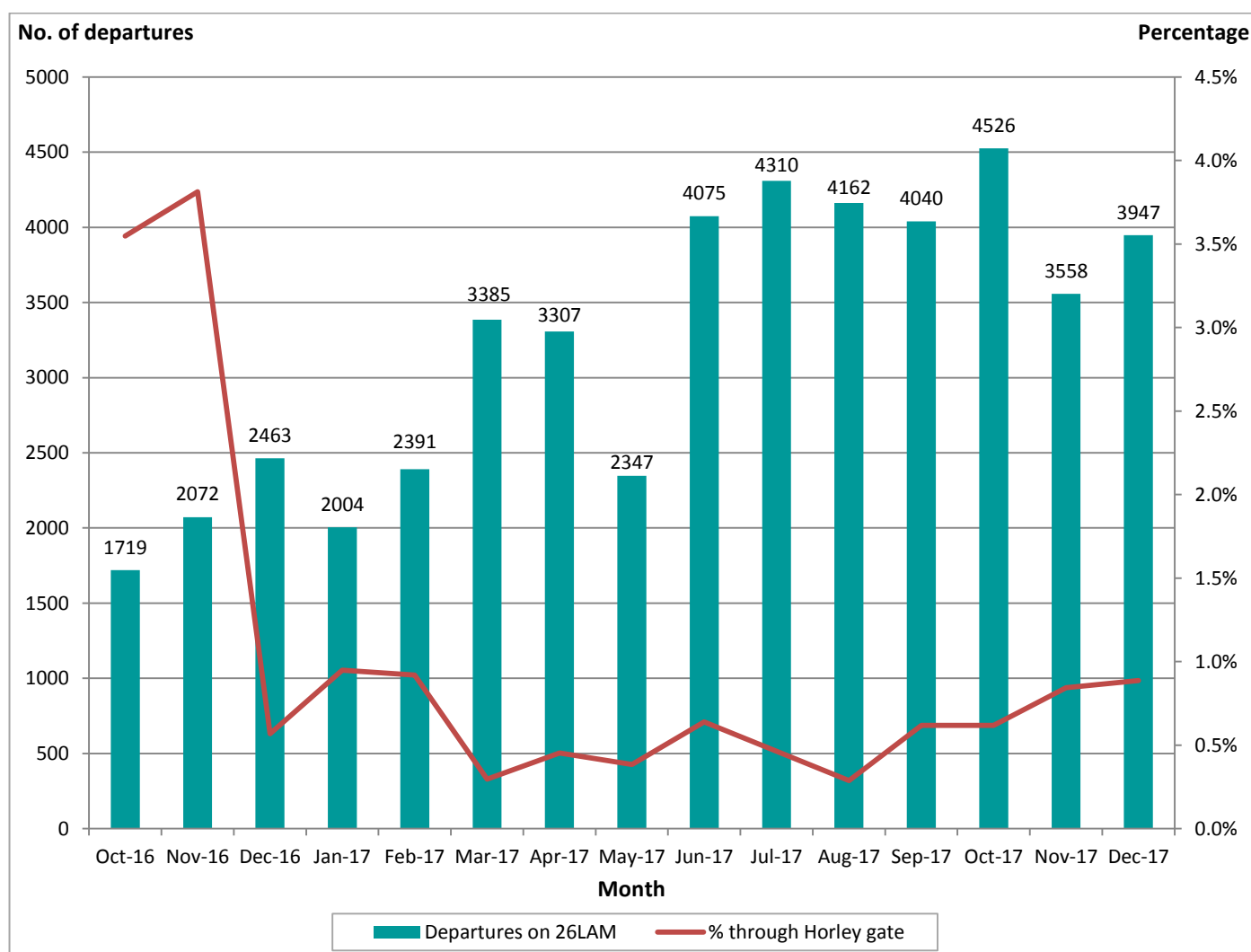




THE TABLE BELOW ILLUSTRATES THE ANALYSIS OF HORLEY OVERFLIGHT

Month	Departures on 26LAM	Horley gate	% through Horley gate	Month	Departures on 26LAM	Horley gate	% through Horley gate	Month	Departures on 26LAM	Horley gate	% through Horley gate
Jan-15	3237	102	3.15%	Jan-16	3031	70	2.31%	Jan-17	2004	19	0.95%
Feb-15	2251	66	2.93%	Feb-16	2449	58	2.37%	Feb-17	2391	22	0.92%
Mar-15	2455	40	1.63%	Mar-16	2282	67	2.94%	Mar-17	3385	10	0.30%
Apr-15	2200	42	1.91%	Apr-16	3018	91	3.02%	Apr-17	3307	15	0.45%
May-15	4051	67	1.65%	May-16	2114	51	2.41%	May-17	2347	9	0.38%
Jun-15	3688	57	1.55%	Jun-16	2922	173	5.92%	Jun-17	4075	26	0.64%
Jul-15	4365	42	0.96%	Jul-16	4968	420	8.45%	Jul-17	4310	20	0.46%
Aug-15	3559	38	1.07%	Aug-16	4099	355	8.66%	Aug-17	4162	12	0.29%
Sep-15	2838	61	2.15%	Sep-16	4409	210	4.76%	Sep-17	4040	25	0.62%
Oct-15	2039	36	1.77%	Oct-16	1719	61	3.55%	Oct-17	4526	28	0.62%
Nov-15	3302	78	2.36%	Nov-16	2072	79	3.81%	Nov-17	3558	30	0.84%
Dec-15	3707	13	0.35%	Dec-16	2463	14	0.57%	Dec-17	3947	35	0.89%

THE GRAPH BELOW ILLUSTRATES THE ANALYSIS OF HORLEY OVERFLIGHT



# Arrivals – Continuous Descent Operations (CDO)

A Continuous Descent Operation (CDO) (formerly known as a CDA) is a noise abatement technique of flight during which a pilot descends at a rate with the intention of achieving a continuous descent to join the glide path at the correct height for the distance. This procedure thereby avoids the need for extended periods of level flight and results in keeping the aircraft higher for longer reducing the need for thrust. In addition to aiding noise reduction, this also reduces fuel burn thereby cutting emissions and producing an overall environmental benefit.

A CDO is a procedure designed to try and avoid prolonged periods of level flight below 7,000ft\*. Studies have determined that elements of prolonged level flight are noisier than when following CDO. The aviation industry is working very hard to improve compliance and an Arrivals Code of Practice (ACoP) has been produced by the Department for Transport which aims to promote the use of CDO as a regular practice for all arriving aircraft:

‘For monitoring purposes, a descent will be deemed to have been continuous provided that no segment of level flight longer than 2.5 nautical miles (nm) occurs below 7,000ft\* QNH and ‘level flight’ is interpreted as any segment of flight having a height change of not more than 50ft over a track distance of 2nm or more, as recorded in the airport Noise and Track Keeping system.’

A CDO is not a precise art and relies on the accuracy of track miles provided by ATC to the flight crew coupled with pilot skill, weather conditions and operational circumstances. Additionally, different aircraft types perform differently requiring varying operating practices to be utilised in order to slow the aircraft down and meet speed restrictions, therefore the procedures in the ACoP are advisory rather than compulsory, so there are no sanctions against pilots or airlines that fail to comply with the measures. Despite this, publication of the ACoP has resulted in significant improvements in CDO achievement at all times of day and night. The FPT are actively working with the airlines to encourage the use of CDO as a best practice method by continually providing monthly reports. Airlines and pilots are keen to adopt this procedure for economic as well as environmental reasons and are active in promoting CDO within their companies.

CDO data is measured over three time periods:

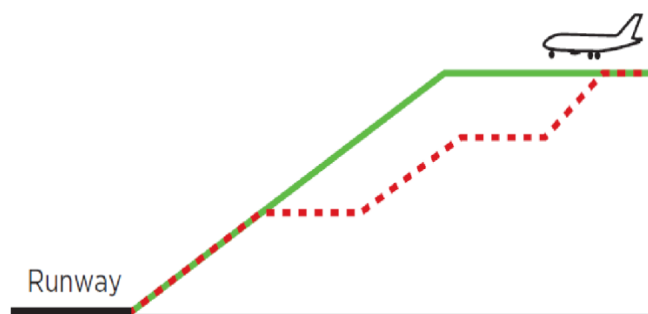
- The Core Night period (2330-0600)
- The Day and Shoulder periods (0600–2330)
- The 24-hour period

The following text appears in the UK Aeronautical Information Package (AIP) Noise Abatement Procedures for Gatwick Airport:

**EGKK AD 2.21 (10)** *Where the aircraft is approaching the aerodrome to land it shall, commensurate with its ATC clearance, minimise noise disturbance by the use of continuous descent and low power, low drag operating procedures (referred to in Detailed Procedures for descent clearance in EGKK AD 2.22 of the UK AIP). Where the use of these procedures is not practicable, the aircraft shall maintain as high an altitude as possible. In addition, when descending on initial approach, including in the closing heading, and on intermediate and final approach, thrust reductions should be achieved where possible by maintaining a 'clean' aircraft configuration and by landing with reduced flap, provided that in all the circumstances of the flight this is consistent with safe operation of the aircraft. This is to avoid prolonged periods of level flight and keep aircraft as high as possible for as long as possible.*

\*As a result of the Independent Review of Arrivals, it was recommended (Imm-05) that the CDO monitoring altitude be increased from 6,000ft to 7,000ft as of 1<sup>st</sup> August 2016.

\*\*Due to the increase in the usage of northern runway operations during the core night period during the last 3 months, this has had an impact on the CDO performance during this time.

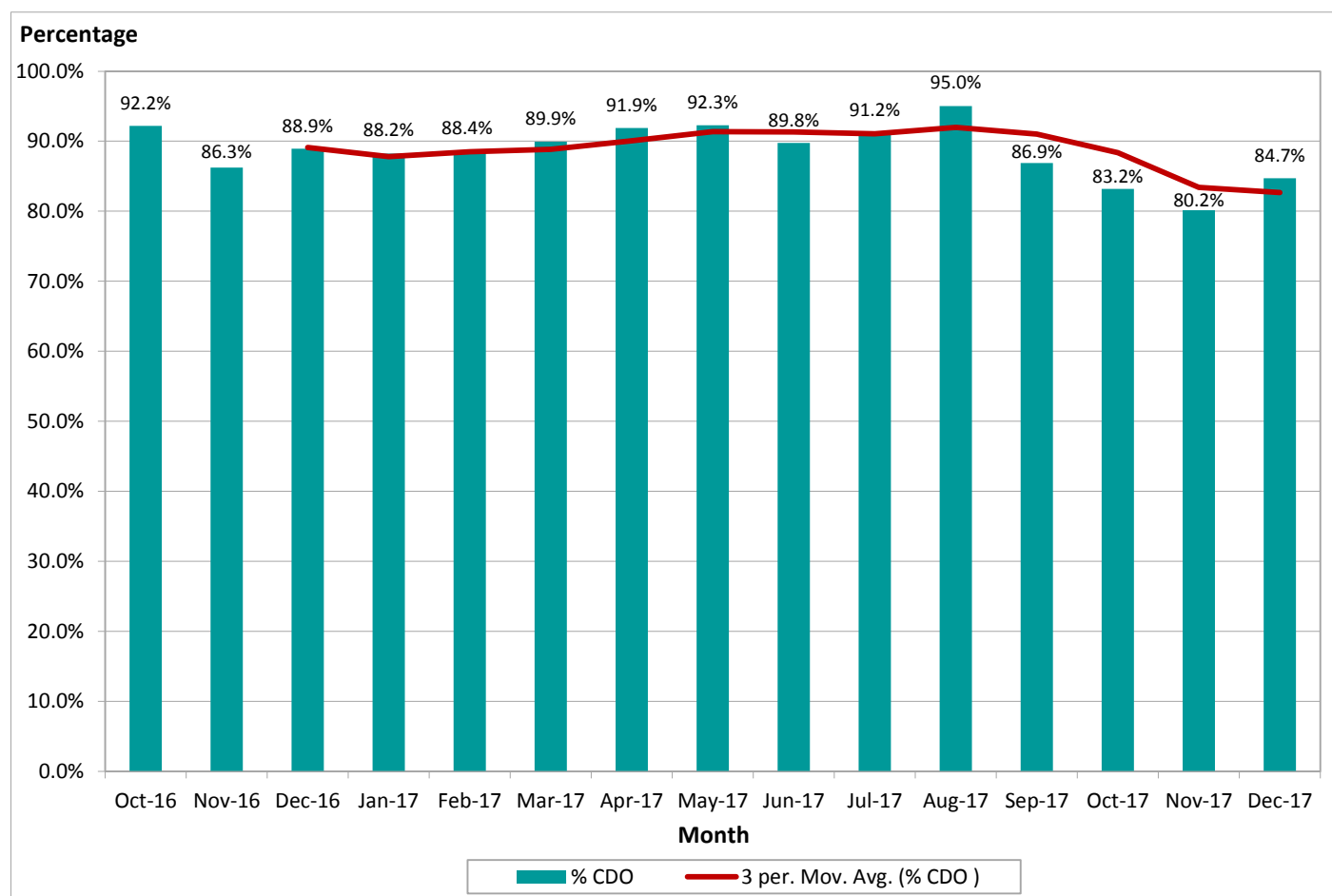


## CORE NIGHT PERIOD (2330-0600)

THE TABLE BELOW ILLUSTRATES THE BREAKDOWN OF THE CDO CORE NIGHT TIME PERIOD

Month	All Arrivals			08 Easterly Arrivals			26 Westerly Arrivals		
	Total	Non CDO	% CDO	Total	Non CDO	% CDO	Total	Non CDO	% CDO
<b>Oct-16</b>	1141	89	92.20%	700	56	92.43%	441	36	91.84%
<b>Nov-16</b>	240	33	86.25%	102	14	86.27%	138	19	86.23%
<b>Dec-16</b>	506	56	88.93%	116	5	95.69%	390	51	86.92%
<b>Jan-17</b>	391	46	88.24%	150	11	92.67%	241	35	85.48%
<b>Feb-17</b>	370	43	88.38%	121	17	85.95%	249	26	89.56%
<b>Mar-17</b>	447	45	89.93%	125	4	96.80%	322	41	87.27%
<b>Apr-17</b>	779	63	91.91%	214	12	94.39%	565	51	90.97%
<b>May-17</b>	1266	98	92.26%	664	64	90.36%	602	34	94.35%
<b>Jun-17</b>	1512	155	89.75%	266	23	91.35%	1246	132	89.41%
<b>Jul-17</b>	1834	162	91.17%	252	37	85.32%	1582	125	92.10%
<b>Aug-17</b>	1715	85	95.04%	330	21	93.64%	1385	64	95.38%
<b>Sep-17</b>	1733	227	86.90%	390	42	89.23%	1343	185	86.22%
<b>Oct-17</b>	1213	204	83.18%	50	4	92.00%	1163	200	82.80%
<b>Nov-17</b>	267	53	80.15%	12	2	83.33%	255	51	80.00%
<b>Dec-17</b>	373	57	84.72%	49	7	85.71%	324	50	84.57%

THE GRAPH BELOW ILLUSTRATES THE CORE NIGHT TIME CDO COMPLIANCE WITH A TREND LINE

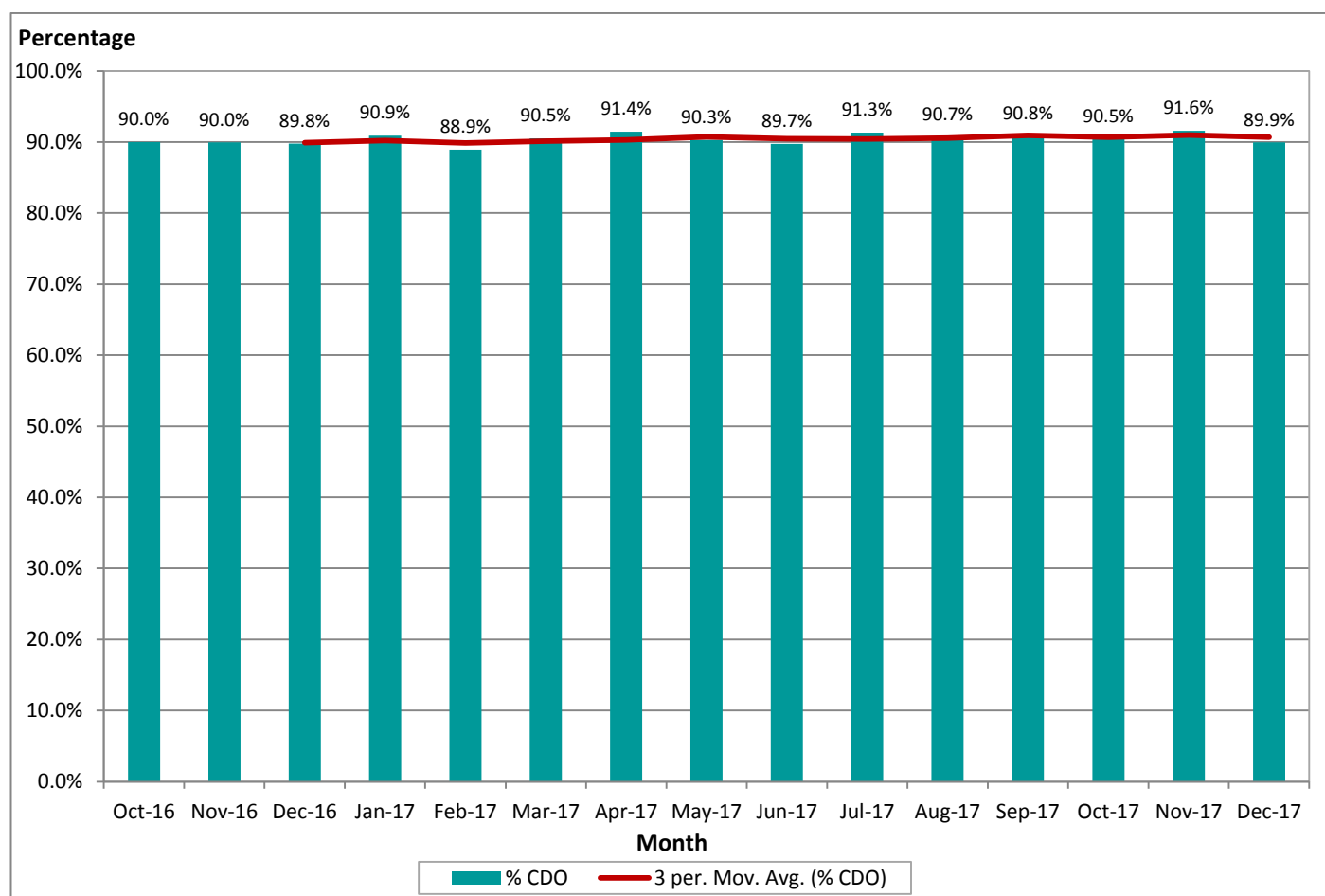


## DAYTIME AND SHOULDER PERIOD CDO ACHIEVEMENT (0600-2330)

THE TABLE BELOW ILLUSTRATES THE BREAKDOWN OF THE CDO DAYTIME AND SHOULDER PERIOD

All Arrivals				08 Easterly Arrivals			26 Westerly Arrivals		
Month	Total	Non CDO	% CDO	Total	Non CDO	% CDO	Total	Non CDO	% CDO
Oct-16	11554	1155	90.00%	7141	745	89.75%	4413	410	90.71%
Nov-16	9079	912	89.95%	3338	319	90.44%	5741	593	89.67%
Dec-16	9838	1005	89.78%	3447	304	91.18%	6391	701	89.03%
Jan-17	9395	855	90.90%	4085	317	92.24%	5310	538	89.87%
Feb-17	9305	1031	88.92%	3017	342	88.66%	6288	689	89.04%
Mar-17	10587	1004	90.52%	2157	225	89.57%	8430	779	90.76%
Apr-17	11016	943	91.44%	2159	193	91.06%	8857	750	91.53%
May-17	11873	1154	90.28%	6104	600	90.17%	5769	554	90.40%
Jun-17	11902	1222	89.73%	2288	204	91.08%	9614	1018	89.41%
Jul-17	12221	1061	91.32%	2016	199	90.13%	10205	862	91.55%
Aug-17	12483	1164	90.68%	2446	263	89.25%	10037	901	91.02%
Sep-17	11879	1089	90.83%	2381	181	92.40%	9498	908	90.44%
Oct-17	11369	1082	90.48%	909	65	92.85%	10460	1017	90.28%
Nov-17	9012	760	91.57%	415	37	91.08%	8597	723	91.59%
Dec-17	9879	993	89.95%	711	108	84.81%	9168	885	90.35%

THE GRAPH BELOW ILLUSTRATES THE DAY & SHOULDER CDO COMPLIANCE WITH A TREND LINE



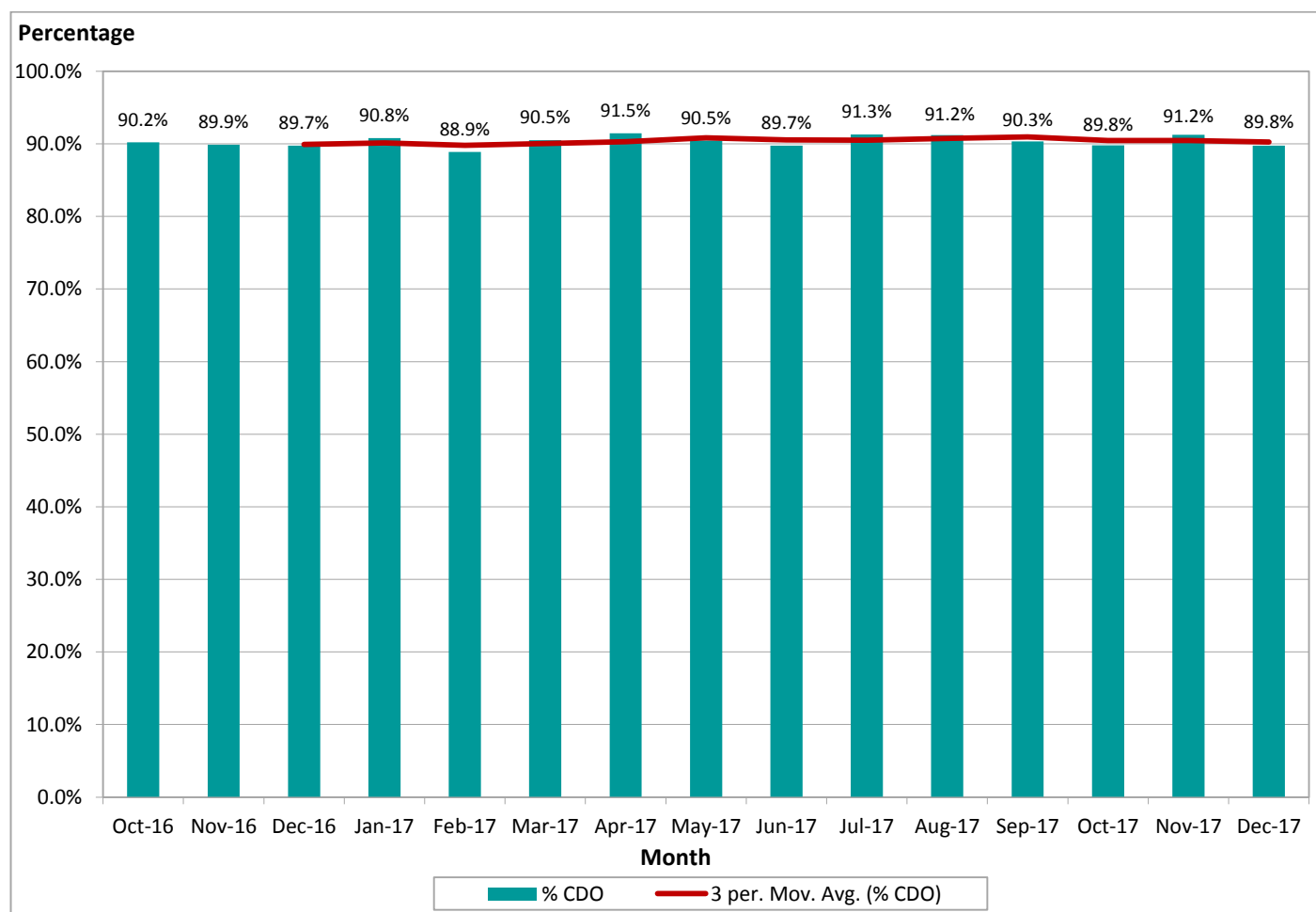


## 24 HOUR PERIOD CDO ACHIEVEMENT

THE TABLE BELOW ILLUSTRATES THE BREAKDOWN OF THE CDO 24 HOUR TIME PERIOD

Month	All Arrivals			08 Easterly Arrivals			26 Westerly Arrivals		
	Total	Non CDO	% CDO	Total	Non CDO	% CDO	Total	Non CDO	% CDO
<b>Oct-16</b>	12695	1244	90.20%	7841	798	89.82%	4854	446	90.81%
<b>Nov-16</b>	9319	945	89.86%	3440	333	90.32%	5879	612	89.59%
<b>Dec-16</b>	10344	1061	89.74%	3563	309	91.33%	6781	752	88.91%
<b>Jan-17</b>	9786	901	90.79%	4235	328	92.26%	5551	573	89.68%
<b>Feb-17</b>	9675	1074	88.90%	3138	359	88.56%	6537	715	89.06%
<b>Mar-17</b>	11034	1049	90.49%	2282	229	89.96%	8752	820	90.63%
<b>Apr-17</b>	11795	1006	91.47%	2373	205	91.36%	9422	801	91.50%
<b>May-17</b>	13139	1252	90.47%	6768	664	90.19%	6371	588	90.77%
<b>Jun-17</b>	13414	1377	89.73%	2554	227	91.11%	10860	1150	89.41%
<b>Jul-17</b>	14055	1223	91.30%	2268	236	89.59%	11787	987	91.63%
<b>Aug-17</b>	14198	1249	91.20%	2776	284	89.77%	11422	965	91.55%
<b>Sep-17</b>	13612	1316	90.33%	2771	223	91.95%	10841	1093	89.92%
<b>Oct-17</b>	12582	1286	89.78%	959	69	92.81%	11623	1217	89.53%
<b>Nov-17</b>	9279	813	91.24%	427	39	90.87%	8852	774	91.26%
<b>Dec-17</b>	10252	1050	89.76%	760	115	84.87%	9492	935	90.15%

THE GRAPH BELOW ILLUSTRATES THE 24 HOUR PERIOD CDO COMPLIANCE WITH A TREND LINE



# Arrivals – Over Congested Areas

## OVERFLIGHT OF CONGESTED AREAS

**AD 2-EGKK1-12 (11)** *Before landing at the aerodrome the aircraft shall maintain as high an altitude as practicable and shall not fly over the congested areas of Crawley, East Grinstead, Horley and Horsham at an altitude of less than 3,000ft (Gatwick QNH) nor over the congested area of Lingfield at an altitude of less than 2,000ft (Gatwick QNH).*

N.B. 2,000ft – (202ft (airfield elevation) + 100ft (radar/ILS tolerance)) = 1,698ft on Airports Noise & Aircraft Tracking System

**Comment:** There were no arriving flights which passed over the towns of Crawley, Horley, East Grinstead or Horsham below the required altitude for this period. The map overleaf illustrates these analysis zones. A polygon located over the urban area at about 7 nautical miles (nm) from touchdown is normally used to analyse tracks over the Lingfield area.

During the analysis period, there were a total of 152 arrivals that passed through this area. Aircraft tracks were analysed for October, November and December 2017 and with the exception of a small number of go-arounds, there were no flights that passed over Lingfield below the altitude of 1,698ft (2,000ft Gatwick QNH).

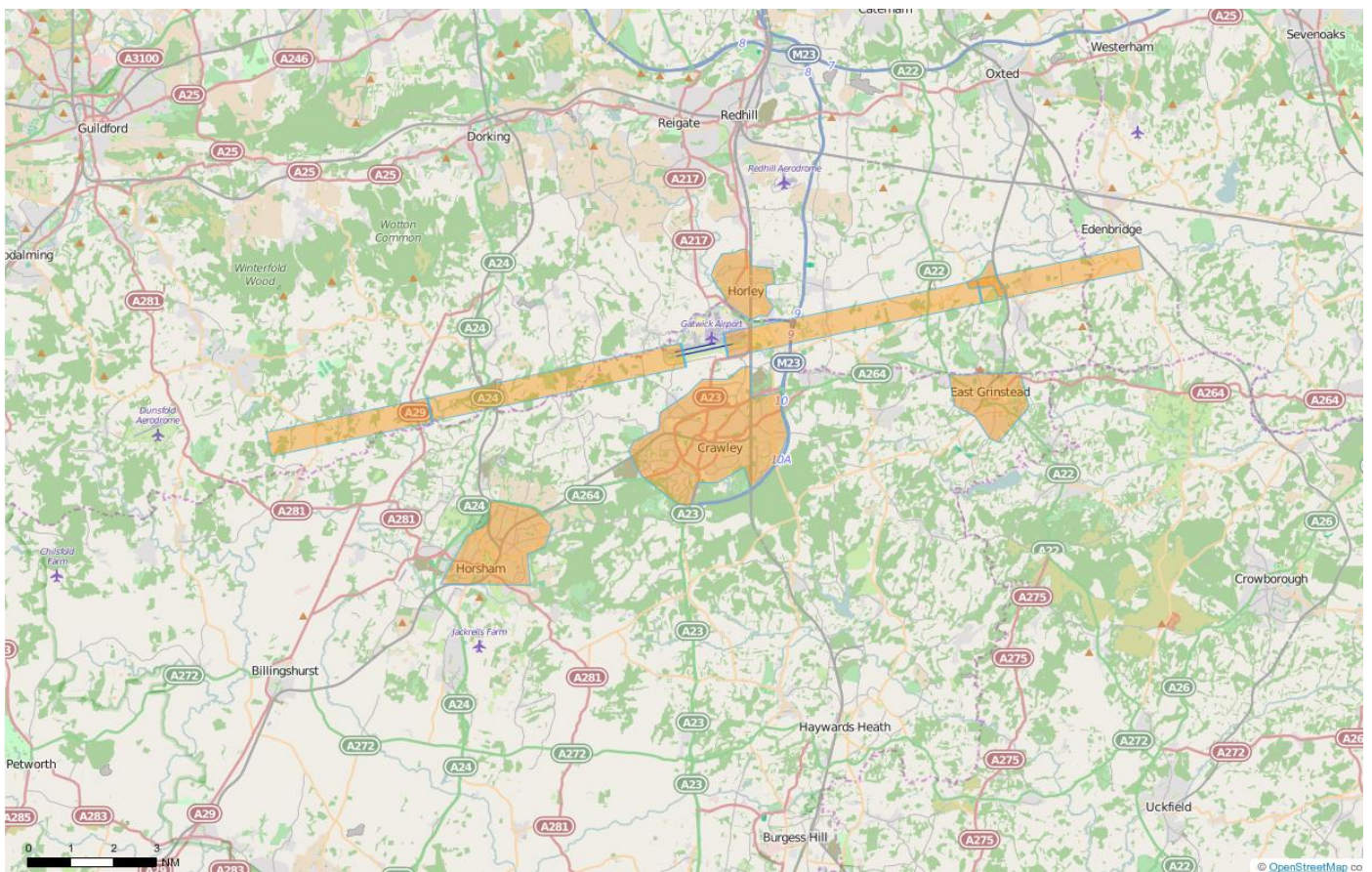
## A) DAY TIME JOINING HEIGHT (0700-2300)

**EGKK AD 2.21 (13(a))** *Where the aircraft is using the ILS in IMC or VMC it shall not descend below 2,000ft (Gatwick QNH) before intercepting the glidepath, nor thereafter fly below the glidepath. This is aimed at keeping aircraft as high as possible for as long as possible.*

The map below shows the congested urban areas, a series of gates running parallel to the extended runway centreline for around 6nm east and west of the airport, used to monitor low arrivals, joining the ILS below 2,000ft.

There were 32,139 arrivals recorded by the Casper NTK system between 1<sup>st</sup> October and 31<sup>st</sup> December 2017. Of these, the number of arrivals that were operating below an altitude of 2,000ft (equivalent to a height in the NTK system of 1,798ft) through one or more of the analysis gates was 182 (0.57%). In addition, there were 23 go-arounds that were not included in this figure. This figure is a sum of both easterly and westerly arrivals joining the ILS.

THE FOLLOWING MAP ILLUSTRATES THE ANALYSIS ZONES USED FOR LATE AND LOW ARRIVALS FOR BOTH ENDS OF THE AIRFIELD AND THE CONGESTED URBAN AREAS



## B) NIGHT TIME JOINING HEIGHT AND DISTANCE (2300-0700)

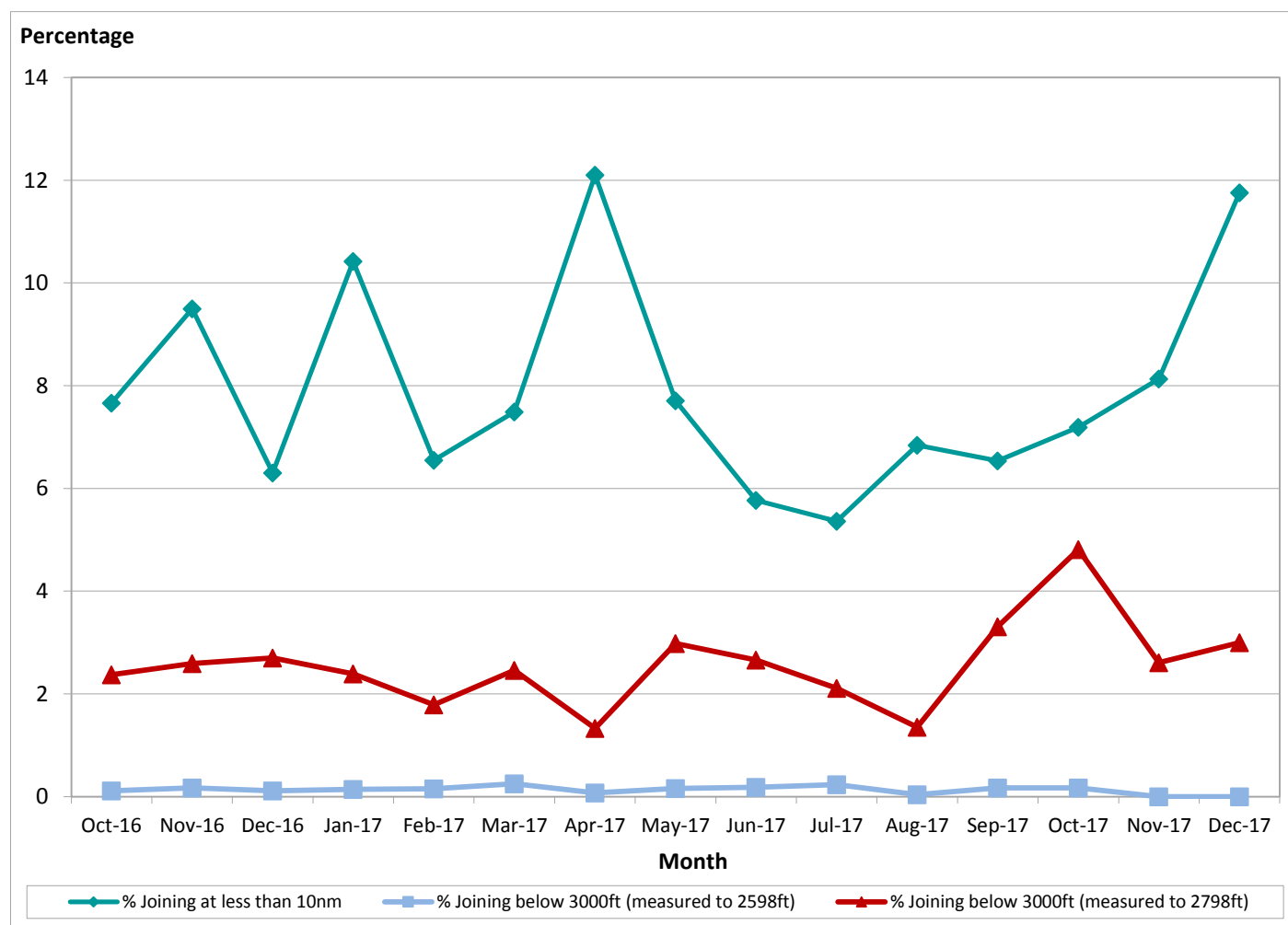
**EGKK AD 2.21 (14)** Aircraft which land at Gatwick Airport - London between the hours of 2300 (local) and 0700 (local), whether or not making use of the ILS localizer and irrespective of weight or type of approach, shall not join the centre-line:

a) below 3000ft, or

b) closer than 10 nm from touchdown.

This aims to keep aircraft higher for longer and avoid overflying areas en route to the ILS below 3,000ft.

THE GRAPH BELOW ILLUSTRATES THE NIGHT TIME JOINING POINTS OVER THE 15 MONTH PERIOD





# Go-Around Statistics 2004 - 2017

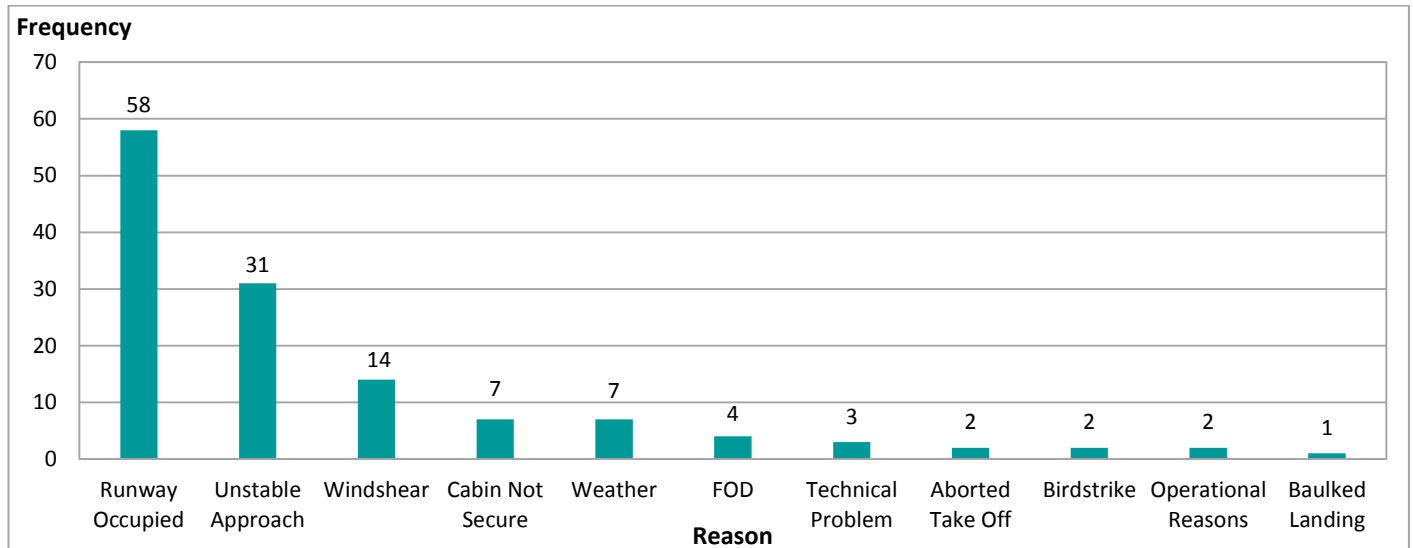
A go-around is a procedure adopted when an arriving aircraft on final approach aborts landing by applying take-off power and climbing away from the airport. It is a set procedure to be followed by the flight crew in the event of an aircraft being unable to land. The procedure is published so that Air Traffic Control (ATC) and the pilots can anticipate where the aircraft will go following the decision to go-around.

The standard missed approach procedure applicable to Gatwick Airport requires aircraft that are aborting their approach to climb to 3,000ft straight ahead, then, on passing 2,000ft or 1DME (distance measuring equipment) (whichever is later), turn heading 180. This may or may not result in aircraft overflying the town of Crawley or outlying areas.

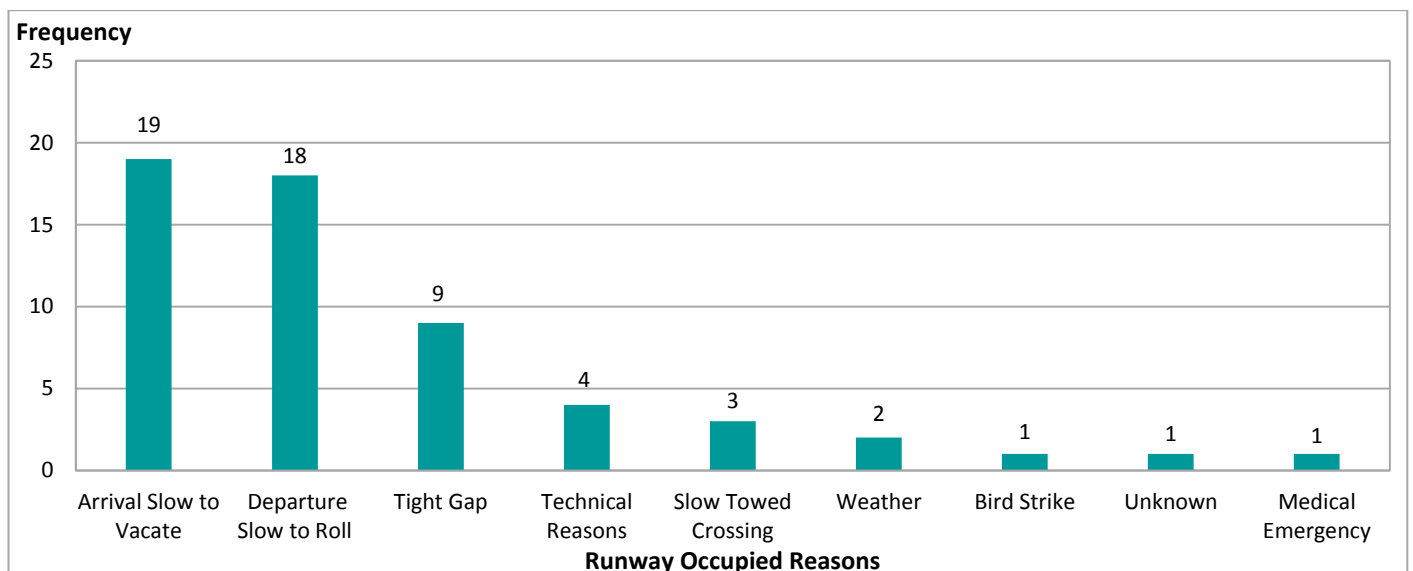
The number and reasons for go-arounds are routinely discussed at FLOPSC meetings and Pilot Forums. All parties are focussed on minimising the number of occasions when a go-around is required, but expect some to occur given the fact that Gatwick is a busy single runway airport.

It should be stated that there are well established standard procedures which both pilots and controllers are trained in and are familiar with. Gatwick Airport Limited, as the airport operator, actively encourages airlines operating at the airport to fly to the best possible environmental standards; however, safety must and always will be the number one priority.

## NATS AND ANS CURRENTLY RECORD GO-AROUNDS UNDER ONE OF THE FOLLOWING CAUSAL FACTORS (OCTOBER – DECEMBER 2017)



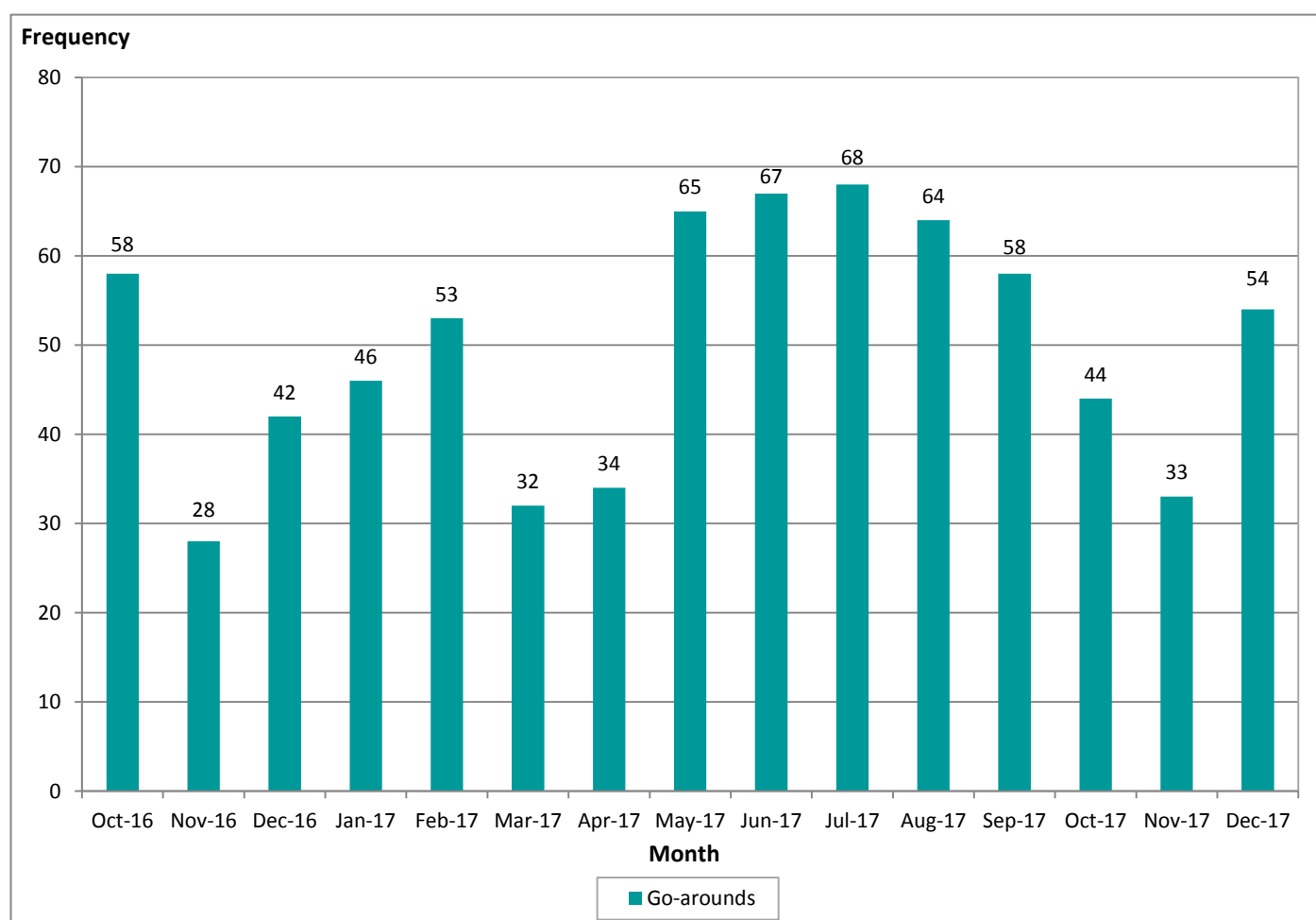
## THE REASONS GIVEN BY ANS FOR GO-AROUNDS DUE TO RUNWAY OCCUPANCY DURING THE THREE MONTH PERIOD



THE TABLE BELOW ILLUSTRATES GO-AROUND STATISTICS 2004 – 2017

Year	Total	Total Arrivals	% of Arrivals
2004	344	124665	0.28
2005	450	129509	0.35
2006	405	130954	0.31
2007	434	133271	0.33
2008	359	131858	0.27
2009	455	125861	0.36
2010	364	120263	0.30
2011	386	125541	0.31
2012	520	123408	0.42
2013	473	125290	0.38
2014	512	129966	0.39
2015	520	133869	0.39
2016	642	139998	0.46
2017	618	142956	0.43

THE GRAPH BELOW ILLUSTRATES TOTAL NUMBER OF GO-AROUNDS PER MONTH (OCTOBER - DECEMBER 2017)



# Night Flights

The Secretary of State, in exercise of his powers under Section 78 of the Civil Aviation Act 1982, has imposed restrictions at Gatwick Airport on aircraft operating at night. These restrictions are in place to limit and mitigate noise disturbance from aircraft operating at night and to prohibit aircraft of specified descriptions from operating, also to limit the number of occasions on which other aircraft may take-off or land.

The night flying restrictions are divided into summer and winter seasons which coincide with the start and end of British Summer Time. They consist of a movement limit and a quota count system. The quota count (QC) means that points are allocated to different aircraft types according to how noisy they are. The noisier the aircraft type, the higher the points allocated. This provides an incentive for airlines to use quieter aircraft types. Aircraft are certified by the International Civil Aviation Organisation (ICAO) according to the noise they produce and are classified separately for both take-off and landing.

For the purposes of night flying operations, the night quota period is defined as the period between 2330-0600 (local time). In addition, there are two further shoulder periods of 2300–2330 and 0600–0700 (local time), where other restrictions apply to the scheduling and operation of aircraft of specified descriptions.

Overleaf is a mid-season report for Winter 2017/18 which commenced at 02:00 on the 29<sup>th</sup> October 2017. The total number of movements available for the Winter season is 3250.

## DISPENSATIONS

In accordance with the DfT guidelines, there may be times when an aircraft can be disregarded from the night flight restrictions. As a general rule these are unforeseen circumstances outside the control of either the Airport or airline resulting in the unscheduled use of a night flight slot. Examples of such instances include humanitarian relief flights, emergencies, VIP visits, delays as a result of disruption leading to passenger hardship, Air Traffic Control disruption or airspace closure caused by a volcanic ash cloud. The rules related to dispensations are strictly adhered to and all instances are reported to the DfT within 7 days.

There have been no dispensations applied during this Winter 2017/18 season.

## QC4, QC8 and QC16 MOVEMENTS

There have been no QC8 or QC16 movements during either the 'night quota' or 'shoulder periods'. These QC values are not to be scheduled to take off or land between 2300 and 0700. There were no unscheduled QC4 movements during the 'night quota period'. QC4 types may not be scheduled to take off or land during this period.

## RESTRICTIONS

Winter	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18
Movements Limits	3250	3250	3250	3250	3250	3250	3250	3250
Quota Points	2060	2000	2000	2000	2000	2000	2000	2000
Summer	2010	2011	2012	2013	2014	2015	2016	2017
Movements Limits	12000	11200	11200	11200	11200	11200	11200	11200
Quota Points	6400	6300	6200	6200	6200	6200	6200	6200

## London Gatwick

### AIRPORT MOVEMENTS and QUOTA SUMMARY to WEEK 09 (29 OCTOBER 2017 TO 04 JANUARY 2018 inc.)

Season Quota Points Limit	2000	Season Movement Limit	3250
Total Quota Points Allowed	2000	Total Movements Allowed	3250

Wk No.	Week Ending Date	QC0 No.	QC0.25 No.	QC0.5 No.	QC1 No.	QC2 No.	QC4 No.	QC8 No.	QC16 No.	Total Quota Value	Mvmnts Against Limit	Not Cont'd Delays	Not Cont'd Gov't	Not Cont'd Emerg	Total Arrivals No.	Total Arrivals %	Total Deps No.	Total Deps %	Total Runway Mvmnts
1	04/11/2017	3	61	62	20	2	0	0	0	70.25	148	0	0	0	128	86.5	20	13.5	148
2	11/11/2017	4	20	34	14	3	0	0	0	42.00	75	0	0	0	60	80.0	15	20.0	75
3	18/11/2017	5	23	34	11	3	0	0	0	39.75	76	0	0	0	64	84.2	12	15.8	76
4	25/11/2017	5	18	34	13	4	0	0	0	42.50	74	0	0	0	61	82.4	13	17.6	74
5	02/12/2017	3	21	27	12	4	0	0	0	38.75	67	0	0	0	57	85.1	10	14.9	67
6	09/12/2017	4	22	28	17	4	0	0	0	44.50	75	0	0	0	62	82.7	13	17.3	75
7	16/12/2017	13	50	33	15	3	0	0	0	50.00	114	0	0	0	102	89.5	12	10.5	114
8	23/12/2017	9	50	44	18	4	0	0	0	60.50	125	0	0	0	107	85.6	18	14.4	125
9	30/12/2017	5	29	32	18	3	0	0	0	47.25	87	0	0	0	71	81.6	16	18.4	87
<b>TOTALS</b>		<b>51</b>	<b>294</b>	<b>328</b>	<b>138</b>	<b>30</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>435.5</b>	<b>841</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>712</b>	<b>84.2</b>	<b>129</b>	<b>15.8</b>	<b>841</b>

Quota Points Available	1564.50	Movements Available	2409
Quota % Points Used	21.8	Movements % Used	25.9

Note 1 Not Cont'd Delays

Note 2 Not Cont'd Gov't

Note 3 Not Cont'd Emerg

Delays likely to lead to serious congestion and delays resulting from widespread disruption of Air Traffic.

Exemptions granted by Gov't (VIP Passengers, Emergency Relief).

Emergency Take-offs and Landing

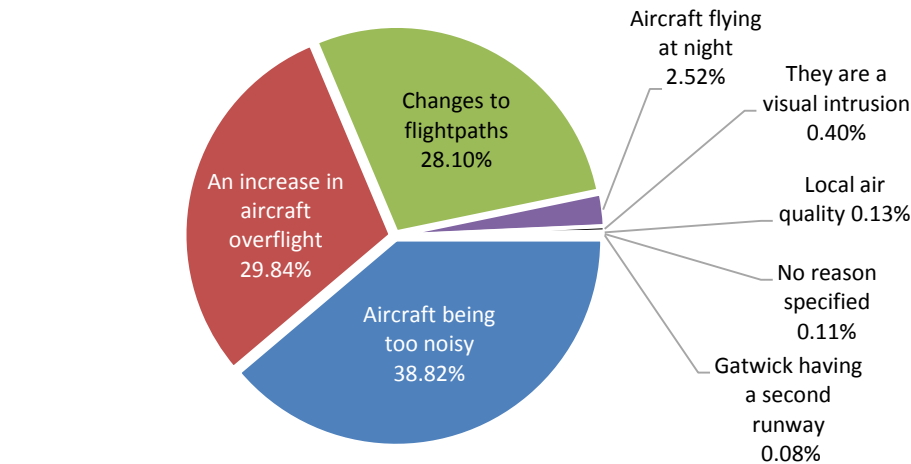


# Noise Complaints

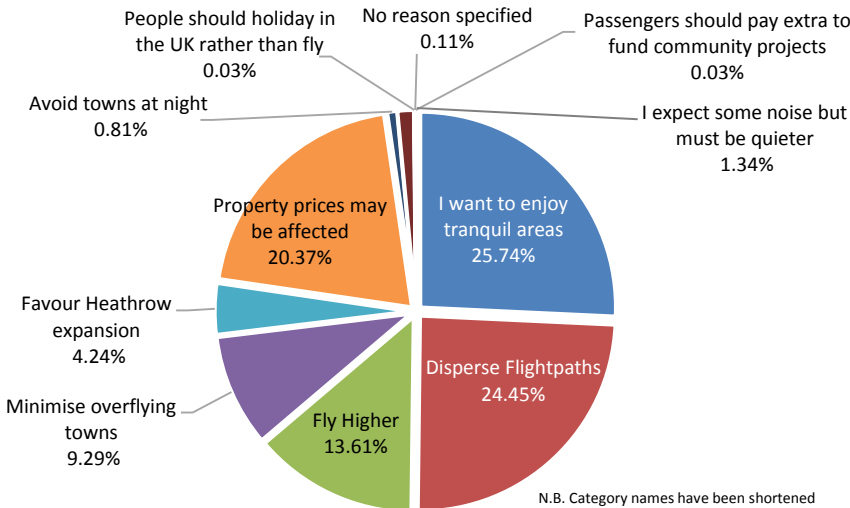
It is important that we understand the issues of noise disturbance from individuals and communities who live around the airport. By studying the complaints we receive and by communicating with the affected towns and villages surrounding the Airport, we believe that this gives us a greater understanding of the issues related to noise.

This means that we can work together to improve the noise climate around the Airport. The complaints we have received are either about specific aircraft events that cause disturbance or generic complaints about airport operations in general. The following charts provide an analysis of the reasons for the numbers of complaints.

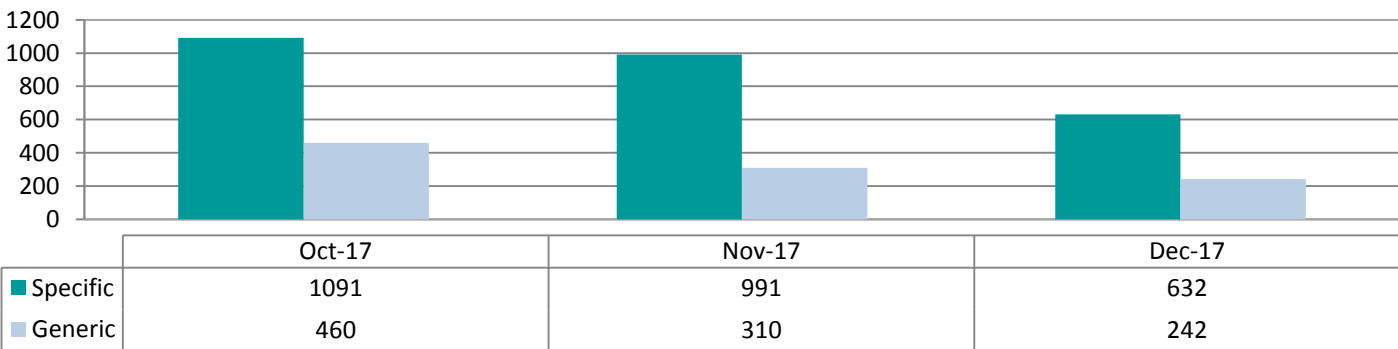
PERCENTAGE OF COMPLAINT OBSERVATIONS MOST AGREED WITH



PERCENTAGE OF COMPLAINT CONCERNS MOST AGREED WITH



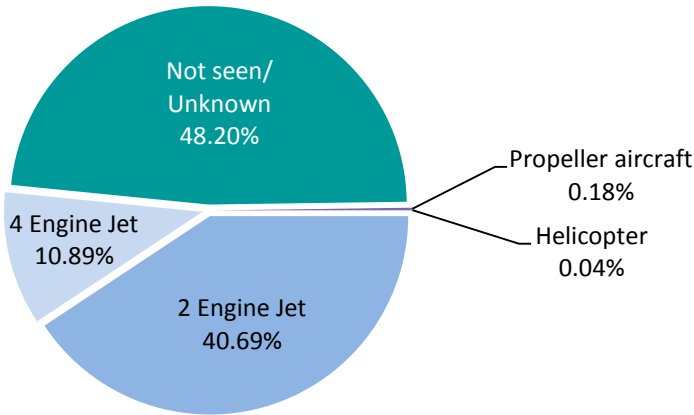
COMPLAINTS RECORDED BY MONTH



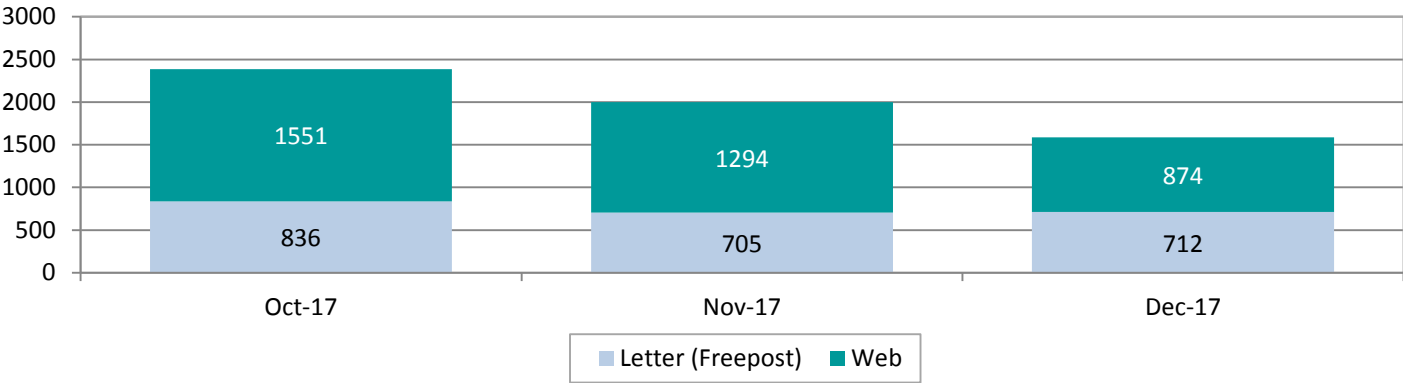
Noise is very subjective and can affect people in different ways. Some people can tolerate a certain noise level whilst it can cause disturbance to others. As well as identifying the issues of noise, it is important to understand the location of each individual complaint.

The charts below provide further analysis of the categories of aircraft types and the method of complaint and the location of individual complainants.

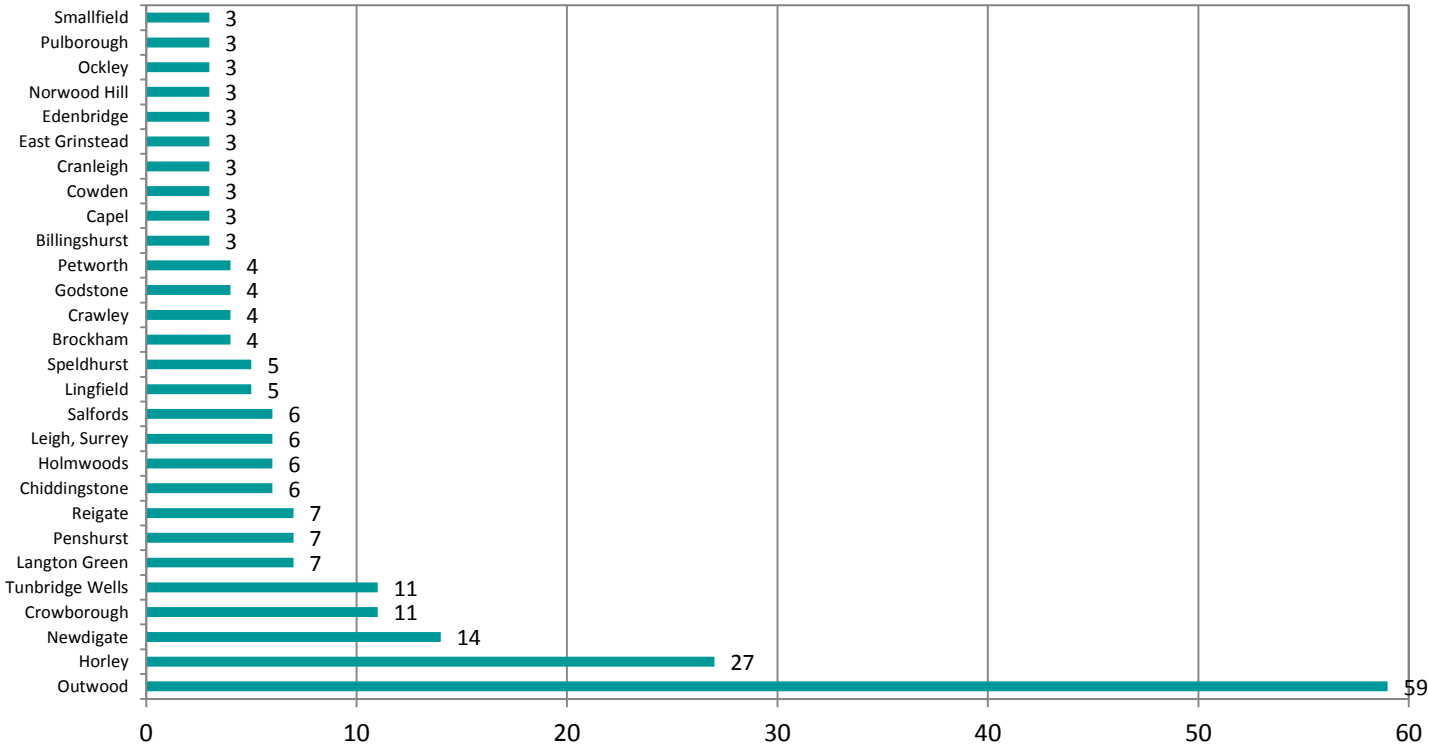
### CATEGORIES OF AIRCRAFT TYPES FROM SPECIFIC COMPLAINTS



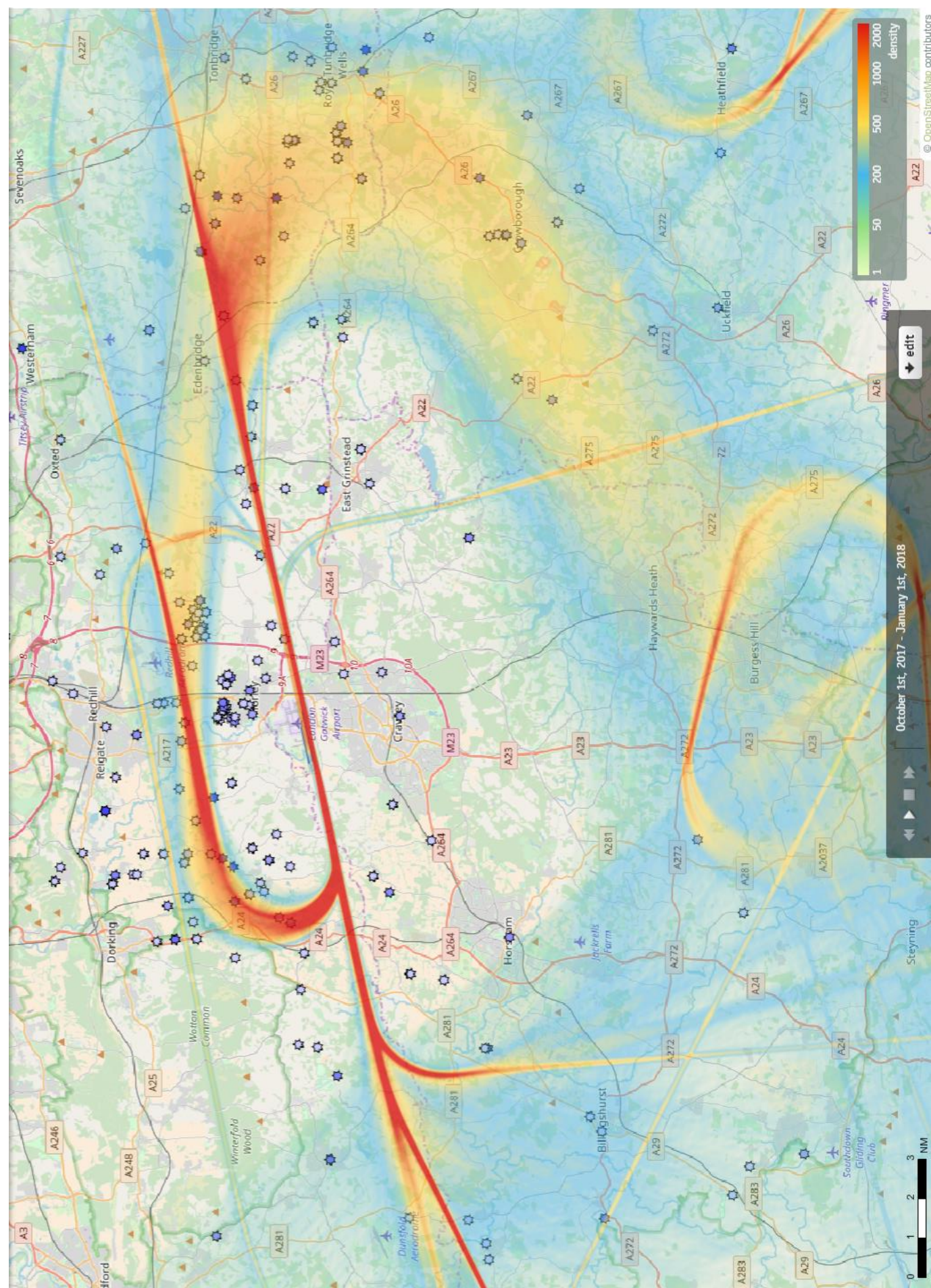
### METHOD OF COMPLAINT



### NUMBER OF INDIVIDUAL COMPLAINANTS BY TOWN/VILLAGE



THE MAP BELOW ILLUSTRATES THE LOCATION OF NOISE COMPLAINTS RECEIVED BETWEEN OCTOBER - DECEMBER 2017





The map displays flight density across the South East of England on October 1st, 2017. The color scale ranges from 1 (blue) to 2000 (red) flights per hour. High-density areas (red/orange) are concentrated around Gatwick Airport and the M23 corridor. The map also shows major roads (A24, A25, A26, A27, A28, A29, A30, A31, A32, A33, A34, A35, A36, A37, A38, A39, A40, A41, A42, A43, A44, A45, A46, A47, A48, A49, A50, A51, A52, A53, A54, A55, A56, A57, A58, A59, A60, A61, A62, A63, A64, A65, A66, A67, A68, A69, A70, A71, A72, A73, A74, A75, A76, A77, A78, A79, A80, A81, A82, A83, A84, A85, A86, A87, A88, A89, A90, A91, A92, A93, A94, A95, A96, A97, A98, A99, A100) and towns (Aldershot, Farnham, Guildford, Godalming, Woking, Dorking, Reigate, Redhill, Horsham, Crawley, East Grinstead, Burgess Hill, Haywards Heath, Petworth, Midhurst, Steyning, Billingshurst, Jickrell Farm, Southdowns Gliding Club, Horsham, Crawley, East Grinstead, Burgess Hill, Haywards Heath, Petworth, Midhurst, Steyning, Billingshurst, Jickrell Farm, Southdowns Gliding Club). The map includes a legend at the bottom right showing the density scale and a scale bar.



# Ground Noise Complaints

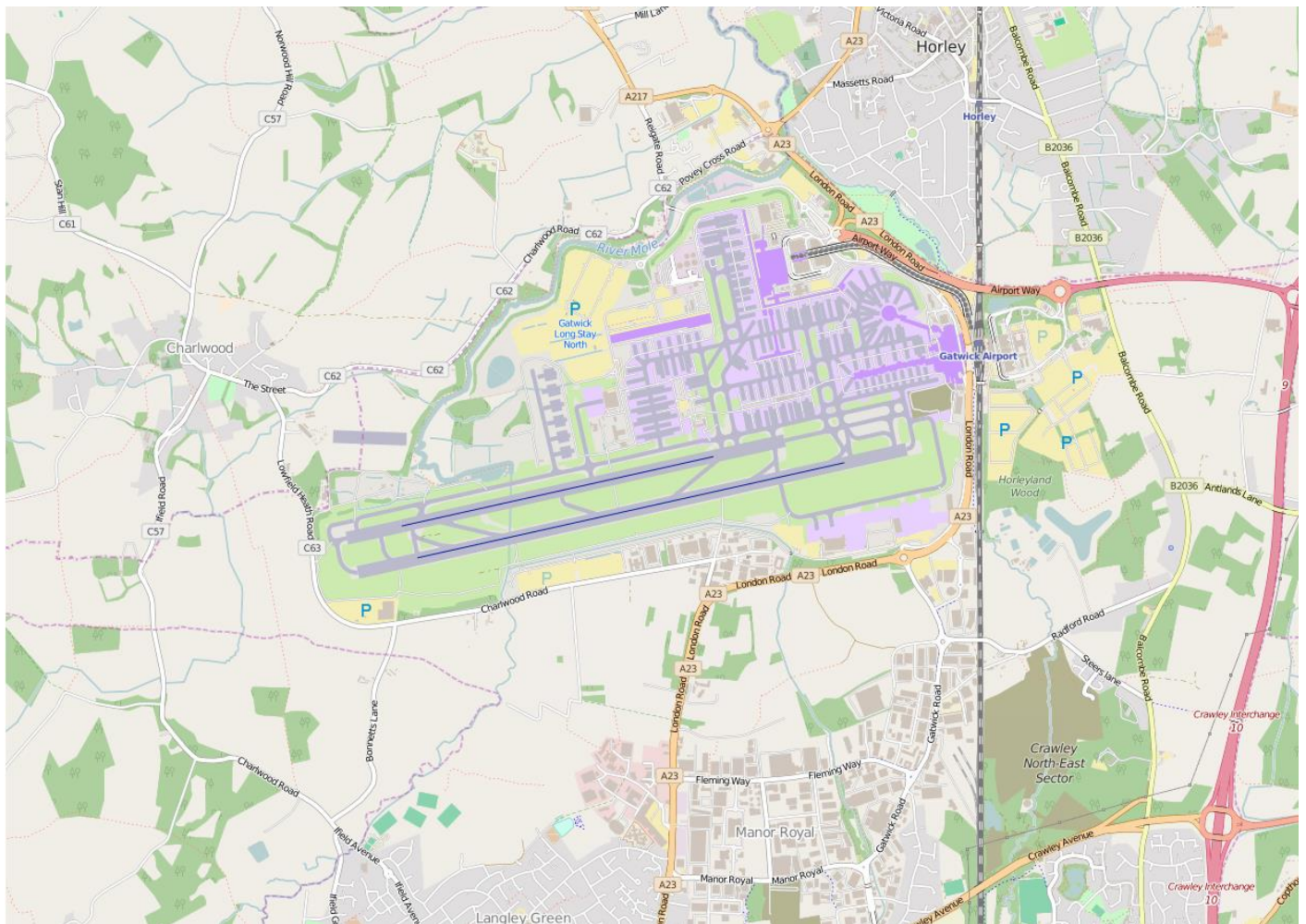
We occasionally receive complaints about disturbance from noise from within the boundary of the airfield. These can be caused by the normal operation of aircraft moving about the airfield, taking off and landing. Additional sources of noise disturbance can be the use of Auxiliary Power Units (APU) by aircraft on stand or the testing of engines following maintenance or repair (engine runs).

Strict regulations exist to minimise this disturbance, which includes a ban on engine running during the night. Details of any ground noise complaints are outlined below.

## Comment:

There were no recorded ground noise complaints during the three month period.

THE MAP BELOW ILLUSTRATES THE GATWICK AIRPORT AIRFIELD



For more information visit us at: <http://www.gatwickairport.com/aircraftnoiseandairspace>

# Glossary

**ACoP** – Arrivals Code of Practice

**AIP** – Aeronautical Information Publication

**AMSL** – Above Mean Sea Level

**ANS** – Air Navigation Solutions

**APU** – Auxiliary Power Unit - A small auxiliary engine on an aircraft used to provide electrical power when the main engines are shut down.

**ATC** – Air Traffic Control

**CAA** – Civil Aviation Authority

**CDO** – Continuous Descent Operations - A noise abatement procedure for arrivals used to avoid periods of level flight, reducing noise and emissions.

**dBA** – A-weighted decibels that takes closest account of human hearing. It is used to measure aircraft noise.

**DfT** – Department for Transport

**DME** – Distance measuring equipment

**EGKK** or **LGW** – London Gatwick Airport

**FLOPSC** – Flight Operations Performance and Safety Committee

**FPT** – Flight Performance Team

**Go-Around** – A go-around is an aborted landing of an aircraft which is on approach to the runway.

**ICAO** – International Civil Aviation Organisation

**ILS** – Instrument Landing System

**IMC** – Instrument Meteorological Conditions

**KPI** – Key Performance Indicators

**Lmax** – Maximum noise level

**NATS** – National Air Traffic Services

**nm** – Nautical Miles

**NPR** – Noise Preferential Route

**NTK** – Noise and Track Keeping monitoring system using Casper.

**P-RNAV** – Precision Route Navigation

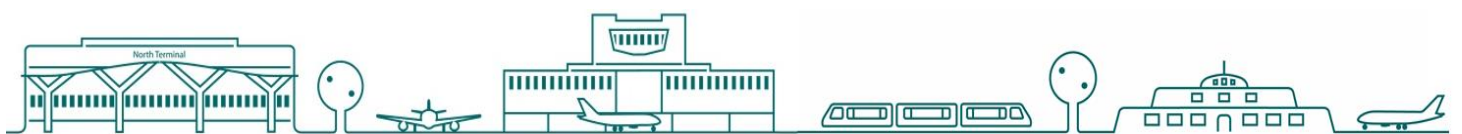
**QC** – Quota Count

**QNH** – The barometric pressure at sea level (QFE is the barometric pressure at the Airport).

**SID** – Standard Instrument Departure - A route out of UK airspace assigned to departing aircraft with an NPR in the first section.

**Vectoring** – Air Traffic Control procedure turning a departure off an NPR onto a more direct heading.

**VMC** – Visual Meteorological Conditions



YOUR LONDON AIRPORT  
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