

# Gatwick Airport Flight Performance Report

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This report covers the period  
(1st January – 31st March 2018)



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 – 31<sup>st</sup> MARCH 2018

Parameter		12 month performance averages <sup>1</sup>			
		Year to date (2018)	Previous year (2017)	2011	2006
Track keeping performance (% on track)	▲	98.09% <sup>2</sup>	98.27%	97.47%	98.17% <sup>3</sup>
24hr CDO (% achievement) <sup>4</sup>	▼	90.42%	89.37%	90.49%	80.79%
Day/Shoulder CDO (% achievement)	▲	90.54%	89.07%	90.19%	79.9%
Core night CDO (% achievement)	▼	89.11%	92.53%	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	▲	952	2354	343	587
Total noise complaints received <sup>5</sup>	▲	18281	23289	2673	4791
Enquiry response performance target is 95% within 8 days (January to March 2018)	▲	100%	81.99%	KPI 95%	
West/East Runway Split (%)	-	76/24	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. It is important to note that since January 2018, complaints which have been deleted from the Casper system are no longer counted in the complaint statistics when they had been previously. Complaints are only deleted if they contain abusive, obscene or threatening language.

# Executive Summary

## Performance Headlines

### AIRPORT OPERATIONS

Between 1<sup>st</sup> January and 31<sup>st</sup> March 2018, there were a total of 60,376 fixed wing aircraft movements at Gatwick, a decrease in traffic of about 1.5% compared to the same period in 2017. The direction of operation is determined by wind direction and this was split 61% on the westerly runway and 39% 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 966 movements from the northern runway.

### TRACK KEEPING

Track keeping performance has decreased slightly compared to the previous years 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, Charlwood 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 decreased compared to the previous twelve months as well as the number of complainants which has also 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 2018.

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 January and March was **236**. 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

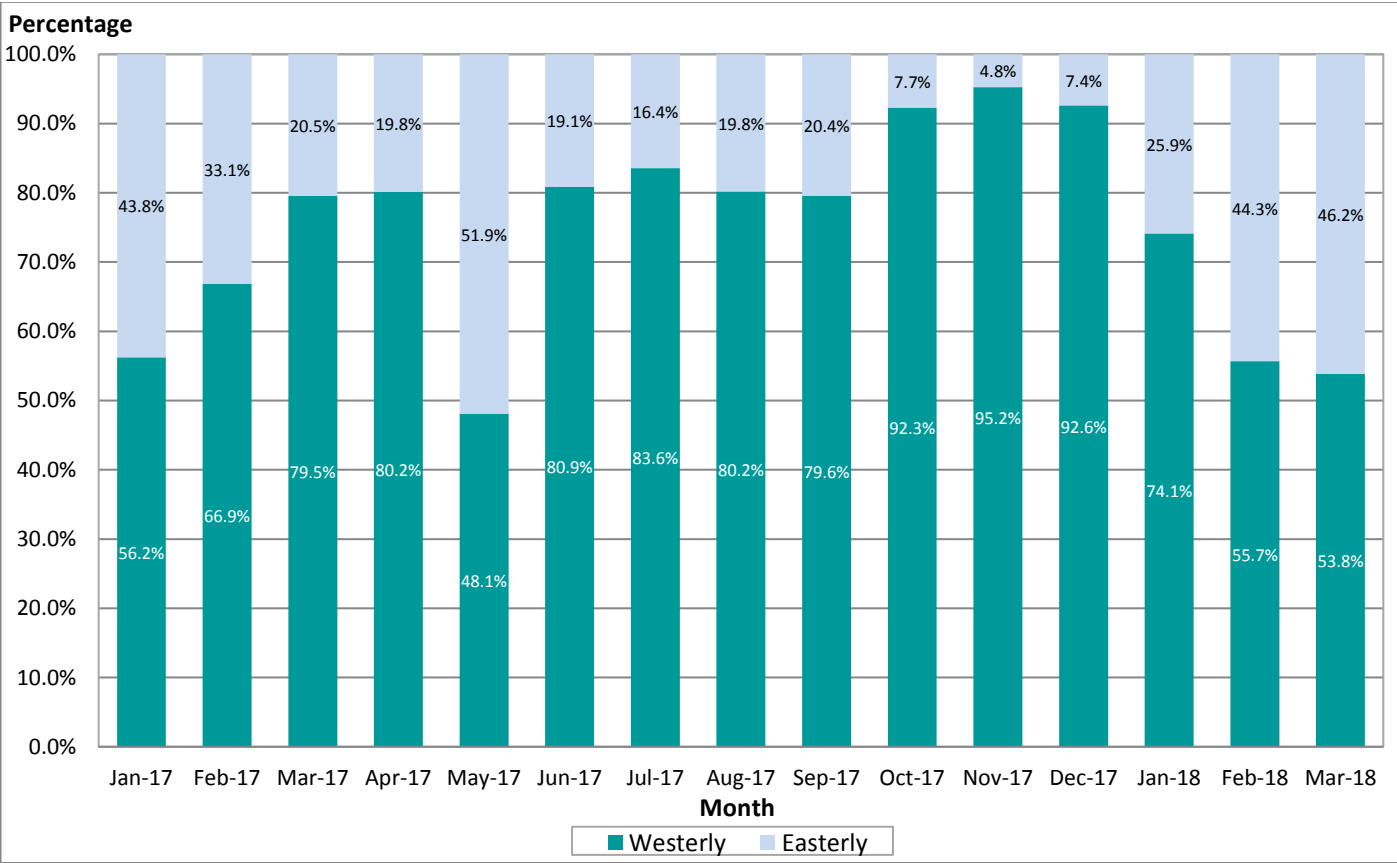
The graph below represents the direction of runway operation at Gatwick. Aircraft operating in a westerly direction take off towards the west and land from the east. Aircraft operating in an easterly direction take off towards the east and land from the west.

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 – MARCH 2018)



# 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	2013	0
2007	13	2014	0
2008	2	2015	0
2009	0	2016	0
2010	0	2017	0
2011	0	2018	0
2012	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	2013	0
2007	2	2014	0
2008	2	2015	0
2009	1	2016	1
2010	0	2017	2
2011	4	2018	0
2012	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.

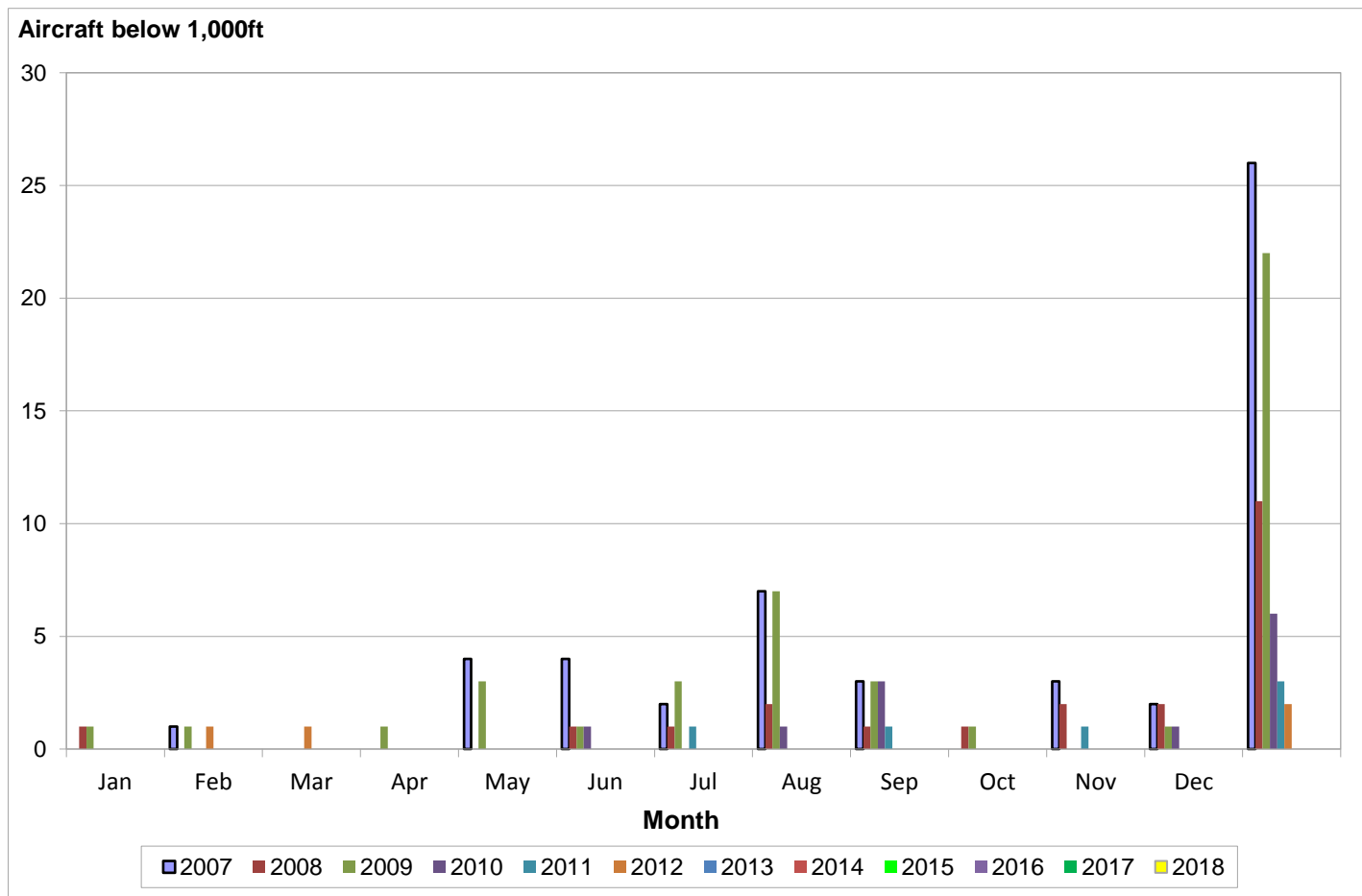
Historically, the summer months are typically the peak period for aircraft failing to meet the 1,000ft requirement, primarily due to the warmer weather which reduces aircraft climb performance.

## 1,000ft INFRINGEMENT TABLE

Year	Total Infringements	Year	Total Infringements
2006	11	2013	0
2007	26	2014	0
2008	11	2015	0
2009	22	2016	0
2010	6	2017	0
2011	3	2018	0
2012	2		

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.

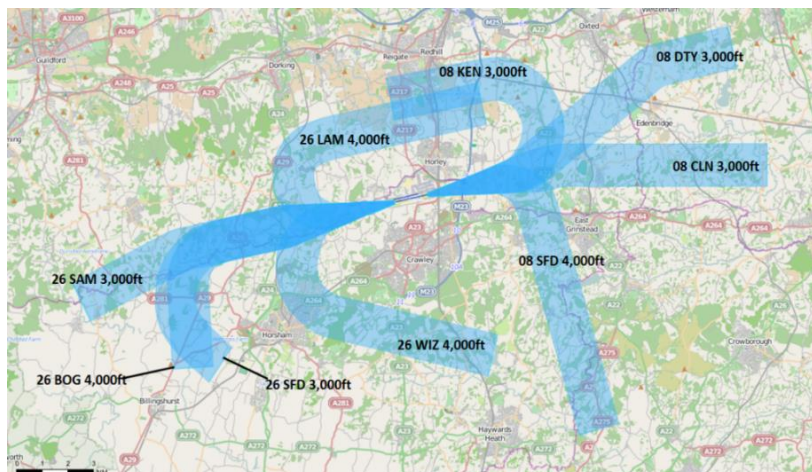
In 2012, Gatwick Airport publicly consulted on the implementation of a more modern form of aircraft navigation called P-RNAV (Precision Route Navigation). After having assessed all consultation feedback, the Civil Aviation Authority (CAA) granted the airport permission to implement P-RNAV on all of our 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. Following the PIR and consultation, the CAA concluded that the modified Route 4 SID's achieve a satisfactory replication of the nominal track of the corrected conventional SID and confirmed the P-RNAV SID designs currently published in the UK Aeronautical Information Publication (AIP) as permanent. This decision has since been quashed by the Court at the request of the CAA. The result is that the Route 4 P-RNAV SID routes remain in place but will revert to a temporary status as was the case prior to the amendment. We will continue to follow CAA guidance through this process and will work closely with them to understand the next steps. This may involve a further redesign of Route 4 but no changes are anticipated in the short term.

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. Gatwick is awaiting a decision from the CAA regarding its status.

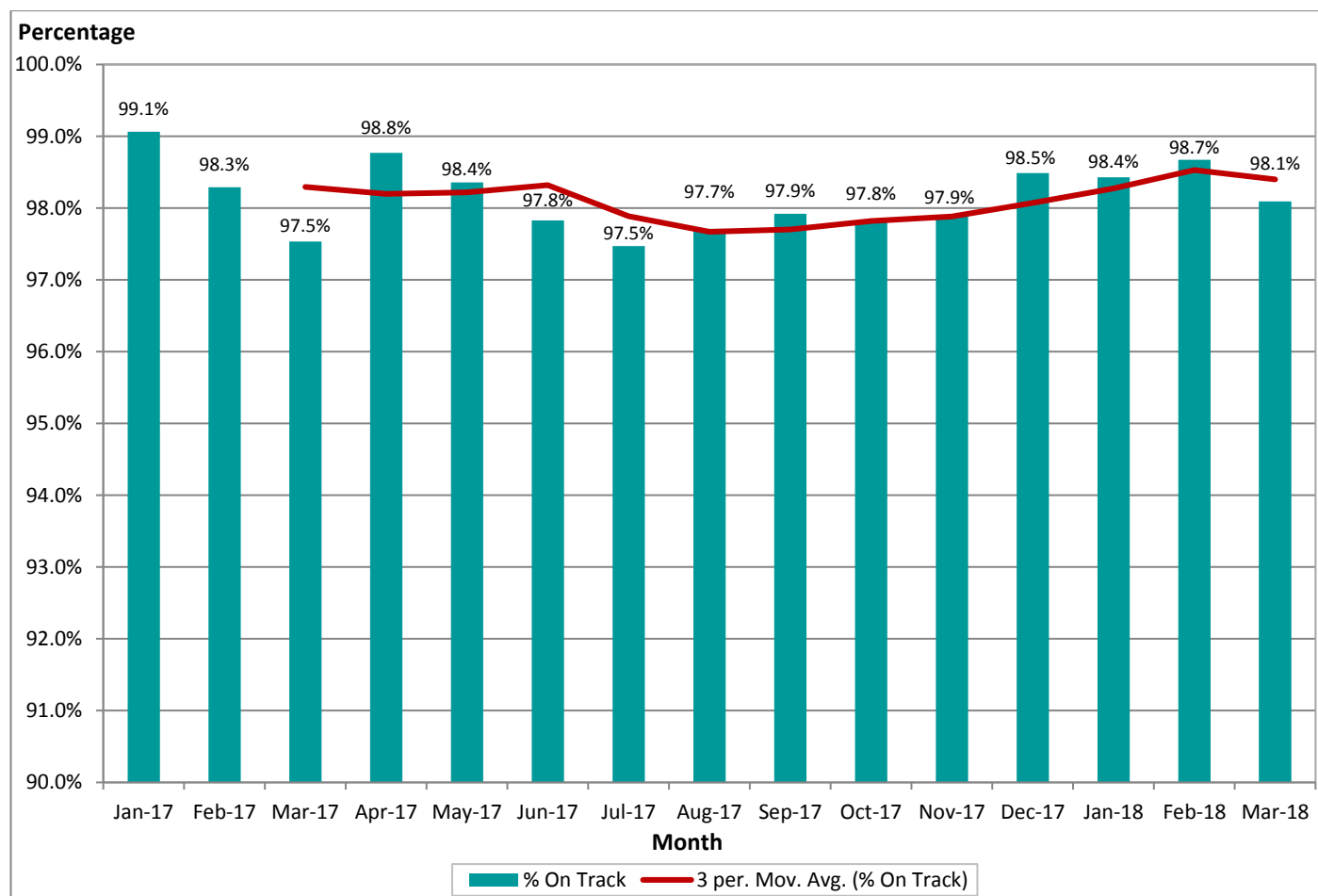
THE MAP BELOW ILLUSTRATES THE NOISE PREFERENTIAL ROUTES USED BY DEPARTING AIRCRAFT WITH MINIMUM VECTORING ALTITUDE FIGURES



THE TABLE BELOW ILLUSTRATES TRACK KEEPING PERFORMANCE OVER 15 MONTHS

Month	Total			Westerly			Easterly		
	Deviations	Departures	%	Deviations	Departures	%	Deviations	Departures	%
Jan-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%
Jan-18	150	9546	1.57%	142	7004	2.03%	8	2542	0.31%
Feb-18	127	9577	1.33%	123	5370	2.29%	4	4207	0.10%
Mar-18	211	11065	1.91%	196	5930	3.31%	15	5135	0.29%

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



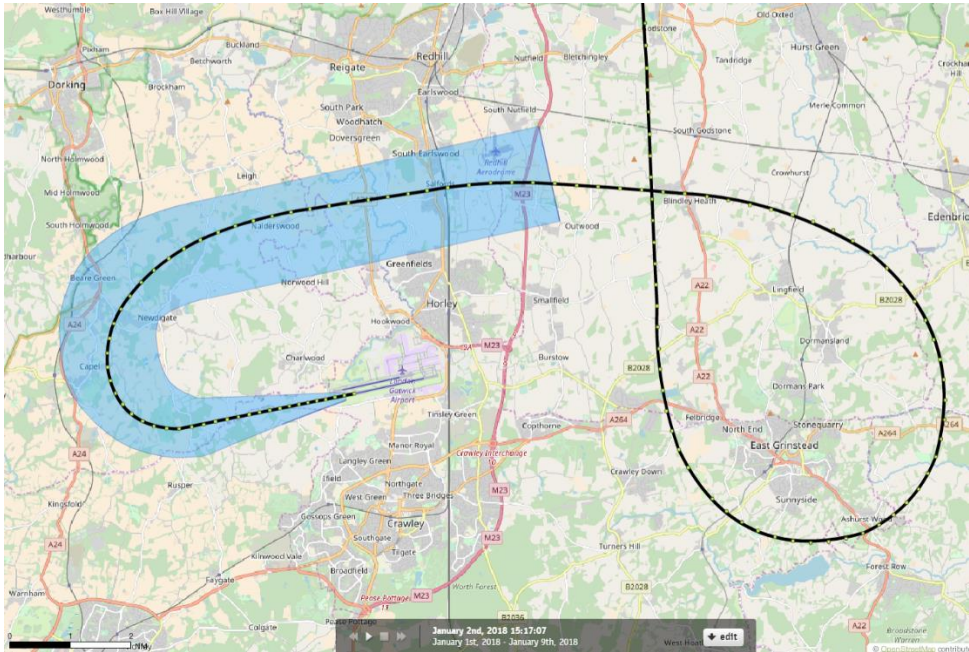


## UNUSUAL TRACKS

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

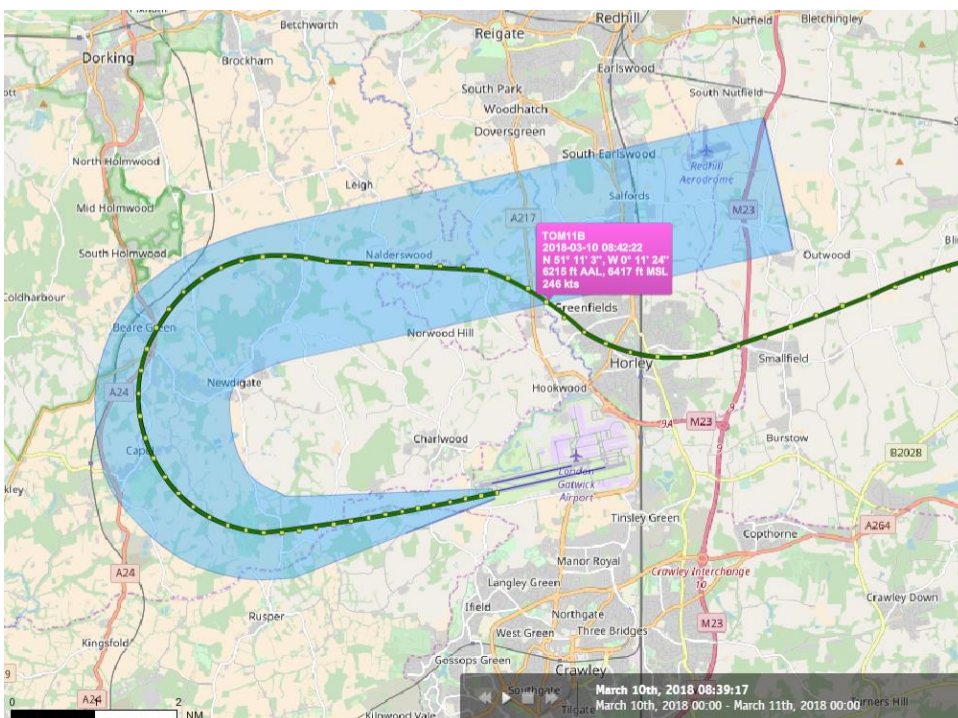
below the required altitude or aircraft that have vectored at the required altitude and then misdirected to avoid conflict with traffic from other airports. All unusual tracks are investigated with the airline concerned.

THE MAP BELOW SHOWS THE EASYJET AIRCRAFT WHICH TOOK AN USUAL TRACK ONCE VECTORED FROM THE NPR



This easyJet flight occurred on the 2<sup>nd</sup> January 2018 at 15:17. NATS Swanwick was contacted regarding this deviation and they explained that there was congestion in the area with a large number of inbound traffic enroute to Heathrow being held in the Biggin stack to the north of Gatwick. Therefore the controller had to give the pilot an extended track mileage to climb above the stack safely.

THE MAP BELOW SHOWS THE TUI AIRCRAFT WHICH DEVIATED FROM THE PRESCRIBED NPR OVER HORLEY



This TUI Airways flight occurred on the 10<sup>th</sup> March at 08:42. NATS Swanwick investigated the flight and explained that this was due to pilot error.



# Departures – Over Congested Areas

## THE WIZAD NOISE PREFERENTIAL ROUTE

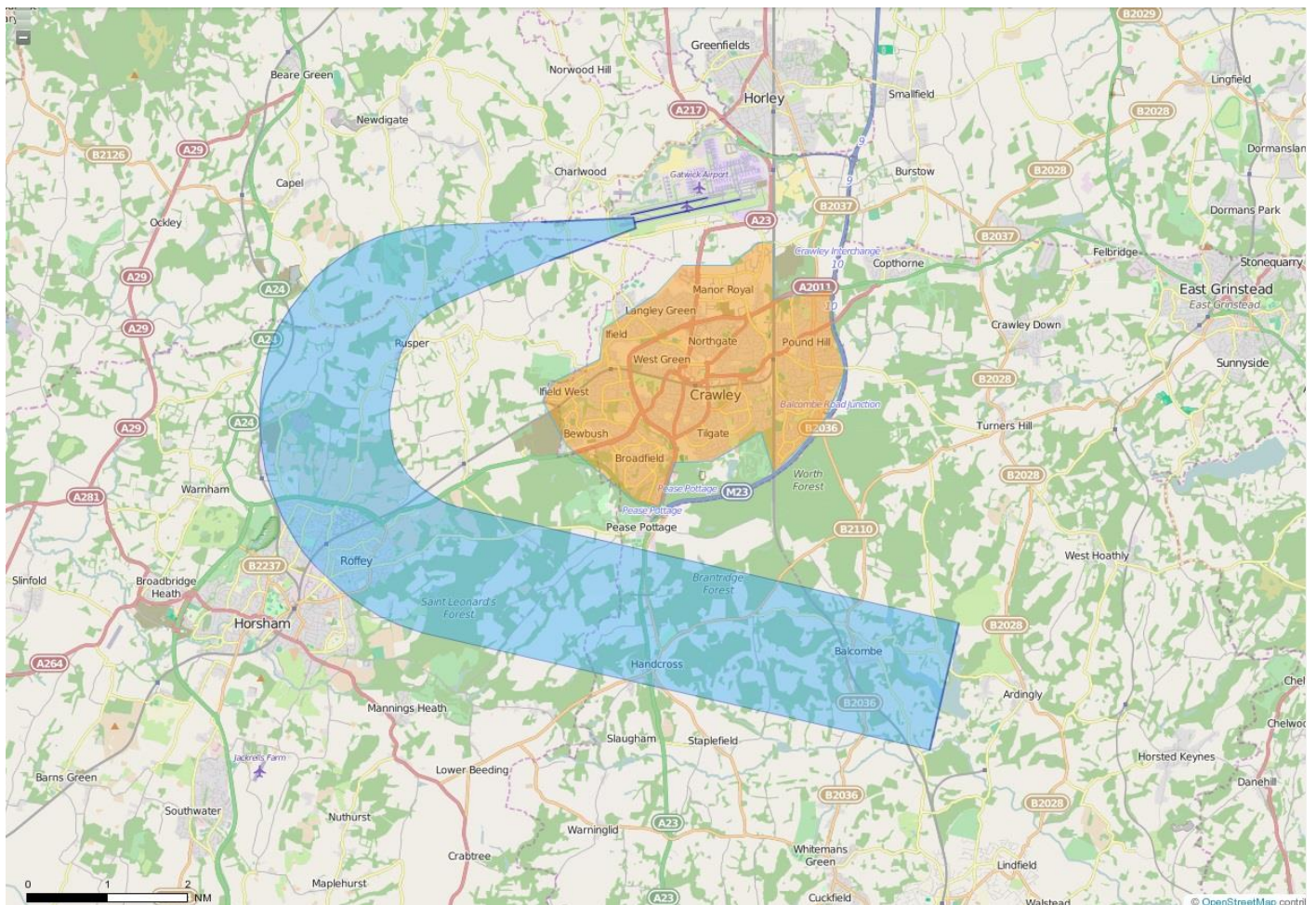
The Wizad Noise Preferential Route was designated by the Government at the same time as all other Gatwick departure routes; however, it is not used on an equal basis with the other routes. It is a Tactical Offload Route and is not usually offered as part of a flight path. If the 26 LAM Route (to the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

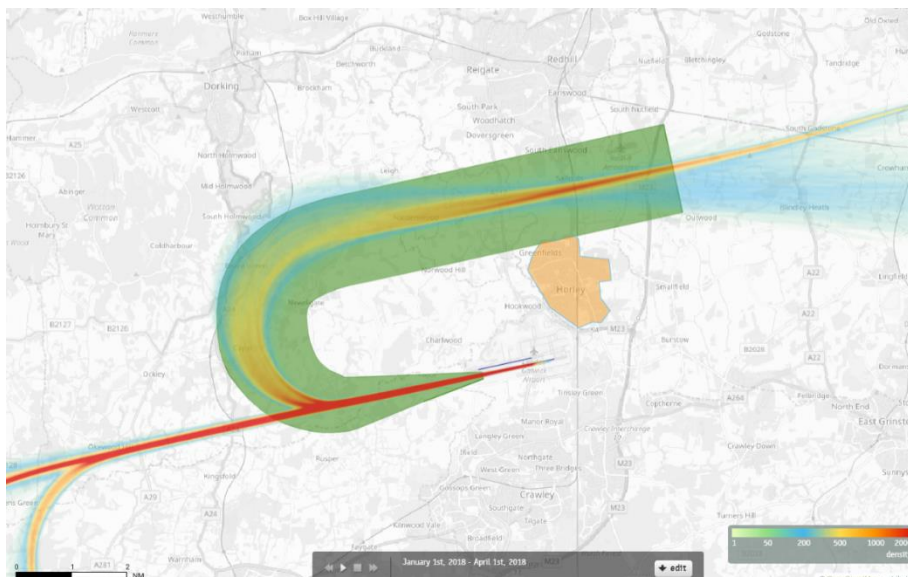
**EGKK AD 2.21 (9)** *After taking off the aircraft shall avoid flying over the congested areas of Horley and Crawley.*

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

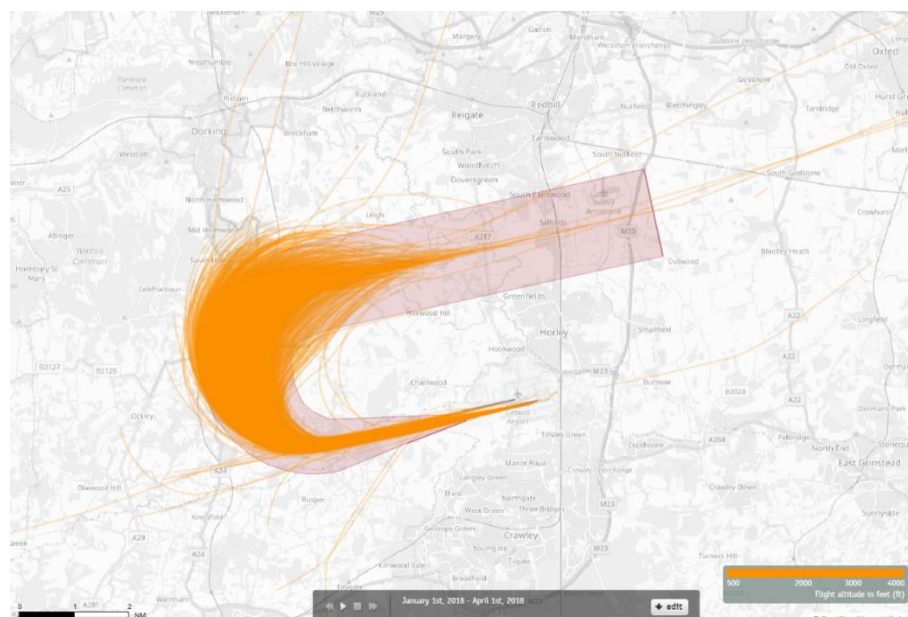
**Comment:** During this period, there were no departing flights that passed over Crawley. It should also be noted that although Casper Noiselab does not show tracks relating to other airports, Horley does experience overflight from Heathrow Airport traffic. The current construction of the SID

is of the 'course to fix' type which determines the course to fly terminating at a waypoint whereas the 'radius to fix' specifies the curved path defined by radius, arc length and fix with the angle of bank being varied to achieve the specified path. Accelerating to a fixed speed in times of strong south westerly winds (2000' wind >25kts) can exceed the aircraft's authorised limits. This leads to a variance between different aircraft types and operators and therefore, some aircraft fly further north or south than others. The wind and weather (e.g. thunderstorms) also has an effect on the headings of aircraft which may result in direct overflight of Horley.

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

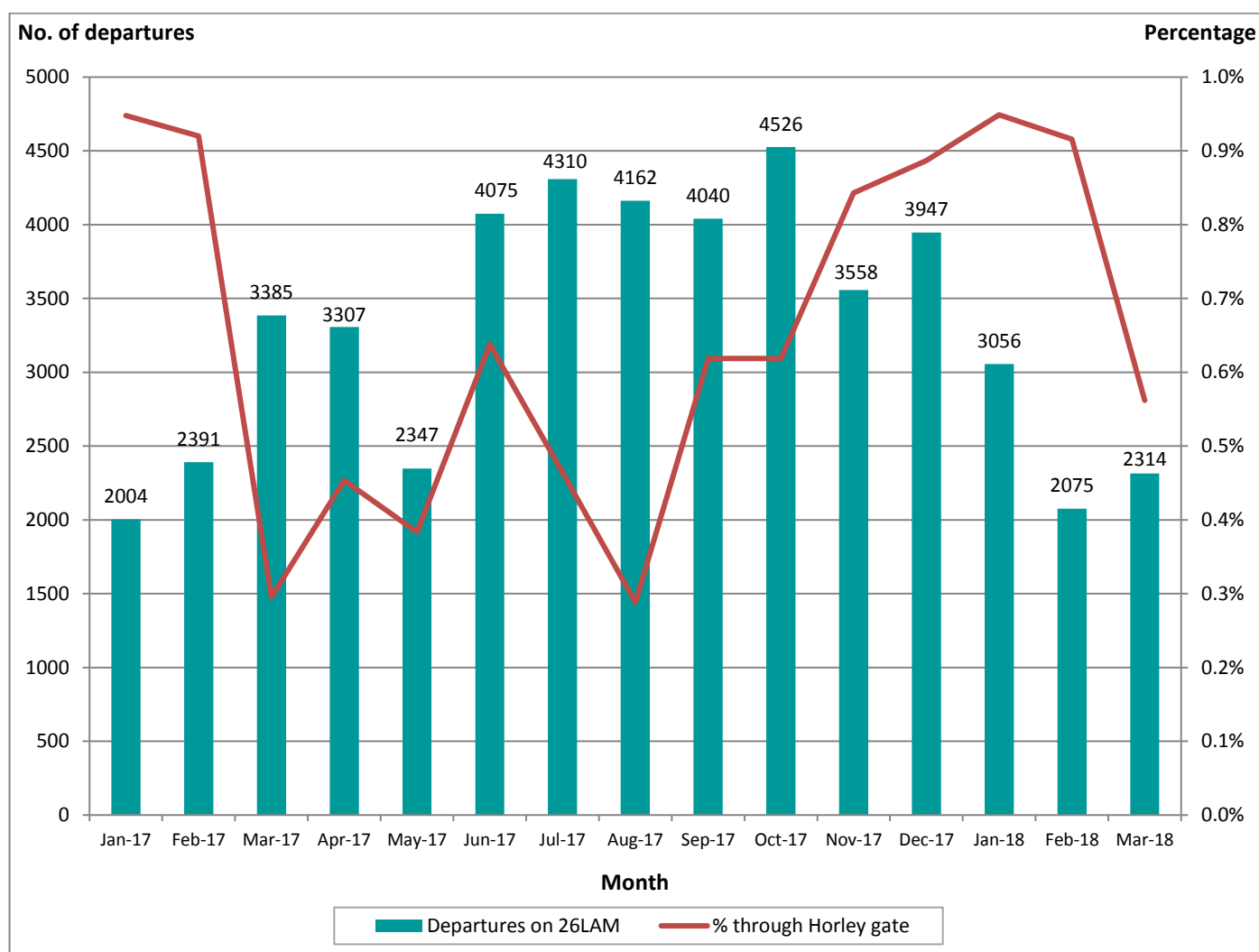




THE TABLE BELOW ILLUSTRATES THE ANALYSIS OF HORLEY OVERFLIGHT

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-16	3031	70	2.31%	Jan-17	2004	19	0.95%	Jan-18	3056	29	0.95%
Feb-16	2449	58	2.37%	Feb-17	2391	22	0.92%	Feb-18	2075	19	0.92%
Mar-16	2282	67	2.94%	Mar-17	3385	10	0.30%	Mar-18	2314	13	0.56%
Apr-16	3018	91	3.02%	Apr-17	3307	15	0.45%	Apr-18	-	-	-
May-16	2114	51	2.41%	May-17	2347	9	0.38%	May-18	-	-	-
Jun-16	2922	173	5.92%	Jun-17	4075	26	0.64%	Jun-18	-	-	-
Jul-16	4968	420	8.45%	Jul-17	4310	20	0.46%	Jul-18	-	-	-
Aug-16	4099	355	8.66%	Aug-17	4162	12	0.29%	Aug-18	-	-	-
Sep-16	4409	210	4.76%	Sep-17	4040	25	0.62%	Sep-18	-	-	-
Oct-16	1719	61	3.55%	Oct-17	4526	28	0.62%	Oct-18	-	-	-
Nov-16	2072	79	3.81%	Nov-17	3558	30	0.84%	Nov-18	-	-	-
Dec-16	2463	14	0.57%	Dec-17	3947	35	0.89%	Dec-18	-	-	-

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:

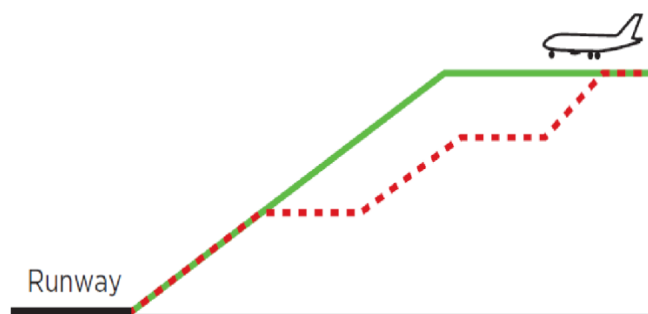
- The Core Night period (2330-0600)
- The Day and Shoulder periods (0600–2330)
- The 24-hour period

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.

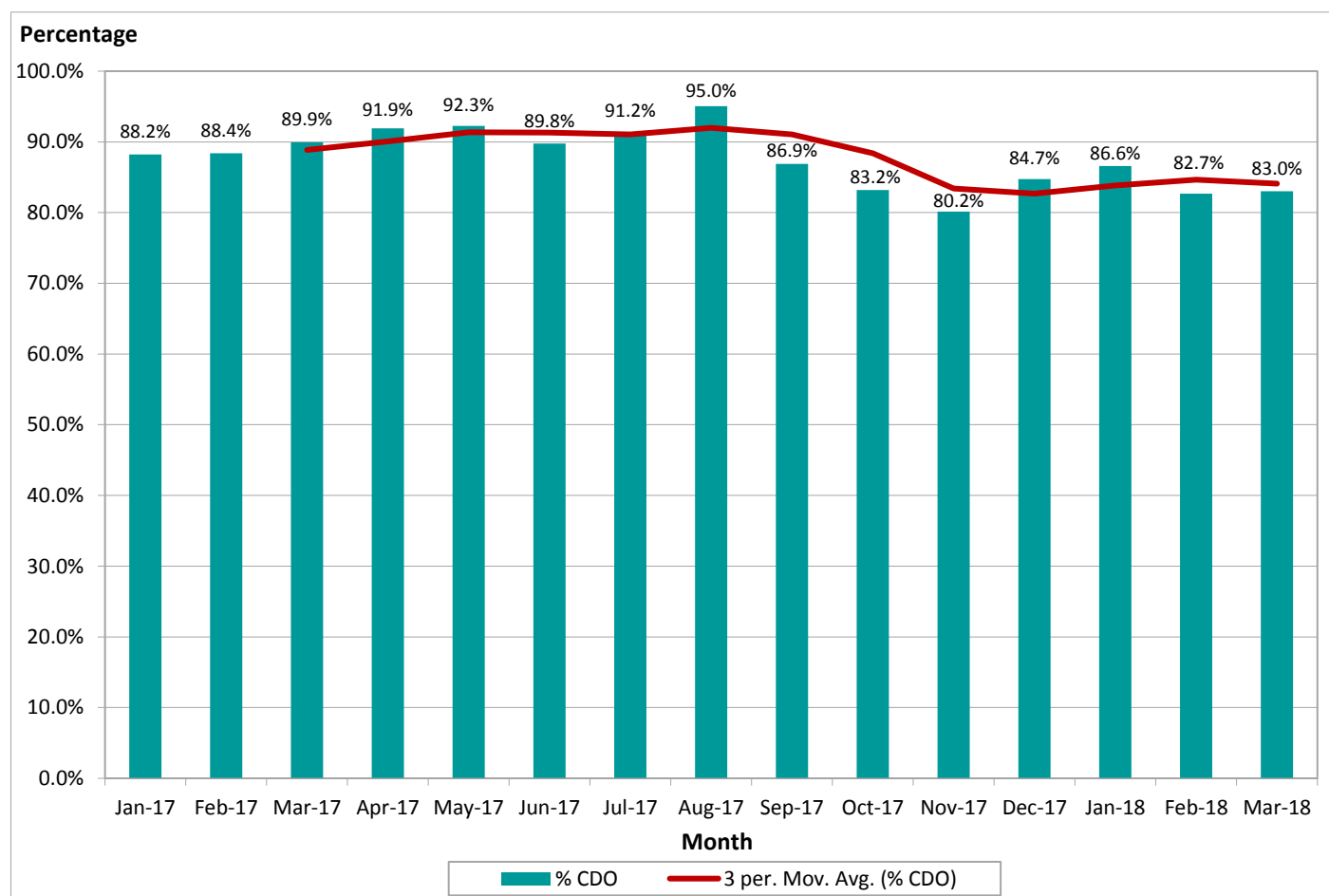


## CORE NIGHT PERIOD (2330-0600)

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
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%
Apr-17	779	63	91.91%	214	12	94.39%	565	51	90.97%
May-17	1266	98	92.26%	664	64	90.36%	602	34	94.35%
Jun-17	1512	155	89.75%	266	23	91.35%	1246	132	89.41%
Jul-17	1834	162	91.17%	252	37	85.32%	1582	125	92.10%
Aug-17	1715	85	95.04%	330	21	93.64%	1385	64	95.38%
Sep-17	1733	227	86.90%	390	42	89.23%	1343	185	86.22%
Oct-17	1213	204	83.18%	50	4	92.00%	1163	200	82.80%
Nov-17	267	53	80.15%	12	2	83.33%	255	51	80.00%
Dec-17	373	57	84.72%	49	7	85.71%	324	50	84.57%
Jan-18	291	39	86.60%	91	11	87.91%	200	28	86.00%
Feb-18	300	52	82.67%	150	21	86.00%	150	31	79.33%
Mar-18	547	93	83.00%	254	36	85.83%	293	57	80.55%

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

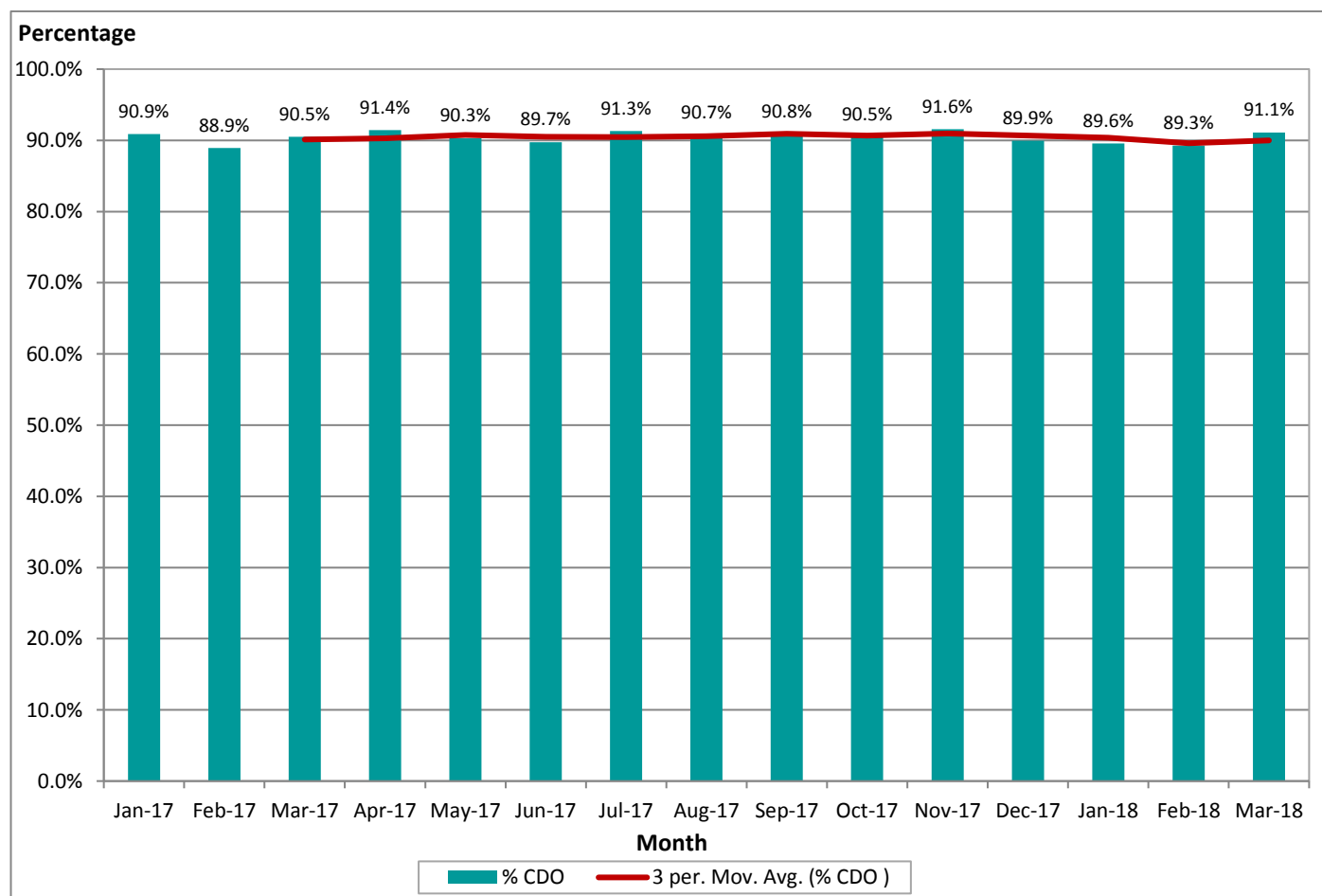


## DAYTIME AND SHOULDER PERIOD CDO ACHIEVEMENT (0600-2330)

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
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%
Jan-18	9264	965	89.58%	2311	219	90.52%	6953	746	89.27%
Feb-18	9279	997	89.26%	4136	453	89.05%	5143	544	89.42%
Mar-18	10503	935	91.10%	4826	461	90.45%	5677	474	91.65%

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

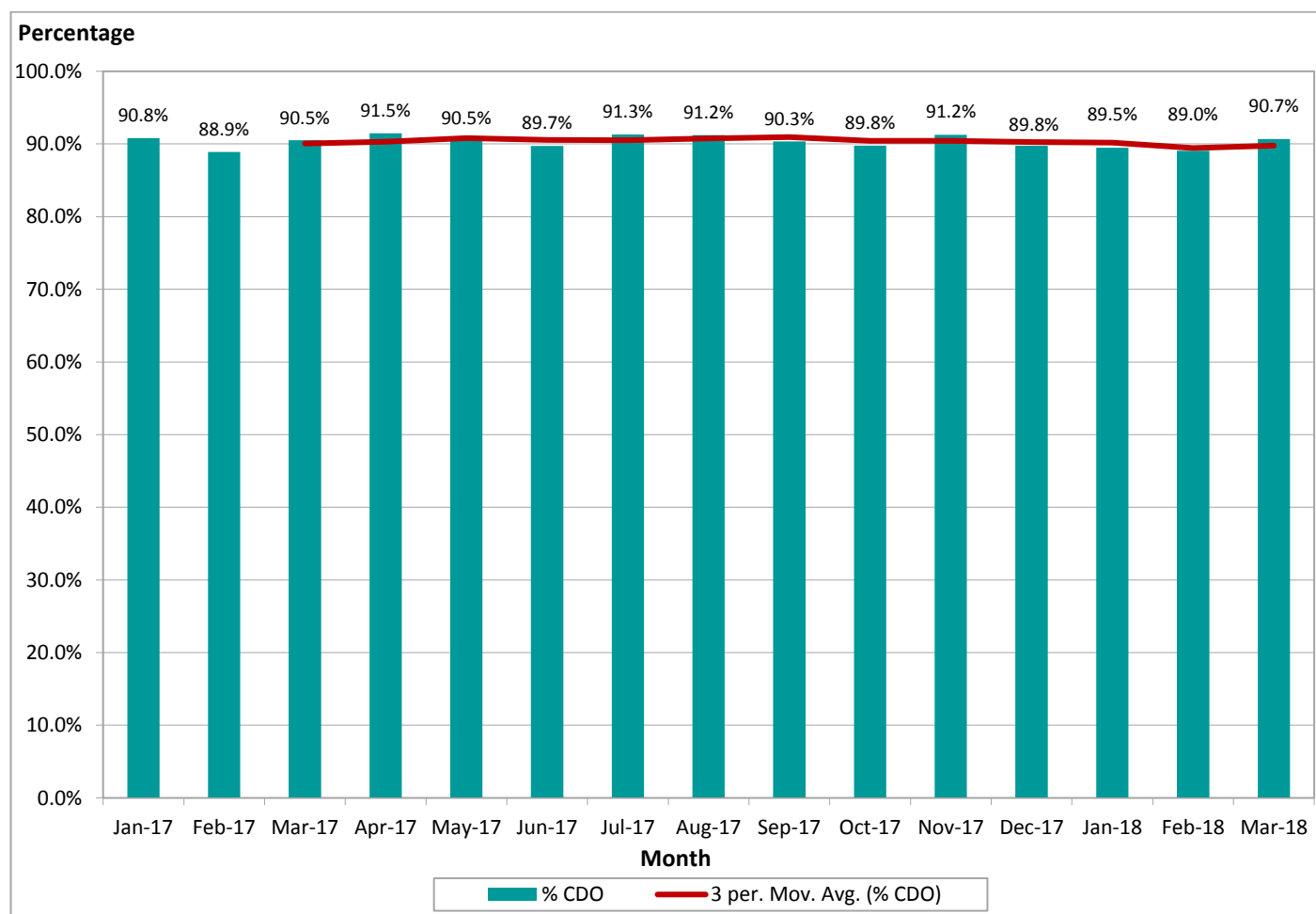


## 24 HOUR PERIOD CDO ACHIEVEMENT

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-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%
Apr-17	11795	1006	91.47%	2373	205	91.36%	9422	801	91.50%
May-17	13139	1252	90.47%	6768	664	90.19%	6371	588	90.77%
Jun-17	13414	1377	89.73%	2554	227	91.11%	10860	1150	89.41%
Jul-17	14055	1223	91.30%	2268	236	89.59%	11787	987	91.63%
Aug-17	14198	1249	91.20%	2776	284	89.77%	11422	965	91.55%
Sep-17	13612	1316	90.33%	2771	223	91.95%	10841	1093	89.92%
Oct-17	12582	1286	89.78%	959	69	92.81%	11623	1217	89.53%
Nov-17	9279	813	91.24%	427	39	90.87%	8852	774	91.26%
Dec-17	10252	1050	89.76%	760	115	84.87%	9492	935	90.15%
Jan-18	9555	1004	89.49%	2402	230	90.42%	7153	774	89.18%
Feb-18	9579	1049	89.05%	4286	474	88.94%	5293	575	89.14%
Mar-18	11050	1028	90.70%	5080	497	90.22%	5970	531	91.11%

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).

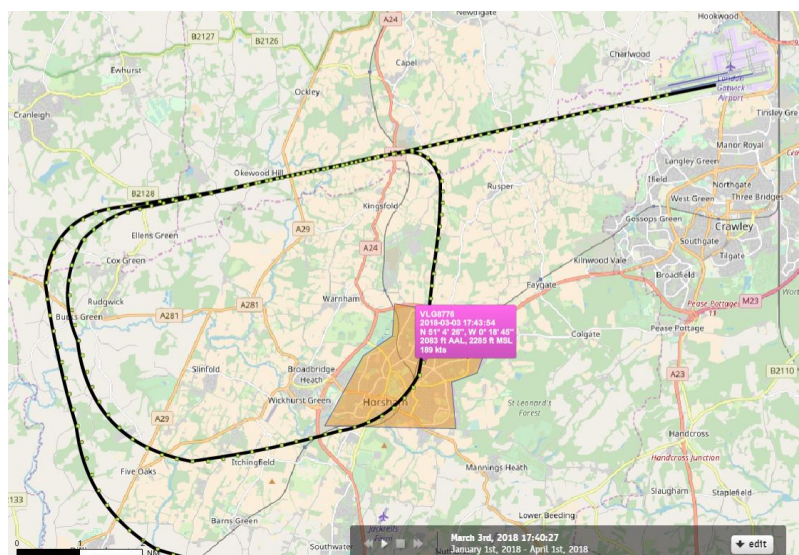
N.B. 2,000ft – (202ft (airfield elevation) + 100ft (radar/ILS tolerance)) = 1,698ft on Airports Noise & Aircraft Tracking System

**Comment:** There were no arriving flights which passed over the towns of Crawley or Horley. There was an arrival that passed over Horsham and an arrival passed over East Grinstead 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.

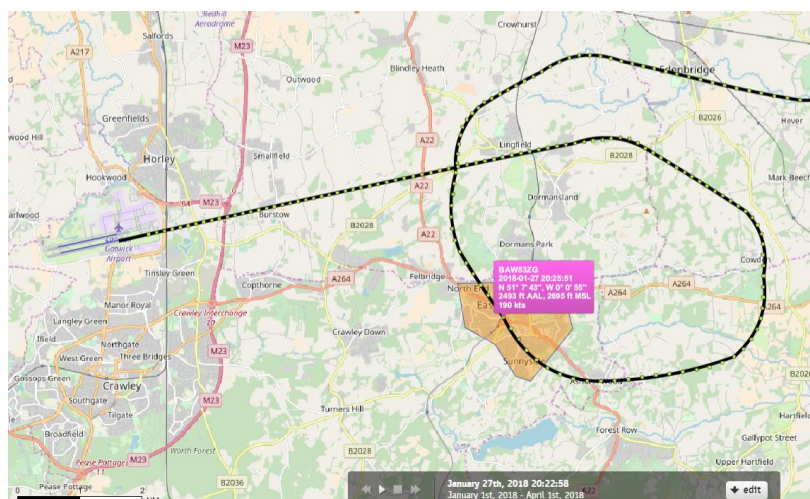
During the analysis period, there were a total of 70 arrivals that passed through this area. Aircraft tracks were analysed for January, February and March 2018 and with the exception of a small number of go-arounds, a single easyJet flight passed over Lingfield below the altitude of 1,698ft (2,000ft Gatwick QNH) on 16 January. The airline was contacted by Gatwick Airport regarding this event and the airline confirmed that the aircraft did not follow easyJet's normal CDO policy, which is part of its commitment to noise reduction. easyJet has assured Gatwick that this was a one-off event and that it will continue to use the CDO procedure.

## THE MAP BELOW SHOWS THE VUELING AIRCRAFT THAT PASSED OVER HORSHAM AT 2,360FT



This Vueling Airlines flight occurred on the 3<sup>rd</sup> March 2018 at 17:44. This was confirmed as a go-around.

## THE MAP BELOW SHOWS THE BRITISH AIRWAYS AIRCRAFT THAT PASSED OVER EAST GRINSTEAD AT 2,695FT



This British Airways flight occurred on the 27<sup>th</sup> January 2018 at 20:25. This was confirmed as a missed approach.



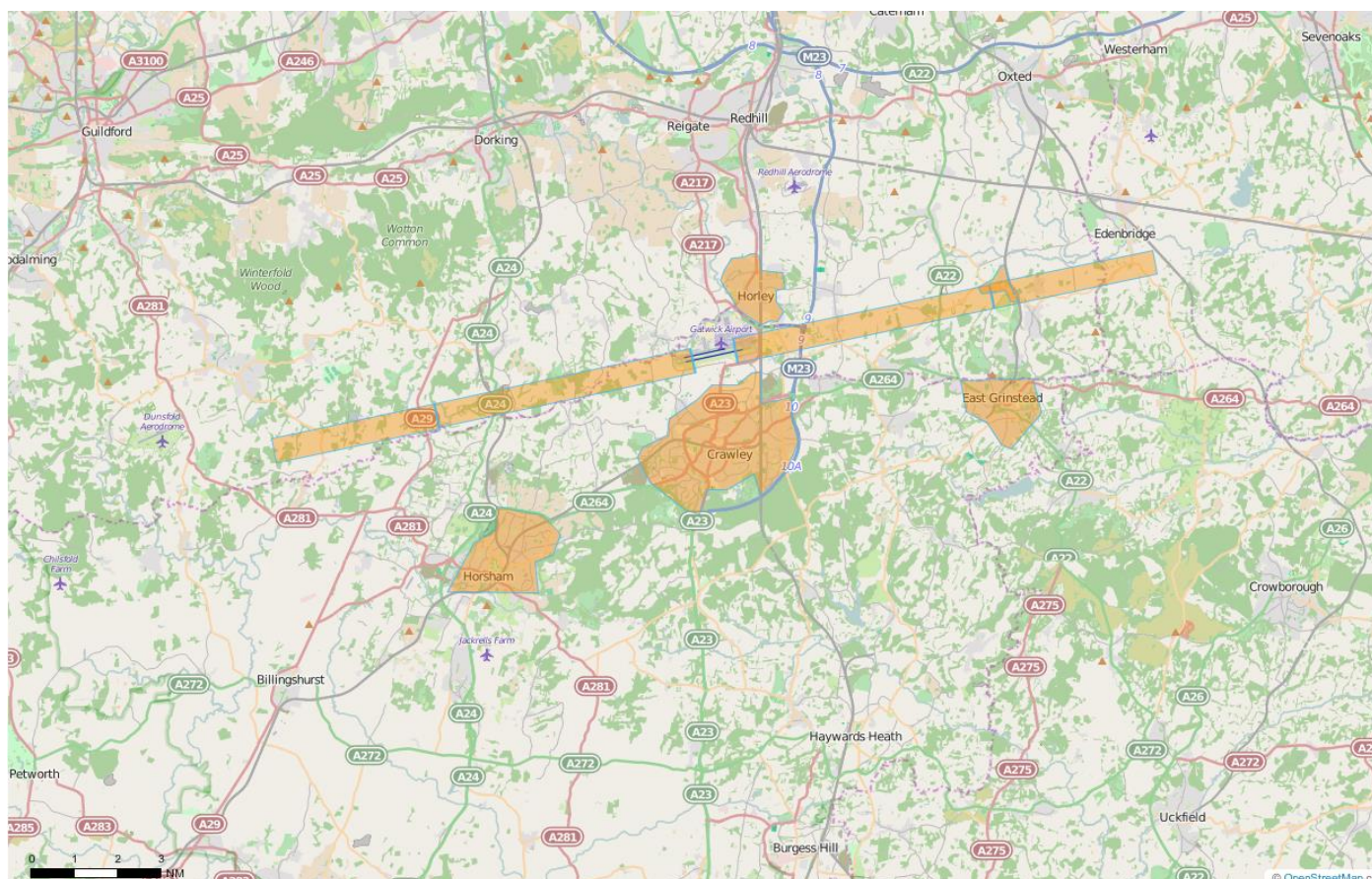
## A) DAY TIME JOINING HEIGHT (0700-2300)

**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 30,194 arrivals recorded by the Casper NTK system between 1<sup>st</sup> January and 31<sup>st</sup> March 2018. 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 1,428 (4.7%). 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)

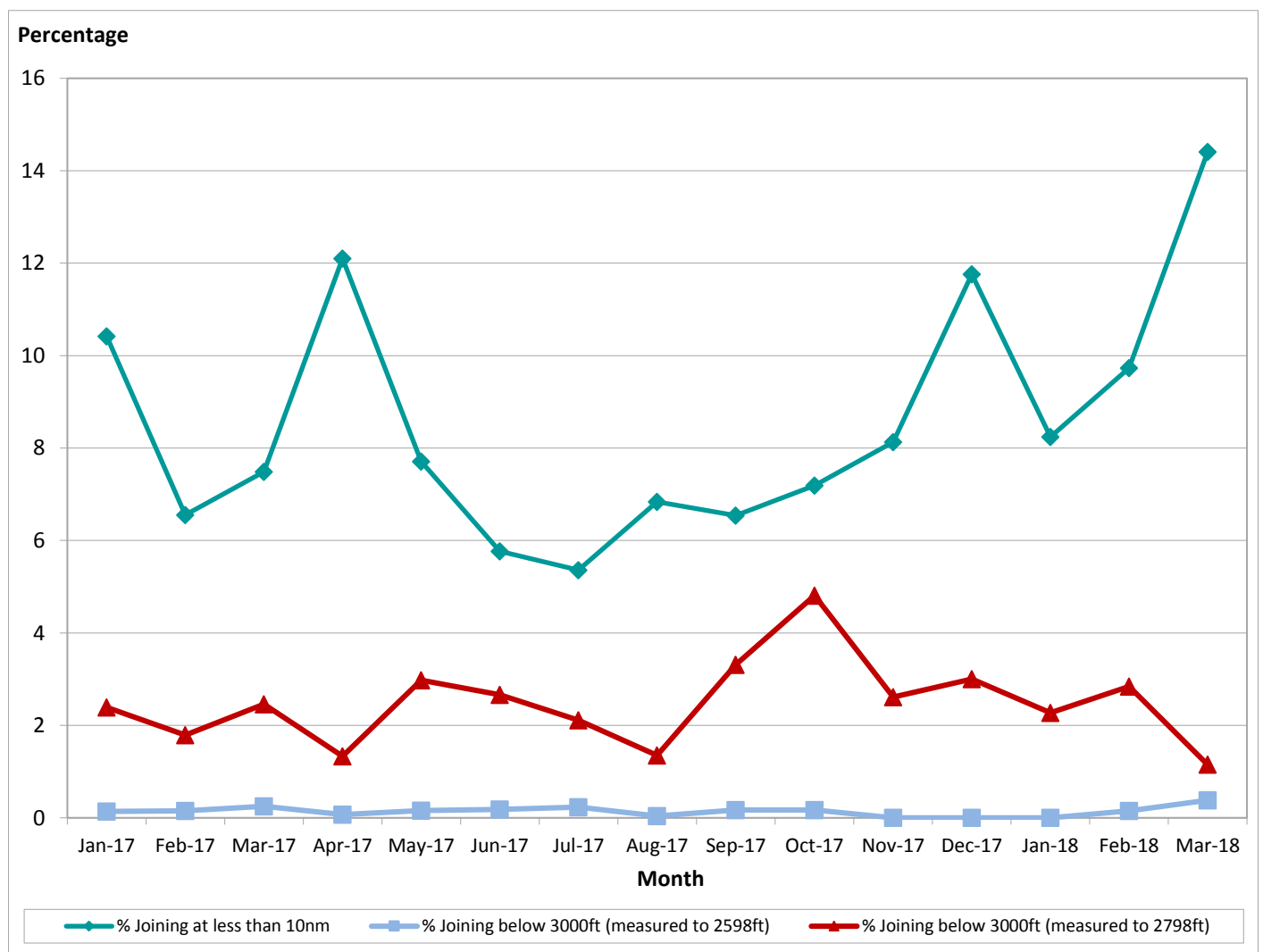
**EGKK AD 2.21 (14)** Aircraft which land at Gatwick Airport - London between the hours of 2300 (local) and 0700 (local), whether or not making use of the ILS localizer and irrespective of weight or type of approach, shall not join the centre-line:

- 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.

During northern runway operations, usually during the night period during maintenance of the main runway, as the threshold is in a different location that the main runway, a different radar map is used for the extended centreline, so the 10 nautical mile (nm) marker is in a slightly different location. As we are complying with 10nm on the northern runway, this may be flagged as a join inside 10nm on the main runway. This means the percentage joining below 10nm may be slightly higher in recent months as there has been an increased use of northern runway operations at night.

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





# Go-Around Statistics 2004 - 2018

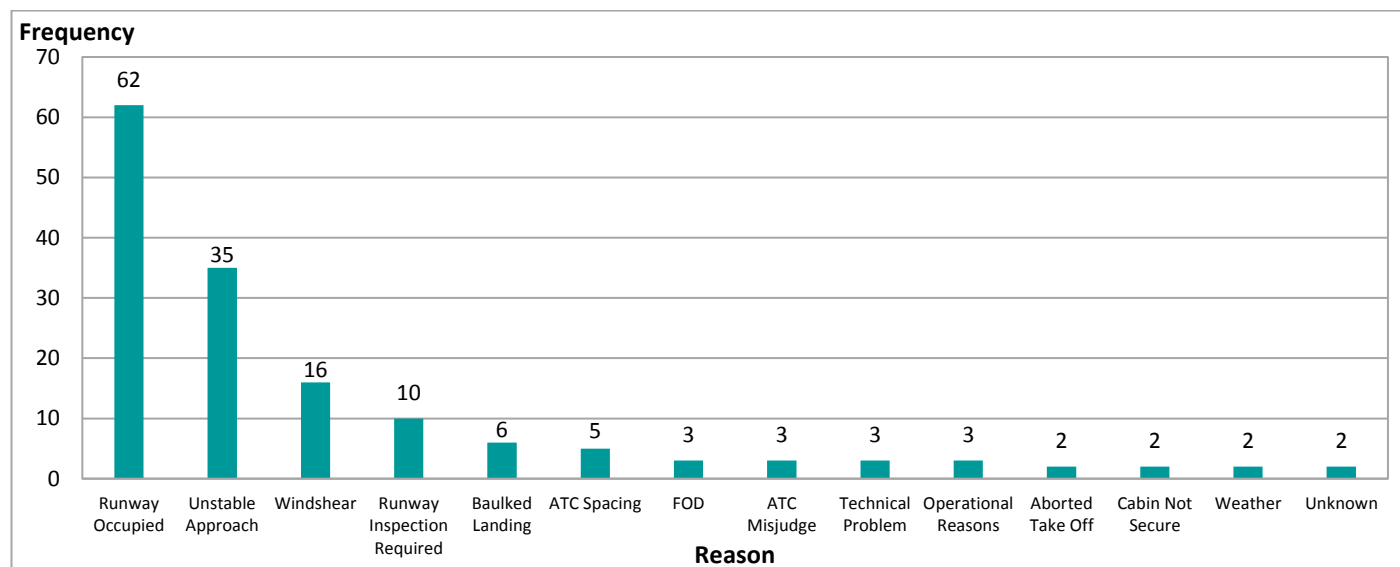
A go-around is a procedure adopted when an arriving aircraft on final approach aborts landing by applying take-off power and climbing away from the airport. It is a set procedure to be followed by the flight crew in the event of an aircraft being unable to land. The procedure is published so that Air 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.

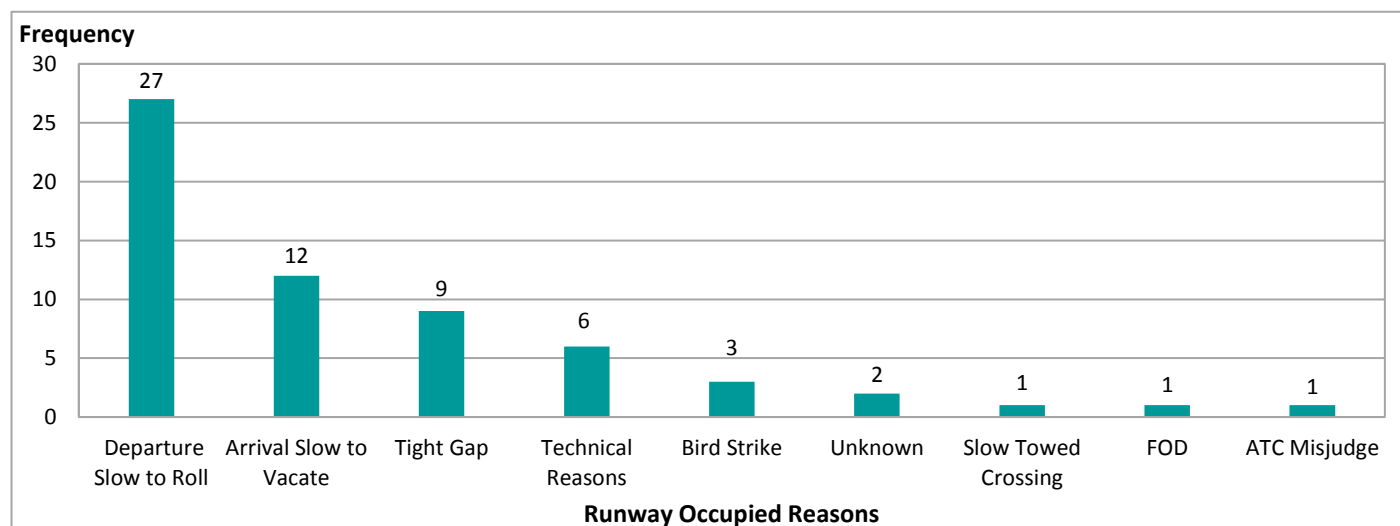
The number and reasons for go-arounds are routinely discussed at FLOPSC meetings and Pilot Forums. All parties are focussed on minimising the number of occasions when a go-around is required, but expect some to occur given the fact that Gatwick is a busy single runway airport.

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.

## ANS CURRENTLY RECORD GO-AROUNDS UNDER ONE OF THE FOLLOWING CAUSAL FACTORS (JANUARY - MARCH 2018)



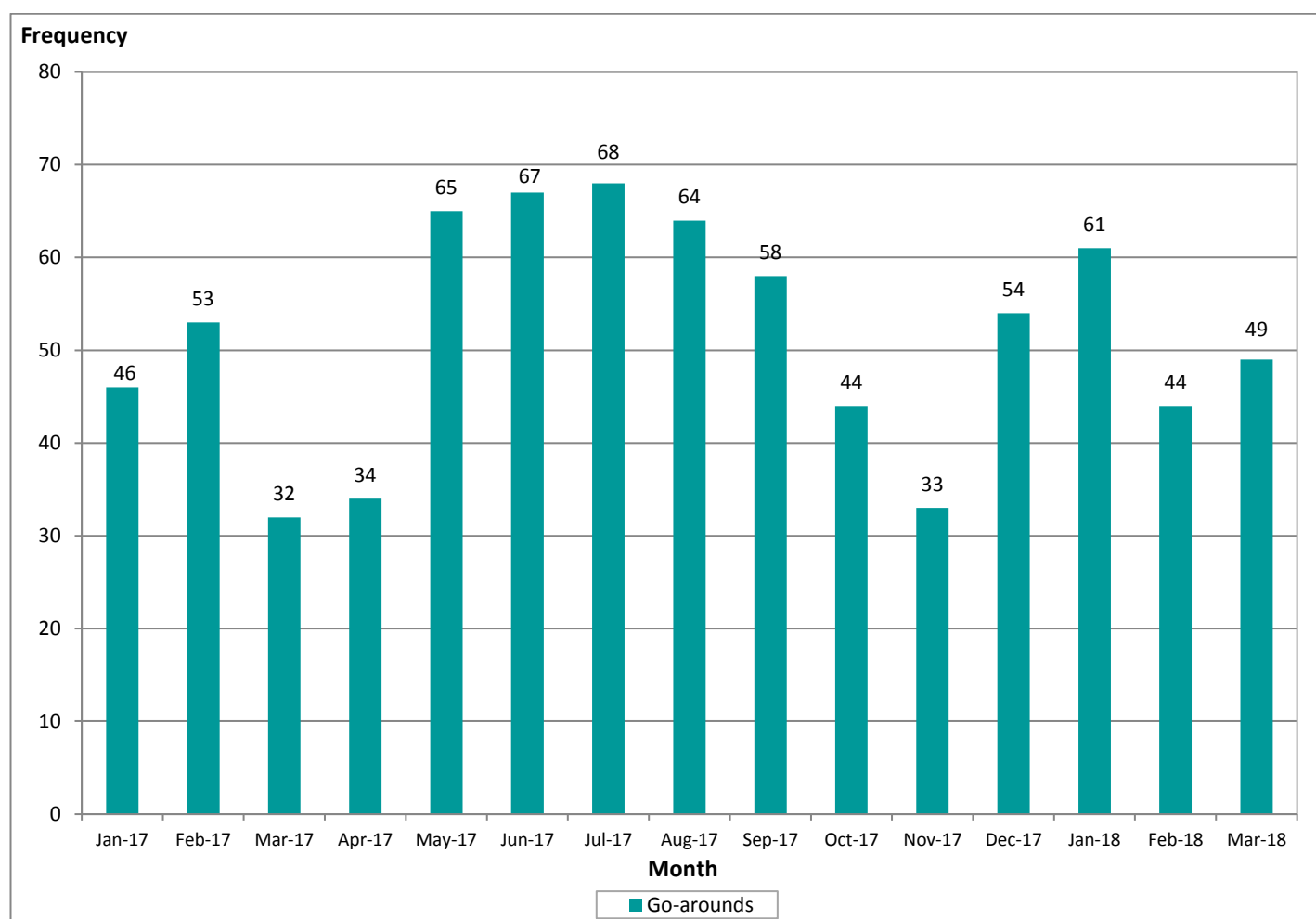
## THE REASONS GIVEN BY ANS FOR GO-AROUNDS DUE TO RUNWAY OCCUPANCY DURING THE THREE MONTH PERIOD



THE TABLE BELOW ILLUSTRATES GO-AROUND STATISTICS 2004 – 2018

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
2018	154	30173	0.51

THE GRAPH BELOW ILLUSTRATES TOTAL NUMBER OF GO-AROUNDS PER MONTH (JANUARY – MARCH 2018)



# 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 new restrictions on night flying came into force in October 2017, to remain in force until 2022 for all the London airports. At Gatwick, the new regime will maintain the status quo for movements and quota count (QC) until the winter season in 2018/19. This will see a reduction in the QC limit and a new QC value of 0.125 applied to some aircraft which are currently exempt. As of October 2017, all aircraft movements have counted towards the night quota limit, including those previously exempt which will carry a QC value

of zero. This will further incentivise the use of quieter aircraft as an airport can continue the use of its movement allowance but the average noise produced by an aircraft cannot increase.

Overleaf is an end of season report for Winter 2017/18 which commenced at 02:00 on the 29<sup>th</sup> October 2017 and ended at 01:00 on the 25<sup>th</sup> March 2018. 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 were 73 dispensations applied during the Winter 2017/18 season and they were all granted due to adverse weather conditions.

## 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	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22
Movements	3250	3250	3250	3250	3250	3250
Limits						
Quota Points	2000	2000	1785	1785	1785	1785

Summer	2017	2018	2019	2020	2021	2022
Movements	11200	11200	11200	11200	11200	11200
Limits						
Quota Points	6200	6200	5150	5150	5150	5150

## AIRPORT MOVEMENTS and QUOTA SUMMARY to WEEK 21 (29 OCTOBER 2017 TO 24 MARCH 2018 inc.)

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
10	06/01/2018	5	32	40	23	6	0	0	0	63.00	106	0	0	0	86	81.1	20	18.9	106
11	13/01/2018	3	26	39	16	4	0	0	0	50.00	88	0	0	0	75	85.2	13	14.8	88
12	20/01/2018	4	17	25	17	3	0	0	0	39.75	66	0	0	0	54	81.8	12	18.2	66
13	27/01/2018	2	15	28	24	3	0	0	0	47.75	72	0	0	0	41	72.2	20	27.8	72
14	03/02/2018	1	22	23	16	2	0	0	0	37.00	64	0	0	0	42	82.8	11	17.2	64
15	10/02/2018	1	21	33	12	3	0	0	0	39.75	70	0	0	0	48	84.3	11	15.7	70
16	17/02/2018	3	35	37	23	3	0	0	0	56.25	101	0	0	0	84	83.2	17	16.8	101
17	24/02/2018	2	28	37	15	5	0	0	0	50.50	87	0	0	0	71	81.6	16	18.4	87
18	03/03/2018	3	56	42	15	4	0	0	0	58.00	120	20	0	0	127	90.7	13	9.3	140
19	10/03/2018	1	43	51	17	4	0	0	0	61.25	116	0	0	0	98	84.5	18	15.5	116
20	17/03/2018	1	35	40	19	3	0	0	0	53.75	98	3	0	0	88	87.1	13	12.9	101
21	24/03/2018	5	39	46	18	5	0	0	0	60.75	113	50	0	0	133	81.6	30	18.4	163
TOTALS		79	666	769	353	75	0	0	0	1054	1942	73	0	0	1692	84.0	323	16.0	2015

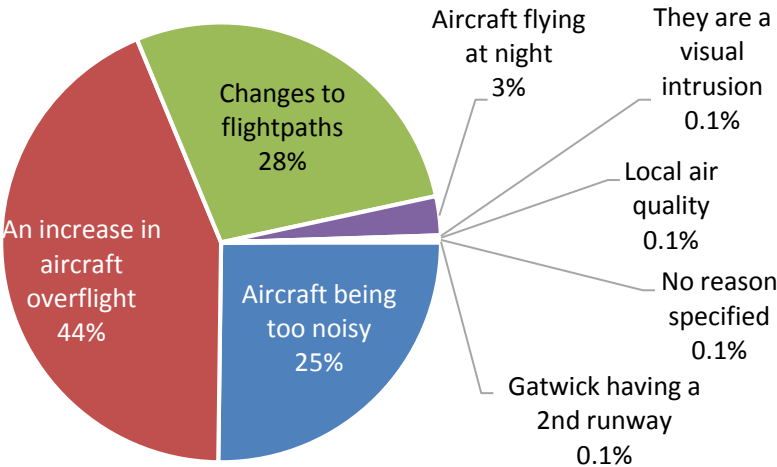
Note 1 Not Cont'd Delays	Delays likely to lead to serious congestion and delays resulting from widespread disruption of Air Traffic.
Note 2 Not Cont'd Gov't	Exemptions granted by Gov't (VIP Passengers, Emergency Relief).
Note 3 Not Cont'd Emerg	Emergency Take-offs and Landing

# Noise Complaints

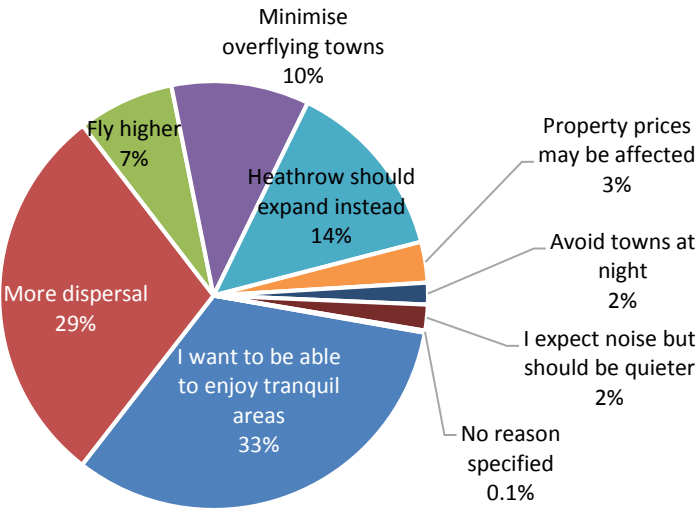
It is important that we understand the issues of noise disturbance from individuals and communities who live around the airport. By studying the complaints we receive and by communicating with the affected towns and villages surrounding the Airport, we believe that this gives us a greater understanding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

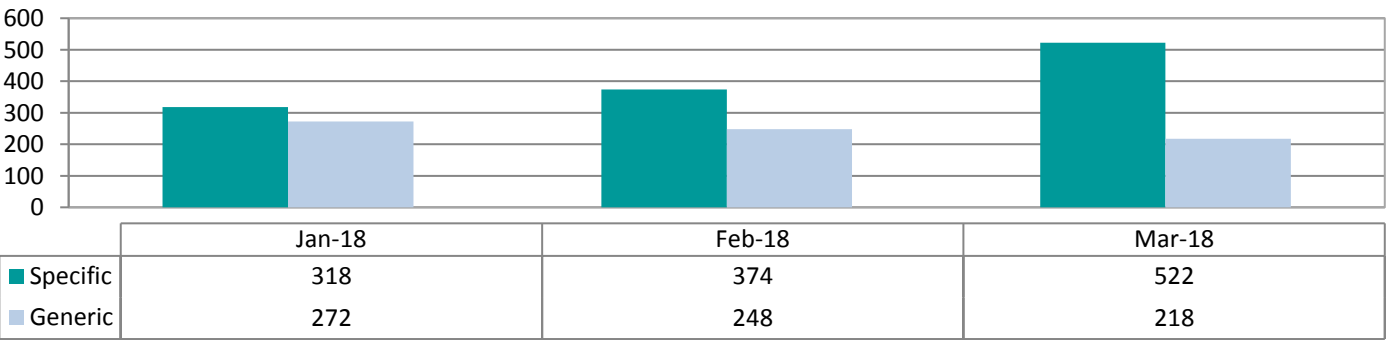
PERCENTAGE OF COMPLAINT OBSERVATIONS MOST AGREED WITH



PERCENTAGE OF COMPLAINT CONCERNS MOST AGREED WITH



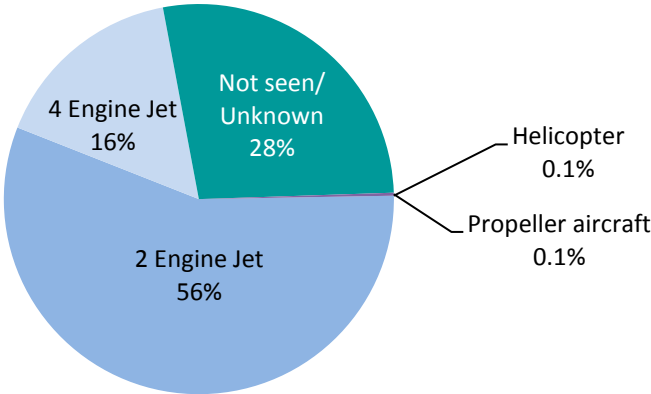
COMPLAINTS RECORDED BY MONTH



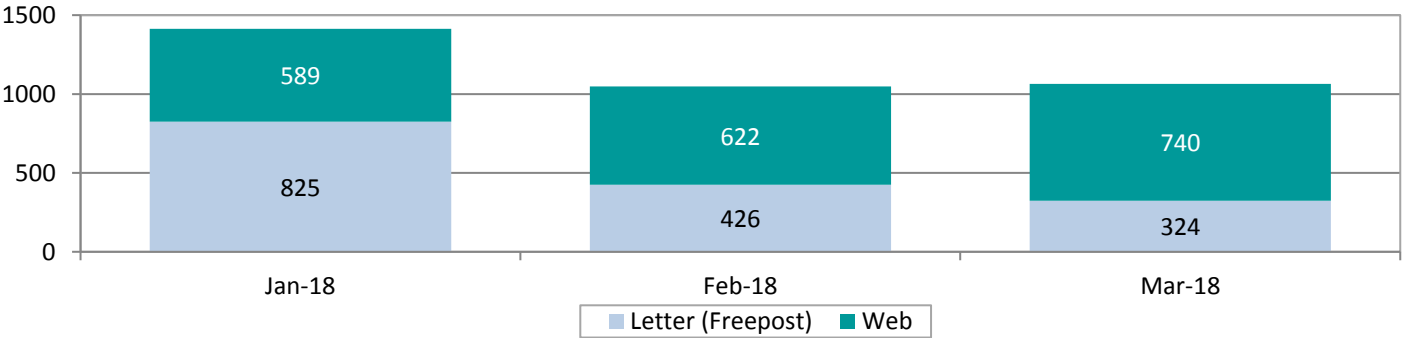
Noise is very subjective and can affect people in different ways. Some people can tolerate a certain noise level whilst it can cause disturbance to others. As well as identifying the issues of noise, it is important to understand the location of each individual complaint.

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

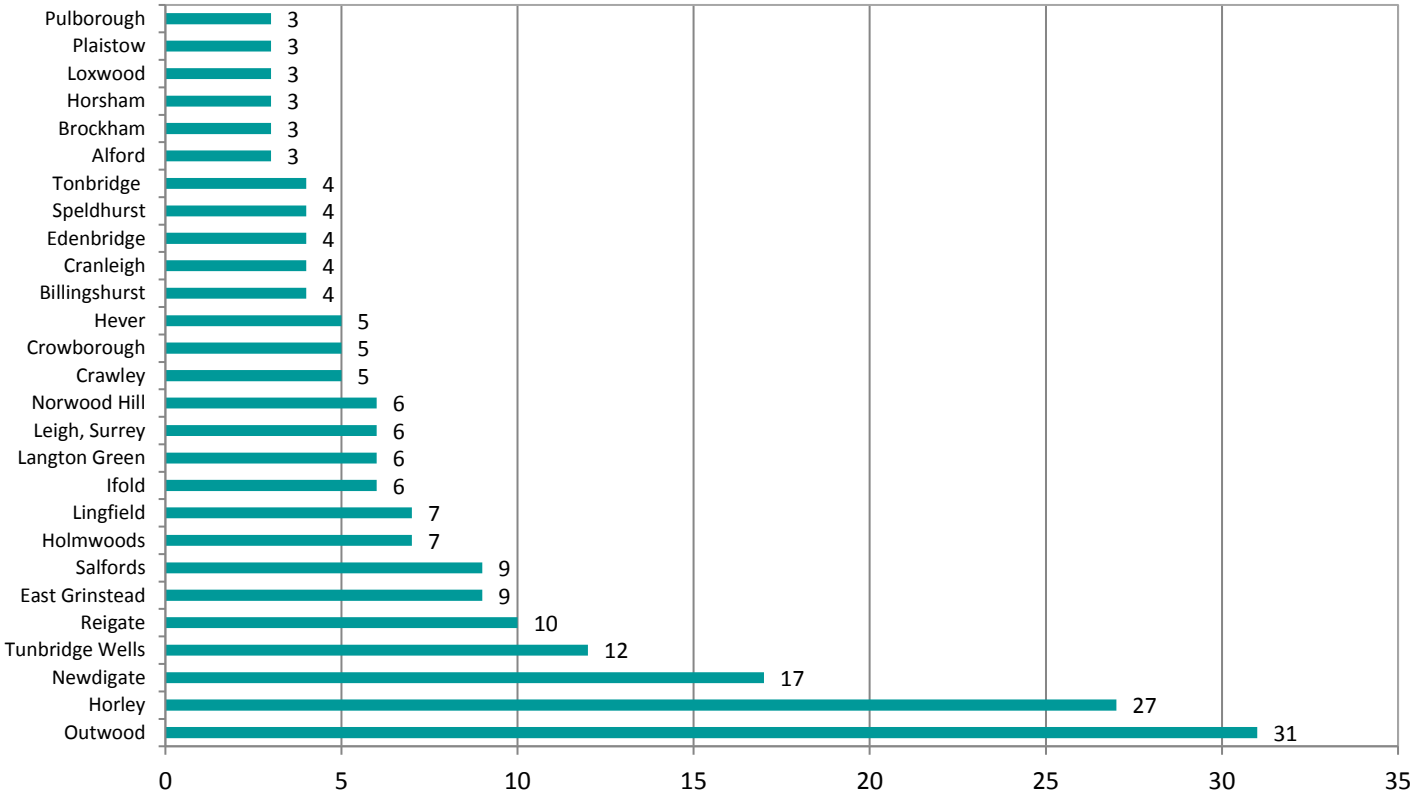
### CATEGORIES OF AIRCRAFT TYPES FROM SPECIFIC COMPLAINTS



### METHOD OF COMPLAINT

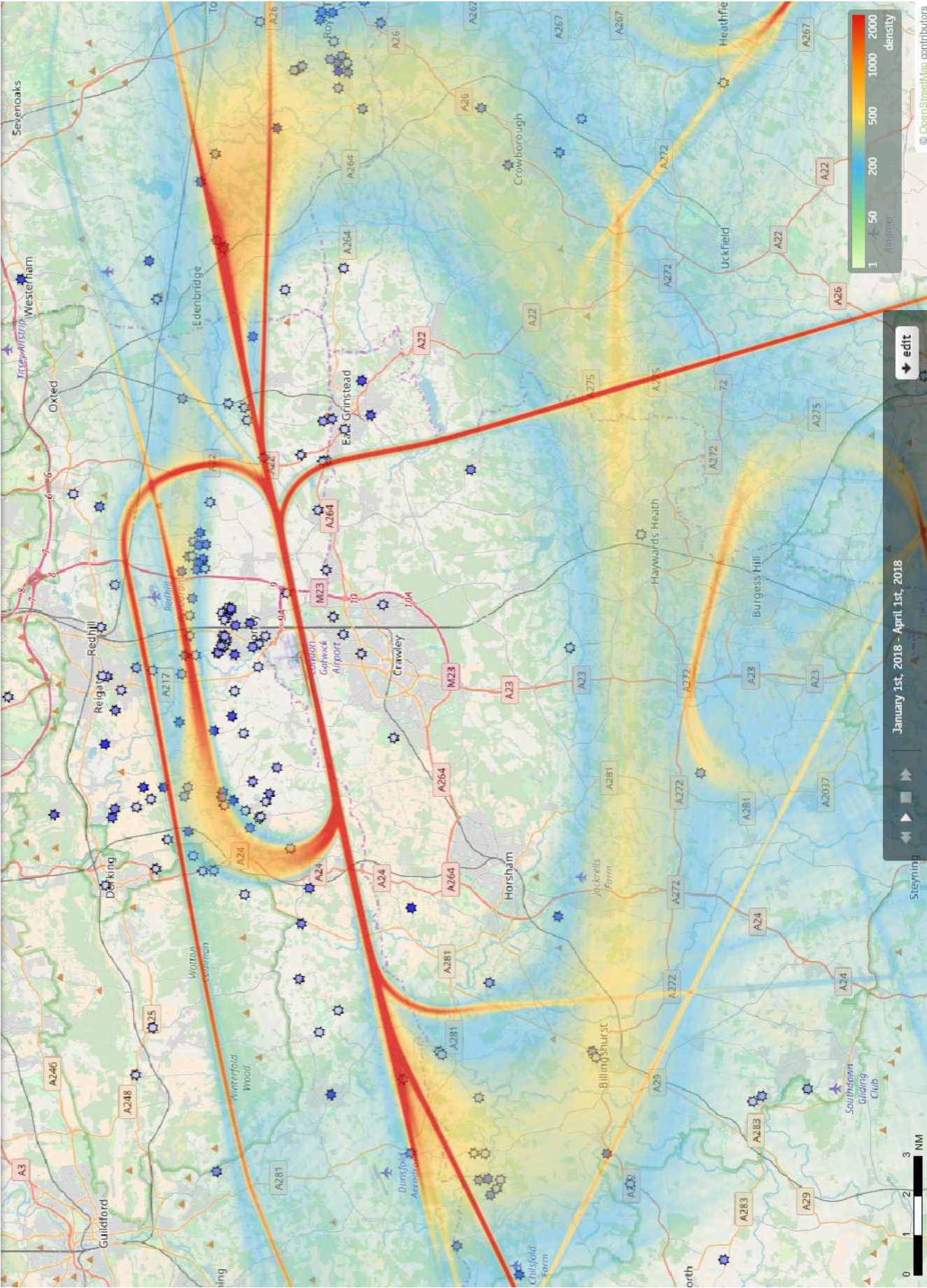


### NUMBER OF INDIVIDUAL COMPLAINANTS BY TOWN/VILLAGE



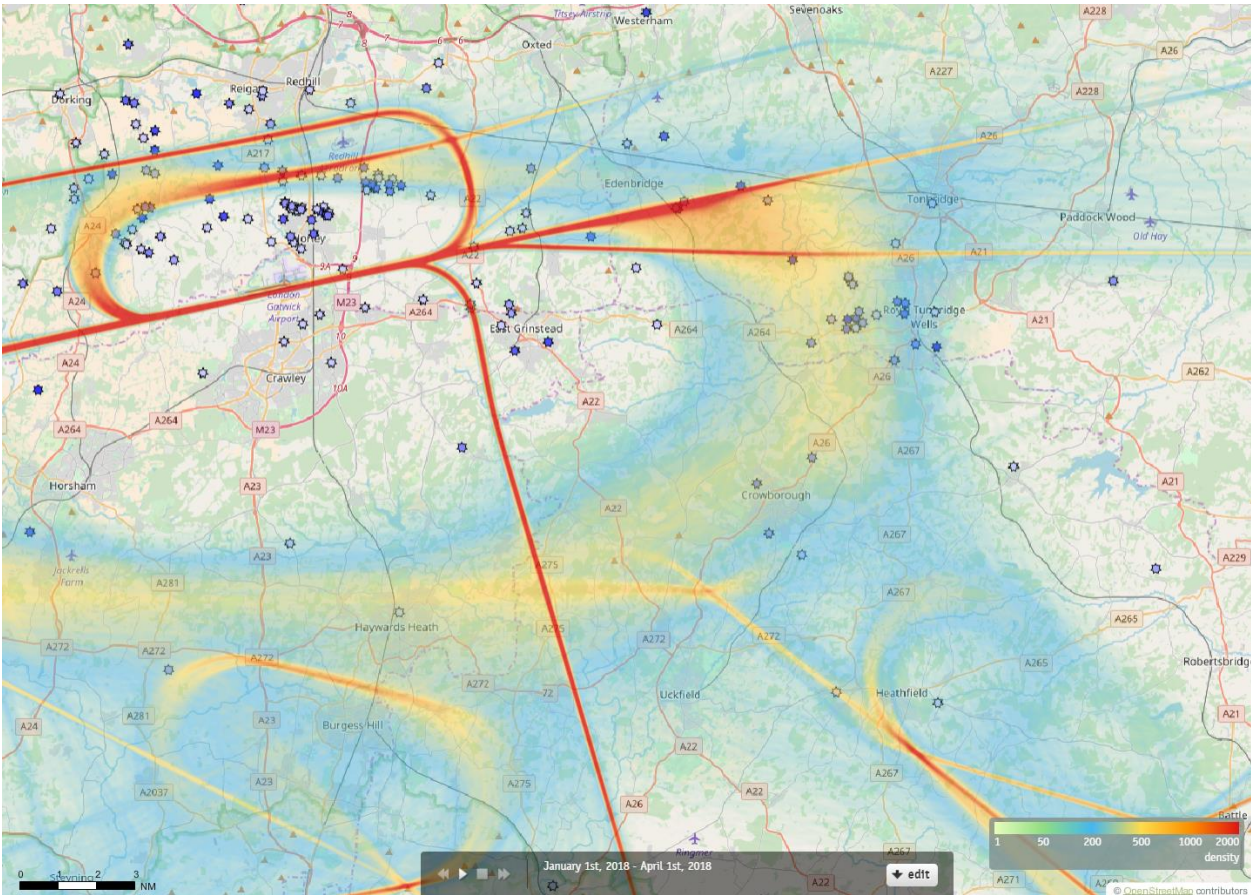


THE MAP BELOW ILLUSTRATES THE LOCATION OF NOISE COMPLAINTS RECEIVED BETWEEN JANUARY - MARCH 2018

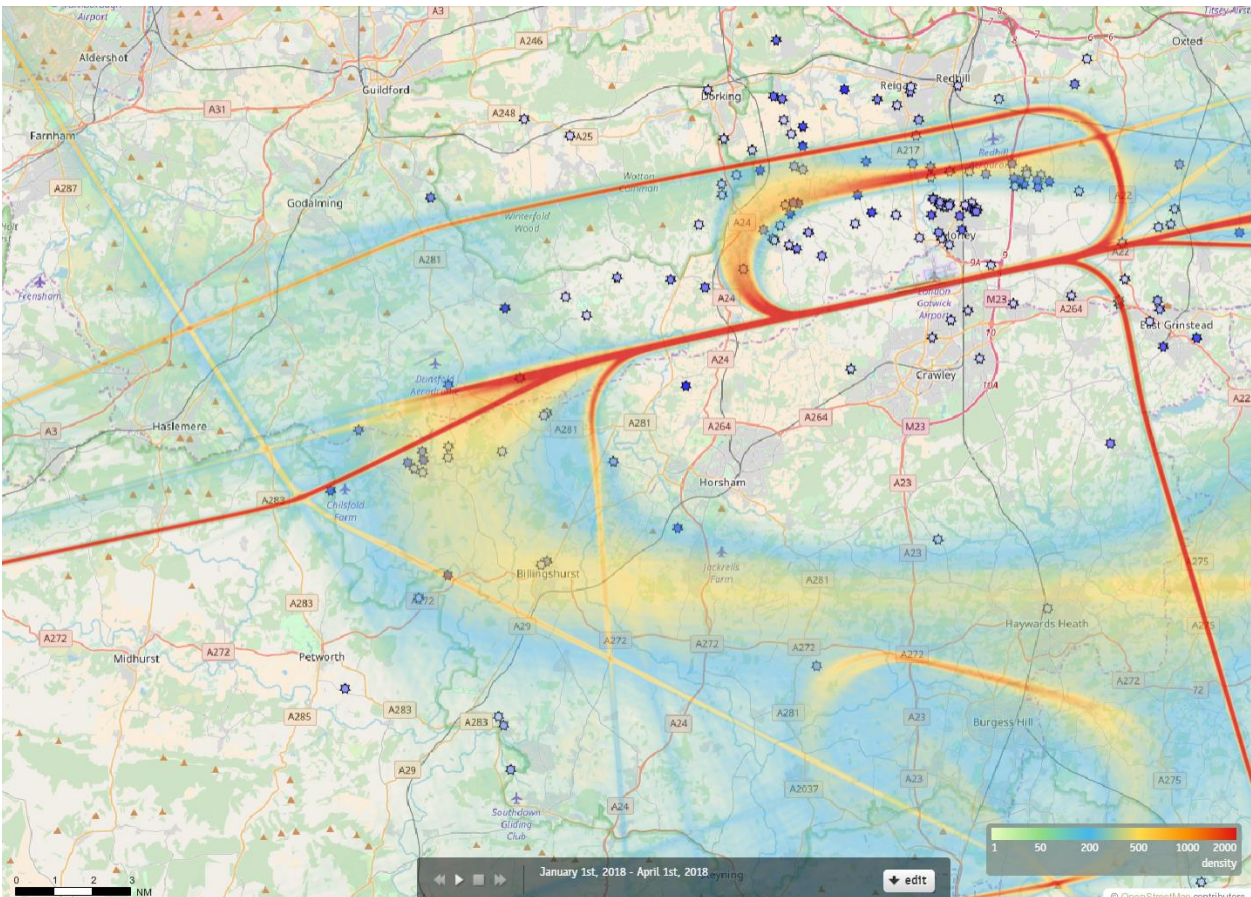




THE MAP BELOW ILLUSTRATES NOISE COMPLAINTS RECEIVED TO THE EAST (JANUARY – MARCH 2018)



THE MAP BELOW ILLUSTRATES NOISE COMPLAINTS RECEIVED TO THE WEST (JANUARY – MARCH 2018)





# Ground Noise Complaints

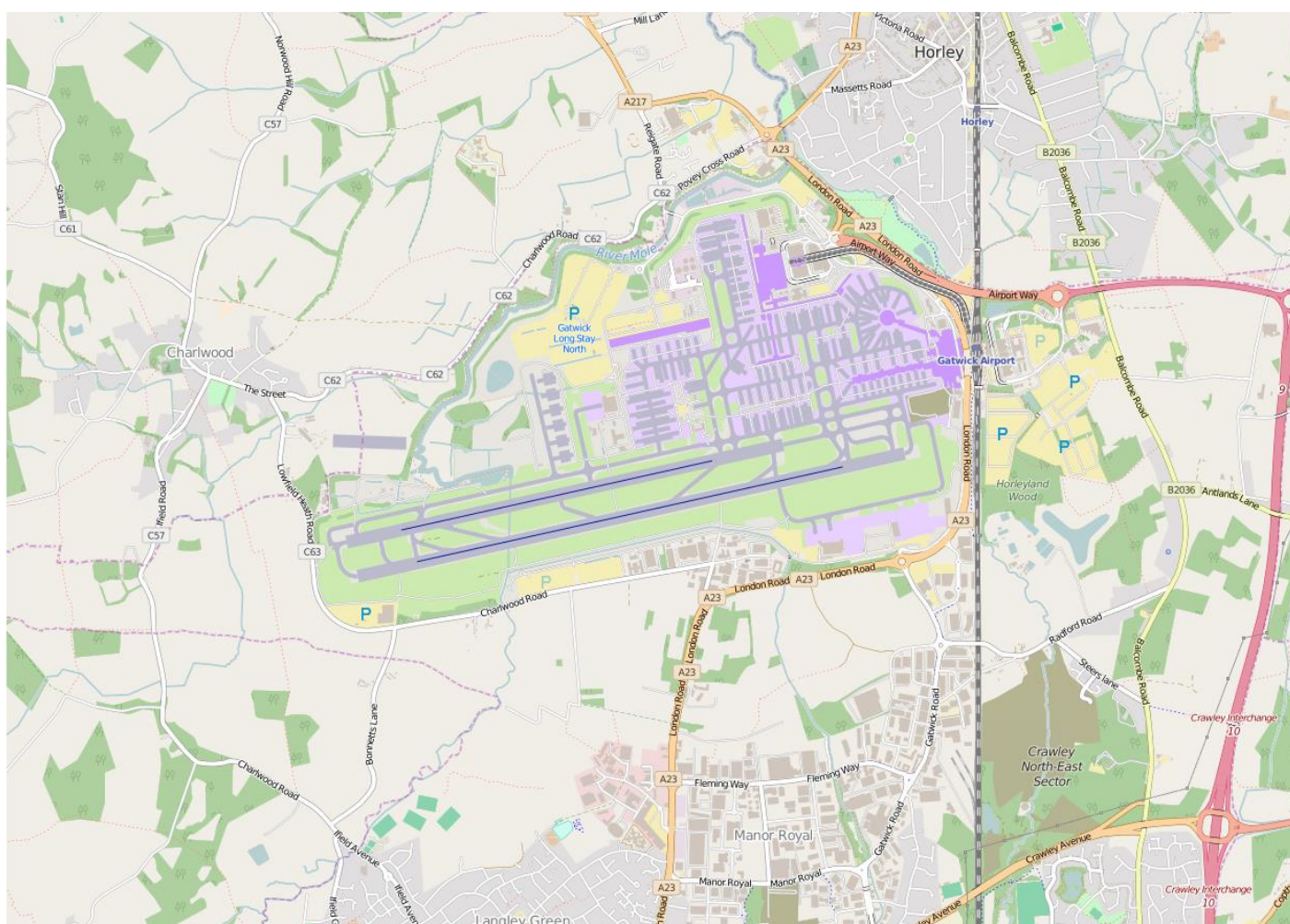
We occasionally receive complaints about disturbance from noise from within the boundary of the airfield. These can be caused by the normal operation of aircraft moving about the airfield, taking off and landing. Additional sources of noise disturbance can be the use of Auxiliary Power Units (APU) by 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

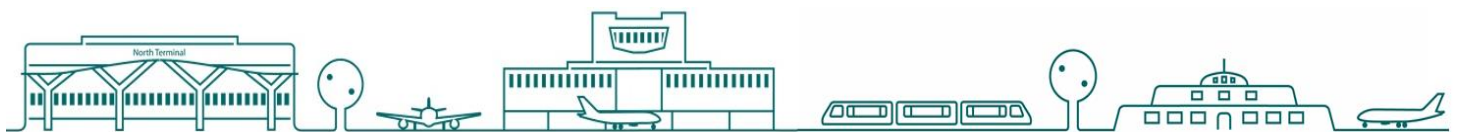
**QC** – Quota Count

**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 2018)



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 2018

Parameter		12 month performance averages <sup>1</sup>		2011	2006
		Year to date (2018)	Previous year (2017)		
Track keeping performance (% on track)	▲	98.10%	98.19%	97.47%	98.17% <sup>3</sup>
24hr CDO (% achievement) <sup>4</sup>	▲	90.64%	89.93%	90.49%	80.79%
Day/Shoulder CDO (% achievement)	▲	90.79%	89.84%	90.19%	79.9%
Core night CDO (% achievement)	▼	88.98%	91.00%	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	2	4	2
Individual complainants	▲	952	1937	343	587
Total noise complaints received <sup>5</sup>	▲	18845	25467	2673	4791
Enquiry response performance target is 95% within 8 days (April to June 2018)	▲	100%	82.63%	KPI 95%	
West/East Runway Split (%)	-	71/29	69/31	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. It is important to note that since January 2018, complaints which have been deleted from the Casper system are no longer counted in the complaint statistics when they had been previously. Complaints are only deleted if they contain abusive, obscene or threatening language.



# Executive Summary

## Performance Headlines

### AIRPORT OPERATIONS

Between 1<sup>st</sup> April and 30<sup>th</sup> June 2018, there were a total of 75,648 fixed wing aircraft movements at Gatwick, a decrease in traffic of about 1% compared to the same period in 2017. The direction of operation is determined by wind direction and this was split 52% on the westerly runway and 48% 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.

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

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

The standby 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 1,361 movements from the standby runway.

### TRACK KEEPING

Track keeping performance has decreased slightly compared to the previous years 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, Charlwood 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 decreased compared to the previous twelve months as well as the number of complainants which has also 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 2018.

The postcode areas with the greatest number of enquiries during the three month period were Outwood, Horley and Copthorne. The number of individual complainants between April and June was **402**. 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

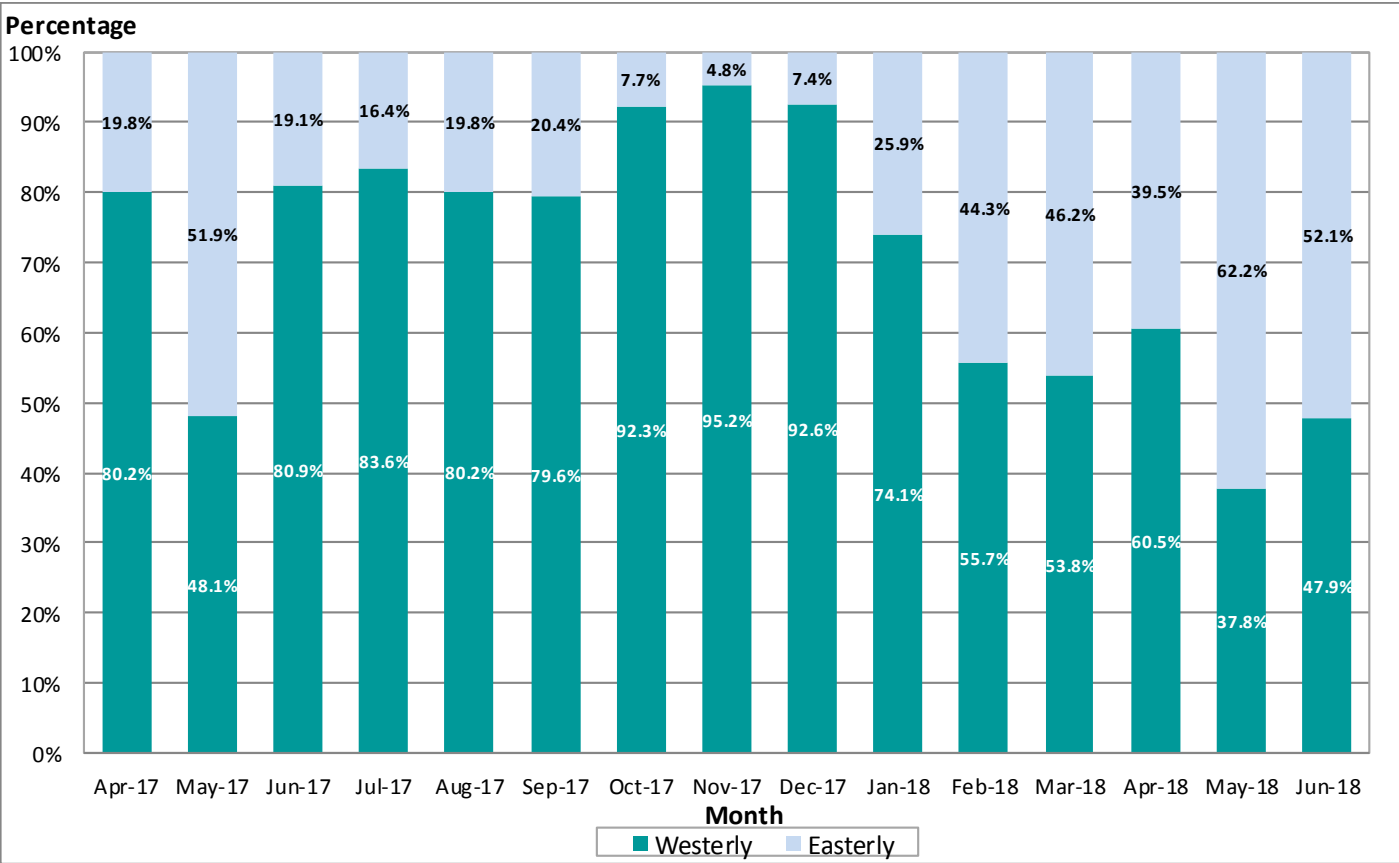
The graph below represents the direction of runway operation at Gatwick. Aircraft operating in a westerly direction take off towards the west and land from the east. Aircraft operating in an easterly direction take off towards the east and land from the west.

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 - JUNE 2018)





# 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	2013	0
2007	13	2014	0
2008	2	2015	0
2009	0	2016	0
2010	0	2017	0
2011	0	2018	0
2012	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	2013	0
2007	2	2014	0
2008	2	2015	0
2009	1	2016	1
2010	0	2017	2
2011	4	2018	0
2012	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.

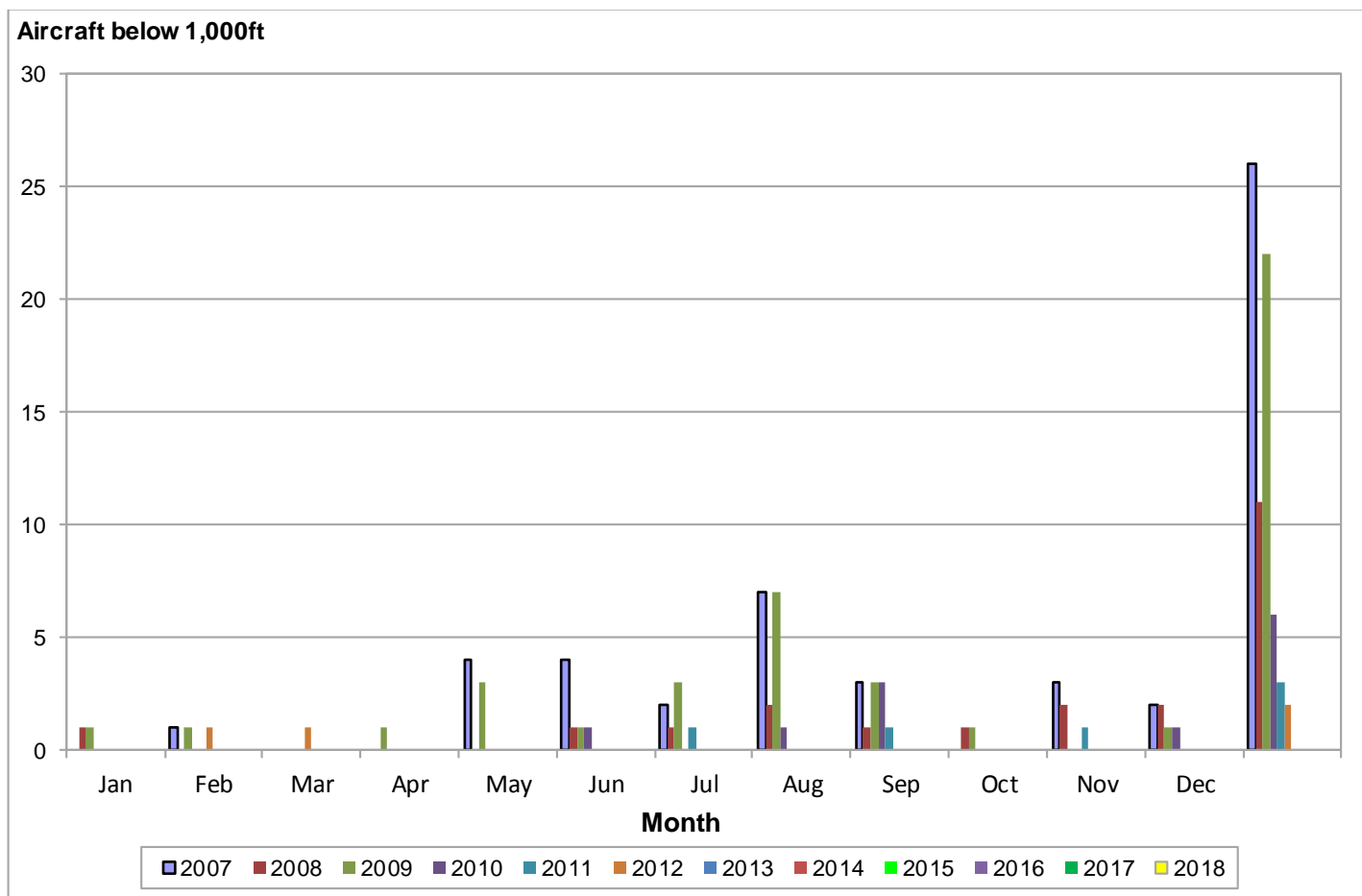
Historically, the summer months are typically the peak period for aircraft failing to meet the 1,000ft requirement, primarily due to the warmer weather which reduces aircraft climb performance.

## 1,000ft INFRINGEMENT TABLE

Year	Total Infringements	Year	Total Infringements
2006	11	2013	0
2007	26	2014	0
2008	11	2015	0
2009	22	2016	0
2010	6	2017	0
2011	3	2018	0
2012	2		

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 (NPR's) up to a height of 3,000ft or 4,000ft depending on the route. An NPR consists of a 'centreline' and an associated compliance monitoring swathe (3km across, i.e. 1.5km either side of the NPR centreline). 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 overleaf.

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 of 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 flagged 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 with a P-RNAV departure SID 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 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 Route 4 P-RNAV SID's were not included. Following the PIR and consultation, the CAA concluded that the modified

Route 4 SID's achieve a satisfactory replication of the nominal track of the corrected conventional SID and confirmed the P-RNAV SID designs currently published in the UK Aeronautical Information Publication (AIP) as permanent.

Following the quashing of the CAA's April 2017 decision by consent, Gatwick are working to revert the Route 4 conventional SID's to their position as they were before 7th April 2017. In support of this, Gatwick completed a comprehensive safety review. Following validation by an independent Instrument Flight Procedure Designer, the changes were submitted to the CAA for approval in May 2018. It is expected that these changes be introduced on 11th October 2018 (AIRAC 11/2018) following the necessary changes to air traffic control systems and aeronautical publications. (Note: as previously briefed this will not change the distribution of traffic).

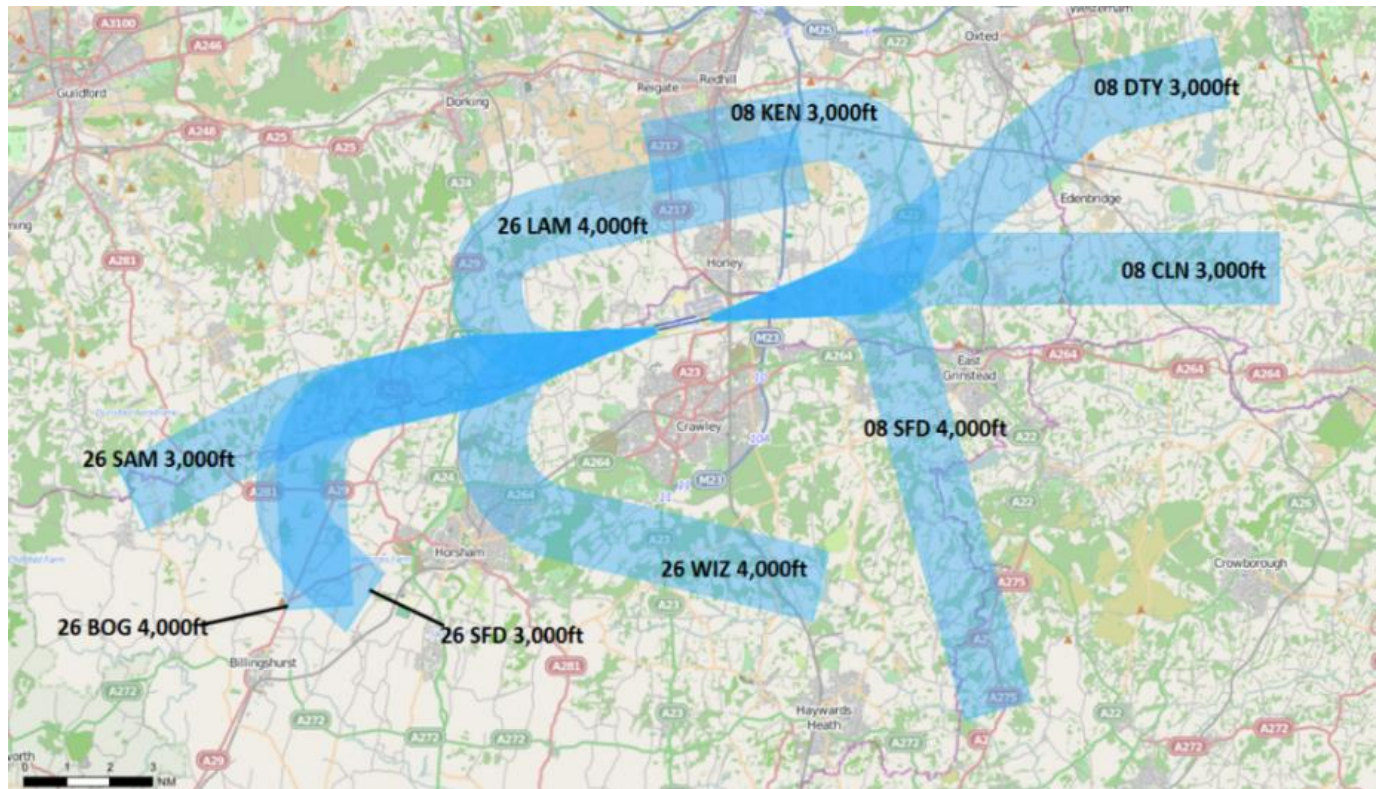
Route 4 P-RNAV SIDs will remain in place but have reverted to a temporary status, as was the case prior to the CAA's decision in April 2017. A redesign of the Route 4 P-RNAV SIDs will be necessary through the development of a new Route 4 airspace change proposal, which will commence in the coming months once the relevant expertise is in place. The process of reviewing a contract proposal for the delivery of the Route 4 airspace change is currently being undertaken.

The airport is focused on following the correct procedure taking into account the various relevant factors to achieve an end result as soon as possible. This required rigorous legal process and does however mean that a final outcome is likely to take up to two years to achieve. An airspace change proposal will be developed in due course and will be consulted widely so communities will have the opportunity to contribute and influence.

An update will be published very soon via the Airspace Blog on the Gatwick Noise website explaining the historic changes to the route, over the past 20 years or so, based on the review of Route 4 conducted by the CAA.

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. Gatwick is awaiting a decision from the CAA regarding its status.

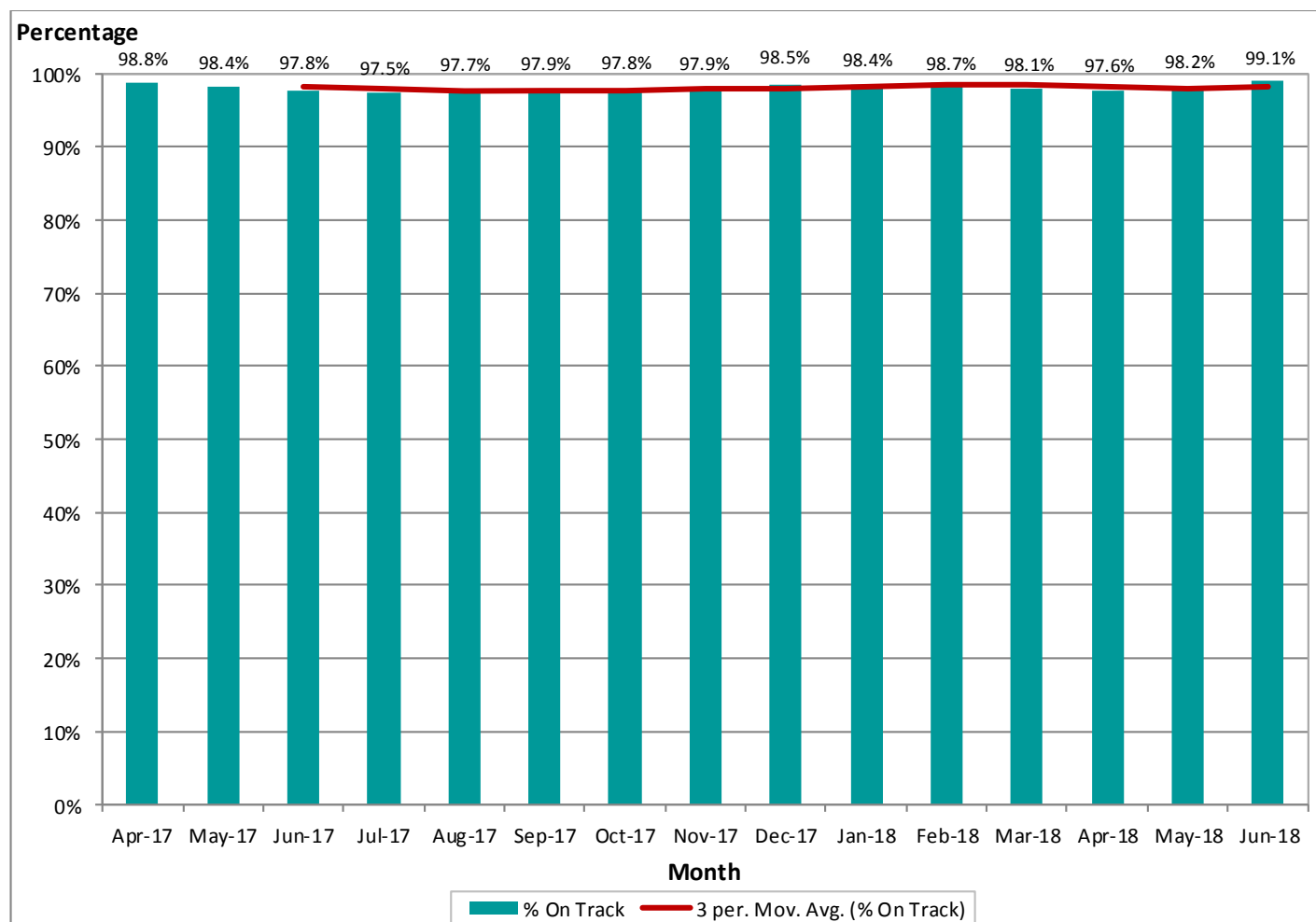
THE MAP BELOW ILLUSTRATES THE NOISE PREFERENTIAL ROUTES USED BY DEPARTING AIRCRAFT WITH MINIMUM VECTORING ALTITUDE FIGURES



THE TABLE BELOW ILLUSTRATES TRACK KEEPING PERFORMANCE OVER 15 MONTHS

Month	Total			Westerly			Easterly		
	Deviations	Departures	%	Deviations	Departures	%	Deviations	Departures	%
Apr-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%
Jan-18	150	9546	1.57%	142	7004	2.03%	8	2542	0.31%
Feb-18	127	9577	1.33%	123	5370	2.29%	4	4207	0.10%
Mar-18	211	11065	1.91%	196	5930	3.31%	15	5135	0.29%
Apr-18	281	11715	2.40%	266	7111	3.74%	15	4604	0.33%
May-18	226	12788	1.77%	122	7937	1.54%	104	4851	2.14%
Jun-18	120	13301	0.90%	99	6428	1.54%	21	6873	0.31%

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



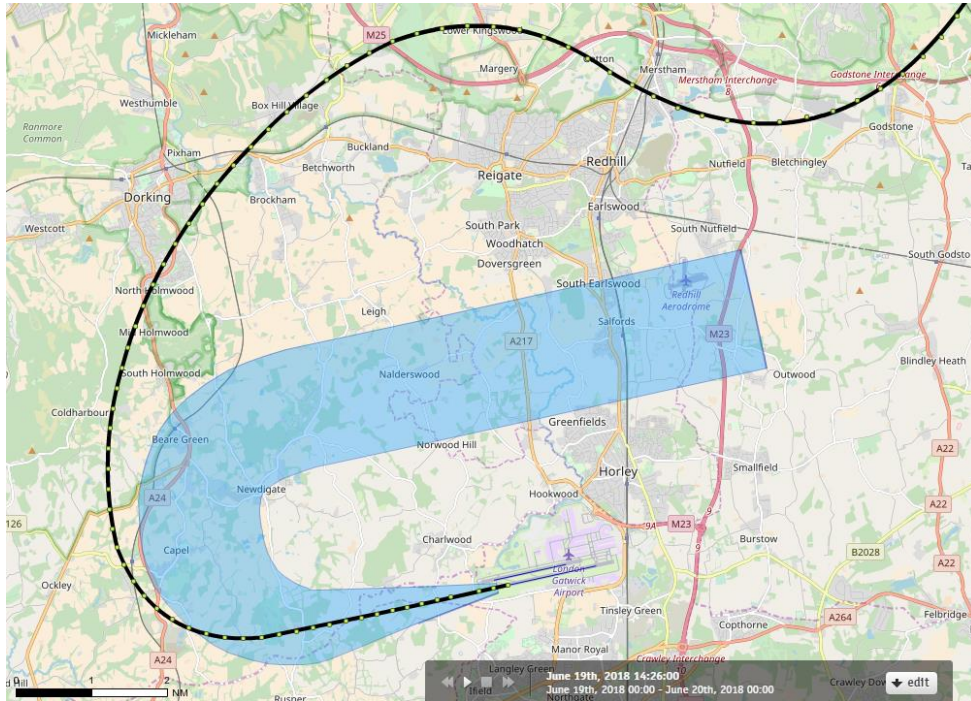


## UNUSUAL TRACKS

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

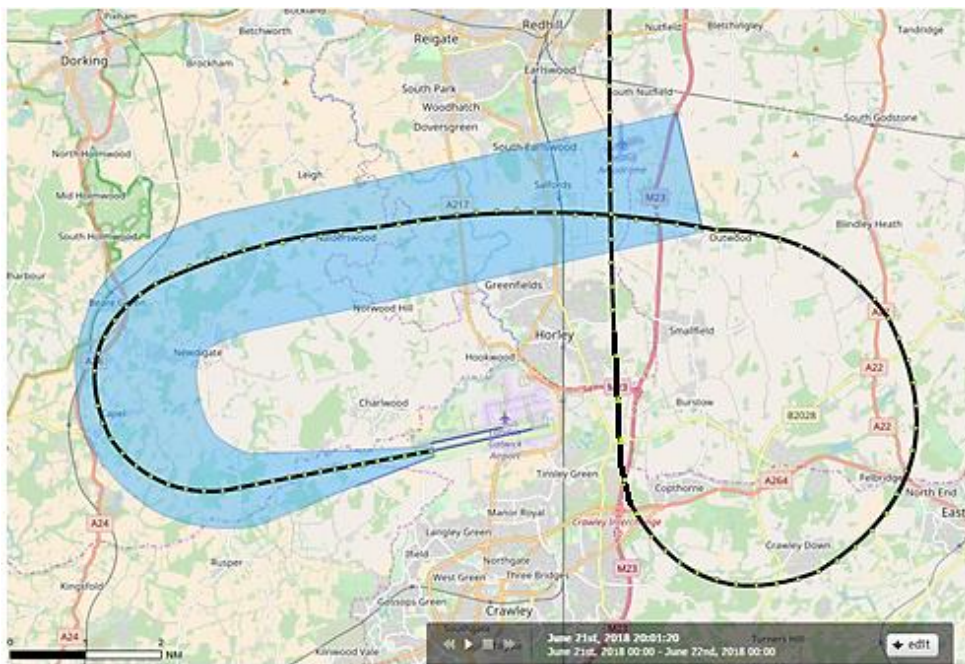
below the required altitude or aircraft that have vectored at the required altitude and then misdirected to avoid conflict with traffic from other airports. All unusual tracks are investigated with the airline concerned.

THE MAP BELOW SHOWS THE ICELANDAIR AIRCRAFT WHICH TOOK AN UNUSUAL TRACK ONCE VECTORED FROM THE NPR



This Icelandair B757-200 flight occurred on the 19<sup>th</sup> June 2018 at 14:28. NATS Swanwick were contacted and advised that this deviation was a result of pilot error.

THE MAP BELOW SHOWS THE EASTJET AIRCRAFT WHICH TOOK AN UNUSUAL TRACK ONCE VECTORED FROM THE NPR



This easyJet A319 flight occurred on the 21<sup>st</sup> June 2018 at 20:01. NATS Swanwick investigated the flight and explained that this aircraft was vectored due to airspace congestion. They added that this is not an unusual event 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

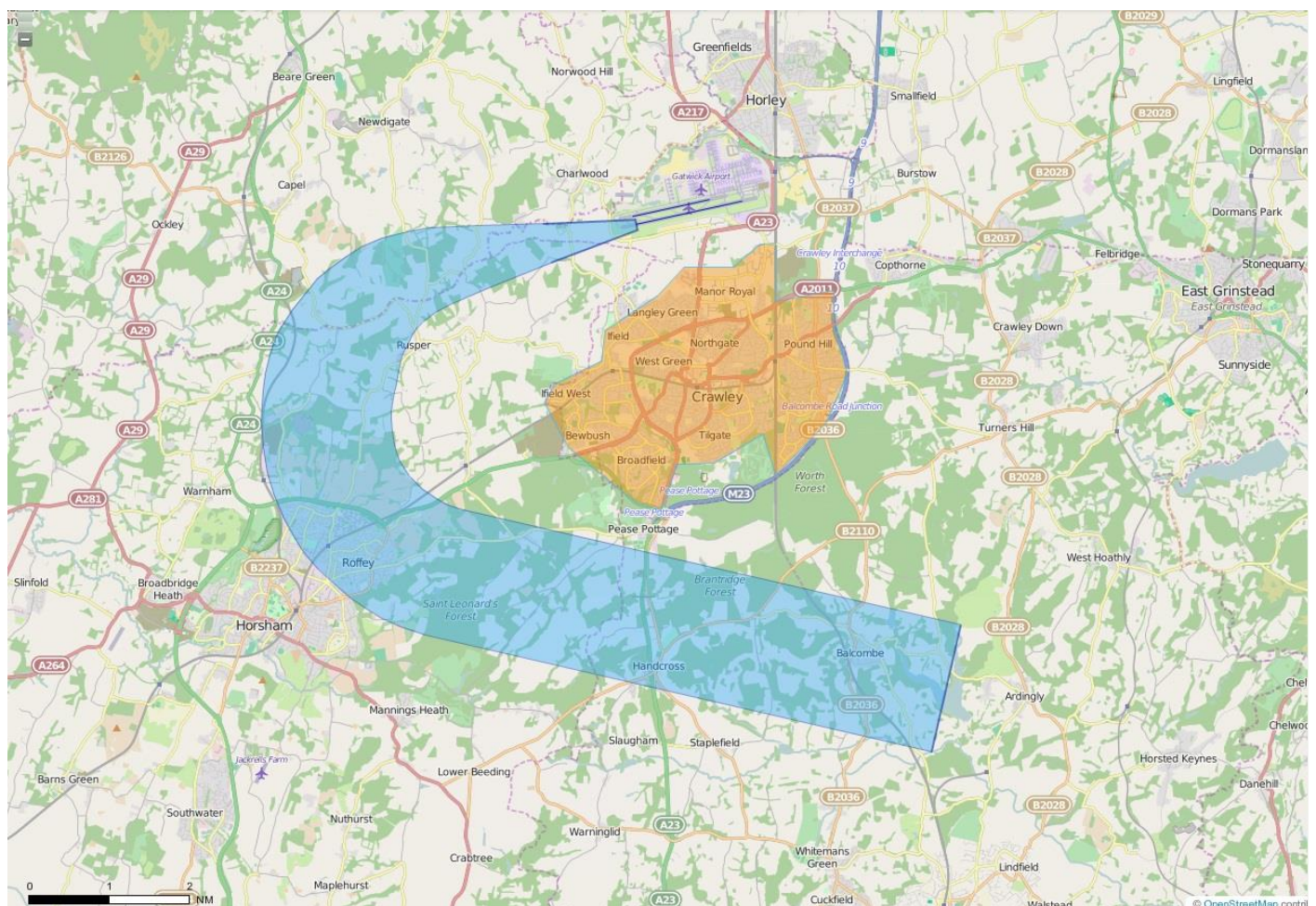
The WIZAD Noise Preferential Route was designated by the Government at the same time as all other Gatwick departure routes; however, it is not used on an equal basis with the other routes. It is a Tactical Offload Route and is not usually offered as part of a flight path. If the 26 LAM Route (to the 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.

**EGKKAD 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'



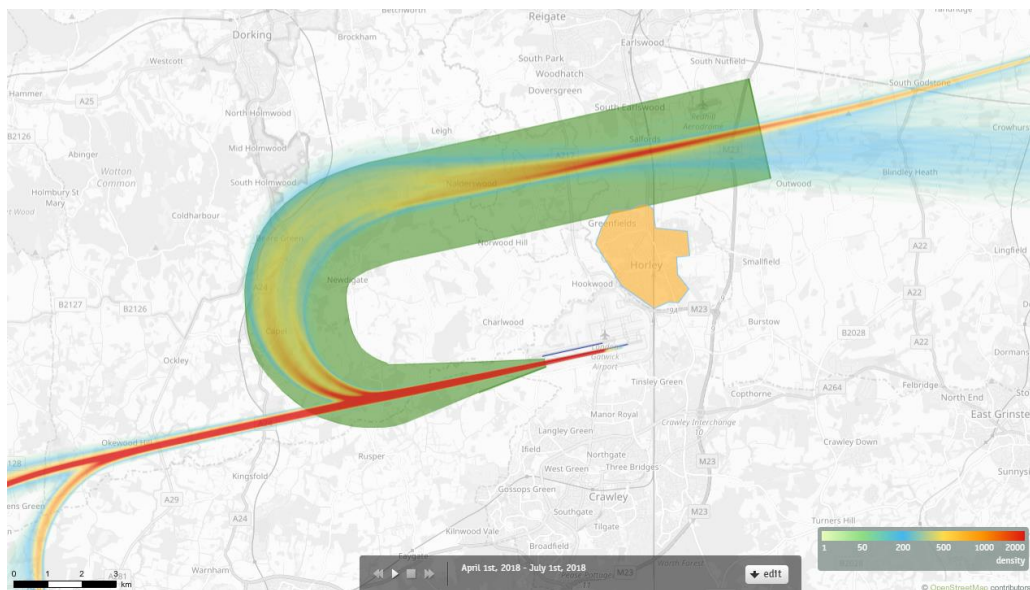
# Overflight of Crawley and Horley

**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.

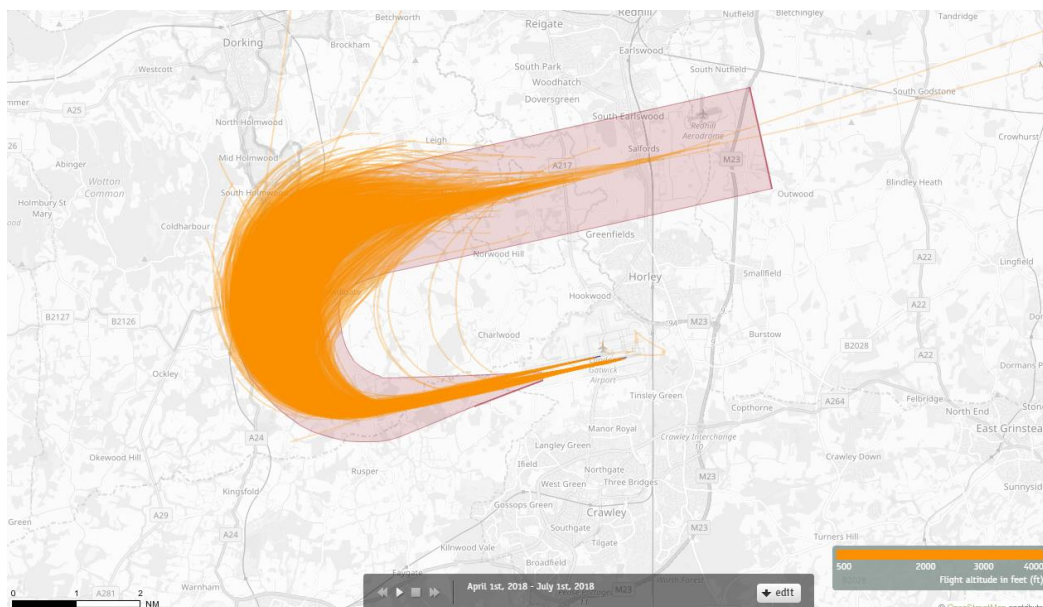
**Comment:** During this period, there were 4 departing flights that passed over Crawley due to adverse weather conditions. It should also be noted that although Casper Noiselab does not show tracks relating to other airports, Horley does experience overflight from Heathrow Airport traffic. The current construction of the SID is of the 'course to fix' type

which determines the course to fly terminating at a waypoint whereas the 'radius to fix' specifies the curved path defined by radius, arc length and fix with the angle of bank being varied to achieve the specified path. Accelerating to a fixed speed in times of strong south westerly winds (2000' wind >25kts) can exceed the aircraft's authorised limits. This leads to a variance between different aircraft types and operators and therefore, some aircraft fly further north or south than others. The wind and weather (e.g. thunderstorms) also has an effect on the headings of aircraft which may result in direct overflight of Horley.

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

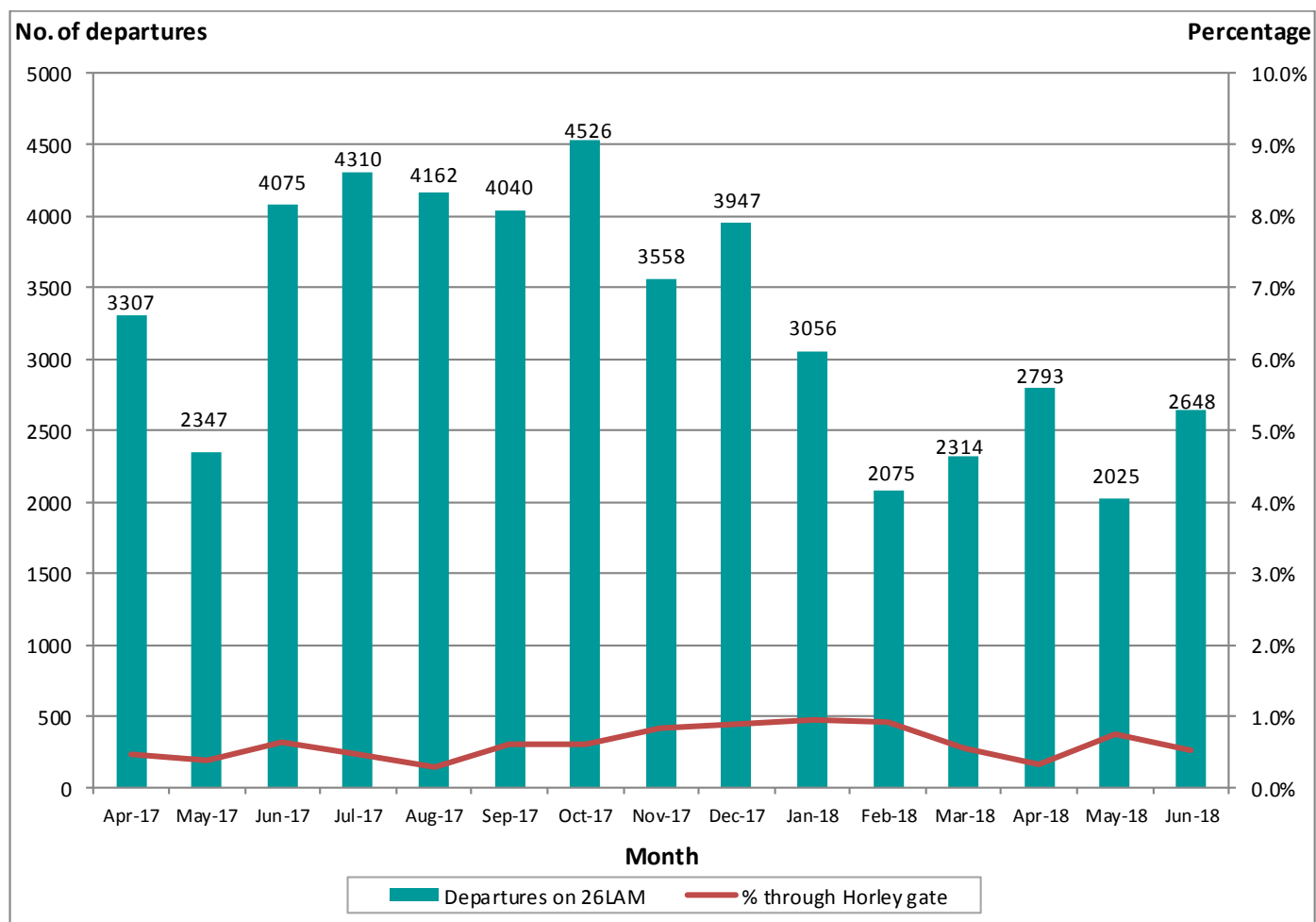




THE TABLE BELOW ILLUSTRATES THE ANALYSIS OF HORLEY OVERFLIGHT

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-16	3031	70	2.31%	Jan-17	2004	19	0.95%	Jan-18	3056	29	0.95%
Feb-16	2449	58	2.37%	Feb-17	2391	22	0.92%	Feb-18	2075	19	0.92%
Mar-16	2282	67	2.94%	Mar-17	3385	10	0.30%	Mar-18	2314	13	0.56%
Apr-16	3018	91	3.02%	Apr-17	3307	15	0.45%	Apr-18	2793	9	0.32%
May-16	2114	51	2.41%	May-17	2347	9	0.38%	May-18	2025	15	0.74%
Jun-16	2922	173	5.92%	Jun-17	4075	26	0.64%	Jun-18	2648	14	0.53%
Jul-16	4968	420	8.45%	Jul-17	4310	20	0.46%	Jul-18	-	-	-
Aug-16	4099	355	8.66%	Aug-17	4162	12	0.29%	Aug-18	-	-	-
Sep-16	4409	210	4.76%	Sep-17	4040	25	0.62%	Sep-18	-	-	-
Oct-16	1719	61	3.55%	Oct-17	4526	28	0.62%	Oct-18	-	-	-
Nov-16	2072	79	3.81%	Nov-17	3558	30	0.84%	Nov-18	-	-	-
Dec-16	2463	14	0.57%	Dec-17	3947	35	0.89%	Dec-18	-	-	-

THE GRAPH BELOW ILLUSTRATES THE ANALYSIS OF HORLEY OVERFLIGHT





# Arrivals – Continuous Descent Operations (CDO)

A Continuous Descent Operation (CDO) (also 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:

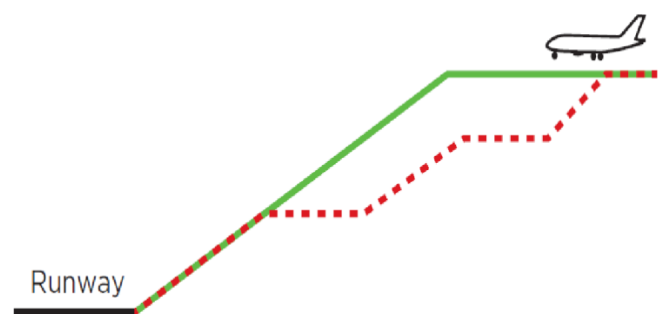
- The Core Night period (2330-0600)
- The Day and Shoulder periods (0600–2330)
- The 24-hour period

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 the standby runway operations during the core night period during the last 3 months, this has had an impact on the CDO performance during this time.

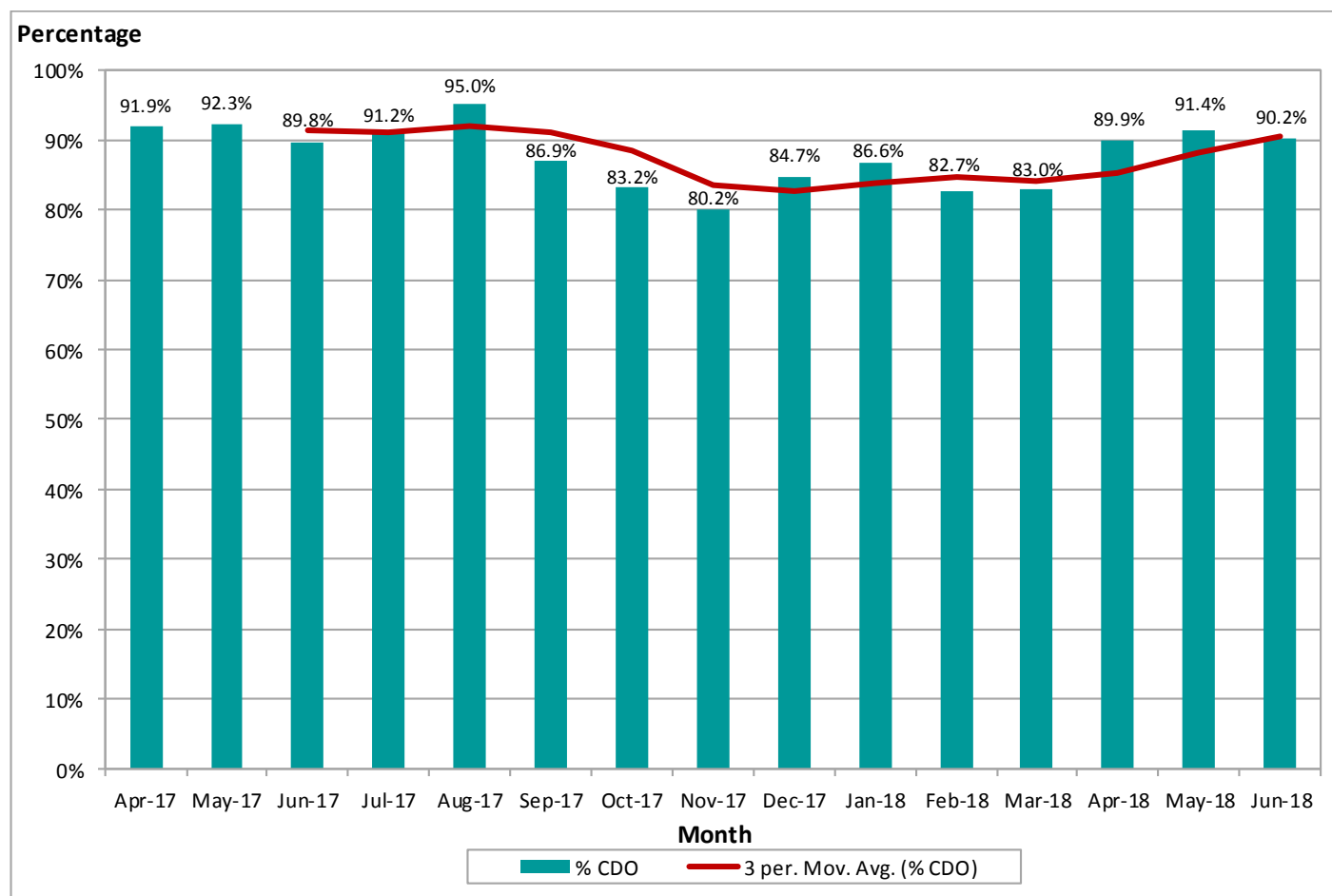


## CORE NIGHT PERIOD (2330-0600)

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>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%
<b>Jan-18</b>	291	39	86.60%	91	11	87.91%	200	28	86.00%
<b>Feb-18</b>	300	52	82.67%	150	21	86.00%	150	31	79.33%
<b>Mar-18</b>	547	93	83.00%	254	36	85.83%	293	57	80.55%
<b>Apr-18</b>	890	90	89.89%	425	23	94.59%	465	67	85.59%
<b>May-18</b>	1331	115	91.36%	841	60	92.87%	490	55	88.78%
<b>Jun-18</b>	1667	164	90.16%	945	63	93.33%	722	101	86.01%

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

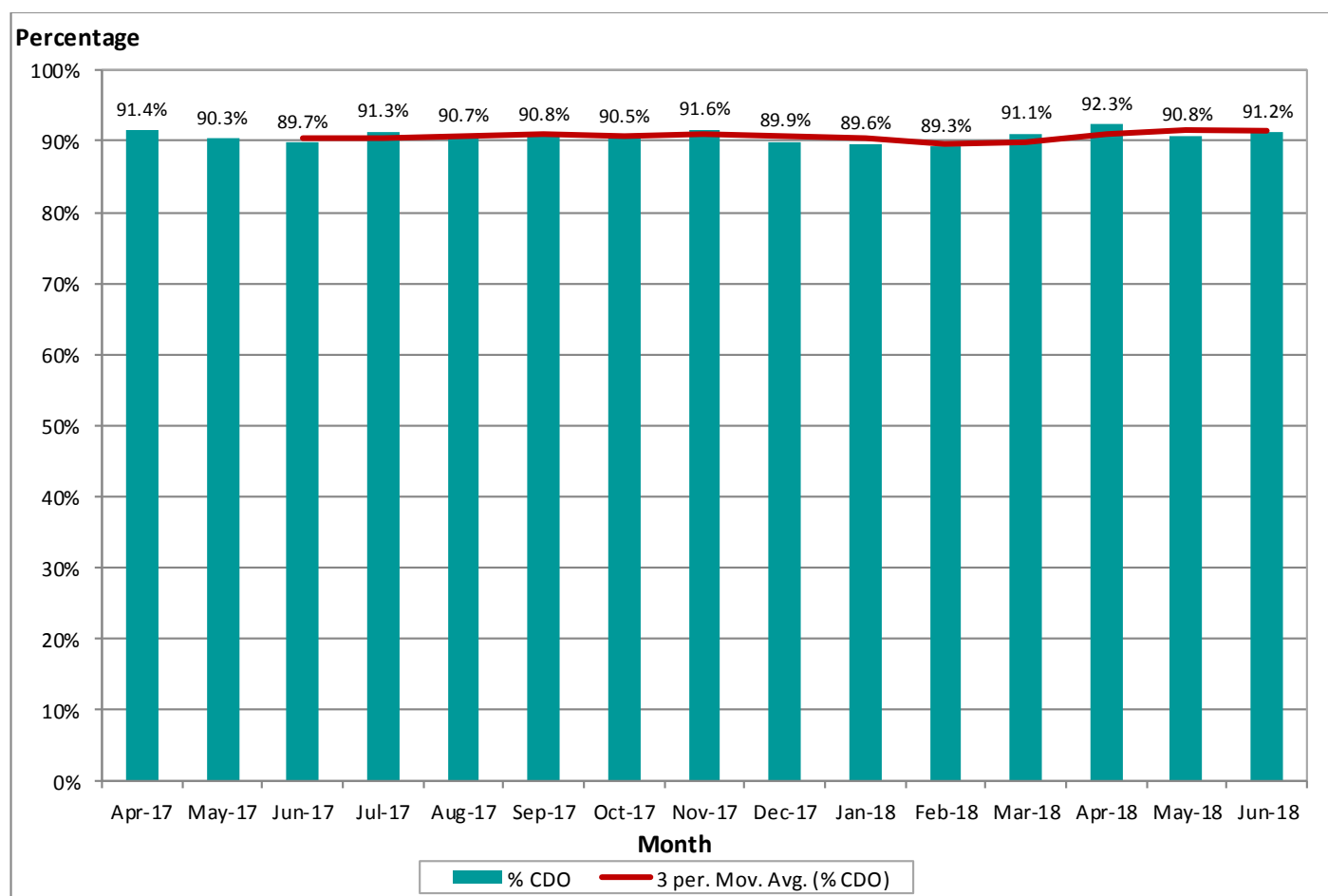


## DAYTIME AND SHOULDER PERIOD CDO ACHIEVEMENT (0600-2330)

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
<b>Apr-17</b>	11016	943	91.44%	2159	193	91.06%	8857	750	91.53%
<b>May-17</b>	11873	1154	90.28%	6104	600	90.17%	5769	554	90.40%
<b>Jun-17</b>	11902	1222	89.73%	2288	204	91.08%	9614	1018	89.41%
<b>Jul-17</b>	12221	1061	91.32%	2016	199	90.13%	10205	862	91.55%
<b>Aug-17</b>	12483	1164	90.68%	2446	263	89.25%	10037	901	91.02%
<b>Sep-17</b>	11879	1089	90.83%	2381	181	92.40%	9498	908	90.44%
<b>Oct-17</b>	11369	1082	90.48%	909	65	92.85%	10460	1017	90.28%
<b>Nov-17</b>	9012	760	91.57%	415	37	91.08%	8597	723	91.59%
<b>Dec-17</b>	9879	993	89.95%	711	108	84.81%	9168	885	90.35%
<b>Jan-18</b>	9264	965	89.58%	2311	219	90.52%	6953	746	89.27%
<b>Feb-18</b>	9279	997	89.26%	4136	453	89.05%	5143	544	89.42%
<b>Mar-18</b>	10503	935	91.10%	4826	461	90.45%	5677	474	91.65%
<b>Apr-18</b>	10847	831	92.34%	4221	312	92.61%	6626	519	92.17%
<b>May-18</b>	11443	1053	90.80%	7113	407	94.28%	4330	346	92.01%
<b>Jun-18</b>	11648	1023	91.22%	6042	542	91.03%	5606	481	91.42%

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

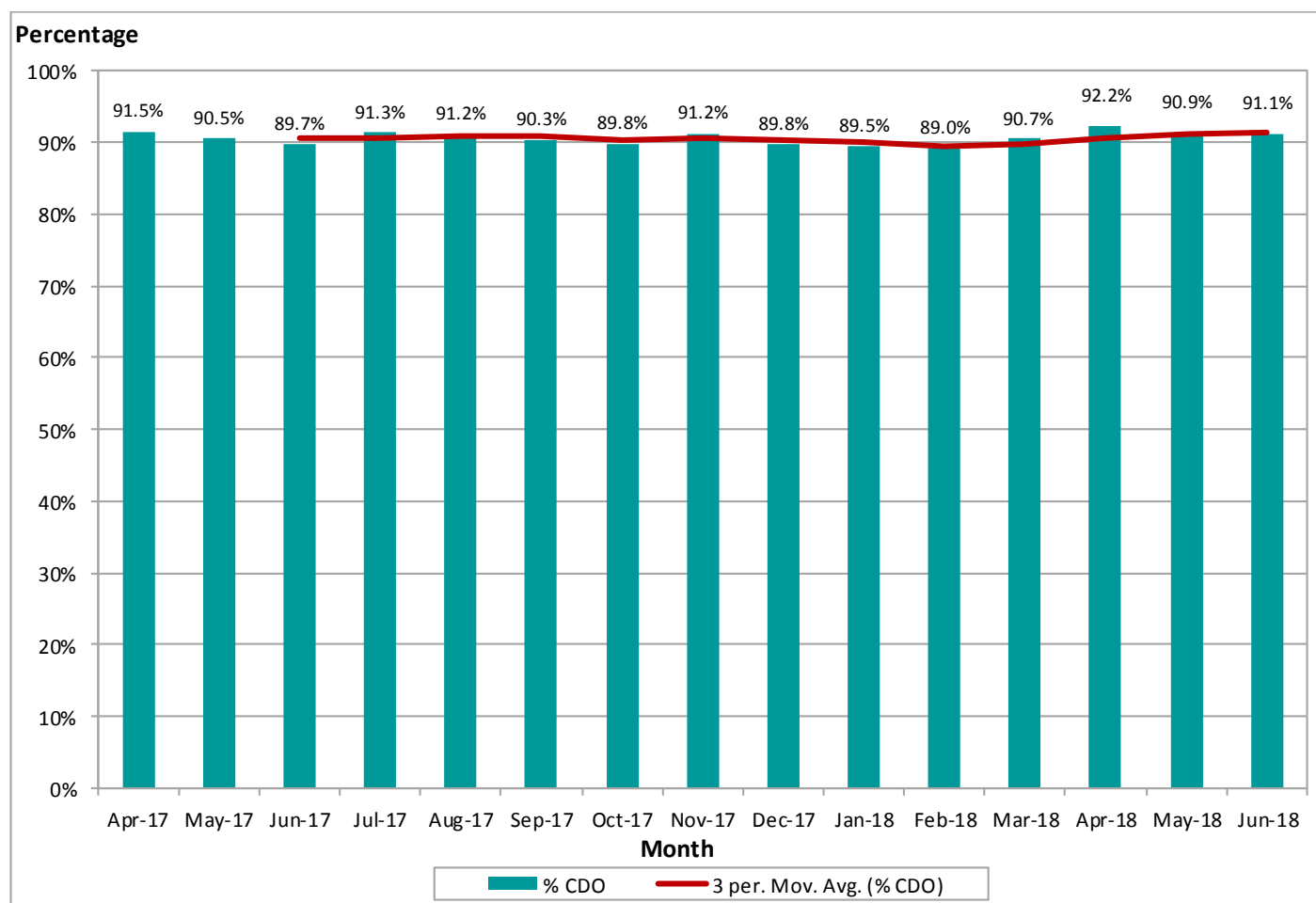


## 24 HOUR PERIOD CDO ACHIEVEMENT

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-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%
<b>Jan-18</b>	9555	1004	89.49%	2402	230	90.42%	7153	774	89.18%
<b>Feb-18</b>	9579	1049	89.05%	4286	474	88.94%	5293	575	89.14%
<b>Mar-18</b>	11050	1028	90.70%	5080	497	90.22%	5970	531	91.11%
<b>Apr-18</b>	11737	921	92.15%	4646	335	92.79%	7091	586	91.74%
<b>May-18</b>	12774	1168	90.86%	7954	767	90.36%	4820	401	91.68%
<b>Jun-18</b>	13315	1187	91.09%	6986	605	91.34%	6329	582	90.80%

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





# Arrivals – Over Congested Areas

## OVERFLIGHT OF CONGESTED AREAS

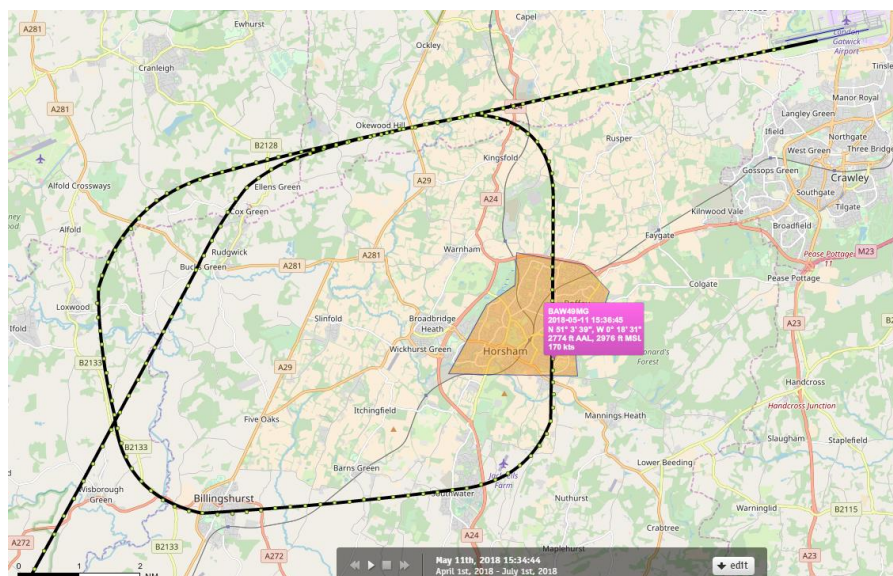
**AD 2-EGKK1-12 (11)** Before landing at the aerodrome the aircraft shall maintain as high an altitude as practicable and shall not fly over the congested areas of Crawley, East Grinstead, Horley and Horsham at an altitude of less than 3,000ft (Gatwick QNH) nor over the congested area of Lingfield at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

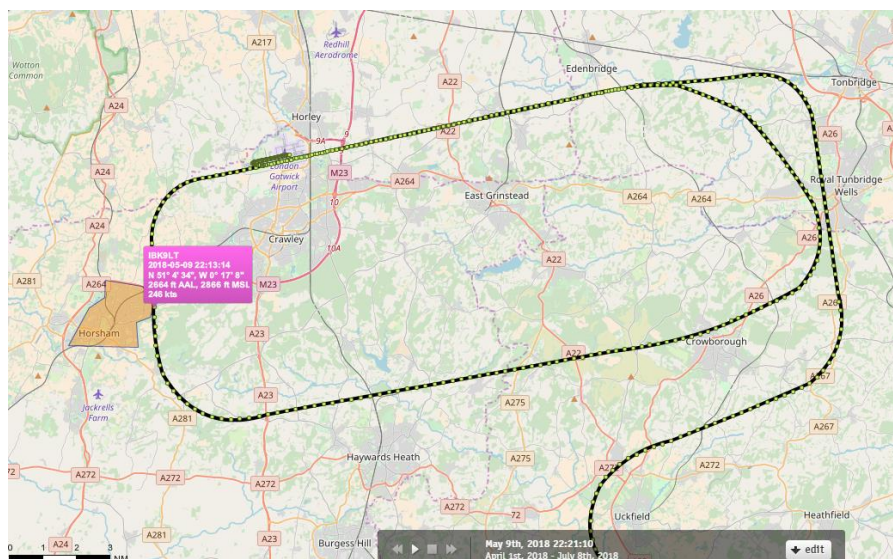
During the analysis period, there were a total of 56 arrivals that passed through this area. Aircraft tracks were analysed for April, May and June 2018 and with the exception of a small number of go-arounds, there were no flights passed over Lingfield below the altitude of 1,698ft (2,000ft Gatwick QNH).

## THE MAP BELOW SHOWS THE BRITISH AIRWAYS AIRCRAFT THAT PASSED OVER HORSHAM AT 2,976ft



This British Airways A320 flight occurred on the 11<sup>th</sup> May 2018 at 15:36. This was confirmed as a missed approach.

## THE MAP BELOW SHOWS THE NORWEGIAN AIRCRAFT THAT PASSED OVER HORSHAM AT 2,866ft



This Norwegian B737-800 flight occurred on the 9<sup>th</sup> May 2018 at 22:35. This was confirmed as a go-around.



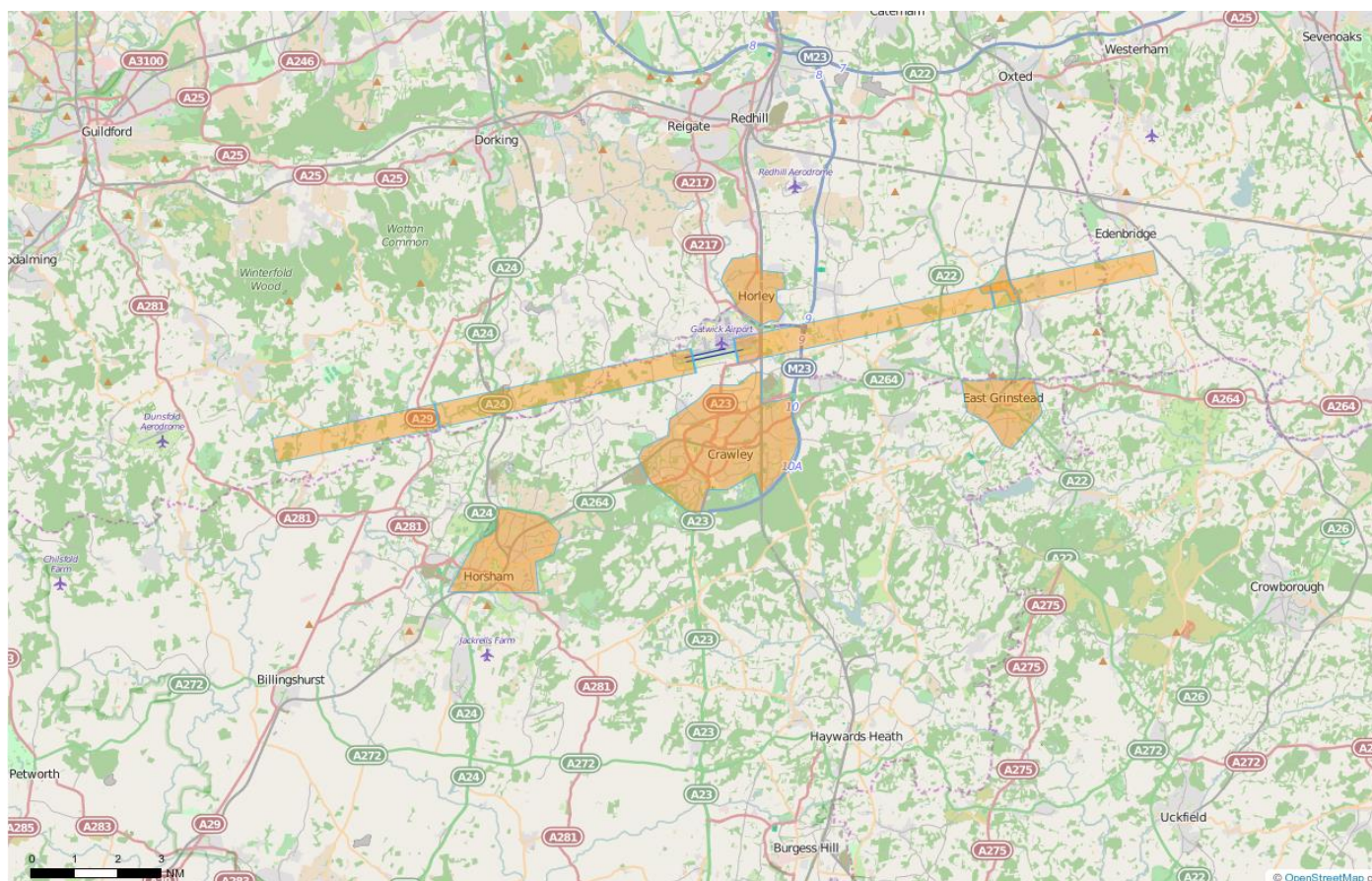
## A) DAY TIME JOINING HEIGHT (0700-2300)

**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 37,836 arrivals recorded by the Casper NTK system between 1<sup>st</sup> April and 30<sup>th</sup> June 2018. 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 127 (0.34%). In addition, there were 39 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:

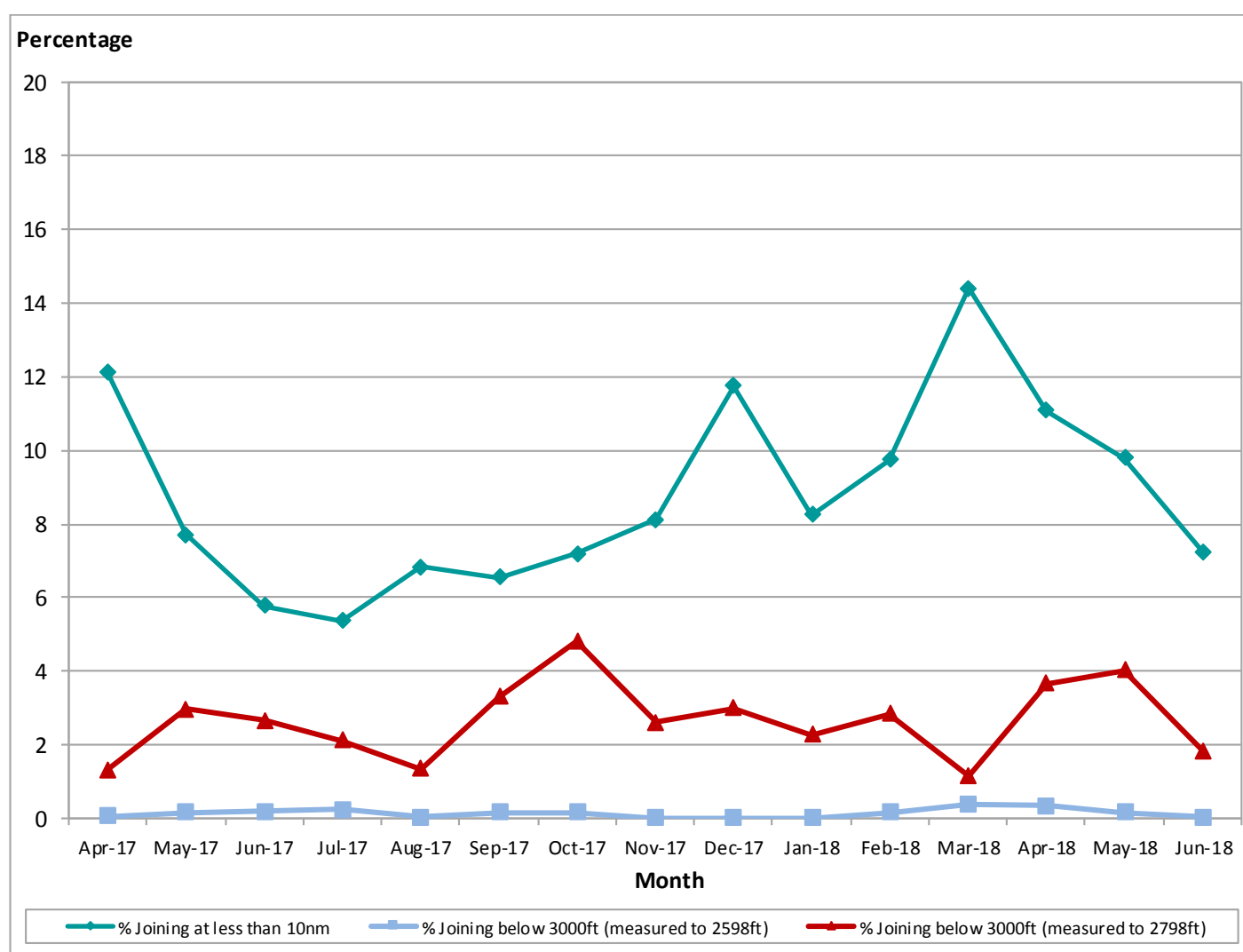
a) below 3000ft, or

b) closer than 10nm from touchdown.

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

During the standby runway operations, usually during the night period during maintenance of the main runway, as the threshold is in a different location than the main runway, a different radar map is used for the extended centreline, so the 10 nautical mile (nm) marker is in a slightly different location. As we are complying with 10nm on the standby runway, this may be flagged as a join inside 10nm on the main runway. This means the percentage joining below 10nm may be slightly higher in recent months as there has been an increased use of standby runway operations at night.

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



N.B. 3,000ft (Gatwick QNH) – 202ft (airfield elevation) = 2,798ft on Airports Noise & Track Keeping System

3,000ft (Gatwick QNH) – 202ft (airfield elevation) – 200ft ATC radar tolerance = 2,598ft on Airports Noise & Track Keeping System

# Go-Around Statistics 2004 - 2018

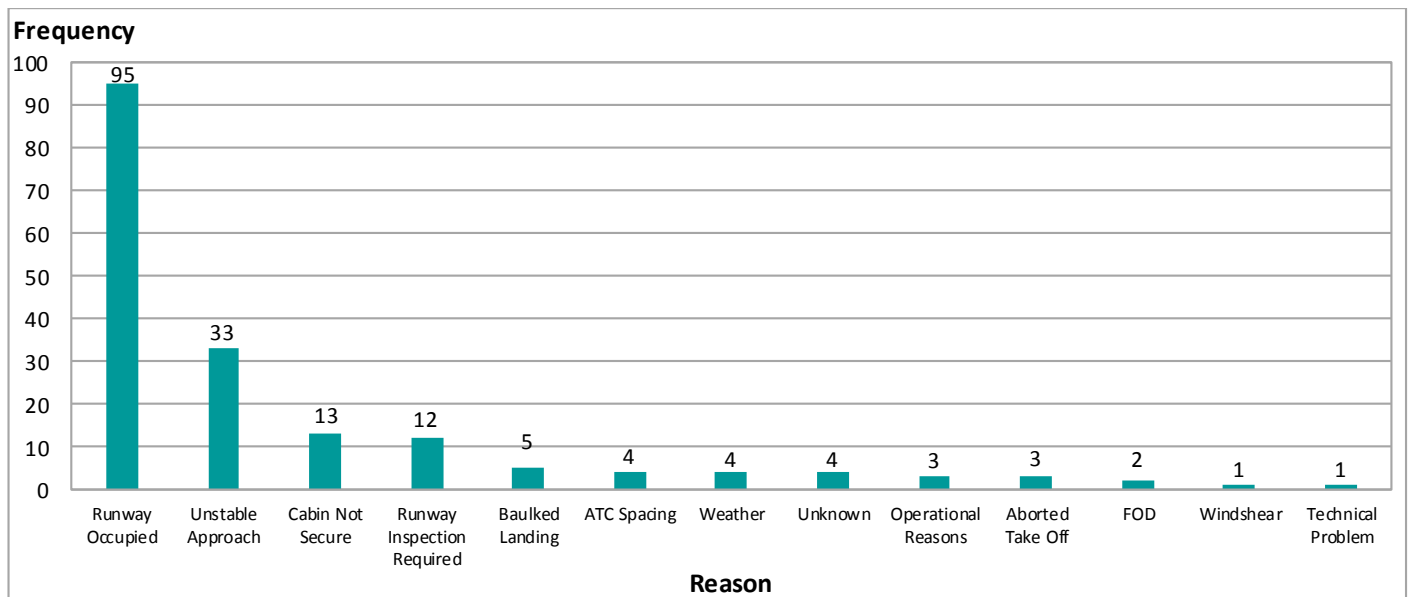
A go-around is a procedure adopted when an arriving aircraft on final approach aborts landing by applying take-off power and climbing away from the airport. It is a set procedure to be followed by the flight crew in the event of an aircraft being unable to land. The procedure is published so that Air 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.

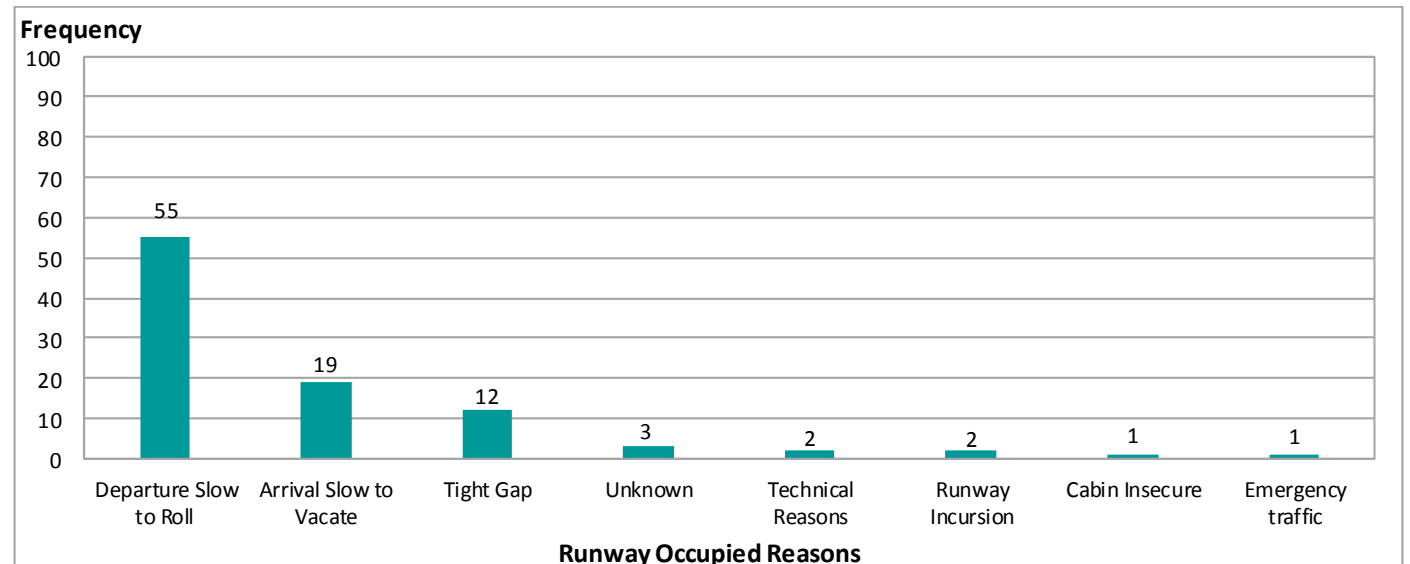
The number and reasons for go-arounds are routinely discussed at FLOPSC meetings and Pilot Forums. All parties are focussed on minimising the number of occasions when a go-around is required, but expect some to occur given the fact that Gatwick is a busy single runway airport.

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.

## ANS CURRENTLY RECORD GO-AROUNDS UNDER ONE OF THE FOLLOWING CAUSAL FACTORS (APRIL - JUNE 2018)



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

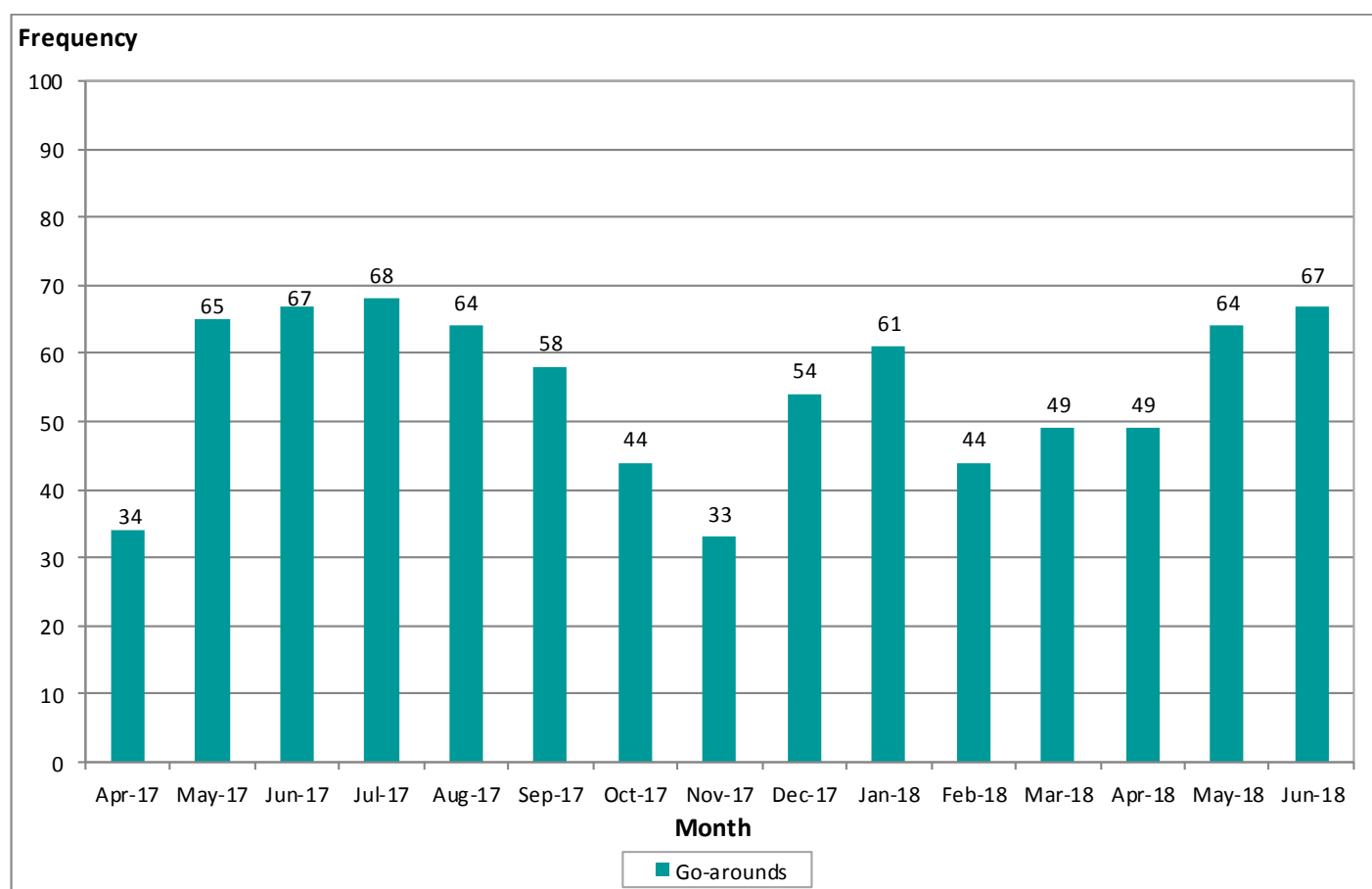




THE TABLE BELOW ILLUSTRATES GO-AROUND STATISTICS 2004 – 2018

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
2018 (Jan-Jun)	334	67975	0.49

THE GRAPH BELOW ILLUSTRATES TOTAL NUMBER OF GO-AROUNDS PER MONTH (APRIL – JUNE 2018)



# 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 new restrictions on night flying came into force in October 2017, to remain in force until 2022 for all the London airports. At Gatwick, the new regime will maintain the status quo for movements and quota count (QC) until the winter season in 2018/19. This will see a reduction in the QC limit and a new QC value of 0.125 applied to some aircraft which are currently exempt. As of October 2017, all aircraft movements have counted towards the night quota limit, including those previously exempt which will carry a QC value of zero. This will further incentivise the use of quieter aircraft as an airport can continue the use of its movement allowance but the average noise produced by an aircraft cannot increase.

## RESTRICTIONS

Winter	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22
Movements	3250	3250	3250	3250	3250	3250
Limits						
Quota Points	2000	2000	1785	1785	1785	1785

Summer	2017	2018	2019	2020	2021	2022
Movements	11200	11200	11200	11200	11200	11200
Limits						
Quota Points	6200	6200	5150	5150	5150	5150

Overleaf is a mid-season report for Summer 2018 which commenced at 01:00 on the 25<sup>th</sup> March 2018 and will end at 02:00 on the 28<sup>th</sup> October 2018. The total number of movements available for the Summer season is 11525.

## 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 were 293 dispensations applied during the Summer 2018 season. The reasons are as follows:

- 127 granted due to adverse weather conditions.
- 46 granted due to Marseille ATC strike 9<sup>th</sup> to 11<sup>th</sup> June.
- 39 granted due to French ATC strike 21<sup>st</sup> to 23<sup>rd</sup> May.
- 31 granted due to EXCDS.
- 22 granted due to low visibility conditions.
- 10 granted due to Marseille ATC strike 23<sup>rd</sup> to 25<sup>th</sup> June.
- 6 granted due both ANS staff shortages and EXCDS.
- 6 granted due to a failure of the Enhanced Tactical Flow Management System.
- 6 granted due to Marseille ATC strike 5<sup>th</sup> to 7<sup>th</sup> May.

## 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.

## London Gatwick

### AIRPORT MOVEMENTS and QUOTA SUMMARY to WEEK 14 (25 MARCH 2018 to 30 JUNE 2018 inc.)

Season Quota Points Limit	6200	Season Movement Limit	11200
Carry over	200	Carry over	325
Total Quota Points Allowed	6400	Total Movements Allowed	11525

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	31/03/2018	10	120	49	18	1	0	0	0	74.50	198	0	0	0	172	86.9	26	13.1	198
2	07/04/2018	11	127	57	18	0	0	0	0	78.25	213	7	0	0	192	87.3	28	12.7	220
3	14/04/2018	12	137	56	10	1	0	0	0	74.25	216	36	0	0	227	90.1	25	9.9	252
4	21/04/2018	7	136	57	18	0	0	0	0	80.50	218	0	0	0	187	85.8	31	14.2	218
5	28/04/2018	9	147	56	22	1	0	0	0	88.75	235	0	0	0	205	87.2	30	12.8	235
6	05/05/2018	16	159	69	20	3	0	0	0	100.25	267	1	0	0	238	88.8	30	11.2	268
7	12/05/2018	9	141	92	32	1	0	0	0	115.25	275	5	0	0	244	87.1	36	12.9	280
8	19/05/2018	7	184	89	30	3	0	0	0	126.50	313	0	0	0	276	88.2	37	11.8	313
9	26/05/2018	13	178	104	26	3	0	0	0	128.50	324	62	0	0	339	87.8	47	12.2	386
10	02/06/2018	14	237	103	34	3	0	0	0	150.75	391	126	0	0	446	86.3	71	13.7	517
11	09/06/2018	12	252	123	42	4	0	0	0	174.50	433	7	0	0	381	86.6	59	13.4	440
12	16/06/2018	10	248	122	44	1	0	0	0	169.00	425	39	0	0	403	86.9	61	13.1	464
13	23/06/2018	10	249	123	41	4	0	0	0	172.75	427	2	0	0	366	85.3	63	14.7	429
14	30/06/2018	2	282	124	27	3	0	0	0	165.50	438	8	0	0	392	87.9	54	12.1	446
<b>TOTALS</b>		<b>142</b>	<b>2597</b>	<b>1224</b>	<b>382</b>	<b>28</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1699.25</b>	<b>4373</b>	<b>293</b>	<b>0</b>	<b>0</b>	<b>4068</b>	<b>87.2</b>	<b>598</b>	<b>12.8</b>	<b>4666</b>

Quota Points Available	4700.75	Movements Available	7152
Quota % Points Used	26.6	Movements % Used	37.9

Note 1 Not Cont'd Delays  
Note 2 Not Cont'd Gov't  
Note 3 Not Cont'd Emerg

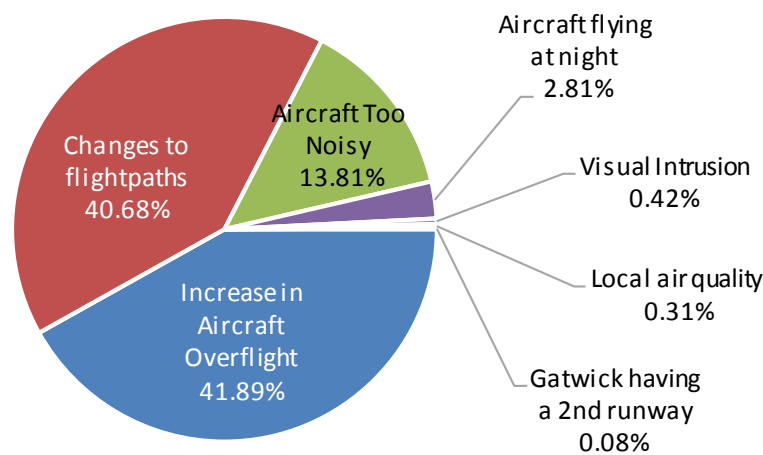
Delays likely to lead to serious congestion and delays resulting from widespread disruption of Air Traffic.  
Exemptions granted by Gov't (VIP Passengers, Emergency Relief).  
Emergency Take-offs and Landing

# Noise Complaints

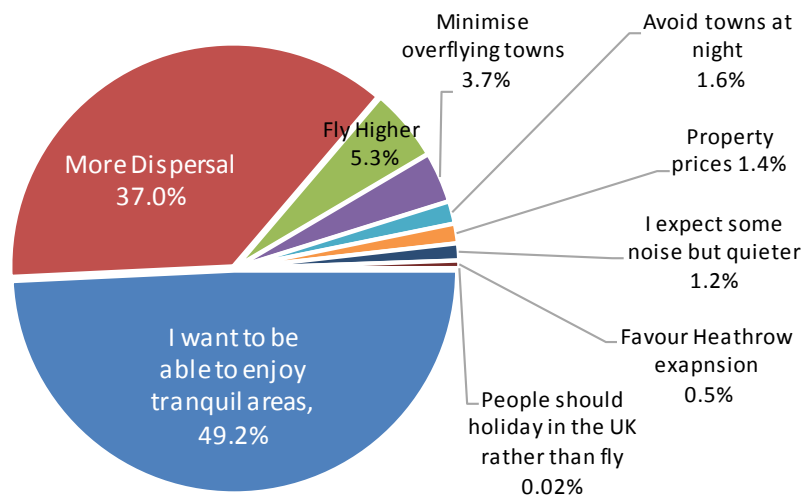
It is important that we understand the issues of noise disturbance from individuals and communities who live around the airport. By studying the complaints we receive and by communicating with the affected towns and villages surrounding the Airport, we believe that this gives us a greater understanding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

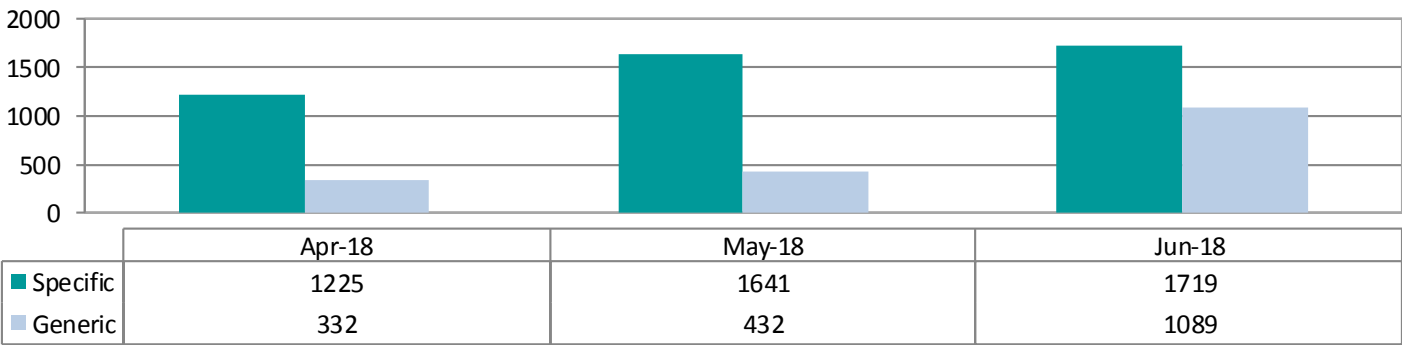
PERCENTAGE OF COMPLAINT OBSERVATIONS MOST AGREED WITH



PERCENTAGE OF COMPLAINT CONCERNS MOST AGREED WITH



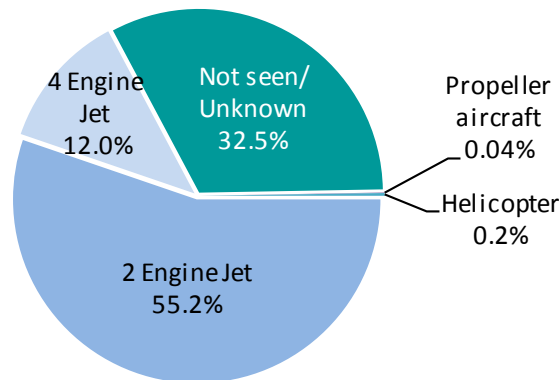
COMPLAINTS RECORDED BY MONTH



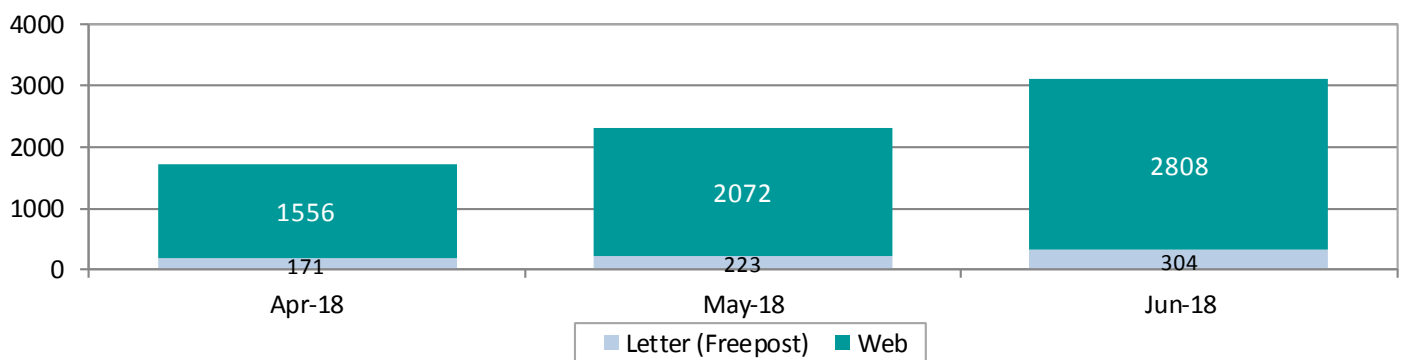
Noise is very subjective and can affect people in different ways. Some people can tolerate a certain noise level whilst it can cause disturbance to others. As well as identifying the issues of noise, it is important to understand the location of each individual complaint.

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

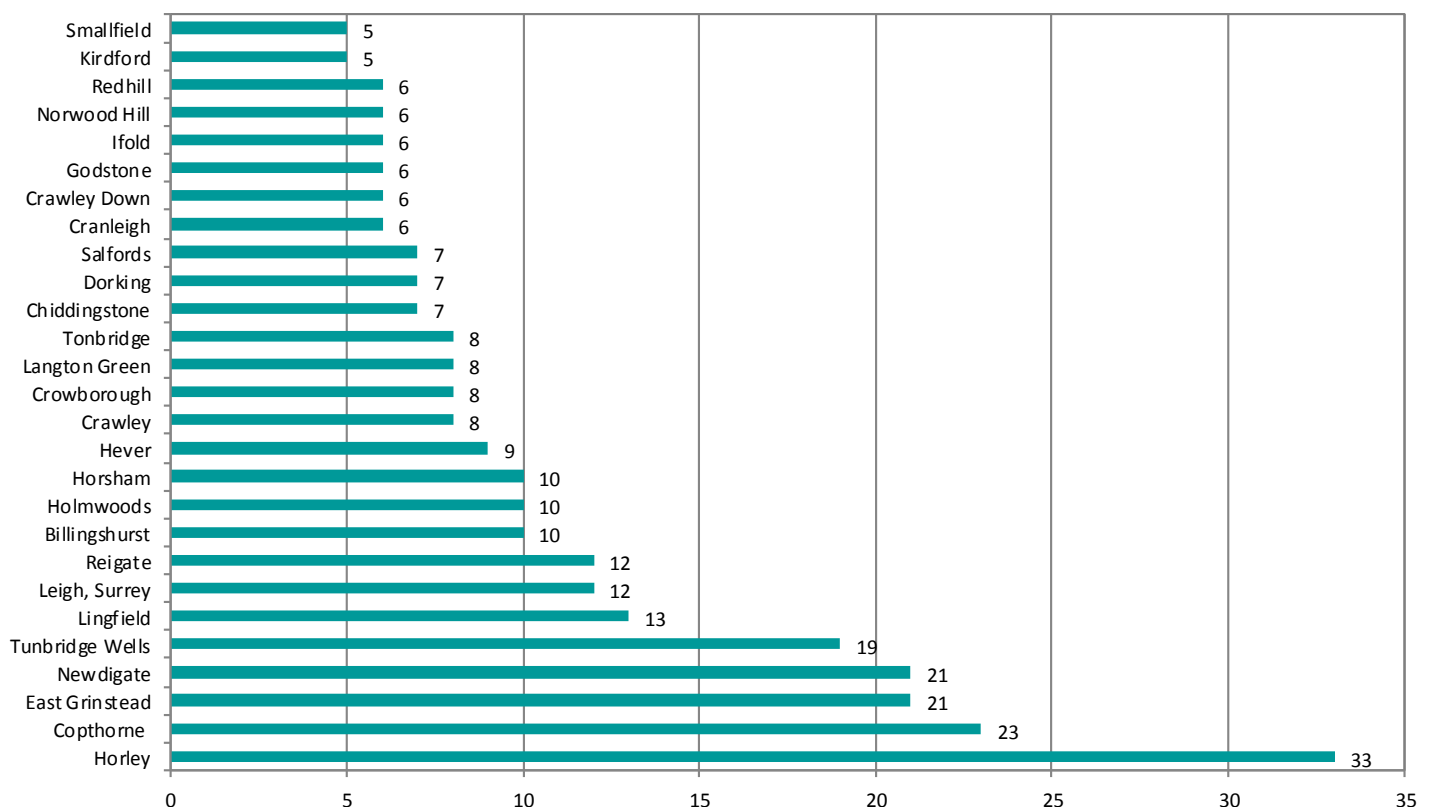
### CATEGORIES OF AIRCRAFT TYPES FROM SPECIFIC COMPLAINTS



### METHOD OF COMPLAINT

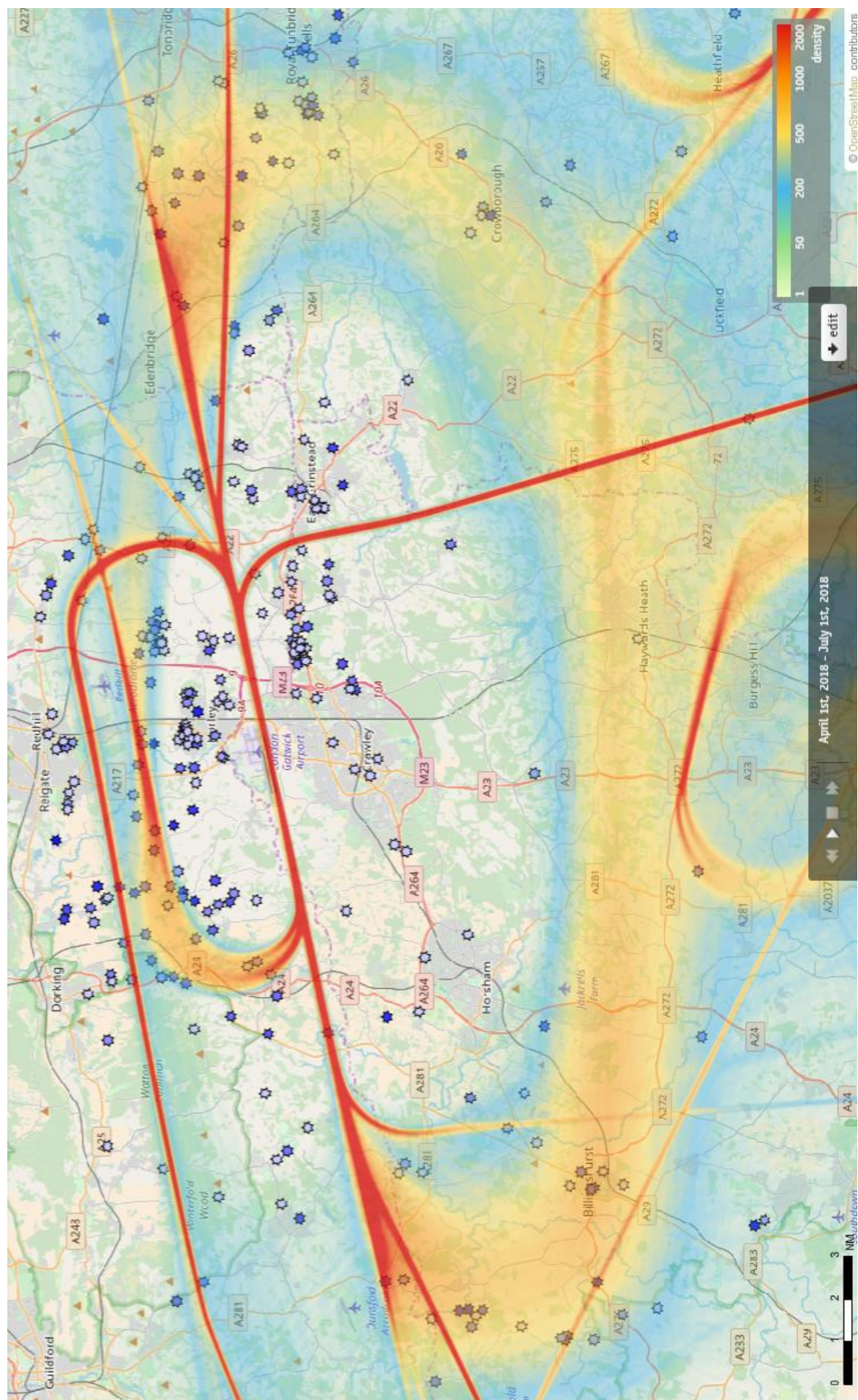


### NUMBER OF INDIVIDUAL COMPLAINANTS BY TOWN/VILLAGE





THE MAP BELOW ILLUSTRATES THE LOCATION OF NOISE COMPLAINTS RECEIVED BETWEEN APRIL - JUNE 2018









# Ground Noise Complaints

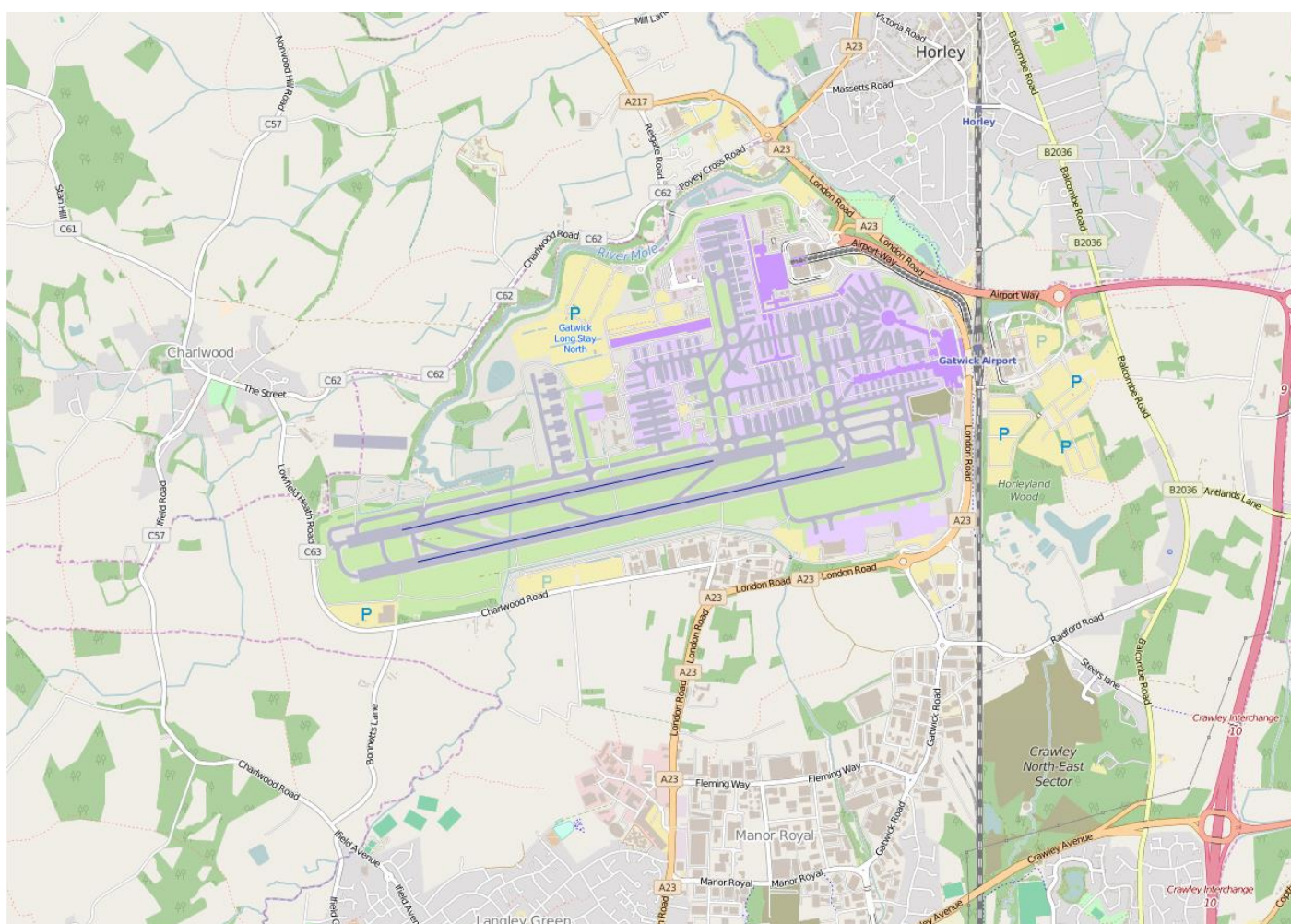
We occasionally receive complaints about disturbance from noise from within the boundary of the airfield. These can be caused by the normal operation of aircraft moving about the airfield, taking off and landing. Additional sources of noise disturbance can be the use of Auxiliary Power Units (APU) by 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

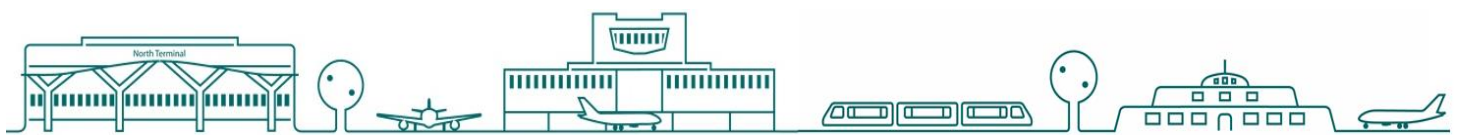
**QNH** – The barometric pressure at sea level (QFE is the barometric pressure at the Airport).

**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 2018)



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, a report on night flying during the period, and an analysis of noise complaints received during the period.

## KEY MONITORING INDICATORS

Parameter		12 month performance averages <sup>1</sup>			
		Year to date (2018) <sup>6</sup>	Previous year (2017)	2011	2006
Track keeping performance (% on track) <sup>2</sup>	▲	98.20%	98.21%	97.47%	98.17% <sup>3</sup>
24hr CDO (% achievement) <sup>4</sup>	▲	90.70%	90.43%	90.49%	80.79%
Day/Shoulder CDO (% achievement)	▲	90.86%	90.40%	90.19%	79.9%
Core night CDO (% achievement)	▼	88.93%	90.77%	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	▲	851	1233	343	587
Total noise complaints received <sup>5</sup>	▲	22111	24716	2673	4791
Enquiry response performance target is 95% within 8 days (July to September 2018)	▲	99.97%	86.32%	KPI 95%	
West/East Runway Split (%)	-	69/31	69/31	67/33	68/32

<sup>1</sup> The colour indicates the most recent 12 month performance compared to the 2011 baseline, 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. It is important to note that since January 2018, complaints which have been deleted from the Casper system are no longer counted in the complaint statistics when they had been previously. Complaints are only deleted if they contain abusive, obscene or threatening language.

<sup>6</sup> It should be noted that there were two separate NTK radar outages to the Casper flight tracking system which occurred between the 11th and 12th July 2018 and between 10th and 13th August 2018 inclusive. As a result of these outages, data has been omitted from the statistics for these dates and so these figures may not be exact for the period. Complaint data is unaffected.



# Executive Summary

## Performance Headlines

### AIRPORT OPERATIONS

Between 1<sup>st</sup> July and 30<sup>th</sup> September 2018, there were a total of 77,569 (figures altered due to NTK radar outage, see footnote page 2) fixed wing aircraft movements at Gatwick. This is a decrease in traffic of approx. 2% compared to the same period in 2017. The direction of operation, which is determined by wind direction, was 75% on the westerly runway and 25% 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.

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

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

The standby runway is normally only utilised during the night when maintenance is carried out on the main runway. During these three months, there were a total of 1,109 movements from the standby runway.

### TRACK KEEPING

Track keeping performance for 2018 has reduced by 0.01% 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 continues to engage with the airlines directly and through the Flight Operations Performance and Safety Committee (FLOPSC) on a range of initiatives to increase 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 FPT 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 also 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 noise monitors located at either end of the runway, there are currently mobile noise monitors deployed at sites in Lingfield, Rusper, Cowden, Charlwood and South Holmwood. The Oakwood Hill monitor was removed in July 2018.

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 the Airport. The noise monitors provide a method of monitoring and recording noise levels 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 in 2018 has decreased compared to the previous twelve months as well as the number of complainants which has also 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 standby runway, and the community issues related to the Route 4 amendment. These may be contributing factors for the number of complaints in 2018.

The postcode areas with the greatest number of complaints during the three month period were Outwood, Horley and Newdigate. The number of individual complainants between July and September was **469**. 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

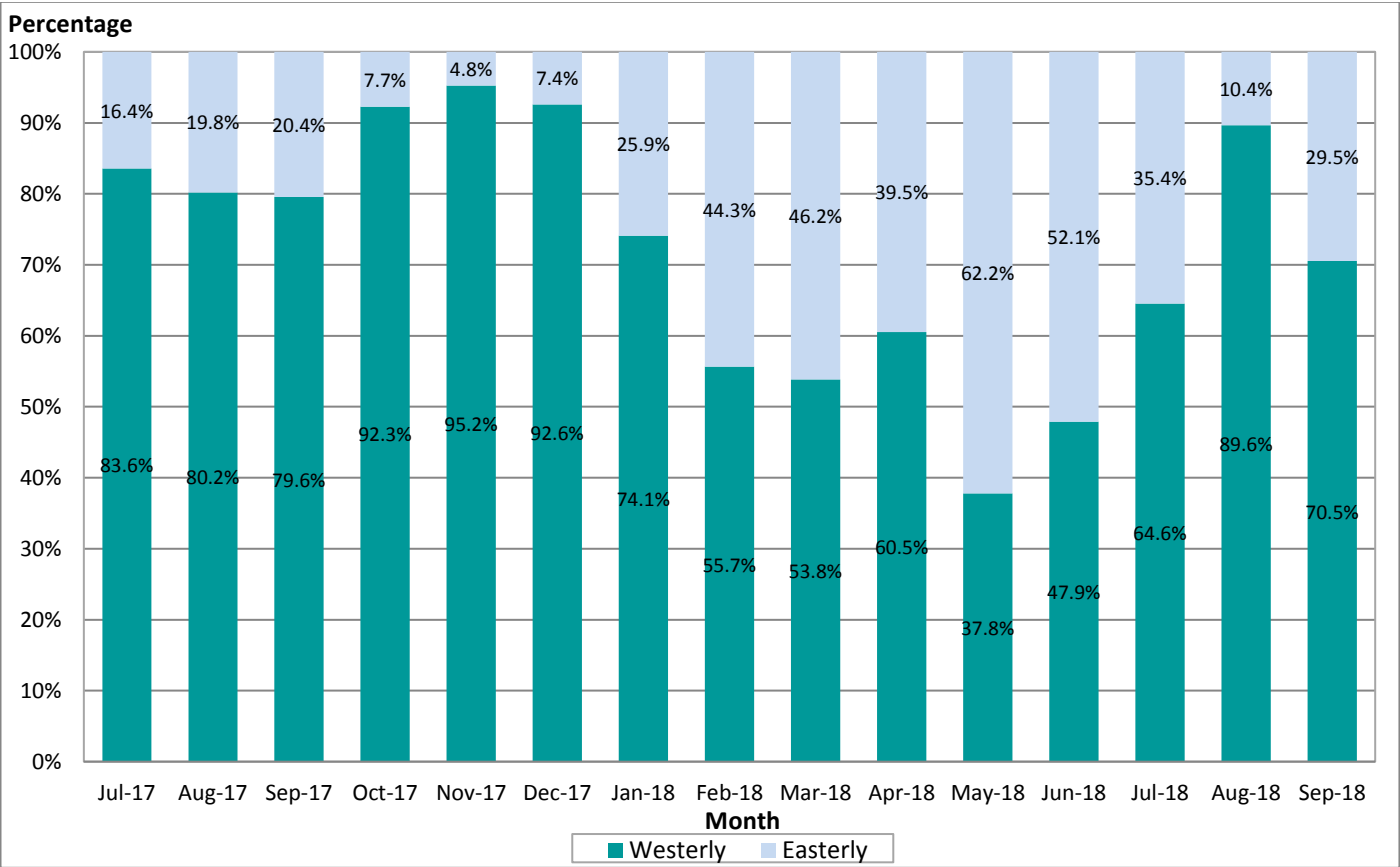
The graph below represents the direction of runway operations at Gatwick. Aircraft operating in a westerly direction take off towards the west and land from the east. Aircraft operating in an easterly direction take off towards the east and land from the west.

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 2017 - SEPTEMBER 2018)



# 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 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 system. For example, the requirement to join the ILS at 3,000ft would equate to 2,798ft.

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	2013	0
2007	13	2014	0
2008	2	2015	0
2009	0	2016	0
2010	0	2017	0
2011	0	2018	0
2012	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	2013	0
2007	2	2014	0
2008	2	2015	0
2009	1	2016	1
2010	0	2017	2
2011	4	2018	0
2012	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 monitoring period.

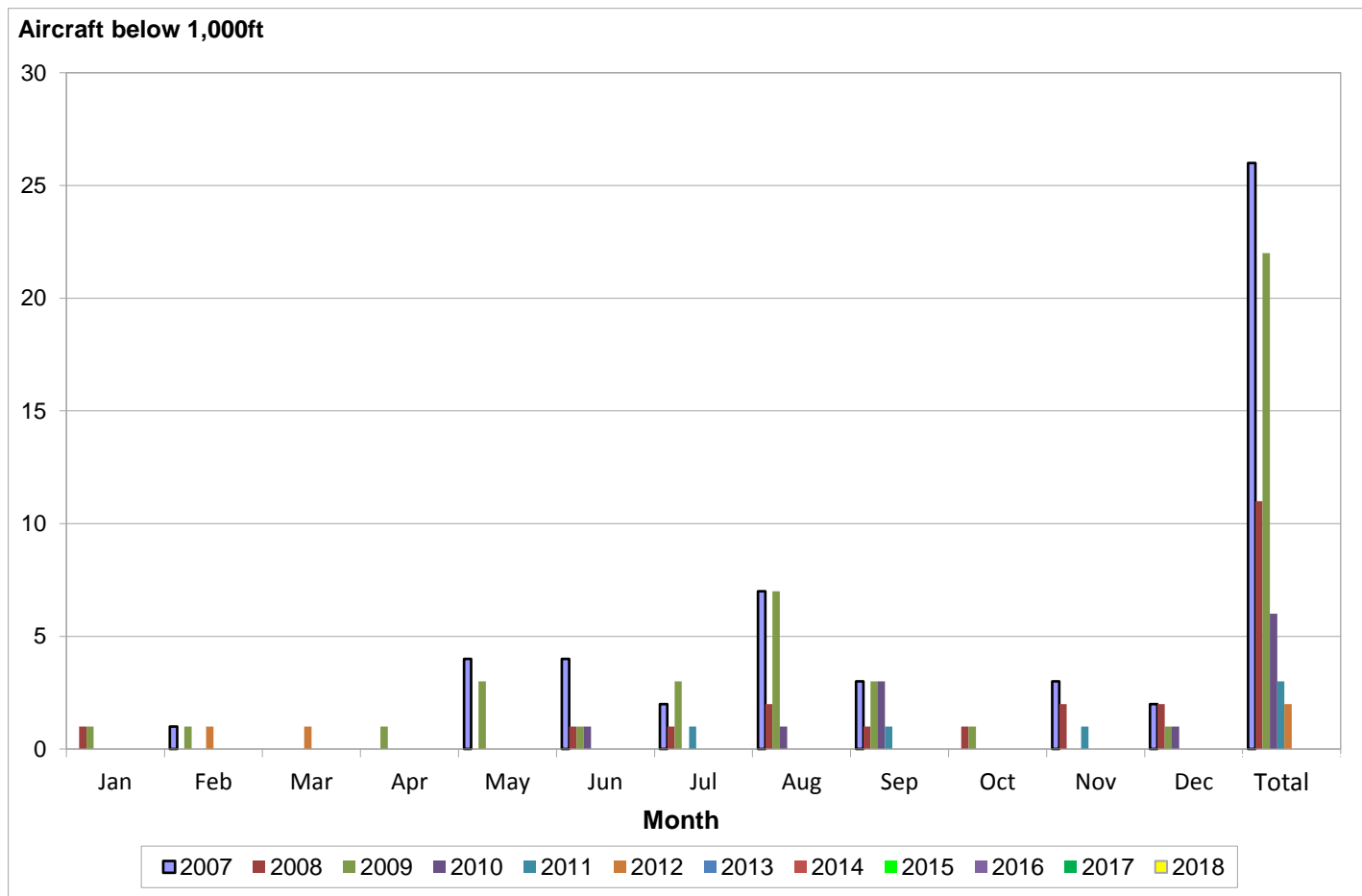
Historically, the summer months are typically the peak period for aircraft failing to meet the 1,000ft requirement, primarily due to the warmer weather which reduces aircraft climb performance.

## 1,000ft INFRINGEMENT TABLE

Year	Total Infringements	Year	Total Infringements
2006	11	2013	0
2007	26	2014	0
2008	11	2015	0
2009	22	2016	0
2010	6	2017	0
2011	3	2018	0
2012	2		

## THE GRAPH BELOW ILLUSTRATES 1,000ft INFRINGEMENT PERFORMANCE

### Initial Climb Performance





# Departures – Track Keeping

All jet aircraft leaving Gatwick Airport should follow an initial flight path known as a Noise Preferential Route (NPR) 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). As long as aircraft remain within the boundaries of this corridor, they are deemed to be on-track. A map illustrating the Noise Preferential Routes at Gatwick is available overleaf.

Air Traffic Control (ATC) are responsible for the routing of aircraft once airborne and when 3,000ft or 4,000ft has been reached, they may give a flight a more direct heading. This procedure is known as vectoring off of 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 flagged and details are sent to the airline for investigation. 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, which 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 with a P-RNAV departure SID on this route were not classified as off-track as they were following the published route.

Following the introduction of P-RNAV in 2014, the CAA conducted a Post Implementation Review (PIR) on all the routes. The Review 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 Route 4 P-RNAV SID's were not included. Following the PIR and consultation, the CAA concluded that the modified Route 4 SID's achieve a satisfactory replication of the nominal track of the corrected conventional SID and confirmed the P-RNAV SID designs currently published in the UK AIP as permanent.

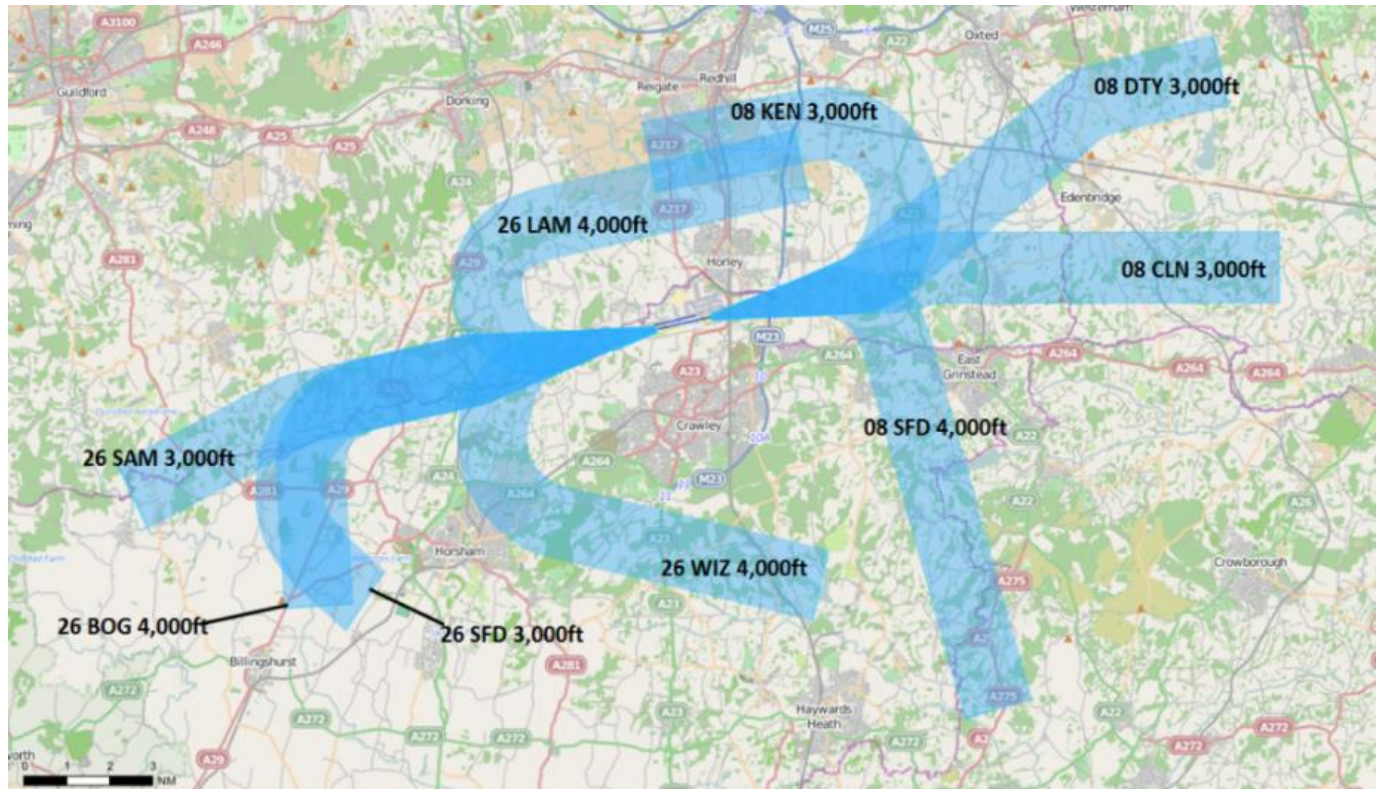
Following the quashing of the CAA's April 2017 decision by consent, Gatwick are working to revert the Route 4 conventional SID's to their position as they were before 7th April 2017. In support of this, Gatwick completed a comprehensive safety review. Following validation by an independent Instrument Flight Procedure Designer, the changes were submitted to the CAA for approval in May 2018. (Note: this will not change the distribution of traffic).

Route 4 P-RNAV SIDs will remain in place but have reverted to a temporary status, as was the case prior to the CAA's decision in April 2017. A redesign of the Route 4 P-RNAV SIDs will be necessary through the development of a new Route 4 airspace change proposal. We continue to work hard to implement the necessary changes to ATC systems and the aeronautical publications although this is currently being delayed due to CAA resource availability.

The airport is focused on following the correct procedure taking into account the various relevant factors to achieve an end result as soon as possible. This requires rigorous legal process and does however mean that a final outcome is likely to take up to two years to achieve. An airspace change proposal will be developed in due course and will be consulted widely so communities will have the opportunity to contribute and influence.

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. 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. Gatwick is still awaiting a decision from the CAA regarding its status.

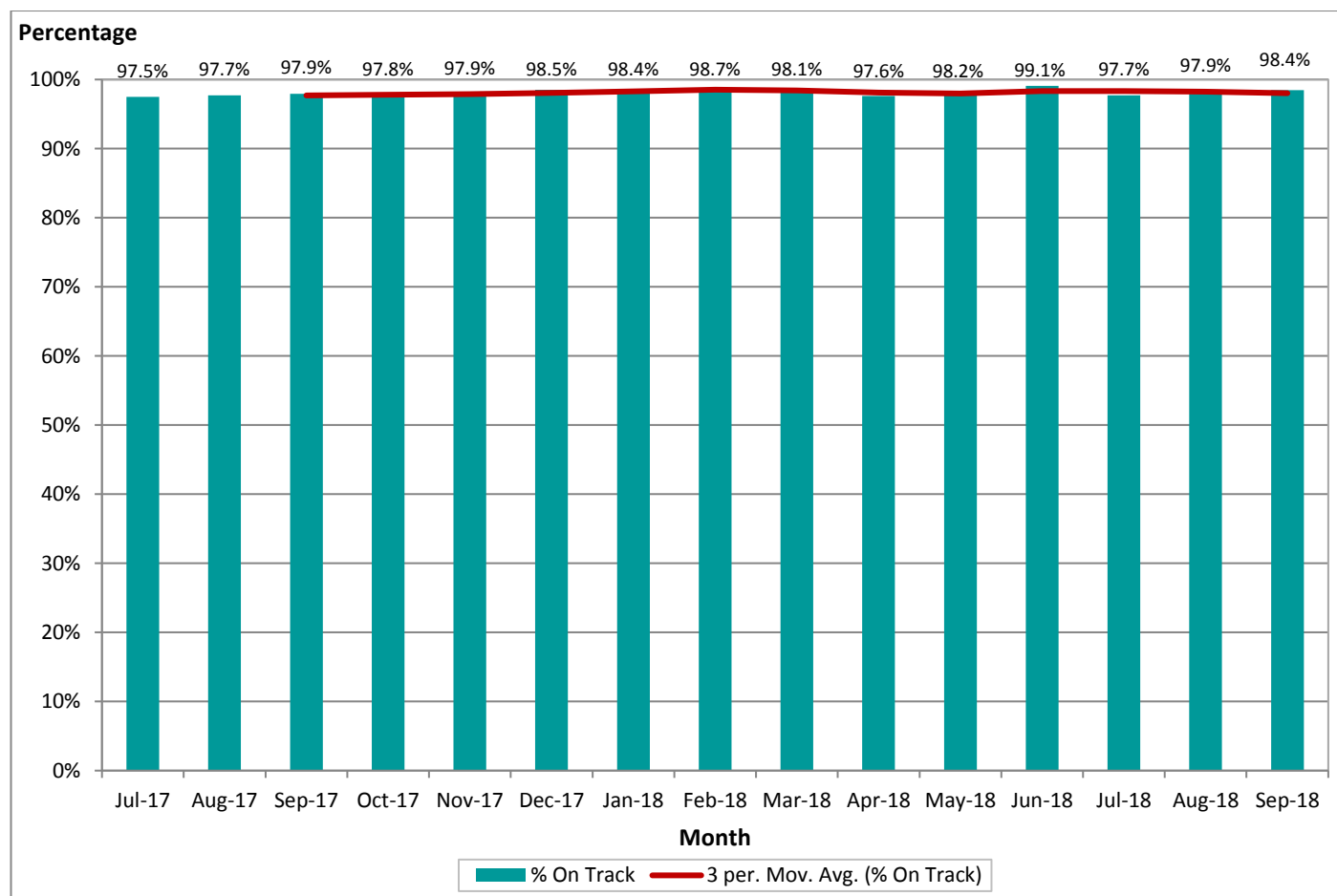
THE MAP BELOW ILLUSTRATES THE NOISE PREFERENTIAL ROUTES USED BY DEPARTING AIRCRAFT WITH MINIMUM VECTORING ALTITUDE FIGURES



THE TABLE BELOW ILLUSTRATES TRACK KEEPING PERFORMANCE OVER 15 MONTHS

Month	Total			Westerly			Easterly		
	Deviations	Departures	%	Deviations	Departures	%	Deviations	Departures	%
Jul-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%
Jan-18	150	9546	1.57%	142	7004	2.03%	8	2542	0.31%
Feb-18	127	9577	1.33%	123	5370	2.29%	4	4207	0.10%
Mar-18	211	11065	1.91%	196	5930	3.31%	15	5135	0.29%
Apr-18	281	11715	2.40%	266	7111	3.74%	15	4604	0.33%
May-18	226	12788	1.77%	122	7937	1.54%	104	4851	2.14%
Jun-18	120	13301	0.90%	99	6428	1.54%	21	6873	0.31%
Jul-18	300	13029	2.30%	288	8829	3.26%	12	4200	0.29%
Aug-18	253	12323	2.05%	249	10866	2.29%	4	1457	0.27%
Sep-18	209	13472	1.55%	202	9505	2.13%	7	3967	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.

**Comment:** During the three month period, there were no unusual tracks identified.



# Departures – Over Congested Areas

## THE WIZAD NOISE PREFERENTIAL ROUTE

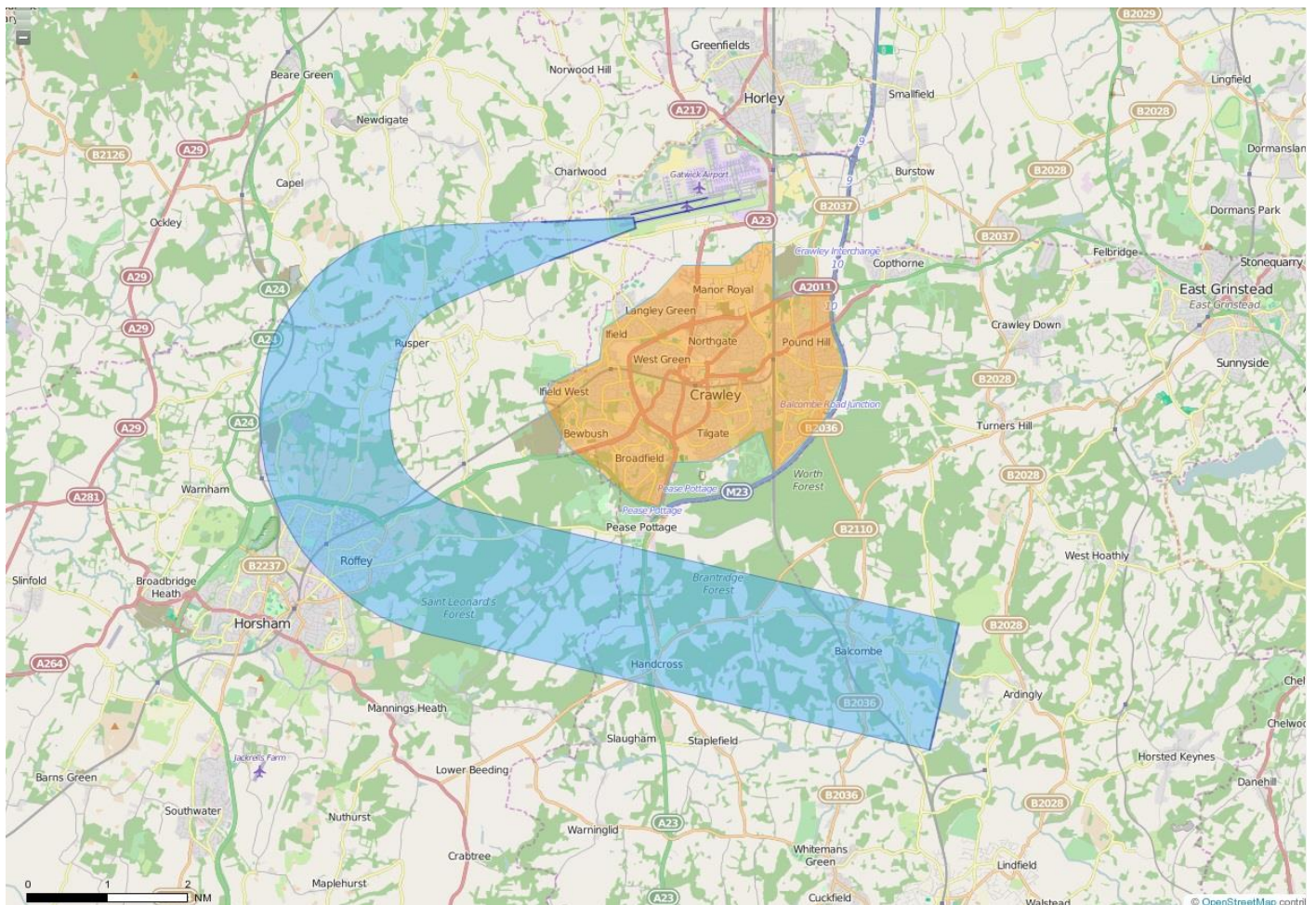
The WIZAD Noise Preferential Route (26WIZ or Route 9) was designated by the Government at the same time as all other Gatwick departure routes; however, it is not used on an equal basis with the other routes. It is a Tactical Offload Route and is not usually offered as part of a flight path. If the 26LAM 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 9 departures during the restricted period (2300-0700 hours local) on the '26 WIZAD' Noise Preferential Route. According to ANS, these SID's were given due to adverse weather and thunderstorms in the vicinity to reduce traffic congestion.

## 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.*

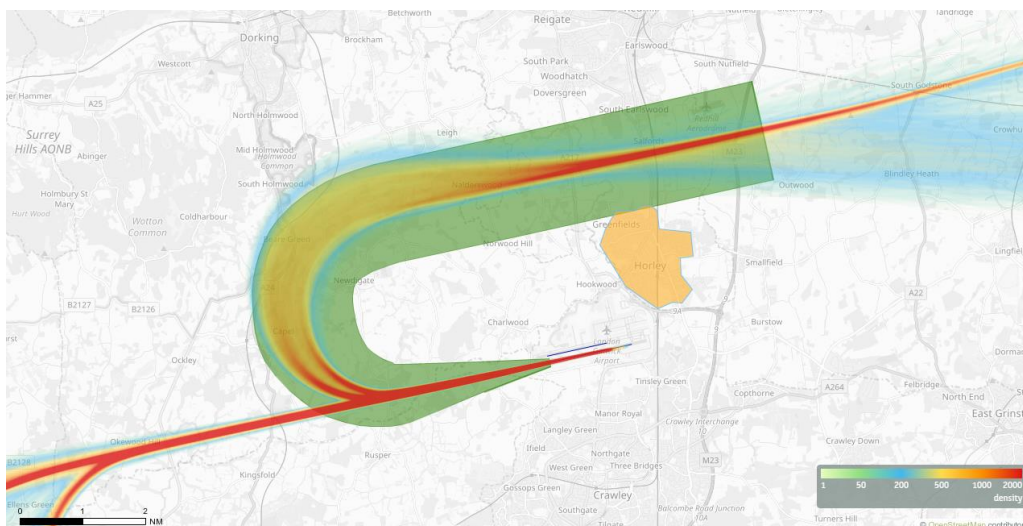
This is to avoid aircraft noise from departing aircraft over areas of high population.

**Comment:** During this period, there were no departing flights that passed over Crawley. 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 current construction of the Route 4 SID's is of the 'course to fix' type which determines the course to fly terminating at a waypoint whereas the 'radius to fix' specifies the curved path defined by radius, arc

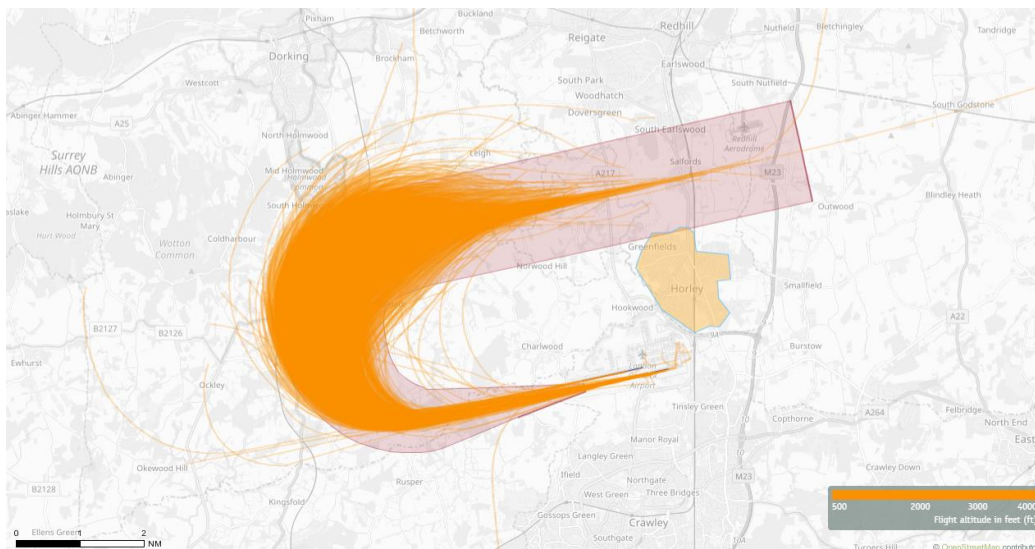
length and fix with the angle of bank being varied to achieve the specified path. Accelerating to a fixed speed in times of strong south westerly winds (2000' wind >25kts) can exceed the aircraft's authorised limits. This leads to a variance between different aircraft types and operators and therefore, some aircraft fly further north or south than others. The wind and weather (e.g. thunderstorms) also has an effect on the headings of aircraft which may result in direct overflight of Horley.

**It should be noted that the Casper NTK system experienced two radar outages between 11<sup>th</sup> and 12<sup>th</sup> July and 10<sup>th</sup> and 13<sup>th</sup> August inclusive which means data has had to be omitted from the figures for these dates.**

**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**

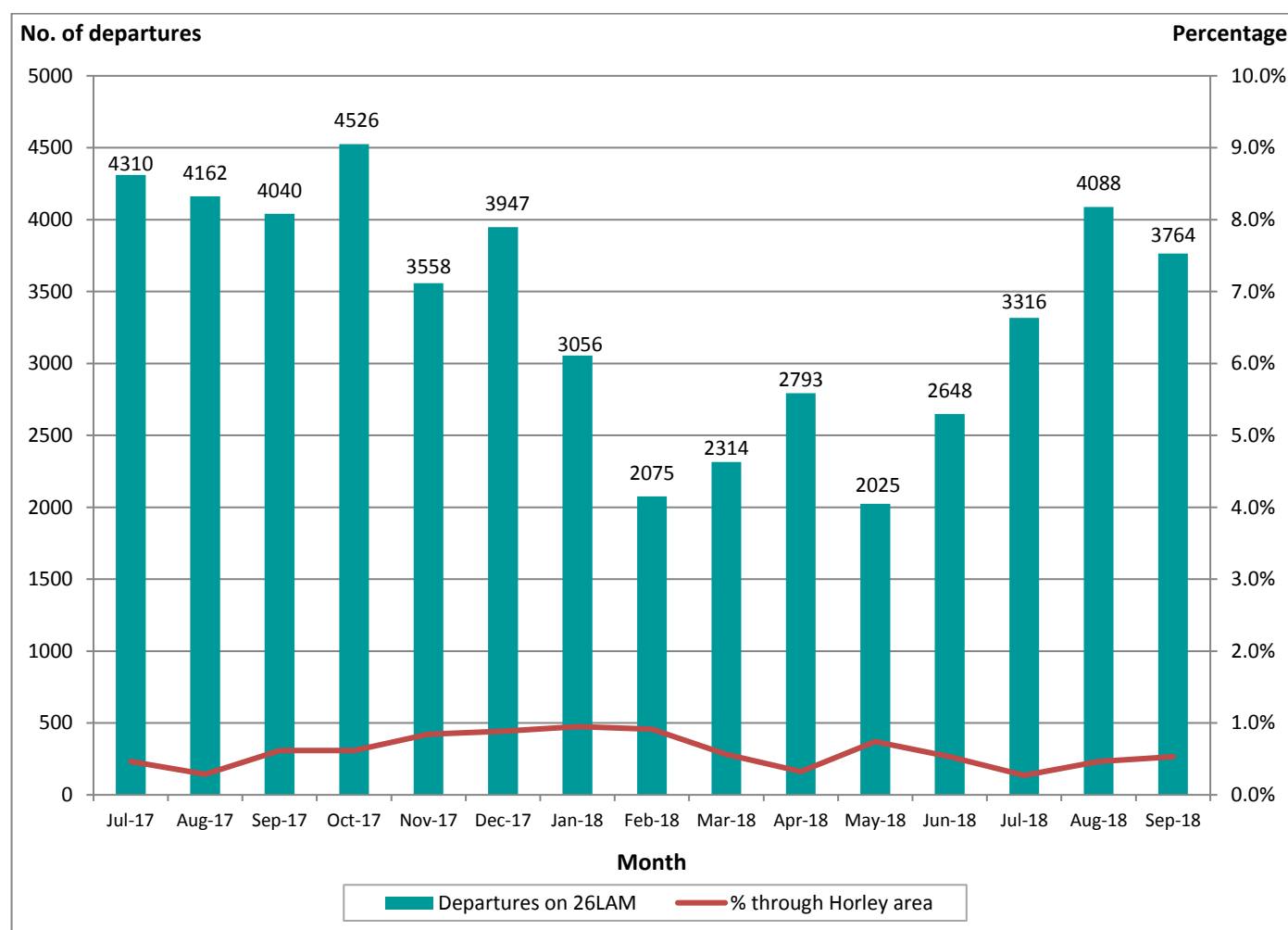




THE TABLE BELOW ILLUSTRATES THE ANALYSIS OF HORLEY OVERFLIGHT

Month	Departures on 26LAM	Horley gate passes	% through Horley gate	Month	Departures on 26LAM	Horley gate passes	% through Horley gate	Month	Departures on 26LAM	Horley gate passes	% through Horley gate
Jan-16	3031	70	2.31%	Jan-17	2004	19	0.95%	Jan-18	3056	29	0.95%
Feb-16	2449	58	2.37%	Feb-17	2391	22	0.92%	Feb-18	2075	19	0.92%
Mar-16	2282	67	2.94%	Mar-17	3385	10	0.30%	Mar-18	2314	13	0.56%
Apr-16	3018	91	3.02%	Apr-17	3307	15	0.45%	Apr-18	2793	9	0.32%
May-16	2114	51	2.41%	May-17	2347	9	0.38%	May-18	2025	15	0.74%
Jun-16	2922	173	5.92%	Jun-17	4075	26	0.64%	Jun-18	2648	14	0.53%
Jul-16	4968	420	8.45%	Jul-17	4310	20	0.46%	Jul-18	3316	9	0.27%
Aug-16	4099	355	8.66%	Aug-17	4162	12	0.29%	Aug-18	4088	19	0.46%
Sep-16	4409	210	4.76%	Sep-17	4040	25	0.62%	Sep-18	3764	20	0.53%
Oct-16	1719	61	3.55%	Oct-17	4526	28	0.62%	Oct-18	-	-	-
Nov-16	2072	79	3.81%	Nov-17	3558	30	0.84%	Nov-18	-	-	-
Dec-16	2463	14	0.57%	Dec-17	3947	35	0.89%	Dec-18	-	-	-

THE GRAPH BELOW ILLUSTRATES THE ANALYSIS OF HORLEY OVERFLIGHT



# Arrivals – Continuous Descent Operations (CDO)

A Continuous Descent Operation (CDO) (also 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, thus there are no sanctions against pilots or airlines that fail to comply with these 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

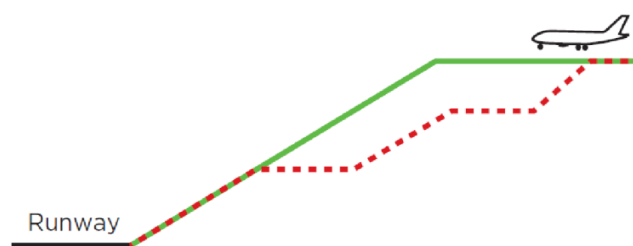
The following text appears in the UK AIP Noise Abatement Procedures for Gatwick Airport:

**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.

**It should be noted that the Casper NTK system experienced two radar outages between 11<sup>th</sup> and 12<sup>th</sup> July and 10<sup>th</sup> and 13<sup>th</sup> August inclusive which means data has had to be omitted from the figures for these dates.**

Due to the increase in the usage of the standby runway operations during the core night period, this can have an impact on the CDO performance during this time.



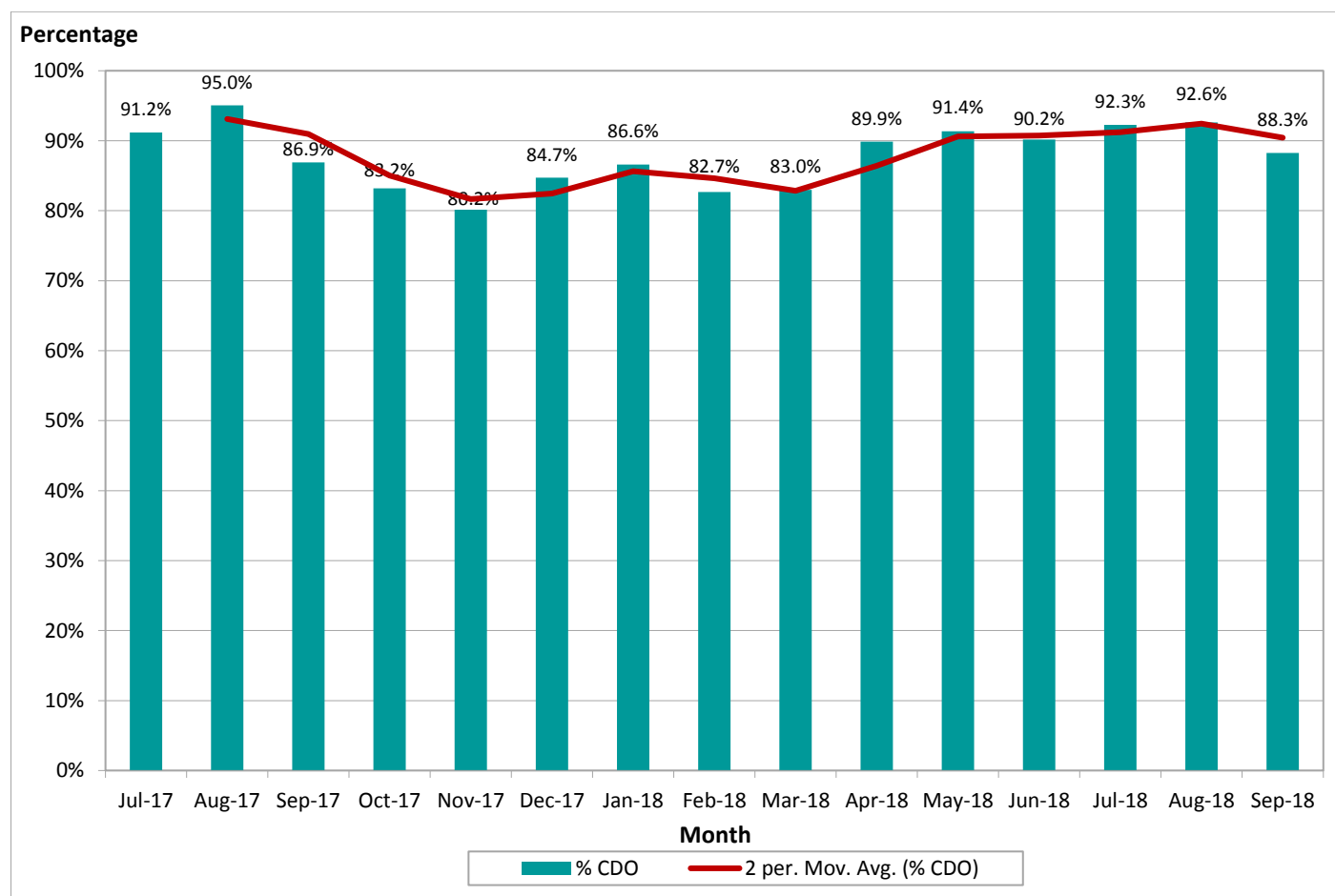


## CORE NIGHT PERIOD (2330-0600)

THE TABLE BELOW ILLUSTRATES THE BREAKDOWN OF THE CDO ACHIEVEMENT DURING THE CORE NIGHT PERIOD

Month	All Arrivals			08 Easterly Arrivals			26 Westerly Arrivals		
	Total	Non CDO	% CDO	Total	Non CDO	% CDO	Total	Non CDO	% CDO
<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%
<b>Jan-18</b>	291	39	86.60%	91	11	87.91%	200	28	86.00%
<b>Feb-18</b>	300	52	82.67%	150	21	86.00%	150	31	79.33%
<b>Mar-18</b>	547	93	83.00%	254	36	85.83%	293	57	80.55%
<b>Apr-18</b>	890	90	89.89%	425	23	94.59%	465	67	85.59%
<b>May-18</b>	1331	115	91.36%	841	60	92.87%	490	55	88.78%
<b>Jun-18</b>	1667	164	90.16%	945	63	93.33%	722	101	86.01%
<b>Jul-18</b>	1755	136	92.25%	502	45	91.04%	1253	91	92.74%
<b>Aug-18</b>	1561	115	92.63%	173	8	95.38%	1388	107	92.29%
<b>Sep-18</b>	1569	184	88.27%	526	51	90.30%	1043	133	87.25%

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

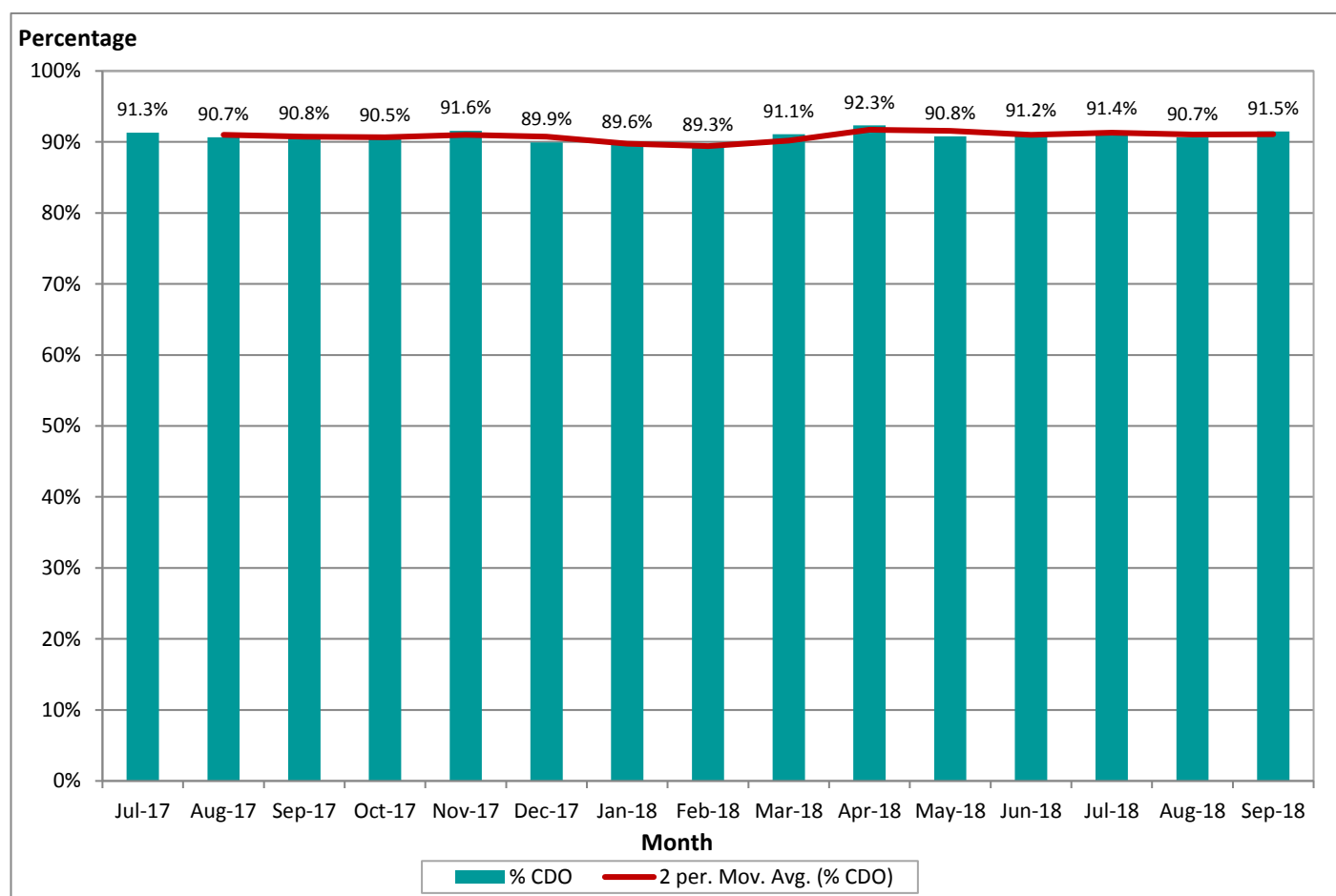


## DAYTIME AND SHOULDER PERIOD CDO ACHIEVEMENT (0600-2330)

THE TABLE BELOW ILLUSTRATES THE BREAKDOWN OF THE CDO ACHIEVEMENT DURING THE DAY/SHOULDER PERIOD

All Arrivals			08 Easterly Arrivals			26 Westerly Arrivals			
Month	Total	Non CDO	% CDO	Total	Non CDO	% CDO	Total	Non CDO	% CDO
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%
Jan-18	9264	965	89.58%	2311	219	90.52%	6953	746	89.27%
Feb-18	9279	997	89.26%	4136	453	89.05%	5143	544	89.42%
Mar-18	10503	935	91.10%	4826	461	90.45%	5677	474	91.65%
Apr-18	10847	831	92.34%	4221	312	92.61%	6626	519	92.17%
May-18	11443	1053	90.80%	7113	407	94.28%	4330	346	92.01%
Jun-18	11648	1023	91.22%	6042	542	91.03%	5606	481	91.42%
Jul-18	11296	967	91.44%	3551	286	91.95%	7745	681	91.21%
Aug-18	10714	1001	90.66%	1272	129	89.86%	9442	872	90.76%
Sep-18	11903	1012	91.50%	3464	324	90.65%	8439	688	91.85%

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

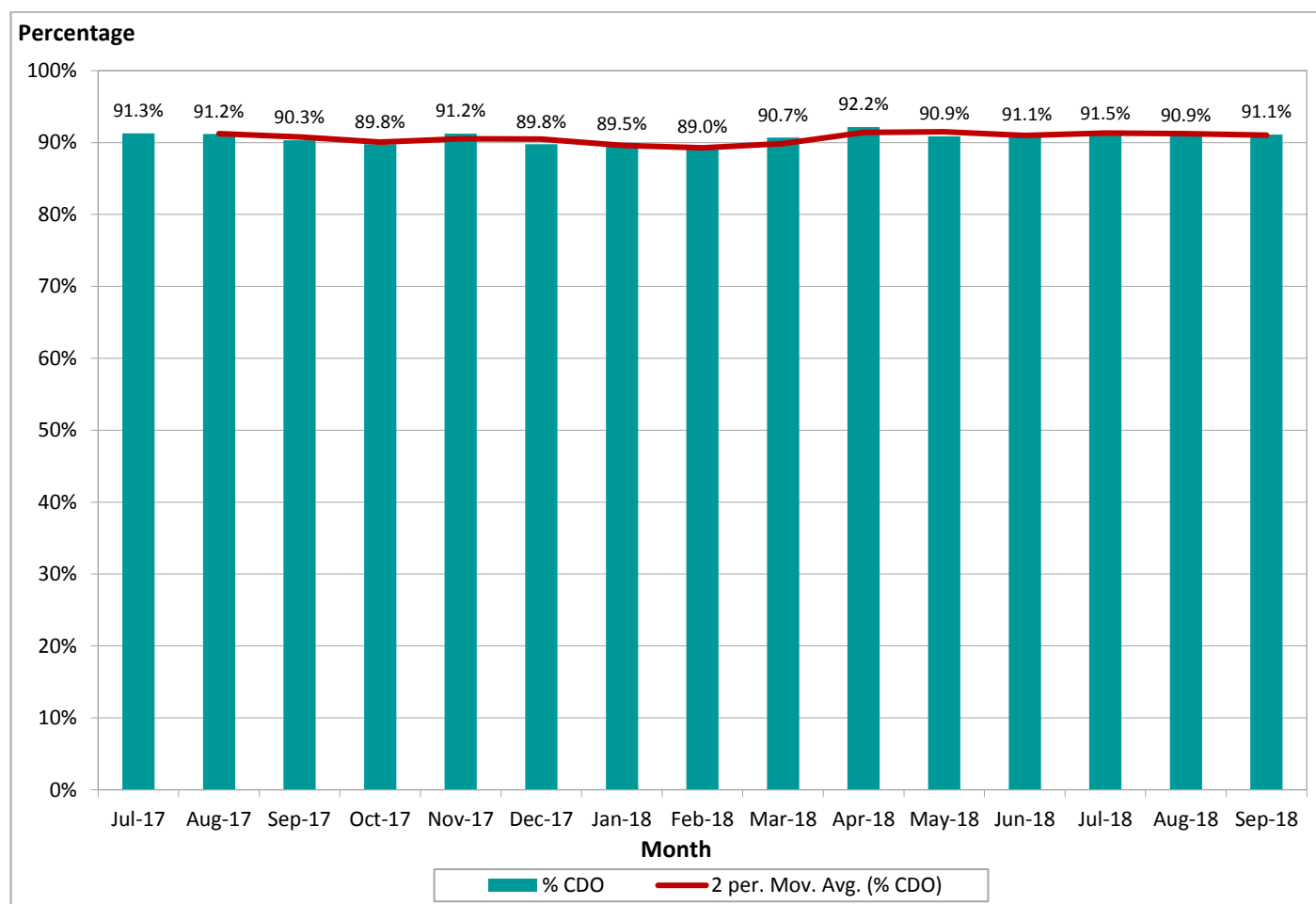


## 24 HOUR PERIOD CDO ACHIEVEMENT

THE TABLE BELOW ILLUSTRATES THE BREAKDOWN OF THE CDO ACHIEVEMENT DURING THE 24 HOUR PERIOD

Month	All Arrivals			08 Easterly Arrivals			26 Westerly Arrivals		
	Total	Non CDO	% CDO	Total	Non CDO	% CDO	Total	Non CDO	% CDO
Jul-17	14055	1223	91.30%	2268	236	89.59%	11787	987	91.63%
Aug-17	14198	1249	91.20%	2776	284	89.77%	11422	965	91.55%
Sep-17	13612	1316	90.33%	2771	223	91.95%	10841	1093	89.92%
Oct-17	12582	1286	89.78%	959	69	92.81%	11623	1217	89.53%
Nov-17	9279	813	91.24%	427	39	90.87%	8852	774	91.26%
Dec-17	10252	1050	89.76%	760	115	84.87%	9492	935	90.15%
Jan-18	9555	1004	89.49%	2402	230	90.42%	7153	774	89.18%
Feb-18	9579	1049	89.05%	4286	474	88.94%	5293	575	89.14%
Mar-18	11050	1028	90.70%	5080	497	90.22%	5970	531	91.11%
Apr-18	11737	921	92.15%	4646	335	92.79%	7091	586	91.74%
May-18	12774	1168	90.86%	7954	767	90.36%	4820	401	91.68%
Jun-18	13315	1187	91.09%	6986	605	91.34%	6329	582	90.80%
Jul-18	13051	1103	91.55%	4053	331	91.83%	8998	772	91.42%
Aug-18	12275	1116	90.91%	1445	137	90.52%	10830	979	90.96%
Sep-18	13472	1196	91.12%	3990	375	90.60%	9482	821	91.34%

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 East Grinstead other than a small number of go-arounds. 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 79 arrivals that passed through this area. Aircraft tracks were analysed for July, August and September 2018, there were no flights passed over Lingfield below the altitude of 1,698ft (2,000ft Gatwick QNH).

**It should be noted that the Casper NTK system experienced two radar outages between 11<sup>th</sup> and 12<sup>th</sup> July and between 10<sup>th</sup> and 13<sup>th</sup> August inclusive which means data has had to be omitted from the figures for these dates.**



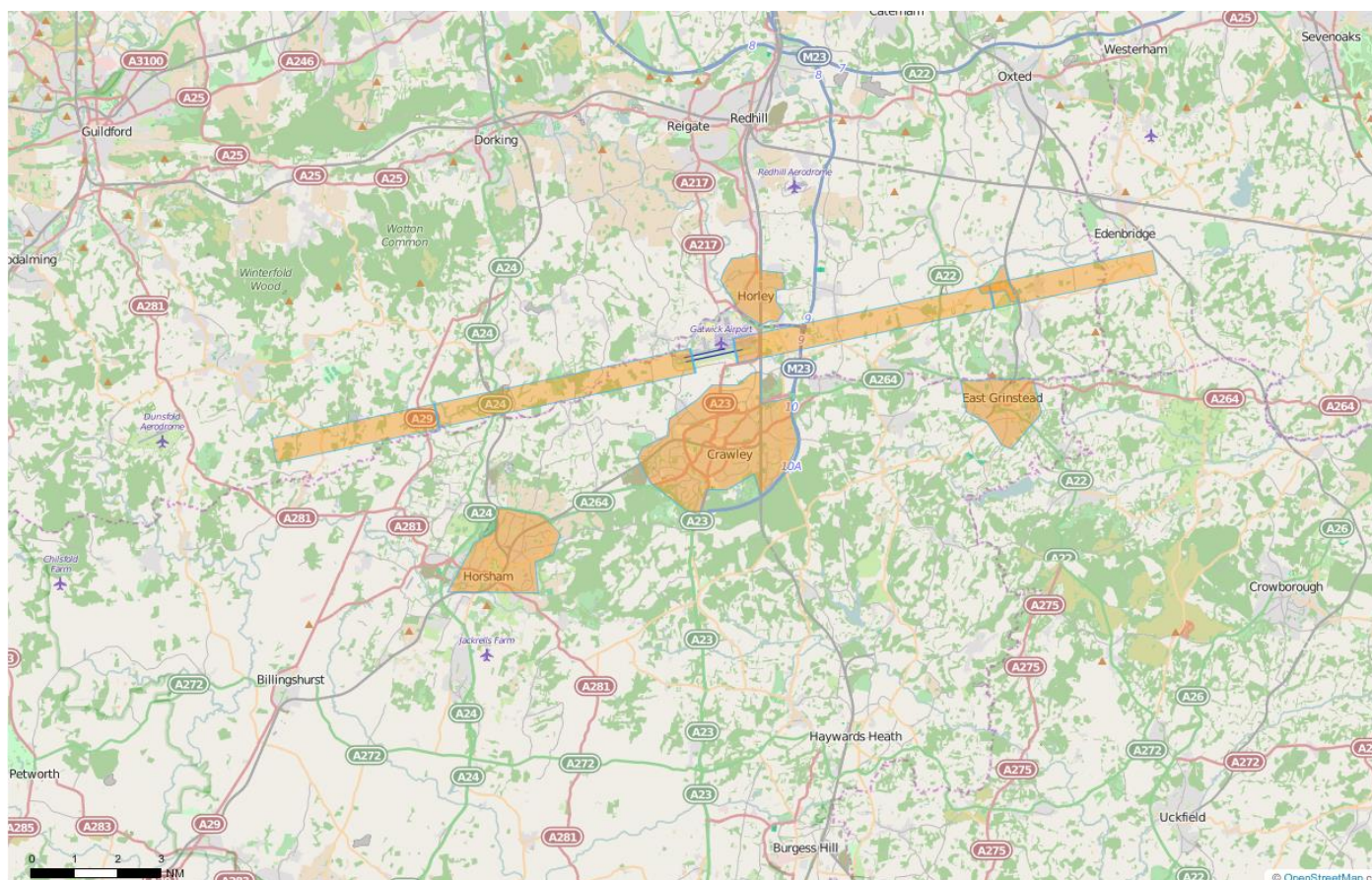
## A) DAY TIME JOINING HEIGHT (0700-2300)

**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. These are used to monitor arrivals joining the ILS below 2,000ft.

There were 38,806 arrivals recorded by the Casper NTK system between 1<sup>st</sup> July and 30<sup>th</sup> September 2018 (figures altered due to NTK radar outage, see footnote page 2). 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 221 (0.57%). In addition, there were 37 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:

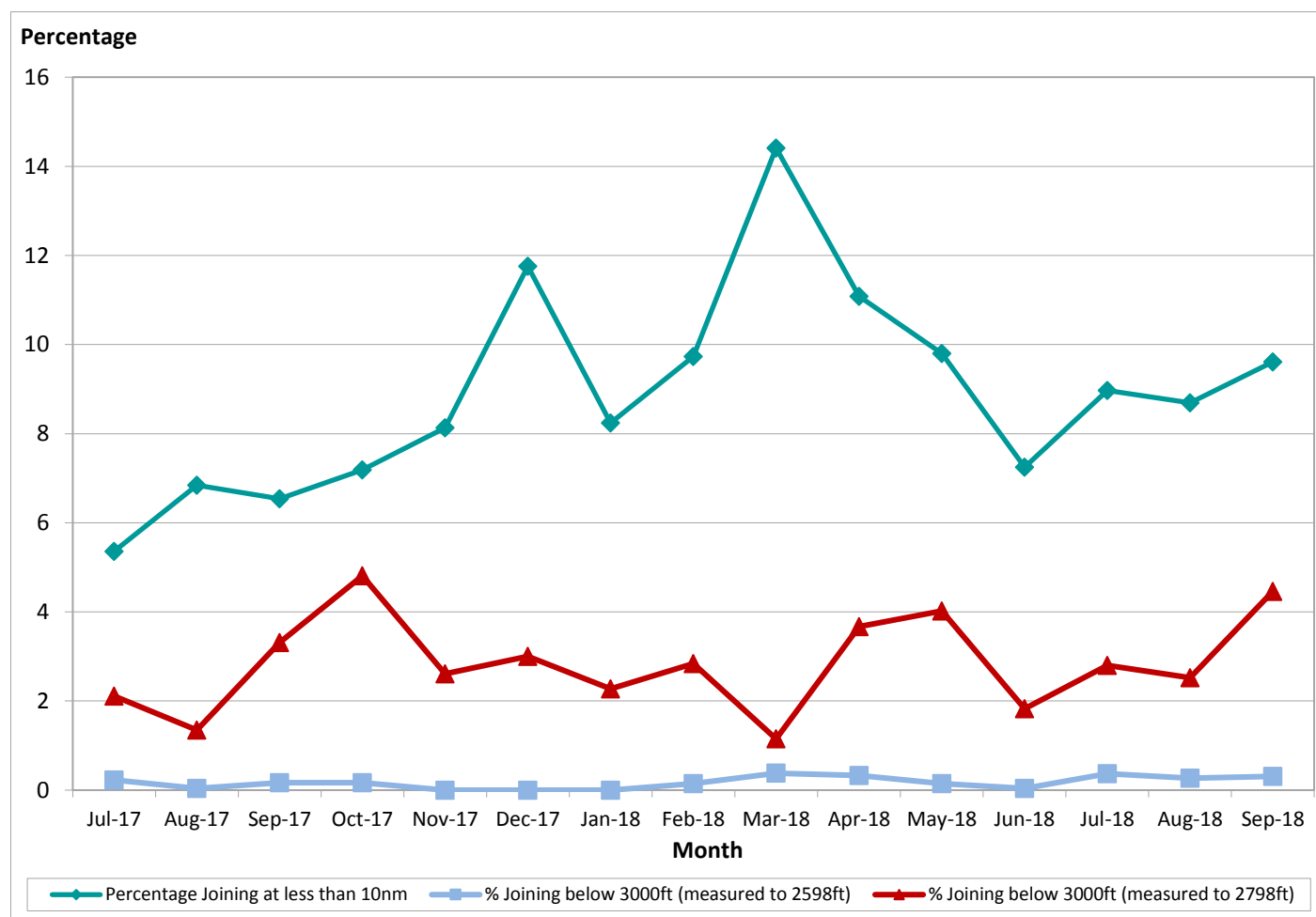
- a) below 3000ft, or
- b) closer than 10 nm from touchdown.

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

The standby runway is typically used in the night period when maintenance works are carried out on the main runway. The standby runway does not have an Instrument Landing System (ILS) and the threshold is also in a different location to that of the main runway. Both of these reasons mean that the 10NM joining point is not in the same position for the main and standby runways. As the Casper NTK system measures this metric using the main runway joining point for both runways, aircraft joining at 10NM on the standby runway may be recorded as joining inside 10NM. In recent months, there has been an increased use of standby runway operations at night and thus the increase in joins below 10NM.

It should be noted that the Casper NTK system experienced two radar outages between 11<sup>th</sup> and 12<sup>th</sup> July and 10<sup>th</sup> and 13<sup>th</sup> August inclusive which means data has had to be omitted from the figures for these dates.

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



N.B. 3,000ft (Gatwick QNH) – 202ft (airfield elevation) = 2,798ft on Airports Noise & Track Keeping System

3,000ft (Gatwick QNH) – 202ft (airfield elevation) – 200ft ATC radar tolerance = 2,598ft on Airports Noise & Track Keeping System

# Go-Around Statistics 2004 - 2018

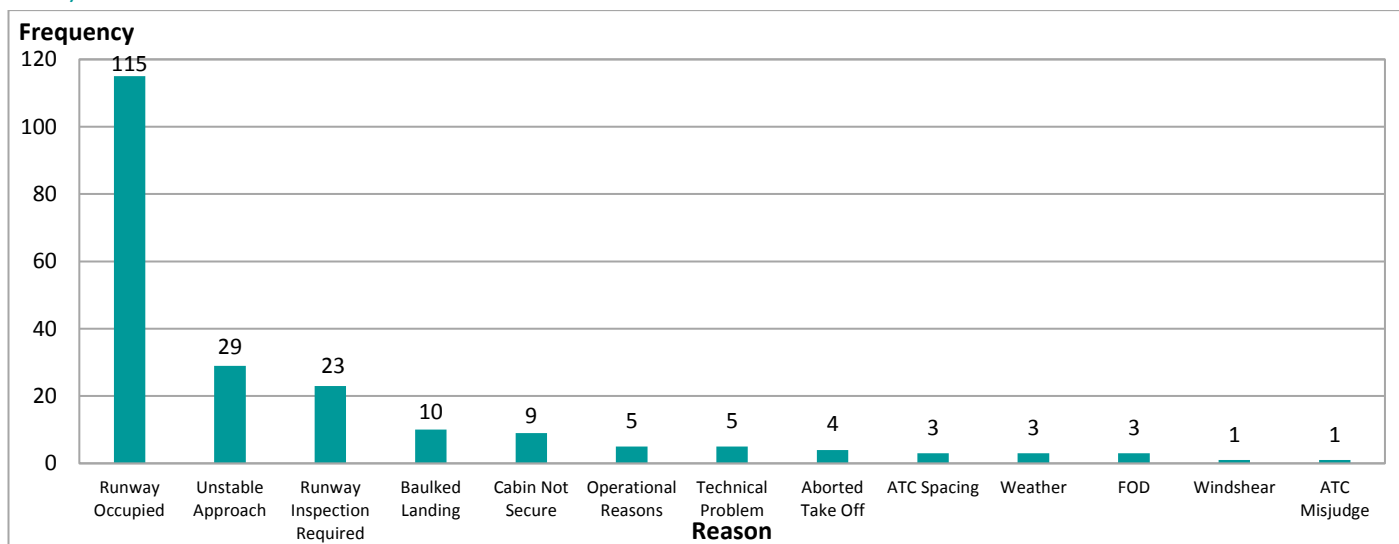
A go-around is a procedure adopted when an arriving aircraft on final approach aborts landing by applying take-off power and climbing away from the airport. It is a set procedure to be followed by the flight crew in the event of an aircraft being unable to land. The procedure is published so that ATC 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 and used by the ATC tower 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, then as directed by ATC. This may or may not result in aircraft overflying the town of Crawley, Horsham, East Grinstead or the outlying areas.

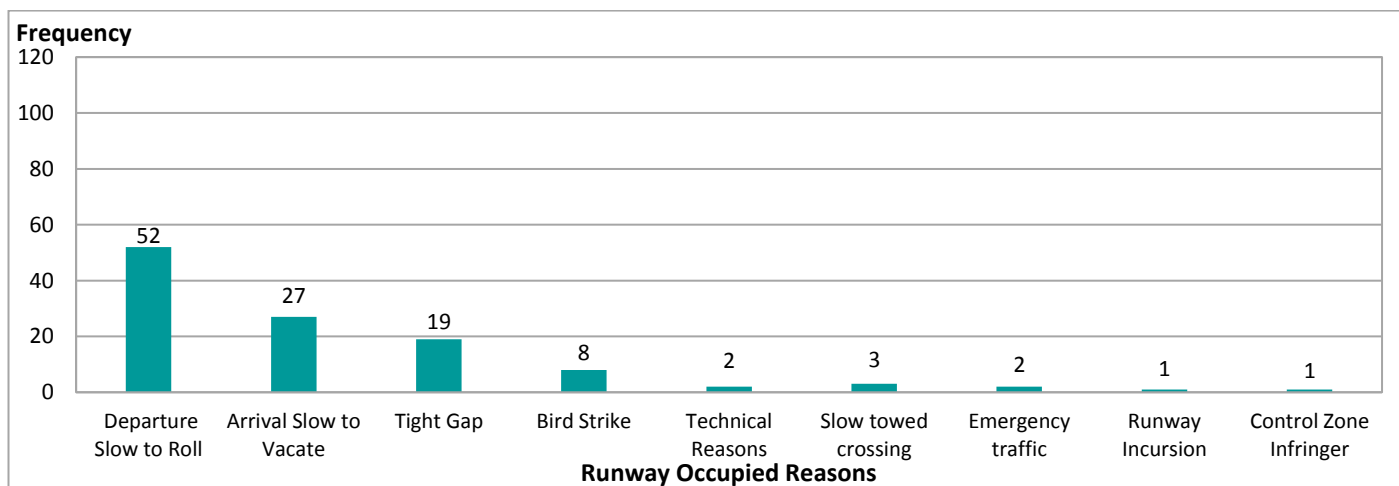
The number and reasons for go-arounds are routinely discussed at FLOPSC meetings and Pilot Forums. All parties are focussed on minimising the number of occasions when a go-around is required, but expect some to occur given the fact that Gatwick is a busy single runway airport.

It should be stated that this is a 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. The go-around procedure is a safety procedure.

## ANS CURRENTLY RECORD GO-AROUNDS UNDER ONE OF THE FOLLOWING CAUSAL FACTORS (JULY - SEPTEMBER 2018)



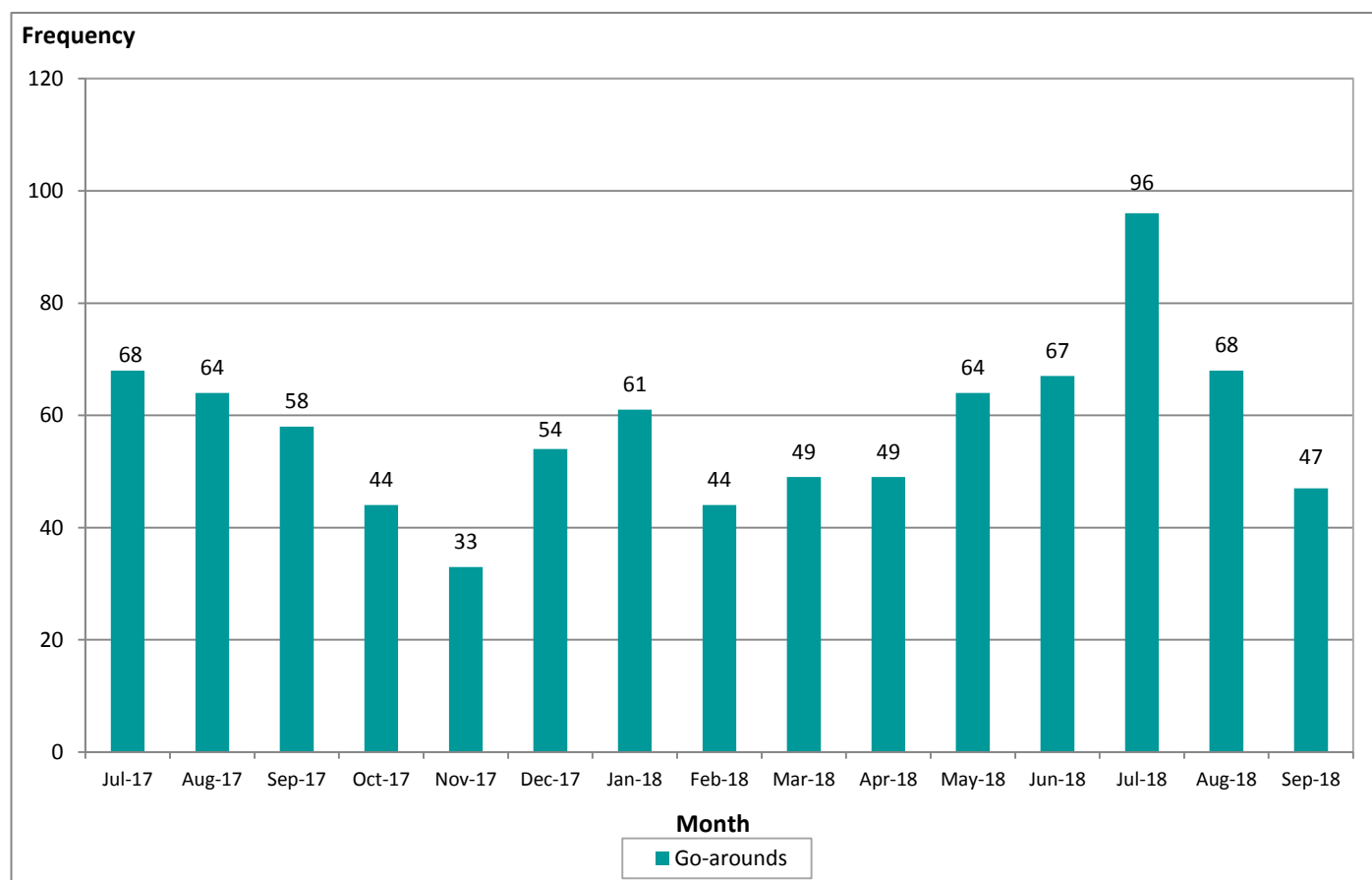
## THE BREAKDOWN OF REASONS GIVEN BY ANS FOR GO-AROUNDS DUE TO RUNWAY OCCUPANCY DURING THE THREE MONTH PERIOD



THE TABLE BELOW ILLUSTRATES GO-AROUND STATISTICS 2004 – 2018

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
2018 (Jan-Sept)	545	109504	0.50

THE GRAPH BELOW ILLUSTRATES TOTAL NUMBER OF GO-AROUNDS PER MONTH





# 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. This is to limit the number of occasions on which 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 new restrictions on night flying came into force in October 2017, to remain in force until 2022 for all the designated London airports. At Gatwick, the new regime will maintain the status quo for movements and quota count (QC) until the winter season in 2018/19. This will then see a reduction in the QC limit and a new QC value of 0.125 applied to some aircraft which are currently classified as QC0. As of October 2017, all aircraft movements count towards the night quota limit, including those which were previously exempt. This will further incentivise the use of quieter aircraft as an airport can continue the use of its movement allowance but the noise produced by an aircraft cannot increase.

## RESTRICTIONS

Winter	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22
Movements	3250	3250	3250	3250	3250	3250
Limits						
Quota Points	2000	2000	1785	1785	1785	1785

Summer	2017	2018	2019	2020	2021	2022
Movements	11200	11200	11200	11200	11200	11200
Limits						
Quota Points	6200	6200	5150	5150	5150	5150

Overleaf is a mid-season report for Summer 2018 which commenced at 01:00 on the 25<sup>th</sup> March 2018 and will end at 02:00 on the 28<sup>th</sup> October 2018. The total number of movements available for the Summer season is 11525.

## 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, ATC 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 947 dispensations applied during the Summer 2018 season (up to 30<sup>th</sup> September). The reasons are as follows:

- 537 dispensations were due to adverse weather conditions (339 were European restrictions, 199 local).
- 234 dispensations were granted due to European ATC capacity restrictions.
- 101 dispensations were granted due to European ATC strike action.
- 32 dispensations were granted due to emergency incidents (2 were European restrictions, 32 local).
- 31 dispensations were granted due to EXCDS in April.
- 6 dispensations were granted due to European ATC staff shortages in April.
- 6 dispensations were due to a failure of the EU Enhanced Tactical Flow Management System in April.

## 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' or 'shoulder period'. QC4 types may not be scheduled to take off or land during the night quota period.

## London Gatwick

### AIRPORT MOVEMENTS and QUOTA SUMMARY to WEEK 28 (25 MARCH 2018 to 06 OCTOBER 2018 inc.)

Season Quota Points Limit 6200 Season Movement Limit 11200  
 Carry over 200 Carry over 325  
 Total Quota Points Allowed 6400 Total Movements Allowed 11525

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	31/03/2018	10	120	49	18	1	0	0	0	74.50	198	0	0	0	172	86.9	26	13.1	198
2	07/04/2018	11	127	57	18	0	0	0	0	78.25	213	7	0	0	192	87.3	28	12.7	220
3	14/04/2018	12	137	56	10	1	0	0	0	74.25	216	36	0	0	227	90.1	25	9.9	252
4	21/04/2018	7	136	57	18	0	0	0	0	80.50	218	0	0	0	187	85.8	31	14.2	218
5	28/04/2018	9	147	56	22	1	0	0	0	88.75	235	0	0	0	205	87.2	30	12.8	235
6	05/05/2018	16	159	69	20	3	0	0	0	100.25	267	1	0	0	238	88.8	30	11.2	268
7	12/05/2018	9	141	92	32	1	0	0	0	115.25	275	5	0	0	244	87.1	36	12.9	280
8	19/05/2018	7	184	89	30	3	0	0	0	126.50	313	0	0	0	276	88.2	37	11.8	313
9	26/05/2018	13	178	104	26	3	0	0	0	128.50	324	62	0	0	339	87.8	47	12.2	386
10	02/06/2018	14	237	103	34	3	0	0	0	150.75	391	126	0	0	446	86.3	71	13.7	517
11	09/06/2018	12	252	123	42	4	0	0	0	174.50	433	7	0	0	381	86.6	59	13.4	440
12	16/06/2018	10	248	122	44	1	0	0	0	169.00	425	39	0	0	403	86.9	61	13.1	464
13	23/06/2018	10	249	123	41	4	0	0	0	172.75	427	2	0	0	366	85.3	63	14.7	429
14	30/06/2018	2	282	124	27	3	0	0	0	165.50	438	8	0	0	392	87.9	54	12.1	446
15	07/07/2018	12	251	122	29	5	0	0	0	162.75	419	40	0	0	398	86.7	61	13.3	459
16	14/07/2018	11	265	125	30	3	0	0	0	164.75	434	23	0	0	407	89.1	50	10.9	457
17	21/07/2018	15	269	128	44	5	0	0	0	185.25	461	56	0	0	437	84.5	80	15.5	517
18	28/07/2018	11	231	127	30	2	0	0	0	155.25	401	80	0	0	407	84.6	74	15.4	481
19	04/08/2018	13	238	125	36	3	0	0	0	164.00	415	104	0	0	443	85.4	76	14.6	519
20	11/08/2018	16	232	122	38	2	0	0	0	161.00	410	124	0	0	453	84.8	81	15.2	534
21	18/08/2018	24	234	115	31	4	0	0	0	155.00	408	50	0	0	400	87.3	58	12.7	458
22	25/08/2018	13	251	126	23	5	0	0	0	158.75	418	55	0	0	412	87.1	61	12.9	473
23	01/09/2018	28	231	124	26	7	0	0	0	159.75	416	53	0	0	409	87.2	60	12.8	469
24	08/09/2018	23	215	136	29	5	0	0	0	160.75	408	19	0	0	370	86.7	57	13.3	427
25	15/09/2018	18	243	130	24	5	0	0	0	159.75	420	26	0	0	394	88.3	52	11.7	446
26	22/09/2018	19	223	123	26	5	0	0	0	153.25	396	24	0	0	361	86.0	59	14.0	420
27	29/09/2018	20	211	115	21	3	0	0	0	137.25	370	0	0	0	326	88.1	44	11.9	370
28	06/10/2018	28	171	115	22	2	0	0	0	126.25	338	0	0	0	295	87.3	43	12.7	338
<b>TOTALS</b>		<b>384</b>	<b>5870</b>	<b>2958</b>	<b>791</b>	<b>84</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>3905.50</b>	<b>10087</b>	<b>947</b>	<b>0</b>	<b>0</b>	<b>9580</b>	<b>86.8</b>	<b>1454</b>	<b>13.2</b>	<b>11034</b>

Quota Points Available

2494.50

Movements Available

1438

Quota % Points Used

61.0

Movements % Used

87.5

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

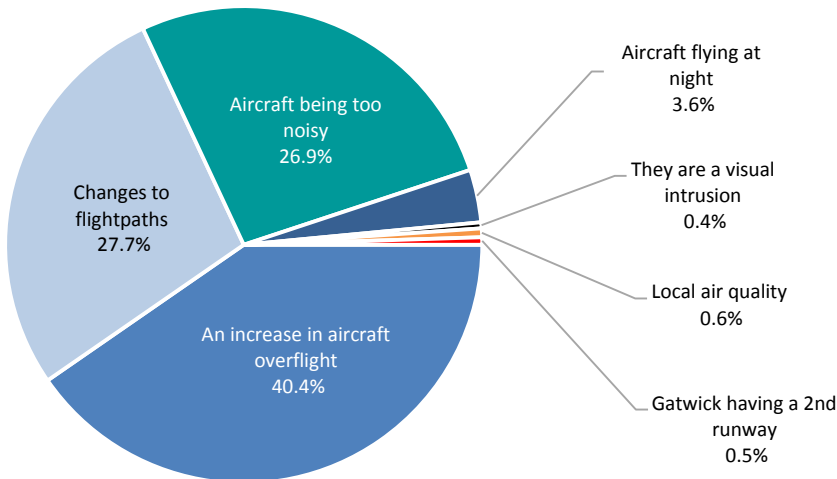
Emergency Take-offs and Landing

# Noise Complaints

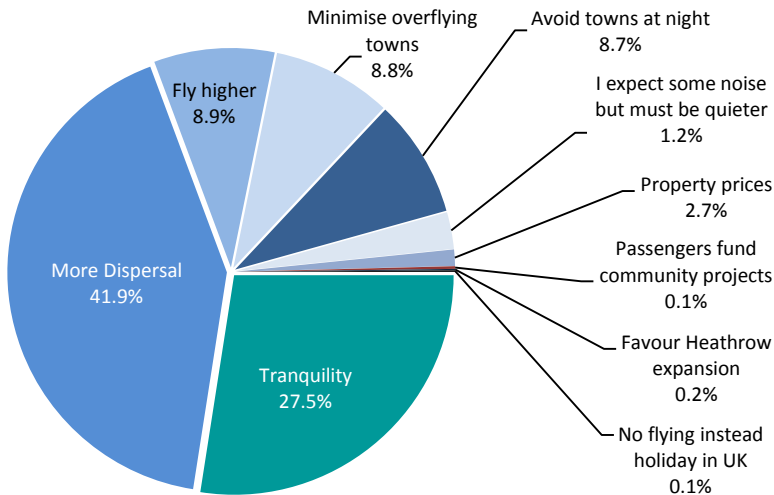
It is important that we understand the issues of noise disturbance from individuals and communities who live around the airport. By studying the complaints we receive and by communicating with the affected towns and villages surrounding the Airport, we believe that this gives us a greater understanding 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 aircraft operations in general. The following charts provide an analysis of the reasons and breakdown of the numbers of complaints received.

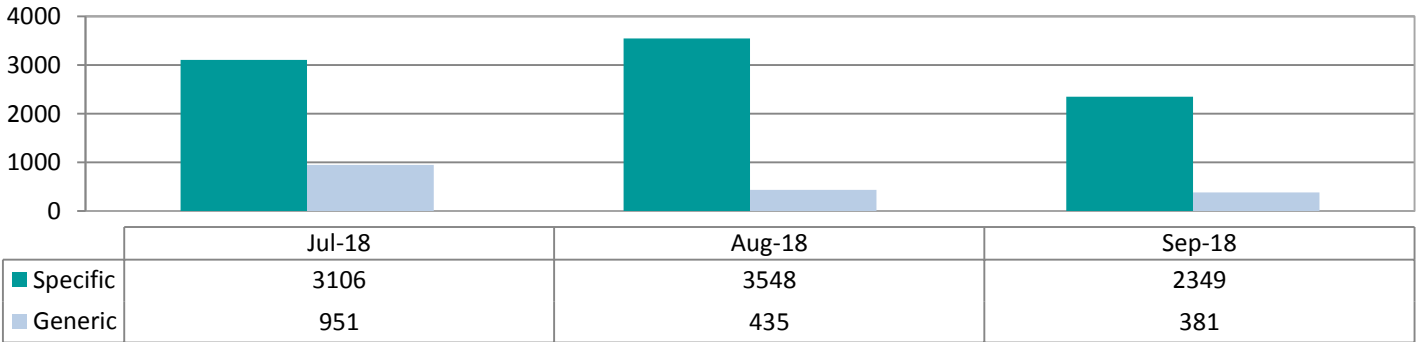
PERCENTAGE OF COMPLAINT OBSERVATIONS MOST AGREED WITH



PERCENTAGE OF COMPLAINT CONCERNS MOST AGREED WITH



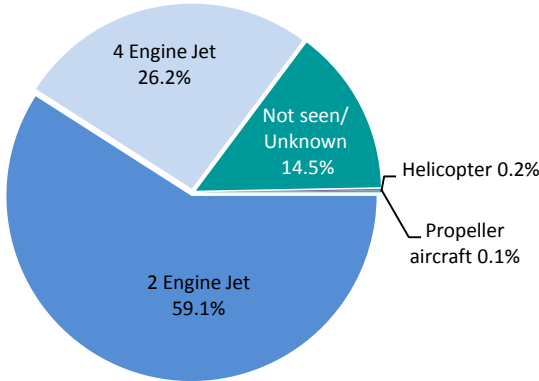
COMPLAINTS RECORDED BY MONTH



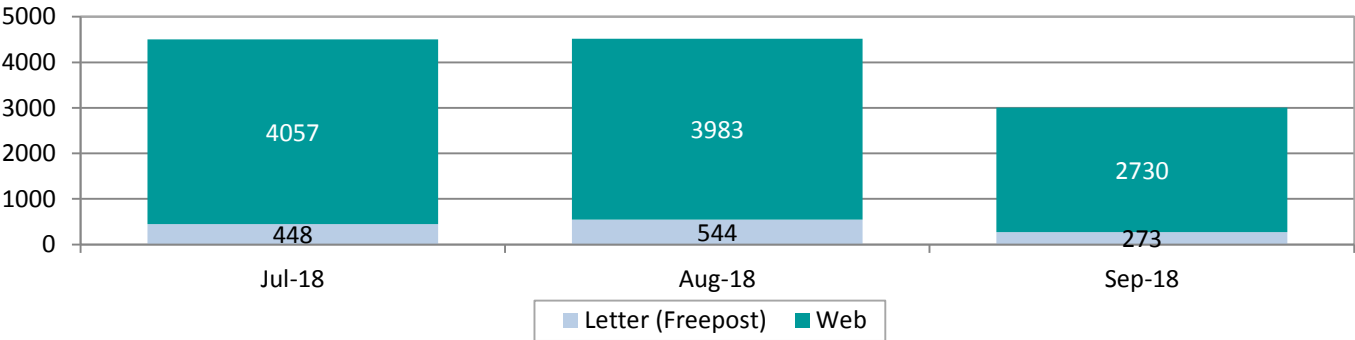
Noise is very subjective and can affect people in different ways. Some people can tolerate a certain noise level whilst it can cause disturbance to others. As well as identifying the issues of noise, it is important to understand the location of each individual complaint.

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

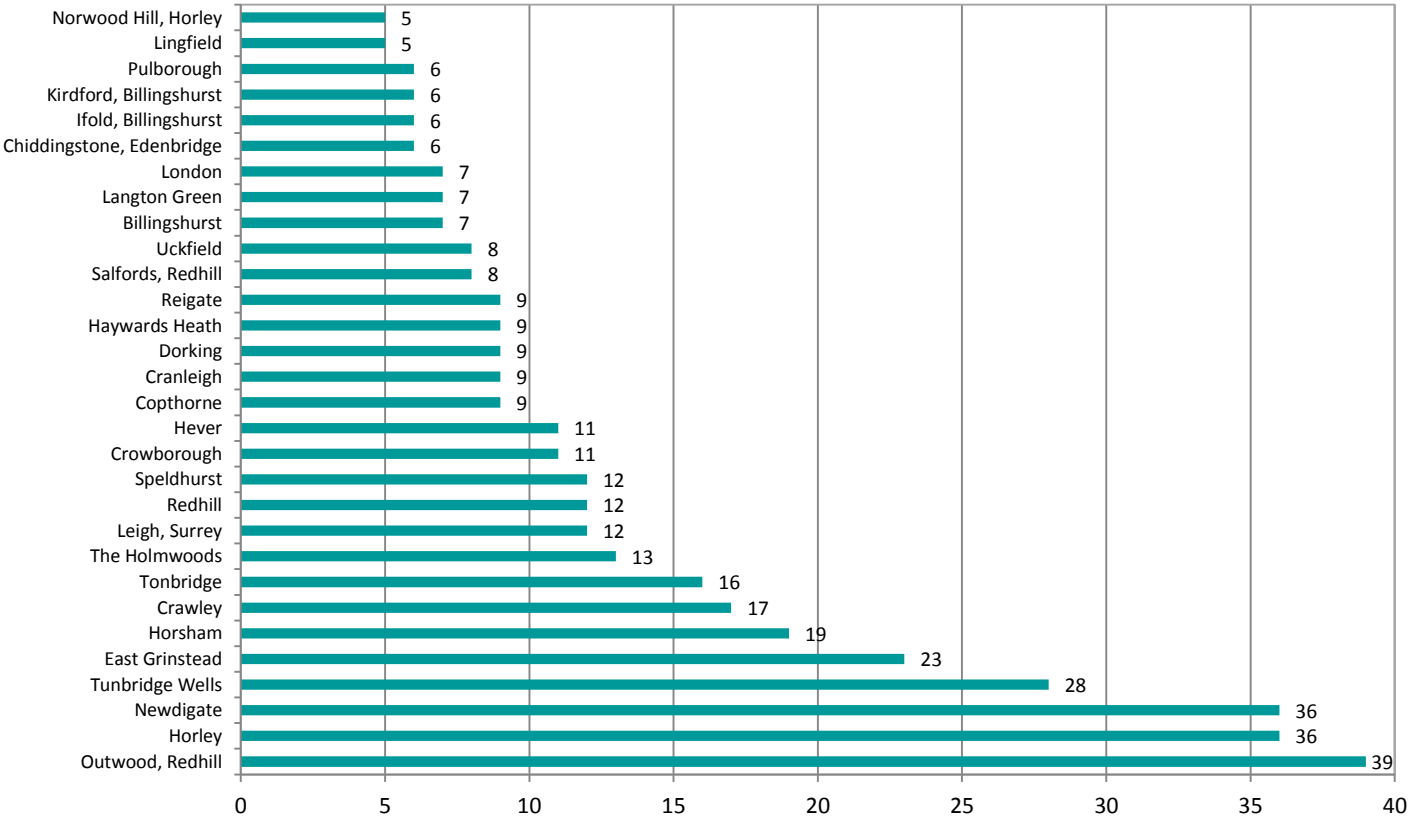
### CATEGORIES OF AIRCRAFT TYPES FROM SPECIFIC COMPLAINTS



### METHOD OF COMPLAINT

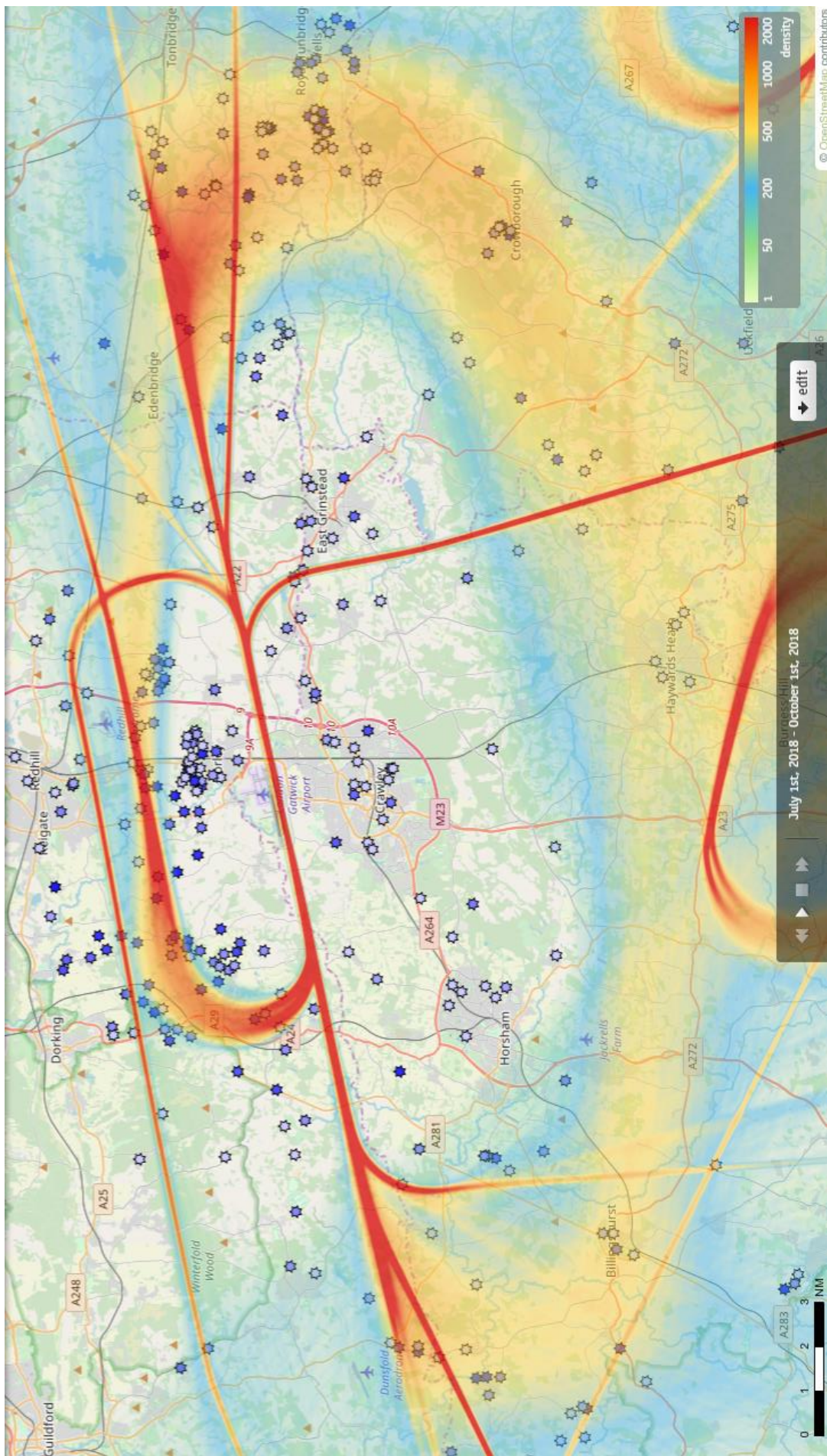


### NUMBER OF INDIVIDUAL COMPLAINANTS BY TOWN/VILLAGE



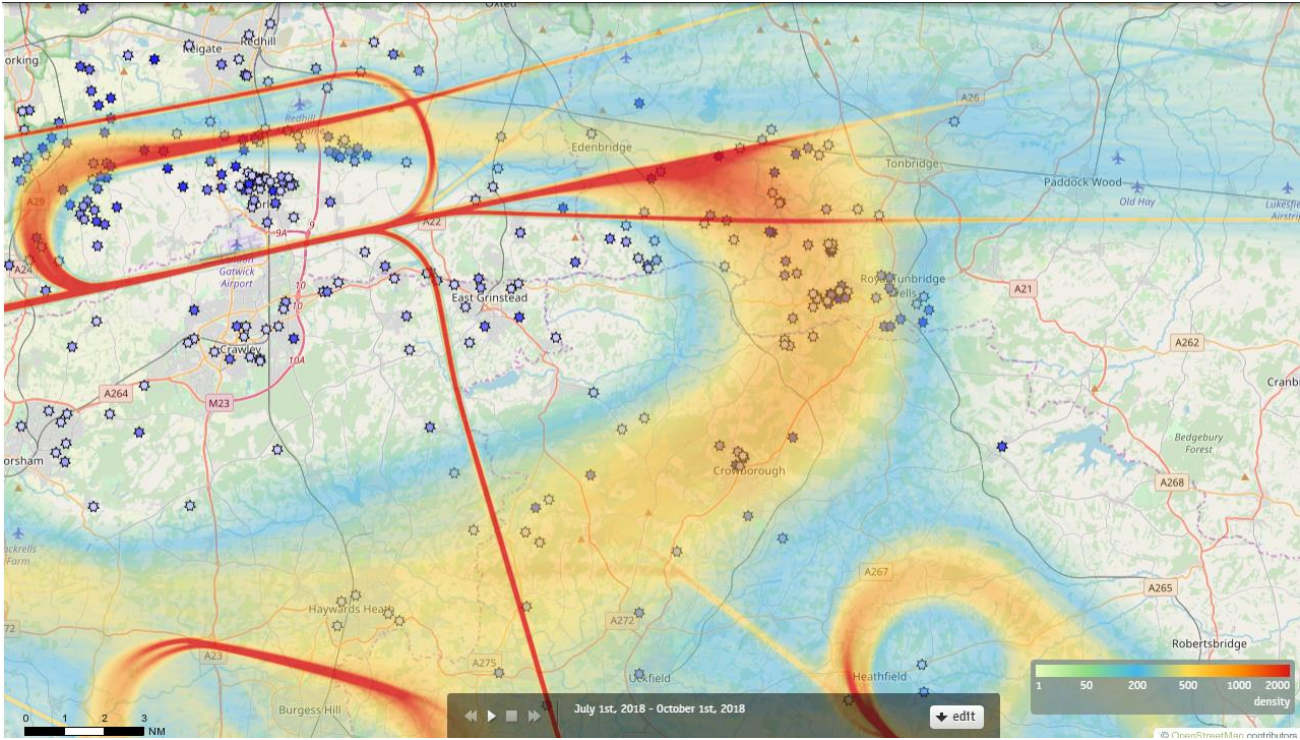


THE MAP BELOW ILLUSTRATES THE LOCATION OF NOISE COMPLAINTS RECEIVED BETWEEN JULY - SEPTEMBER 2018

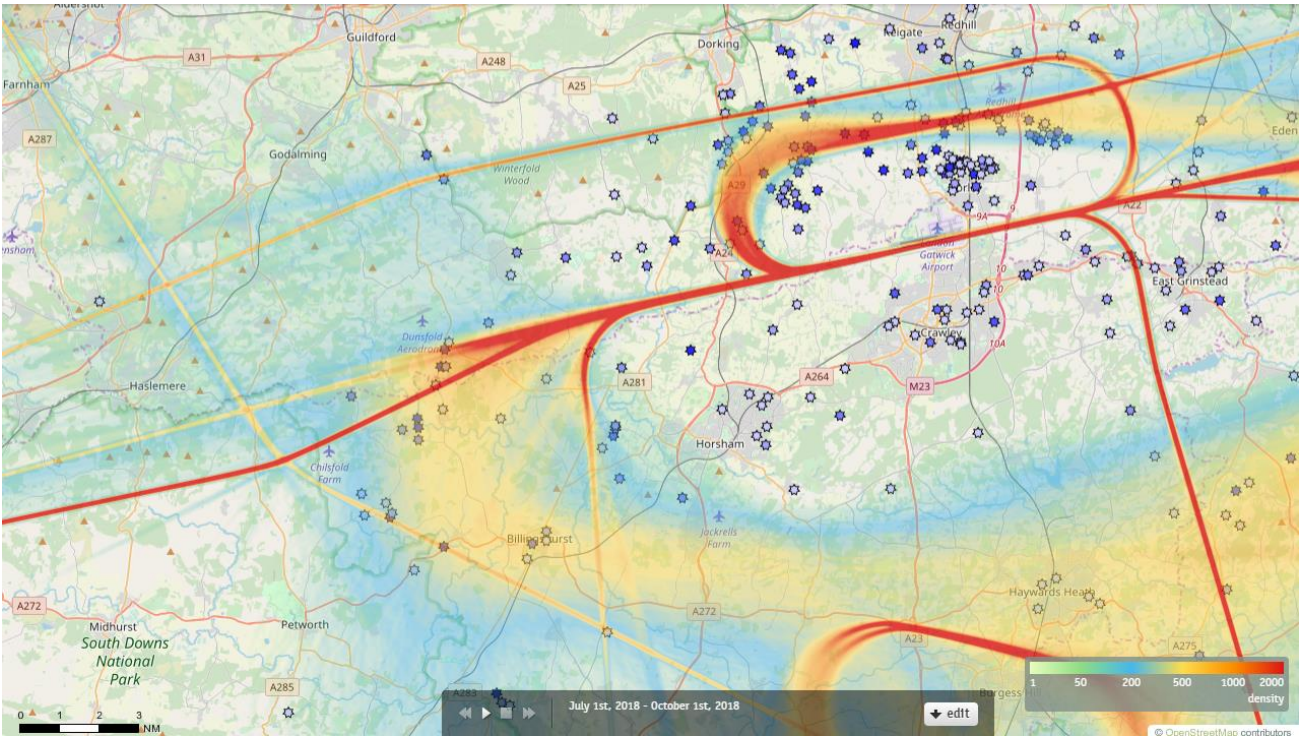




THE MAP BELOW ILLUSTRATES NOISE COMPLAINTS RECEIVED TO THE EAST (JULY – SEPTEMBER 2018)



THE MAP BELOW ILLUSTRATES NOISE COMPLAINTS RECEIVED TO THE WEST (JULY - SEPTEMBER 2018)





# Ground Noise Complaints

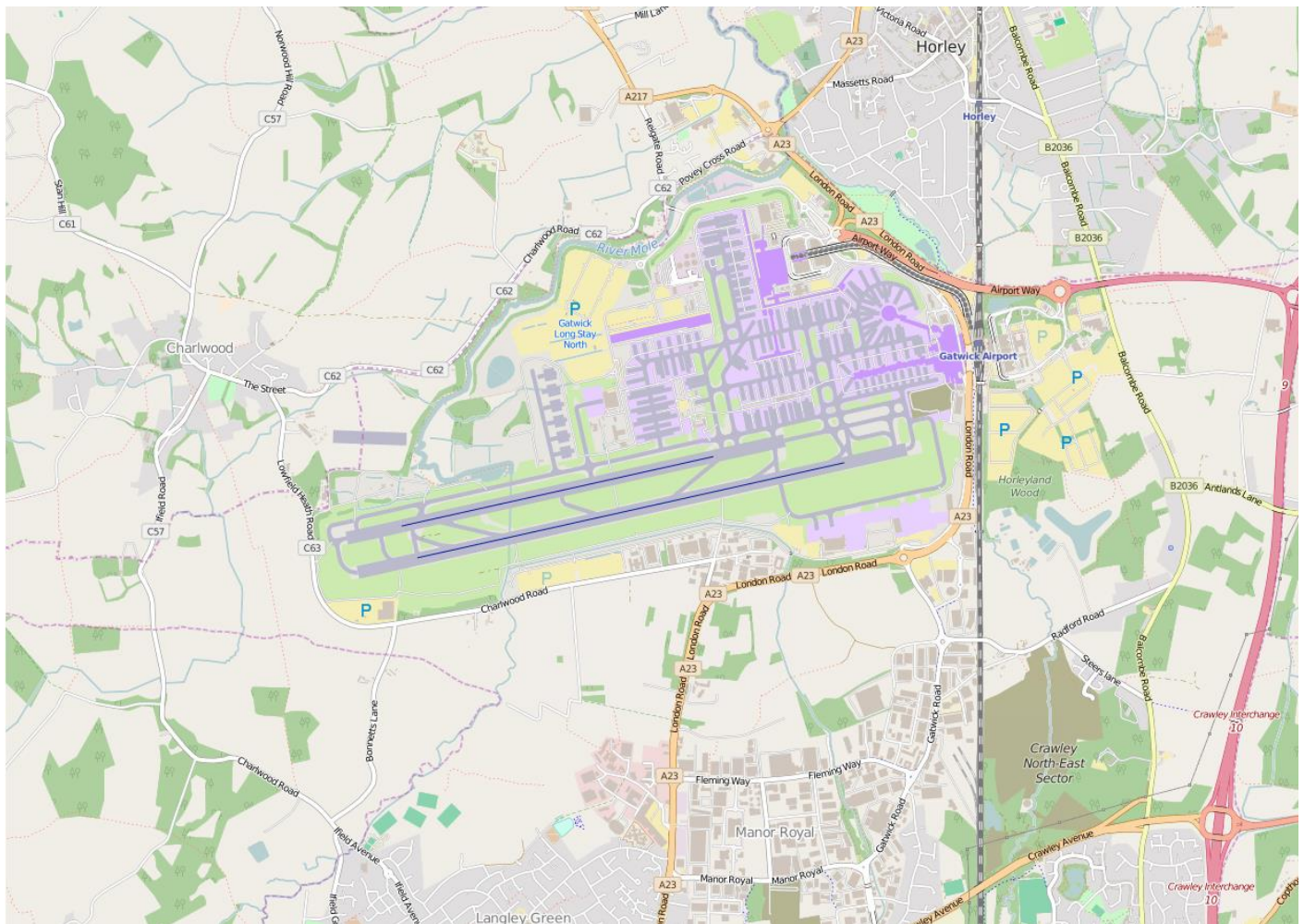
We occasionally receive complaints about disturbance from noise from within the boundary of the airfield. These can be caused by the normal operation of aircraft moving about the airfield, taking off and landing. Additional sources of noise disturbance can be the use of Auxiliary Power Units (APU) by 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 2018)



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 2018

Parameter		12 month performance averages <sup>1</sup>			
		Year to date (2018) <sup>6</sup>	Previous year (2017)	2011	2006
Track keeping performance (% on track)	▲	98.08%	98.06%	97.47%	98.17% <sup>3</sup>
24hr CDO (% achievement) <sup>4</sup>	▲	90.74%	90.48%	90.49%	80.79%
Day/Shoulder CDO (% achievement)	▲	90.80%	90.56%	90.19%	79.9%
Core night CDO (% achievement)	▲	90.03%	89.60%	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	2	4	2
Individual complainants	▲	836	997	343	587
Total noise complaints received <sup>5</sup>	▲	24447	24658	2673	4791
Enquiry response performance target is 95% within 8 days (July to September 2018)	▲	99.98%	99.89%	KPI 95%	
West/East Runway Split (%)	-	62/38	78/22	67/33	68/32

<sup>1</sup> The colour indicates the most recent 12 month performance compared to the 2011 END Baseline, with green showing improvement and red a decline in performance, the directional arrow indicating performance compared to the previous 12 month 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. It is important to note that since January 2018, complaints which have been deleted from the Casper system are no longer counted in the complaint statistics when they had been previously. Complaints are only deleted if they contain abusive, obscene or threatening language.

<sup>6</sup> It should be noted that there were two separate NTK radar outages to the Casper flight tracking system which occurred between the 11th and 12th July 2018 and between 10th and 13th August 2018 inclusive. As a result of these outages, data has been omitted from the statistics for these dates and so these figures may not be exact for the period. Complaint data is unaffected.



# Executive Summary

## Performance Headlines

### AIRPORT OPERATIONS

Between 1<sup>st</sup> October and 31<sup>st</sup> December 2018, there were a total of 64,872 fixed wing aircraft movements at Gatwick, an increase in traffic of over 1% compared to the same period in 2017. The direction of operation is determined by wind direction and this was split 62% on the westerly runway and 38% 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.

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

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

The standby 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 98 movements from the standby runway.

### TRACK KEEPING

Track keeping performance has increased slightly compared to the previous years 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, Cowden, Charlwood, South Holmwood, Withyham and Hever Castle.

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 decreased compared to the previous twelve months as well as the number of complainants which has also decreased. Although the airport has been just as busy as it has in recent years, there has also been a large amount of publicity surrounding the community issues related to the Route 4 amendment and the airport’s Draft Master Plan Consultation, which may be contributing factors for the number of complaints in 2018.

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 241. 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

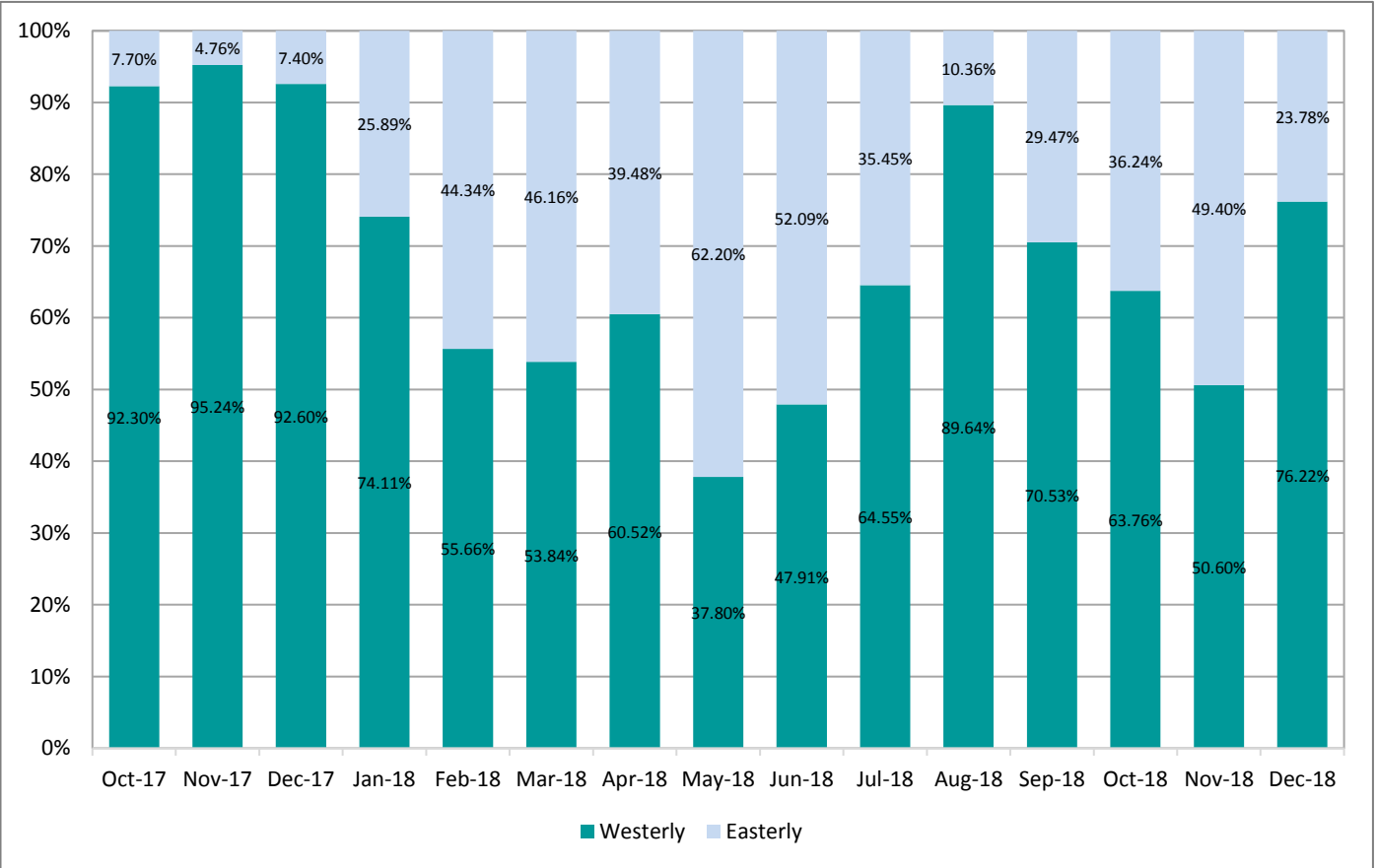
The graph below represents the direction of runway operation at Gatwick. Aircraft operating in a westerly direction take off towards the west and land from the east. Aircraft operating in an easterly direction take off towards the east and land from the west.

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 2017-DECEMBER 2018)



# 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	2013	0
2007	13	2014	0
2008	2	2015	0
2009	0	2016	0
2010	0	2017	0
2011	0	2018	0
2012	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	2013	0
2007	2	2014	0
2008	2	2015	0
2009	1	2016	1
2010	0	2017	2
2011	4	2018	0
2012	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 this three month period.

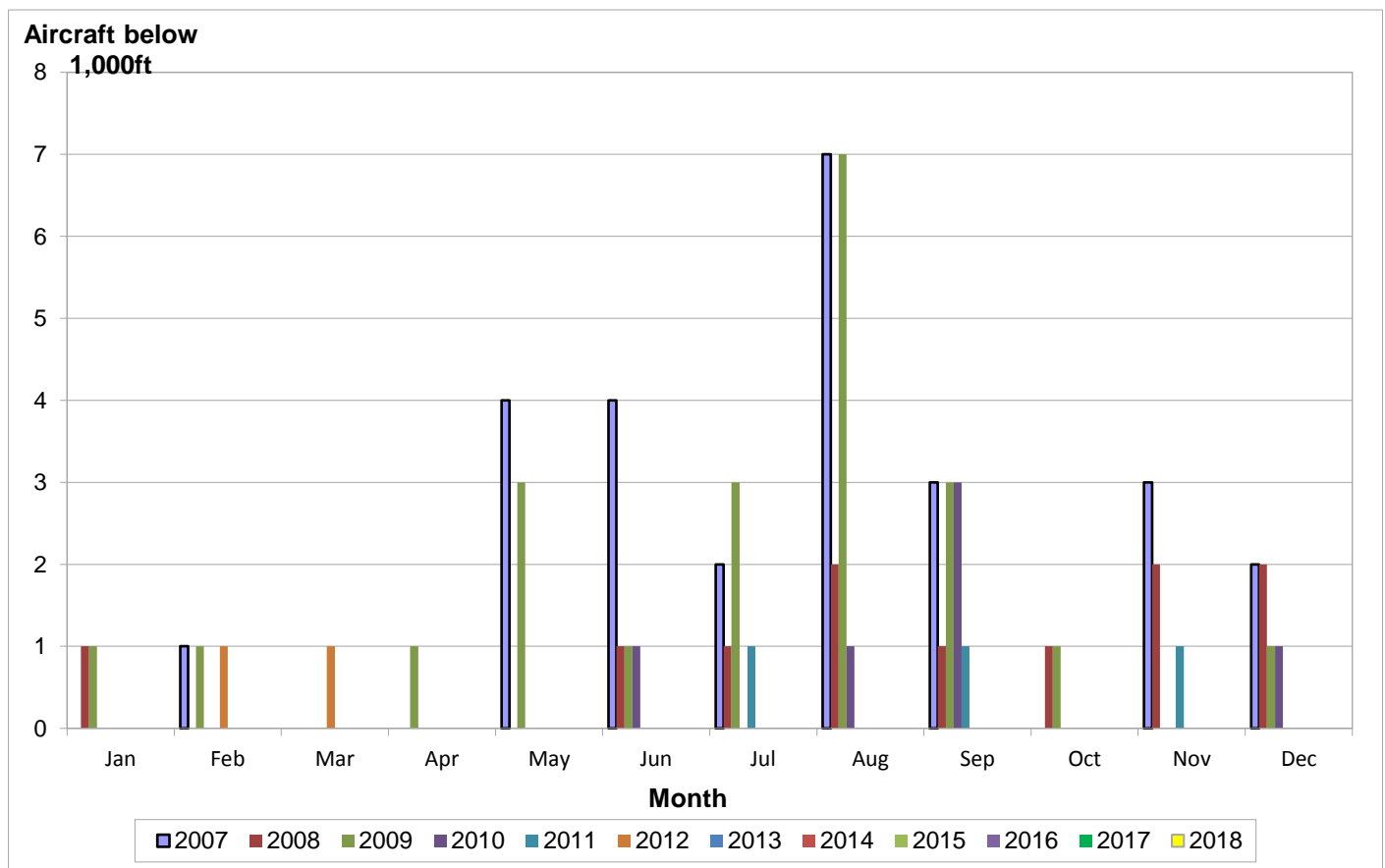
Historically, the summer months are typically the peak period for aircraft failing to meet the 1,000ft requirement, primarily due to the warmer weather which reduces aircraft climb performance.

## 1,000ft INFRINGEMENT TABLE

Year	Total Infringements	Year	Total Infringements
2006	11	2013	0
2007	26	2014	0
2008	11	2015	0
2009	22	2016	0
2010	6	2017	0
2011	3	2018	0
2012	2		

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 (NPR's) up to a height of 3,000ft or 4,000ft depending on the route. An NPR consists of a 'centreline' and an associated compliance monitoring swathe (3km across, i.e. 1.5km either side of the NPR centreline). 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 overleaf.

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 of 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 flagged 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 with a P-RNAV departure SID 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 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 Route 4 P-RNAV SID's were not included. Following the PIR and consultation, the CAA concluded that the modified Route 4 SID's achieve a satisfactory replication of the nominal track of the corrected conventional SID and confirmed the P-RNAV SID designs currently published in the UK Aeronautical Information Publication (AIP) as permanent.

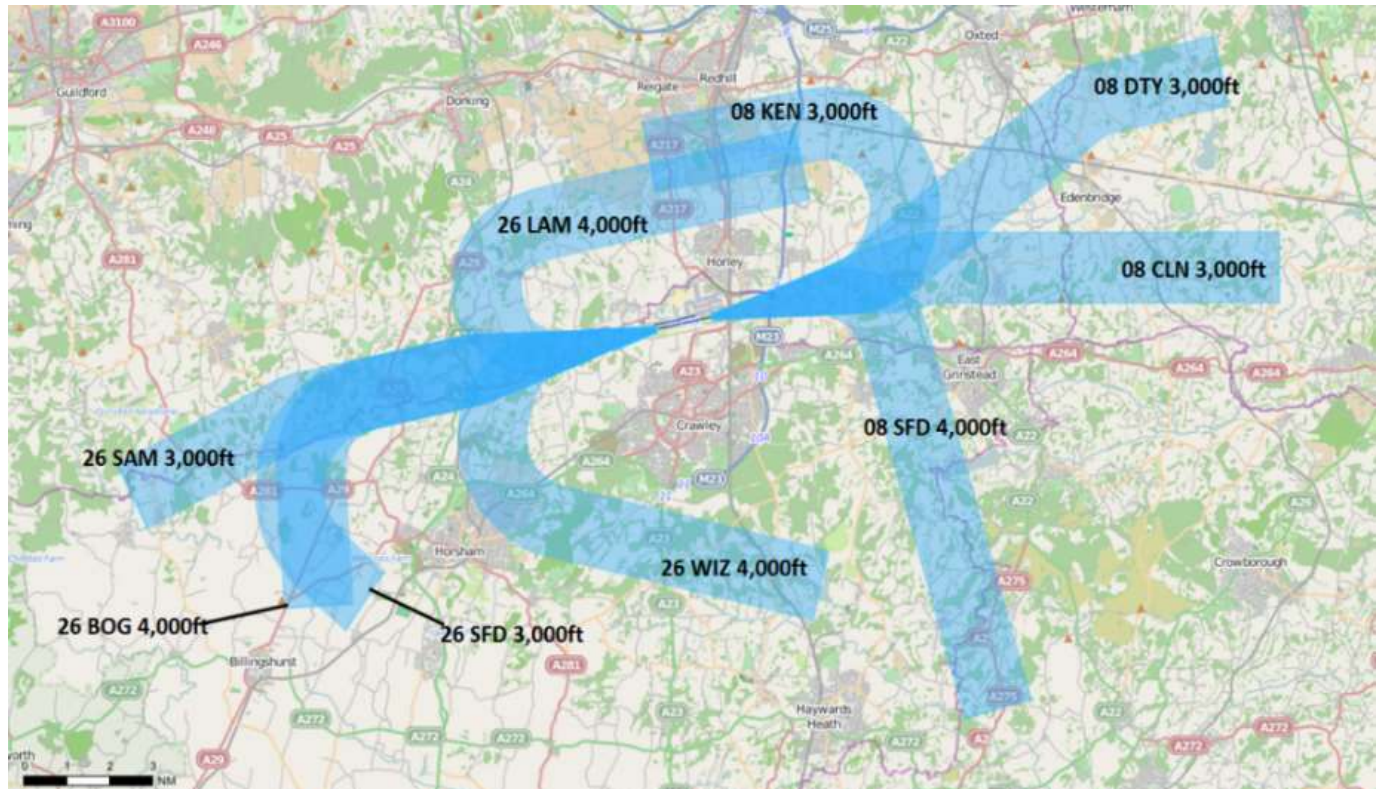
Following the quashing of the CAA's April 2017 decision by consent, Gatwick are working to revert the Route 4 conventional SID's to their position as they were before 7th April 2017. In support of this, Gatwick completed a comprehensive safety review. Following validation by an independent Instrument Flight Procedure Designer, the changes were submitted to the CAA for approval in May 2018. (Note: as previously briefed this will not change the distribution of traffic).

Route 4 P-RNAV SIDs will remain in place but have reverted to a temporary status, as was the case prior to the CAA's decision in April 2017. A redesign of the Route 4 P-RNAV SIDs will be necessary through the development of a new Route 4 airspace change proposal. We expect these changes to be introduced by the end of the year following the necessary changes to air traffic control systems and aeronautical publications. This is subject to CAA resource availability.

The airport is focused on following the correct procedure taking into account the various relevant factors to achieve an end result as soon as possible. This required rigorous legal process and does however mean that a final outcome is likely to take up to two years to achieve. An airspace change proposal will be developed in due course and will be consulted widely so communities will have the opportunity to contribute and influence.

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. Gatwick is awaiting a decision from the CAA regarding its status.

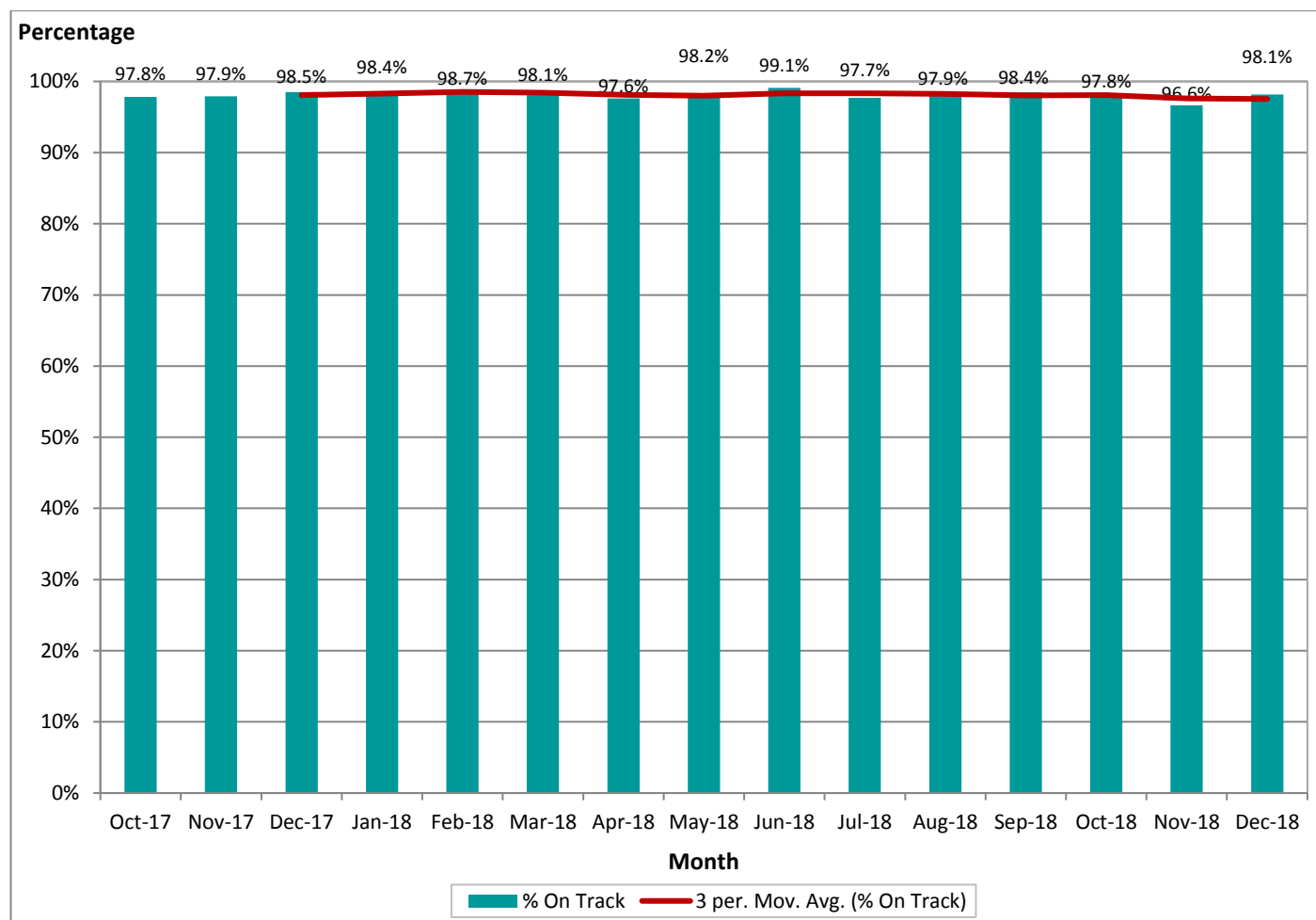
THE MAP BELOW ILLUSTRATES THE NOISE PREFERENTIAL ROUTES USED BY DEPARTING AIRCRAFT WITH MINIMUM VECTORING ALTITUDE FIGURES



THE TABLE BELOW ILLUSTRATES TRACK KEEPING PERFORMANCE OVER 15 MONTHS

Month	Total			Westerly			Easterly		
	Deviations	Departures	%	Deviations	Departures	%	Deviations	Departures	%
Oct-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%
Jan-18	150	9546	1.57%	142	7004	2.03%	8	2542	0.31%
Feb-18	127	9577	1.33%	123	5370	2.29%	4	4207	0.10%
Mar-18	211	11065	1.91%	196	5930	3.31%	15	5135	0.29%
Apr-18	281	11715	2.40%	266	7111	3.74%	15	4604	0.33%
May-18	226	12788	1.77%	122	7937	1.54%	104	4851	2.14%
Jun-18	120	13301	0.90%	99	6428	1.54%	21	6873	0.31%
Jul-18	300	13029	2.30%	288	8829	3.26%	12	4200	0.29%
Aug-18	253	12323	2.05%	249	10866	2.29%	4	1457	0.27%
Sep-18	209	13472	1.55%	202	9505	2.13%	7	3967	0.18%
Oct-18	274	12530	2.19%	258	7966	3.24%	16	4564	0.35%
Nov-18	327	9705	3.37%	314	4904	6.40%	13	4801	0.27%
Dec-18	189	10191	1.85%	184	7762	2.37%	5	2429	0.21%

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.

**Comment:** During this three month period, there were no unusual tracks identified.



# Departures – Over Congested Areas

## THE WIZAD NOISE PREFERENTIAL ROUTE

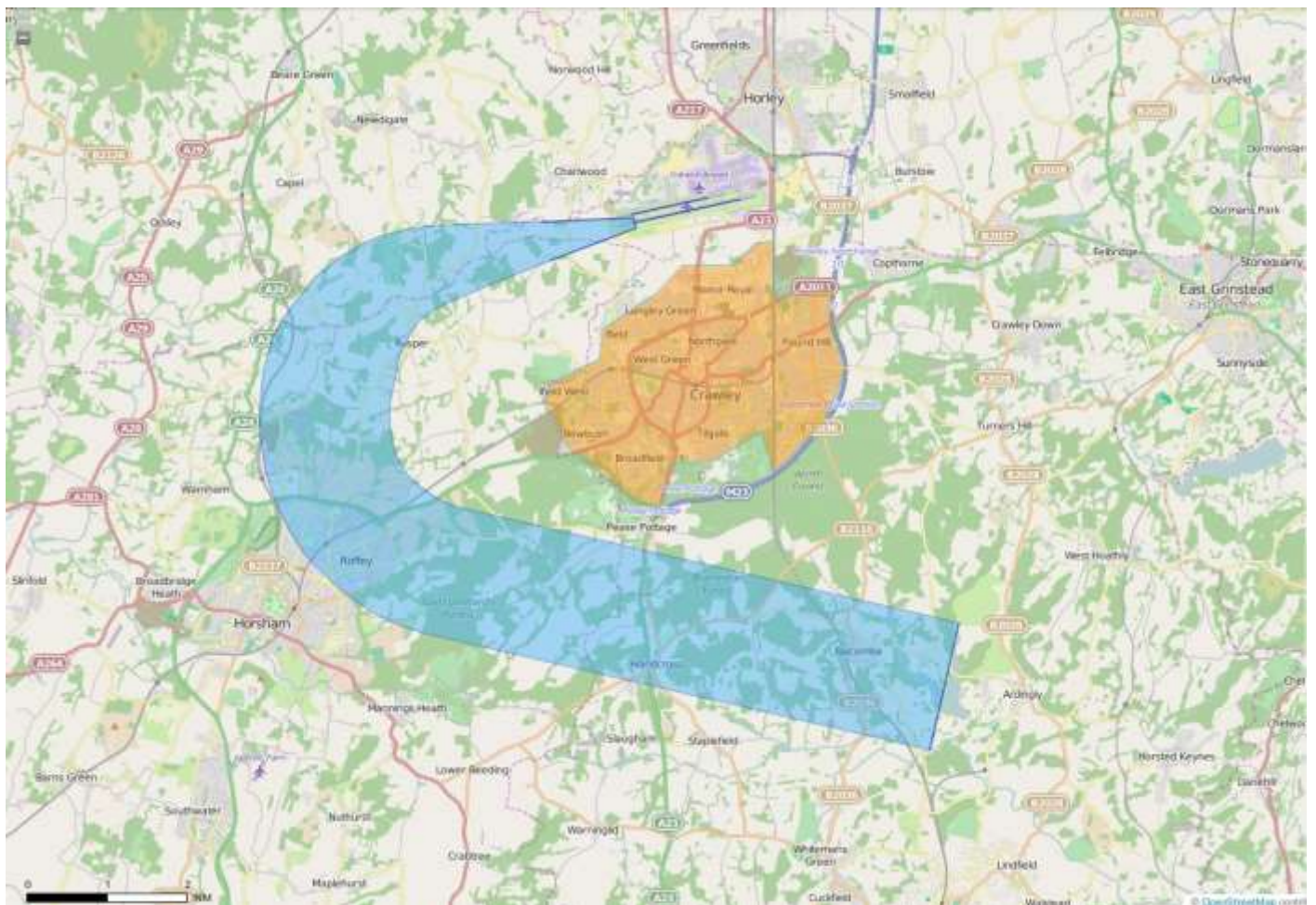
The Wized Noise Preferential Route (26WIZ or Route 9) was designated by the Government at the same time as all other Gatwick departure routes; however, it is not used on an equal basis with the other routes. It is a Tactical Offload Route and is not usually offered as part of a flight path. If the 26LAM Route (to the North of Horley) is very busy, Wized 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 0 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.*

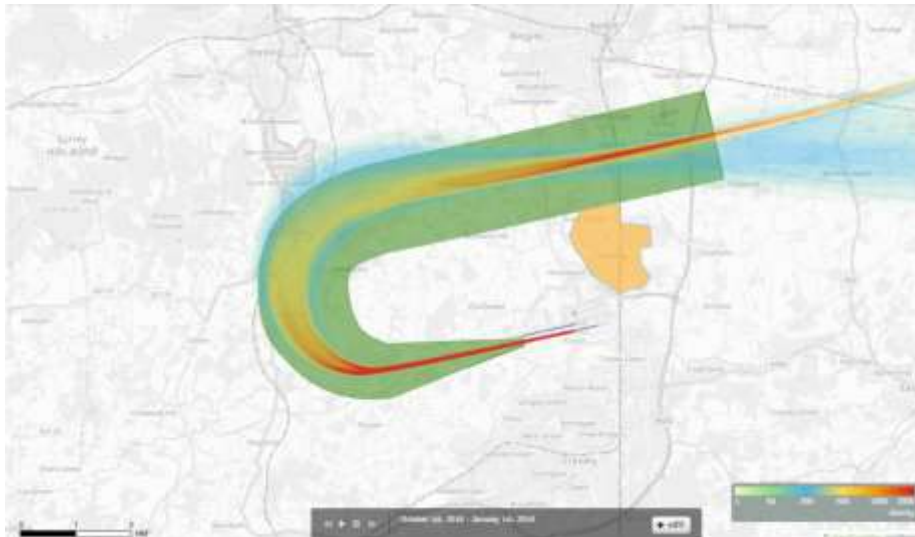
This is to avoid aircraft noise from departing aircraft over areas of high population.

**Comment:** During this period, there were no departing flights that passed over Crawley. 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 current construction of the SID is of the 'course to fix' type which determines the course to fly terminating at a waypoint whereas the 'radius to fix' specifies the curved path defined by radius, arc length and fix

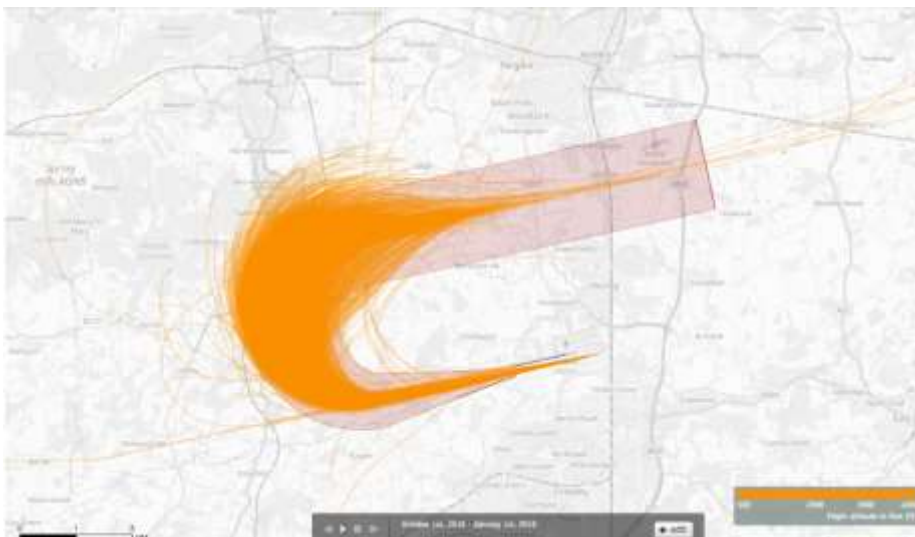
with the angle of bank being varied to achieve the specified path. Accelerating to a fixed speed in times of strong south westerly winds (2000' wind >25kts) can exceed the aircraft's authorised limits. This leads to a variance between different aircraft types and operators and therefore, some aircraft fly further north or south than others. The wind and weather (e.g. thunderstorms) also has an effect on the headings of aircraft which may result in direct overflight of Horley.

**It should be noted that the Casper NTK system experienced two radar outages between 11<sup>th</sup> and 12<sup>th</sup> July and 10<sup>th</sup> and 13<sup>th</sup> August inclusive which means data has had to be omitted from the figures for these dates**

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



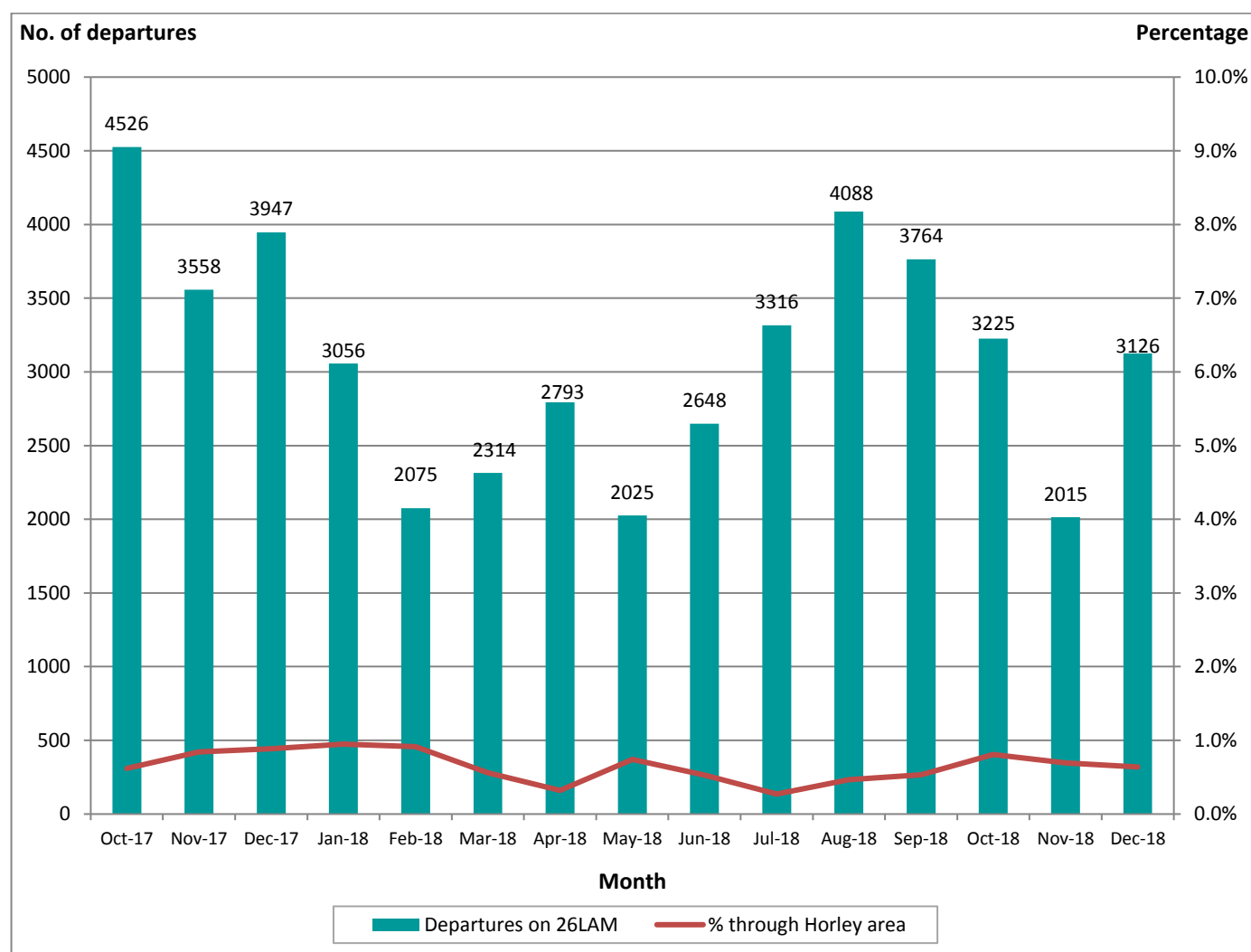
THE MAP BELOW ILLUSTRATES THE TRACKS OF DEPARTING AIRCRAFT ON THE '26 LAM' DEPARTURE ROUTE USING P-RNAV DURING THE THREE MONTH PERIOD UP TO AN ALTITUDE OF 4,000FT



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-16	3031	70	2.31%	Jan-17	2004	19	0.95%	Jan-18	3056	29	0.95%
Feb-16	2449	58	2.37%	Feb-17	2391	22	0.92%	Feb-18	2075	19	0.92%
Mar-16	2282	67	2.94%	Mar-17	3385	10	0.30%	Mar-18	2314	13	0.56%
Apr-16	3018	91	3.02%	Apr-17	3307	15	0.45%	Apr-18	2793	9	0.32%
May-16	2114	51	2.41%	May-17	2347	9	0.38%	May-18	2025	15	0.74%
Jun-16	2922	173	5.92%	Jun-17	4075	26	0.64%	Jun-18	2648	14	0.53%
Jul-16	4968	420	8.45%	Jul-17	4310	20	0.46%	Jul-18	3316	9	0.27%
Aug-16	4099	355	8.66%	Aug-17	4162	12	0.29%	Aug-18	4088	19	0.46%
Sep-16	4409	210	4.76%	Sep-17	4040	25	0.62%	Sep-18	3764	20	0.53%
Oct-16	1719	61	3.55%	Oct-17	4526	28	0.62%	Oct-18	3225	26	0.81%
Nov-16	2072	79	3.81%	Nov-17	3558	30	0.84%	Nov-18	2015	14	0.69%
Dec-16	2463	14	0.57%	Dec-17	3947	35	0.89%	Dec-18	3126	20	0.64%

THE GRAPH BELOW ILLUSTRATES THE ANALYSIS OF HORLEY OVERFLIGHT



# Arrivals – Continuous Descent Operations (CDO)

A Continuous Descent Operation (CDO) (also 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.

**It should be noted that the Casper NTK system experienced two radar outages between 11<sup>th</sup> and 12<sup>th</sup> July and 10<sup>th</sup> and 13<sup>th</sup> August inclusive which means data has had to be omitted from the figures for these dates.**



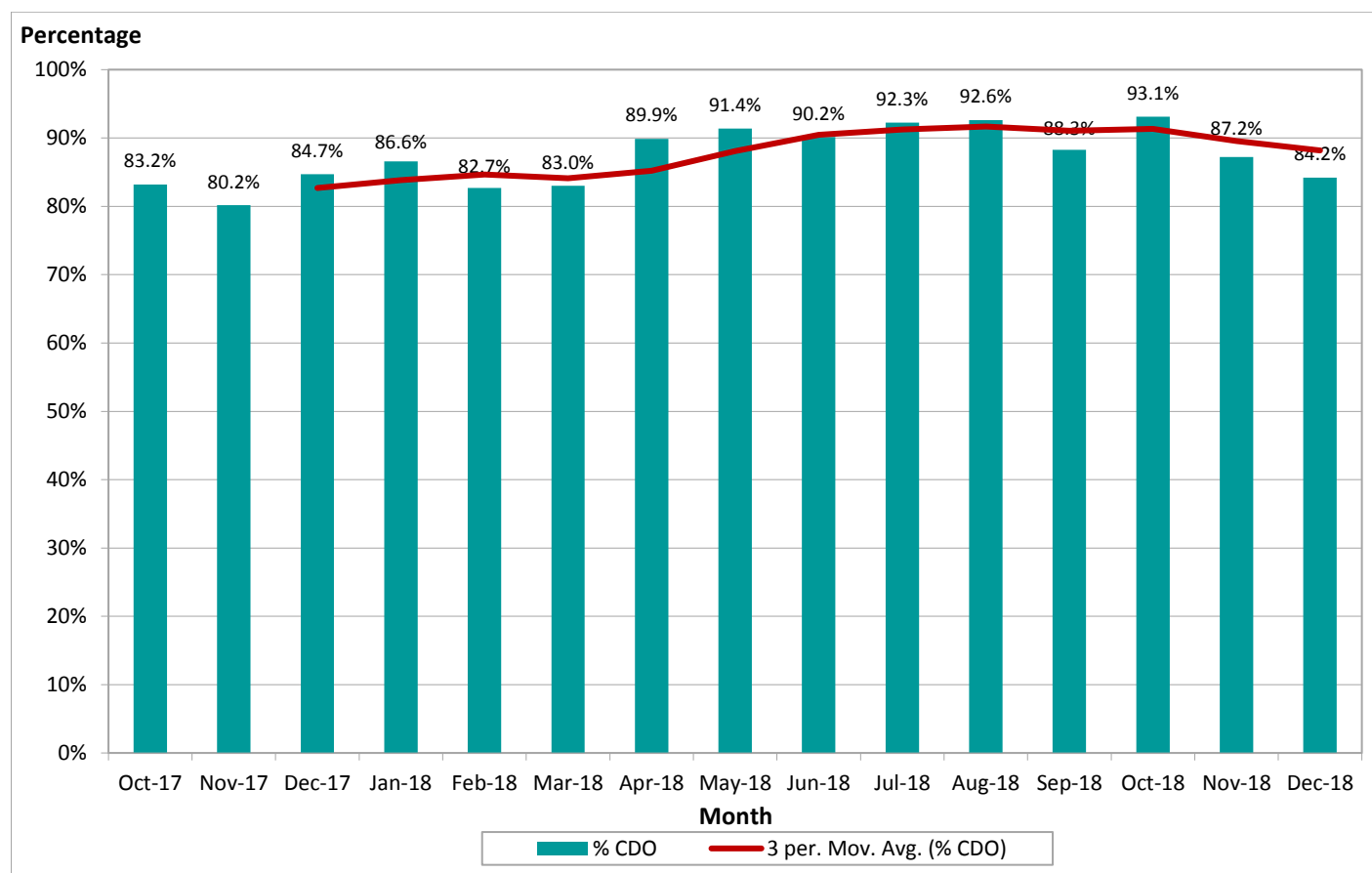


## CORE NIGHT PERIOD (2330-0600)

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-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%
<b>Jan-18</b>	291	39	86.60%	91	11	87.91%	200	28	86.00%
<b>Feb-18</b>	300	52	82.67%	150	21	86.00%	150	31	79.33%
<b>Mar-18</b>	547	93	83.00%	254	36	85.83%	293	57	80.55%
<b>Apr-18</b>	890	90	89.89%	425	23	94.59%	465	67	85.59%
<b>May-18</b>	1331	115	91.36%	841	60	92.87%	490	55	88.78%
<b>Jun-18</b>	1667	164	90.16%	945	63	93.33%	722	101	86.01%
<b>Jul-18</b>	1755	136	92.25%	502	45	91.04%	1253	91	92.74%
<b>Aug-18</b>	1561	115	92.63%	173	8	95.38%	1388	107	92.29%
<b>Sep-18</b>	1569	184	88.27%	526	51	90.30%	1043	133	87.25%
<b>Oct-18</b>	1122	77	93.14%	416	25	93.99%	706	52	92.63%
<b>Nov-18</b>	329	42	87.23%	185	23	87.57%	144	19	86.81%
<b>Dec-18</b>	437	69	84.21%	117	15	87.18%	320	54	83.13%

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

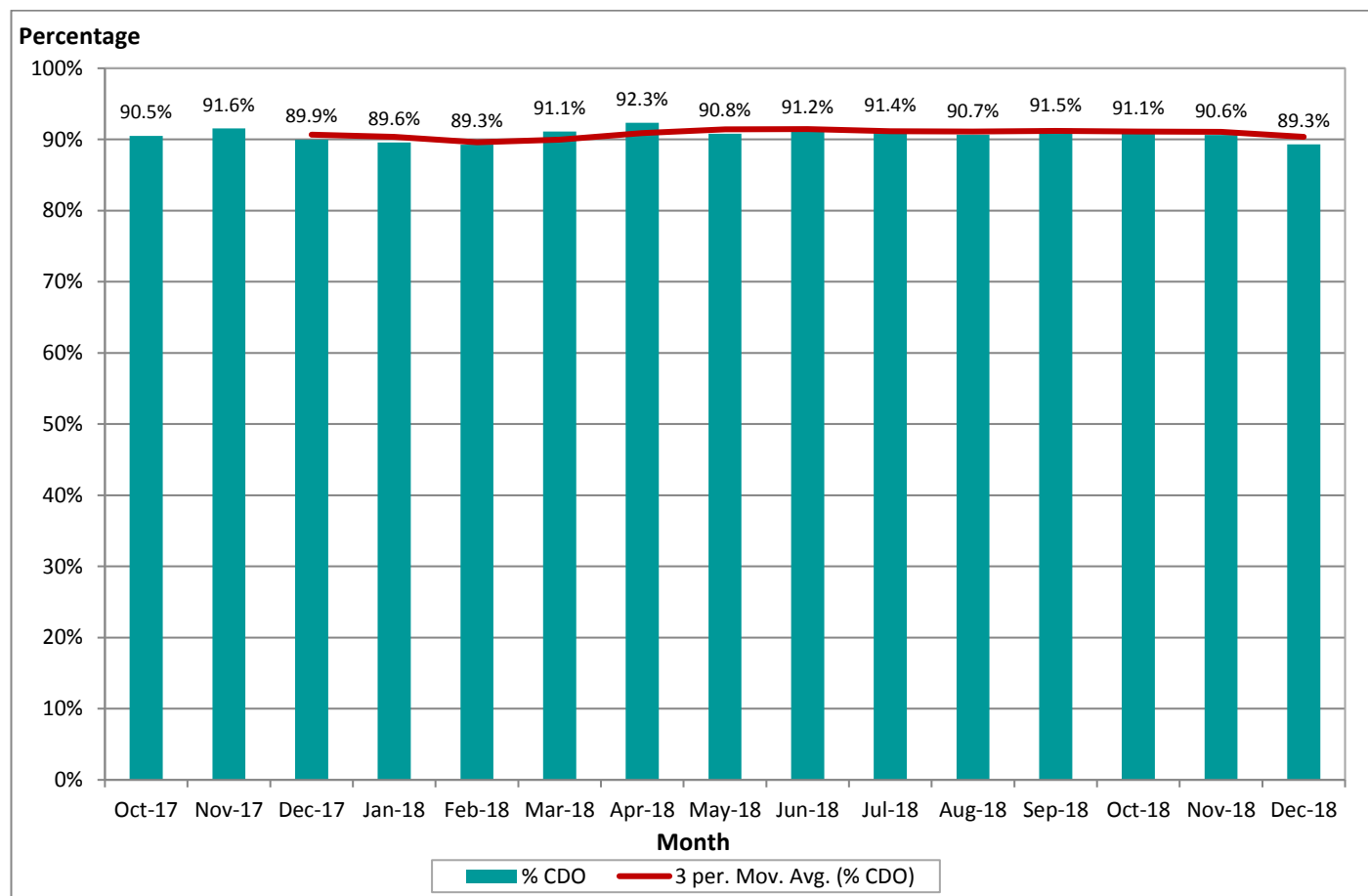


## DAYTIME AND SHOULDER PERIOD CDO ACHIEVEMENT (0600-2330)

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
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%
Jan-18	9264	965	89.58%	2311	219	90.52%	6953	746	89.27%
Feb-18	9279	997	89.26%	4136	453	89.05%	5143	544	89.42%
Mar-18	10503	935	91.10%	4826	461	90.45%	5677	474	91.65%
Apr-18	10847	831	92.34%	4221	312	92.61%	6626	519	92.17%
May-18	11443	1053	90.80%	7113	407	94.28%	4330	346	92.01%
Jun-18	11648	1023	91.22%	6042	542	91.03%	5606	481	91.42%
Jul-18	11296	967	91.44%	3551	286	91.95%	7745	681	91.21%
Aug-18	10714	1001	90.66%	1272	129	89.86%	9442	872	90.76%
Sep-18	11903	1012	91.50%	3464	324	90.65%	8439	688	91.85%
Oct-18	11434	1017	91.11%	4103	382	90.69%	7331	635	91.34%
Nov-18	9340	876	90.62%	4591	393	91.44%	4749	483	89.83%
Dec-18	9770	1045	89.30%	2304	216	90.63%	7466	829	88.90%

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

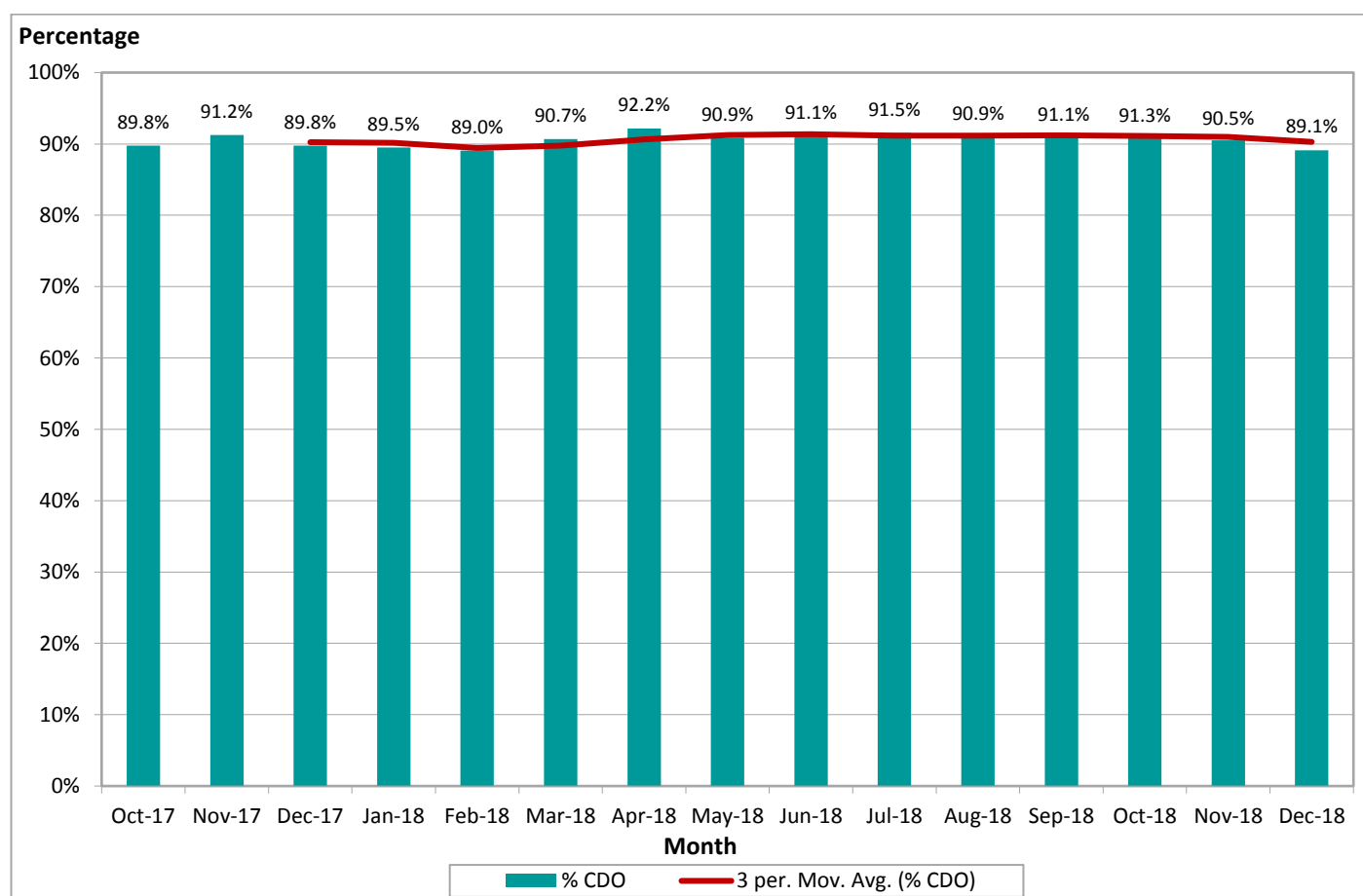


## 24 HOUR PERIOD CDO ACHIEVEMENT

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-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%
<b>Jan-18</b>	9555	1004	89.49%	2402	230	90.42%	7153	774	89.18%
<b>Feb-18</b>	9579	1049	89.05%	4286	474	88.94%	5293	575	89.14%
<b>Mar-18</b>	11050	1028	90.70%	5080	497	90.22%	5970	531	91.11%
<b>Apr-18</b>	11737	921	92.15%	4646	335	92.79%	7091	586	91.74%
<b>May-18</b>	12774	1168	90.86%	7954	767	90.36%	4820	401	91.68%
<b>Jun-18</b>	13315	1187	91.09%	6986	605	91.34%	6329	582	90.80%
<b>Jul-18</b>	13051	1103	91.55%	4053	331	91.83%	8998	772	91.42%
<b>Aug-18</b>	12275	1116	90.91%	1445	137	90.52%	10830	979	90.96%
<b>Sep-18</b>	13472	1196	91.12%	3990	375	90.60%	9482	821	91.34%
<b>Oct-18</b>	12556	1094	91.29%	4519	407	90.99%	8037	687	91.45%
<b>Nov-18</b>	9669	918	90.51%	4776	416	91.29%	4893	502	89.74%
<b>Dec-18</b>	10207	1114	89.09%	2421	231	90.46%	7786	883	88.66%

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 East Grinstead other than a small number of go-arounds. 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 66 arrivals that passed through this area. Aircraft tracks were analysed for October, November and December 2018 and there were no flights which passed over Lingfield below the altitude of 1,698ft (2,000ft Gatwick QNH).

**It should be noted that the Casper NTK system experienced two radar outages between 11<sup>th</sup> and 12<sup>th</sup> July and between 10<sup>th</sup> and 13<sup>th</sup> August inclusive which means data has had to be omitted from the figures for these dates.**



## 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 32,446 arrivals recorded by ATC between 1<sup>st</sup> October and 31<sup>st</sup> December 2018. 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 138 (0.46%). In addition, there were 19 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:

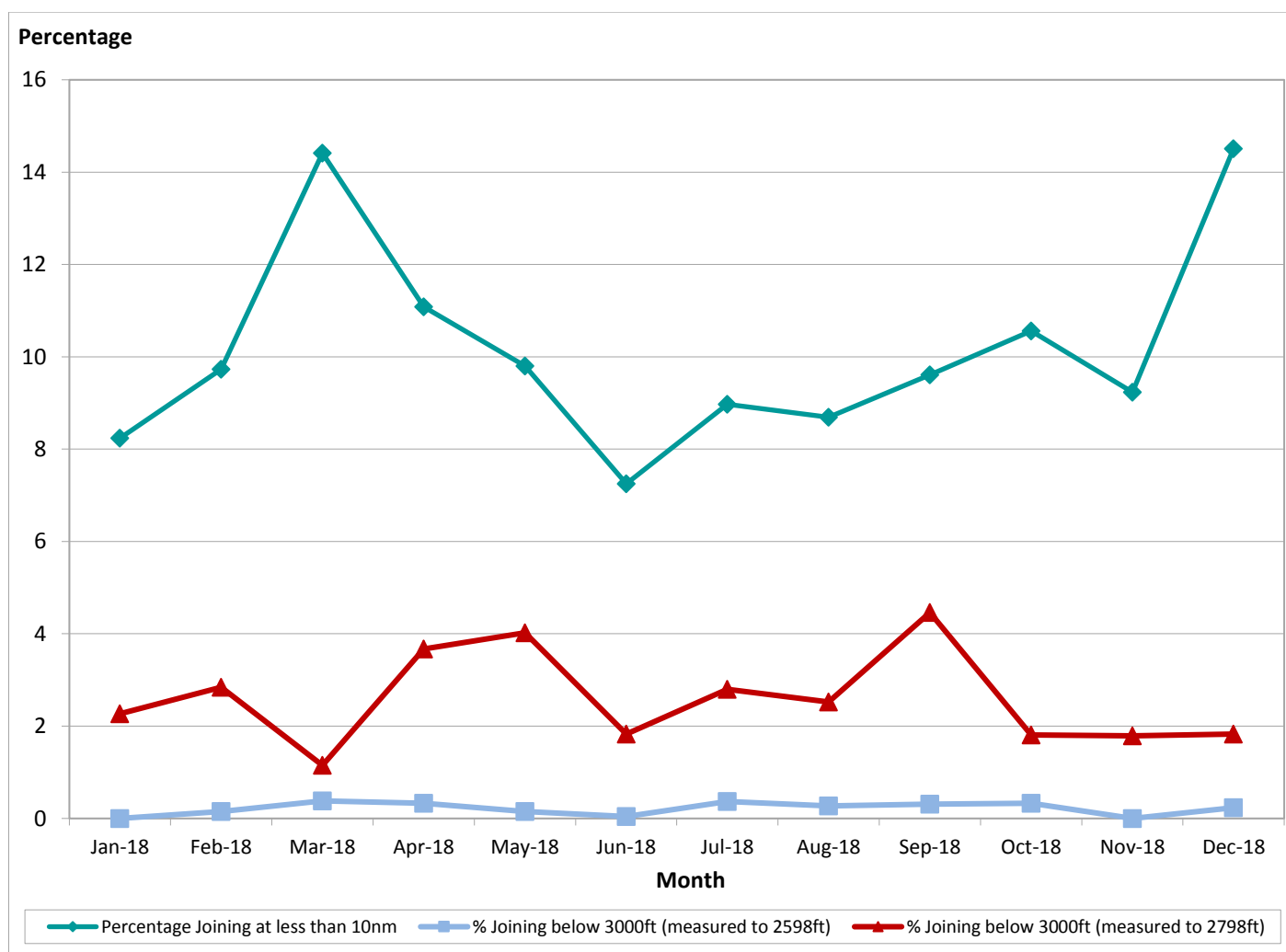
- a) below 3000ft, or
- b) closer than 10 nm from touchdown.

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

During the standby runway operations, usually during the night period during maintenance of the main runway, as the threshold is in a different location that the main runway, a different radar map is used for the extended centreline, so the 10 nautical mile (nm) marker is in a slightly different location. As we are complying with 10nm on the standby runway, this may be flagged as a join inside 10nm on the main runway. This means the percentage joining below 10nm may be slightly higher in recent months as there has been an increased use of standby runway operations at night.

**It should be noted that the Casper NTK system experienced two radar outages between 11<sup>th</sup> and 12<sup>th</sup> July and 10<sup>th</sup> and 13<sup>th</sup> August inclusive which means data has had to be omitted from the figures for these dates.**

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



N.B. 3,000ft (Gatwick QNH) – 202ft (airfield elevation) = 2,798ft on Airports Noise & Track Keeping System

3,000ft (Gatwick QNH) – 202ft (airfield elevation) – 200ft ATC radar tolerance = 2,598ft on Airports Noise & Track Keeping System

# Go-Around Statistics 2004 - 2018

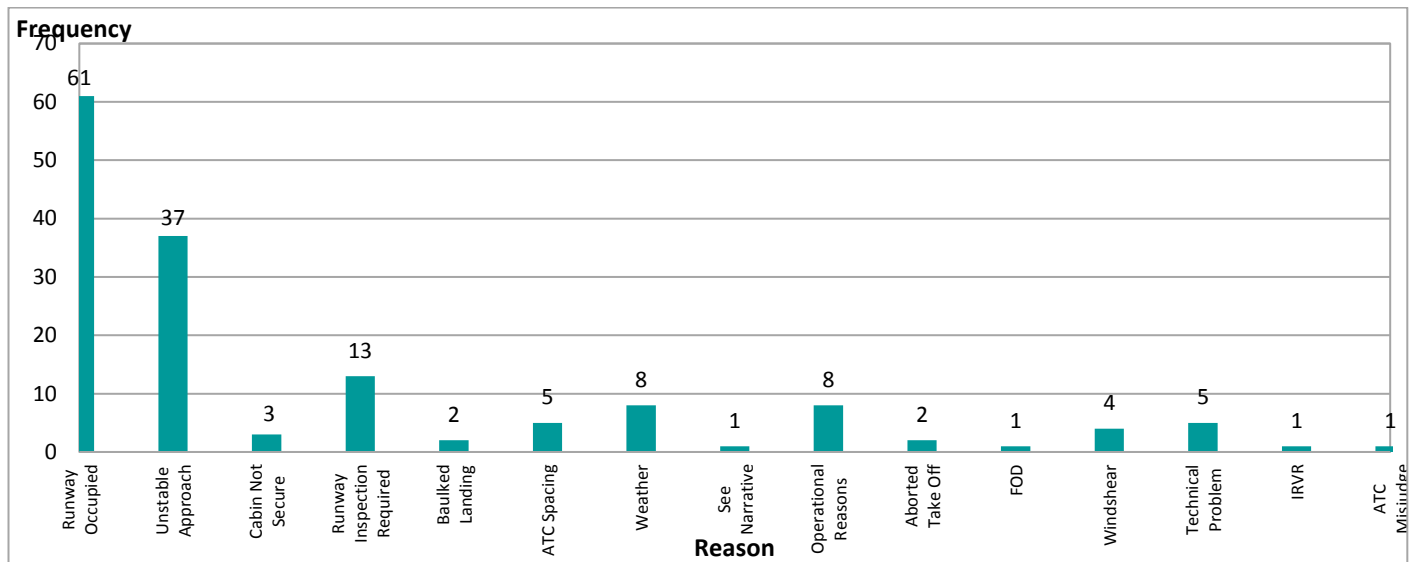
A go-around is a procedure adopted when an arriving aircraft on final approach aborts landing by applying take-off power and climbing away from the airport. It is a set procedure to be followed by the flight crew in the event of an aircraft being unable to land. The procedure is published so that Air 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.

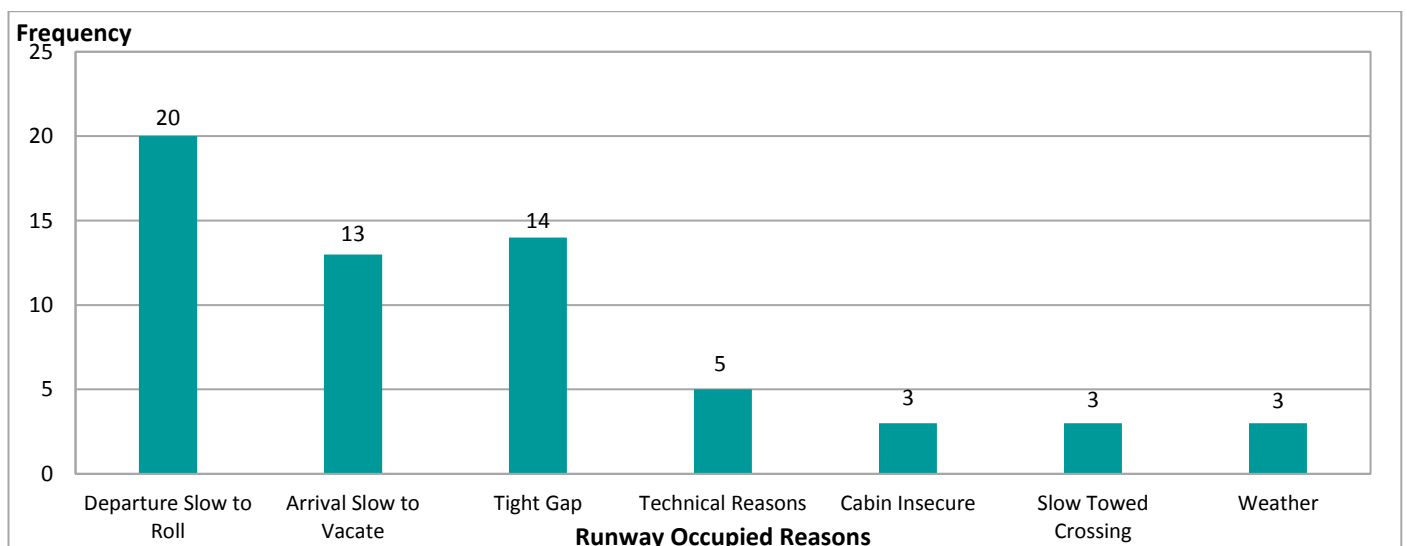
The number and reasons for go-arounds are routinely discussed at FLOPSC meetings and Pilot Forums. All parties are focussed on minimising the number of occasions when a go-around is required, but expect some to occur given the fact that Gatwick is a busy single runway airport.

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.

## ANS CURRENTLY RECORD GO-AROUNDS UNDER ONE OF THE FOLLOWING CAUSAL FACTORS (OCTOBER-DECEMBER 2018)



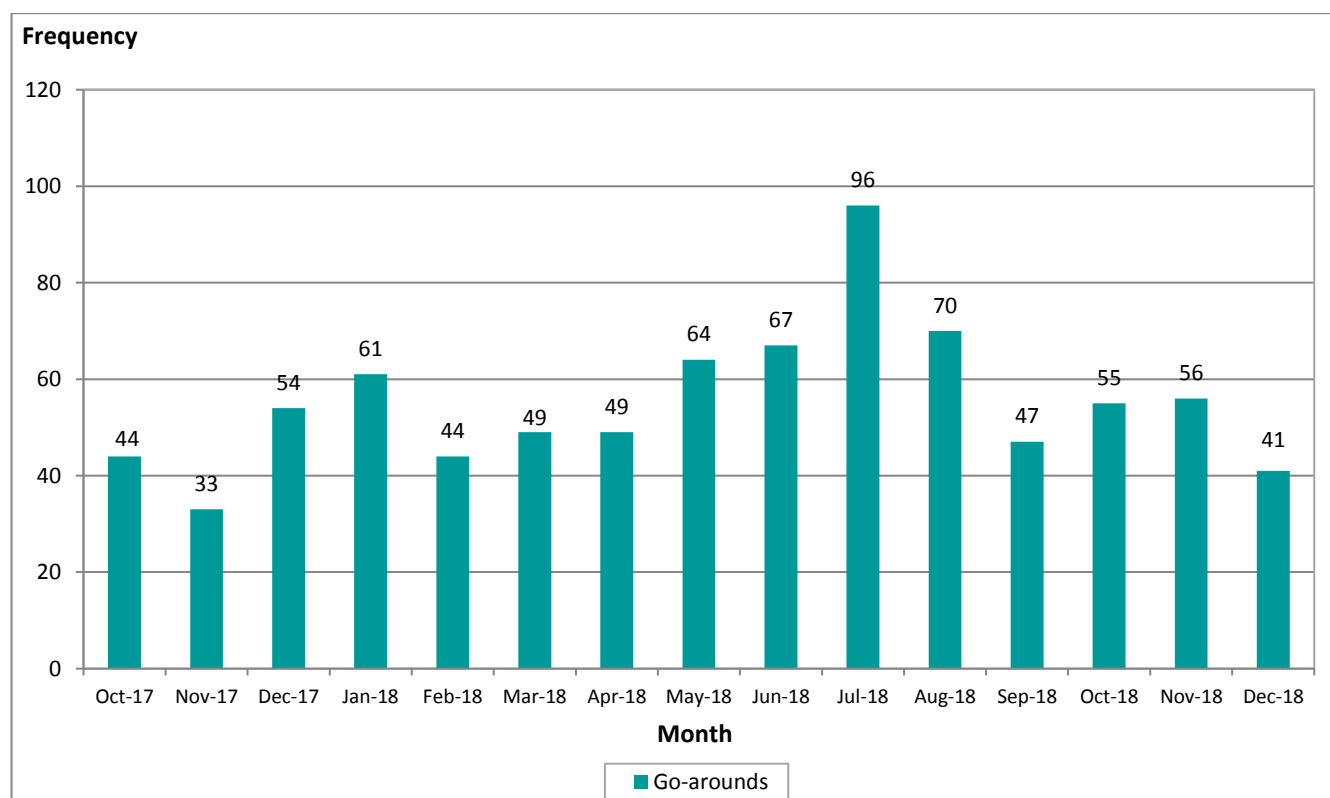
## THE REASONS GIVEN BY ANS FOR GO-AROUNDS DUE TO RUNWAY OCCUPANCY DURING THE THREE MONTH PERIOD



THE TABLE BELOW ILLUSTRATES GO-AROUND STATISTICS 2004 – 2018

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
2018	699	141950	0.49

THE GRAPH BELOW ILLUSTRATES TOTAL NUMBER OF GO-AROUNDS PER MONTH





# 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 new restrictions on night flying came into force in October 2017, to remain in force until 2022 for all the London airports. At Gatwick, the new regime maintains the status quo for movements and quota count (QC) until the winter season in 2018/19. This season sees a reduction in the QC limit and a new QC value of 0.125 applied to some aircraft which are currently classified as QC0. As of October 2017, all aircraft movements have counted towards the night quota limit, including those previously exempt. This will further incentivise the use of quieter aircraft as an airport can continue the use of its movement allowance but the average noise produced by an aircraft cannot increase.

## RESTRICTIONS

Winter	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22
Movements	3250	3250	3250	3250	3250	3250
Limits						
Quota Points	2000	2000	1785	1785	1785	1785

Summer	2017	2018	2019	2020	2021	2022
Movements	11200	11200	11200	11200	11200	11200
Limits						
Quota Points	6200	6200	5150	5150	5150	5150

Overleaf is a mid-season report for winter 2018 which commenced at 02:00 on the 28<sup>th</sup> October 2018 and will end at 01:00 on the 31<sup>st</sup> March 2019. 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 109 dispensations applied during this winter season so far. The reasons are as follows:

- 29 dispensations were granted due to prolonged disruption caused by adverse weather conditions.
- 66 dispensations were granted as a direct result of the disruption caused by the drone incident on 19<sup>th</sup>/20<sup>th</sup> December.
- And 14 dispensations were granted due to ATC flow restrictions in place to aid recovery from that incident.

## 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.

## London Gatwick

### AIRPORT MOVEMENTS and QUOTA SUMMARY to WEEK 9 (28 OCTOBER 2018 to 29 DECEMBER 2018 inc.)

Season Quota Points Limit 1785 Season Movement Limit 3250  
Total Quota Points Allowed 1785 Total Movements Allowed 3250

Wk No.	Week Ending Date	QC0 No.	QC0.125 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	03/11/2018	1	5	78	74	26	4	0	0	0	91.125	188	0	0	0	167	88.8	21	11.2	188
2	10/11/2018	0	6	19	40	20	3	0	0	0	51.5	88	0	0	0	75	85.2	13	14.8	88
3	17/11/2018	0	2	30	36	21	1	0	0	0	48.75	90	20	0	0	92	83.6	18	16.4	110
4	24/11/2018	2	0	23	35	17	2	0	0	0	44.25	79	0	0	0	67	84.8	12	15.2	79
5	01/12/2018	0	2	21	33	18	2	0	0	0	44	76	0	0	0	63	82.9	13	17.1	76
6	08/12/2018	0	1	26	37	18	3	0	0	0	49.125	85	0	0	0	71	83.5	14	16.5	85
7	15/12/2018	1	3	33	49	22	2	0	0	0	59.125	110	0	0	0	93	84.5	17	15.5	110
8	22/12/2018	0	0	28	28	21	3	0	0	0	48	80	0	66	0	116	79.5	30	20.5	146
9	29/12/2018	0	1	42	53	24	1	0	0	0	63.125	121	23	0	0	117	81.2	27	18.8	144
TOTALS		4	20	300	385	187	21	0	0	0	499	917	43	66	0	861	83.9	165	16.1	1026

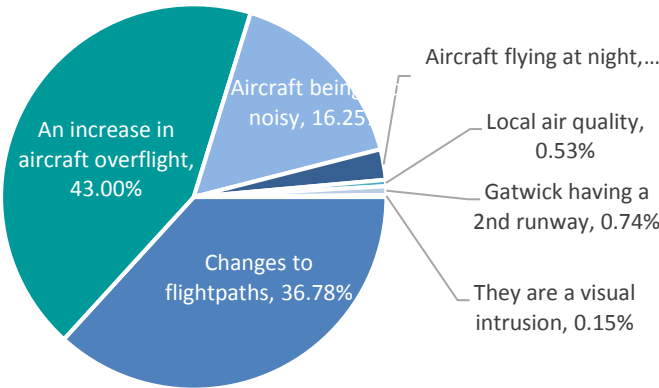
Quota Points Available 1286.00 Movements Available 2333  
Quota % Points Used 28.0 Movements % Used 28.2  
Note 1 Not Cont'd Delays Delays likely to lead to serious congestion and delays resulting from widespread disruption of Air Traffic.  
Note 2 Not Cont'd Gov't Exemptions granted by Gov't (VIP Passengers, Emergency Relief).  
Note 3 Not Cont'd Emerg Emergency Take-offs and Landing

# Noise Complaints

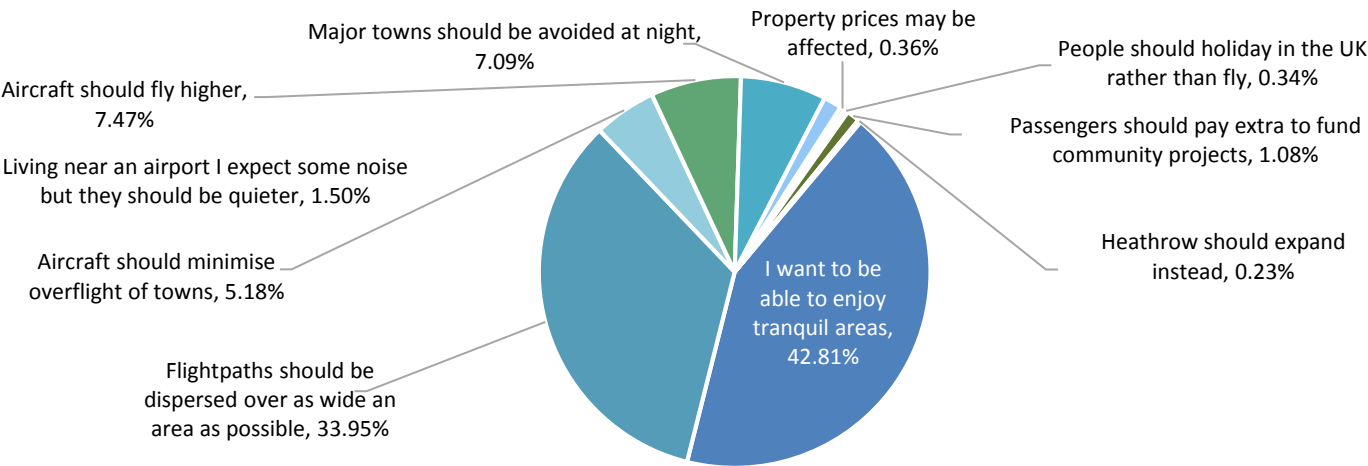
It is important that we understand the issues of noise disturbance from individuals and communities who live around the airport. By studying the complaints we receive and by communicating with the affected towns and villages surrounding the Airport, we believe that this gives us a greater understanding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

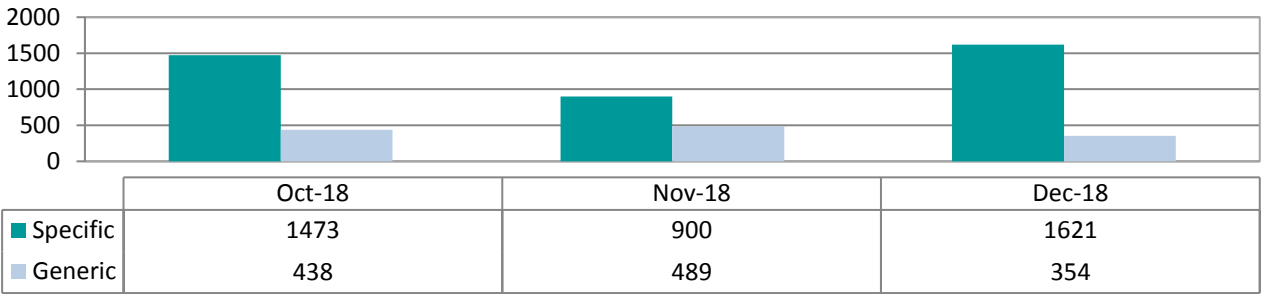
PERCENTAGE OF COMPLAINT OBSERVATIONS MOST AGREED WITH



PERCENTAGE OF COMPLAINT CONCERNS MOST AGREED WITH



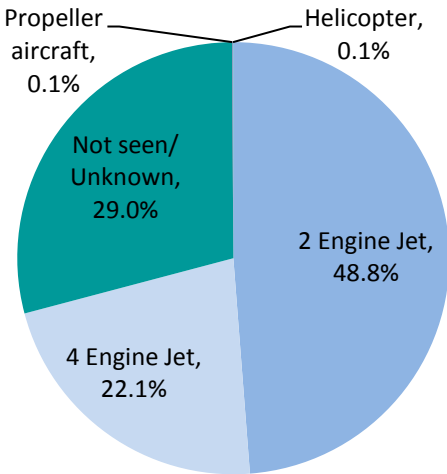
COMPLAINTS RECORDED BY MONTH – WEB ONLY



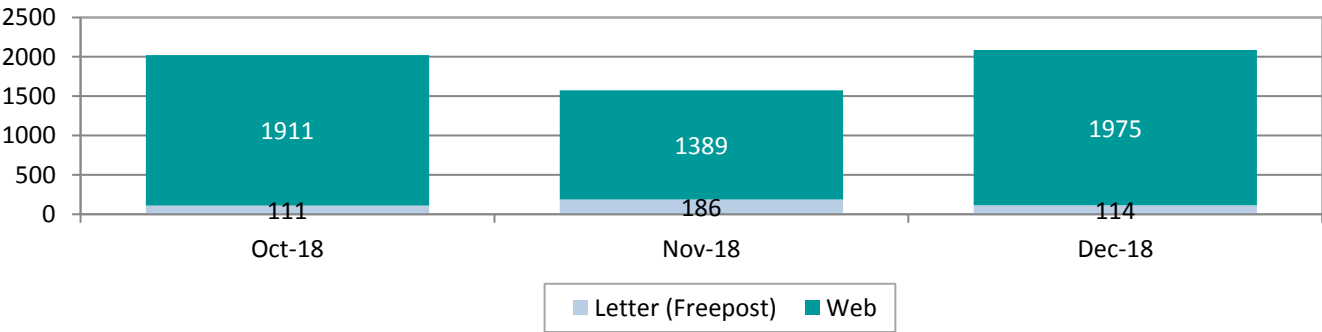
Noise is very subjective and can affect people in different ways. Some people can tolerate a certain noise level whilst it can cause disturbance to others. As well as identifying the issues of noise, it is important to understand the location of each individual complaint.

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

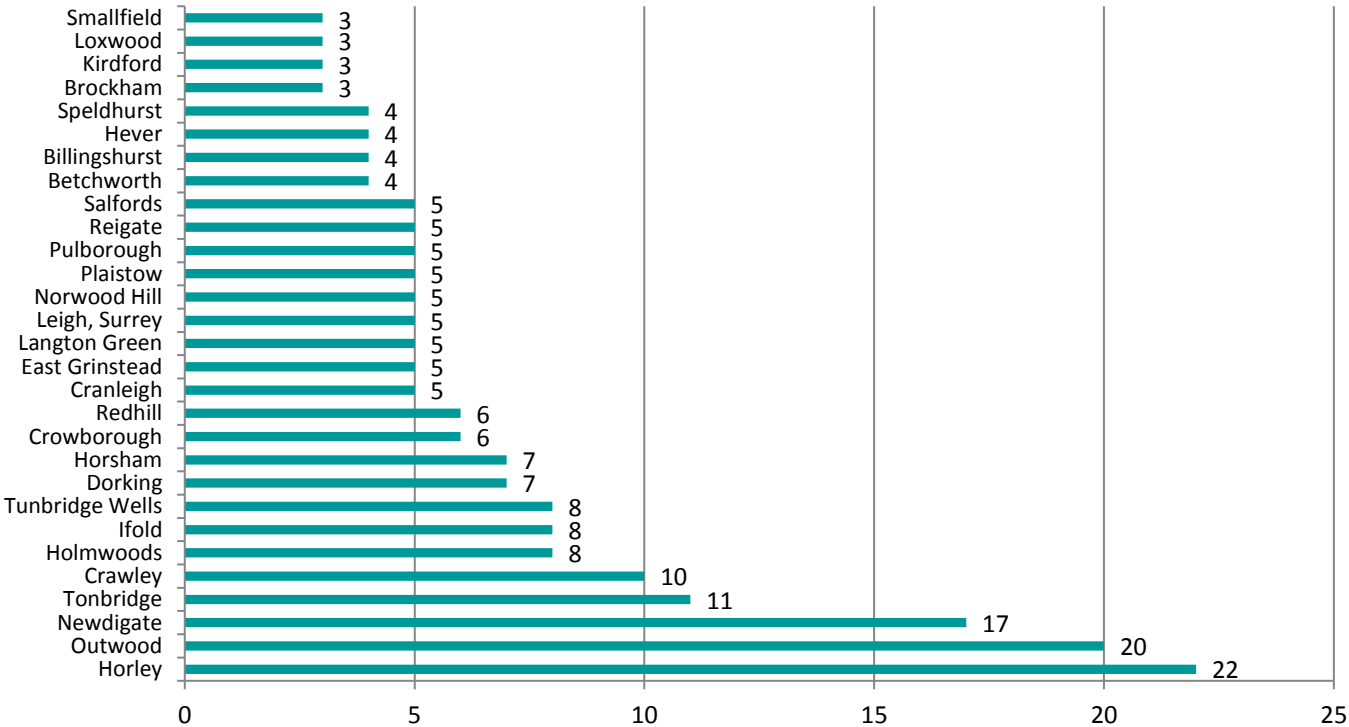
### CATEGORIES OF AIRCRAFT TYPES FROM SPECIFIC COMPLAINTS



### METHOD OF COMPLAINT

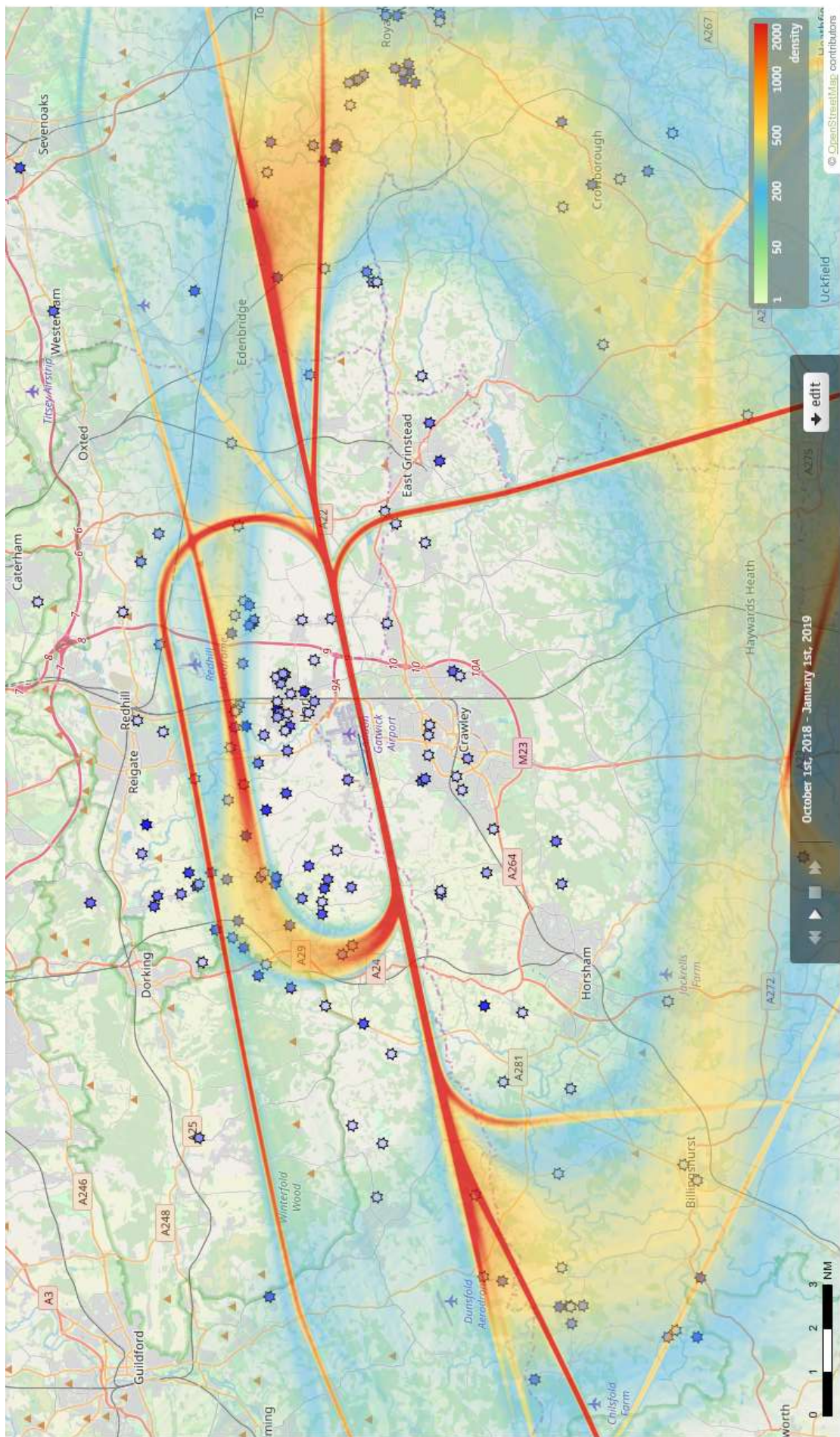


### NUMBER OF INDIVIDUAL COMPLAINANTS BY TOWN/VILLAGE



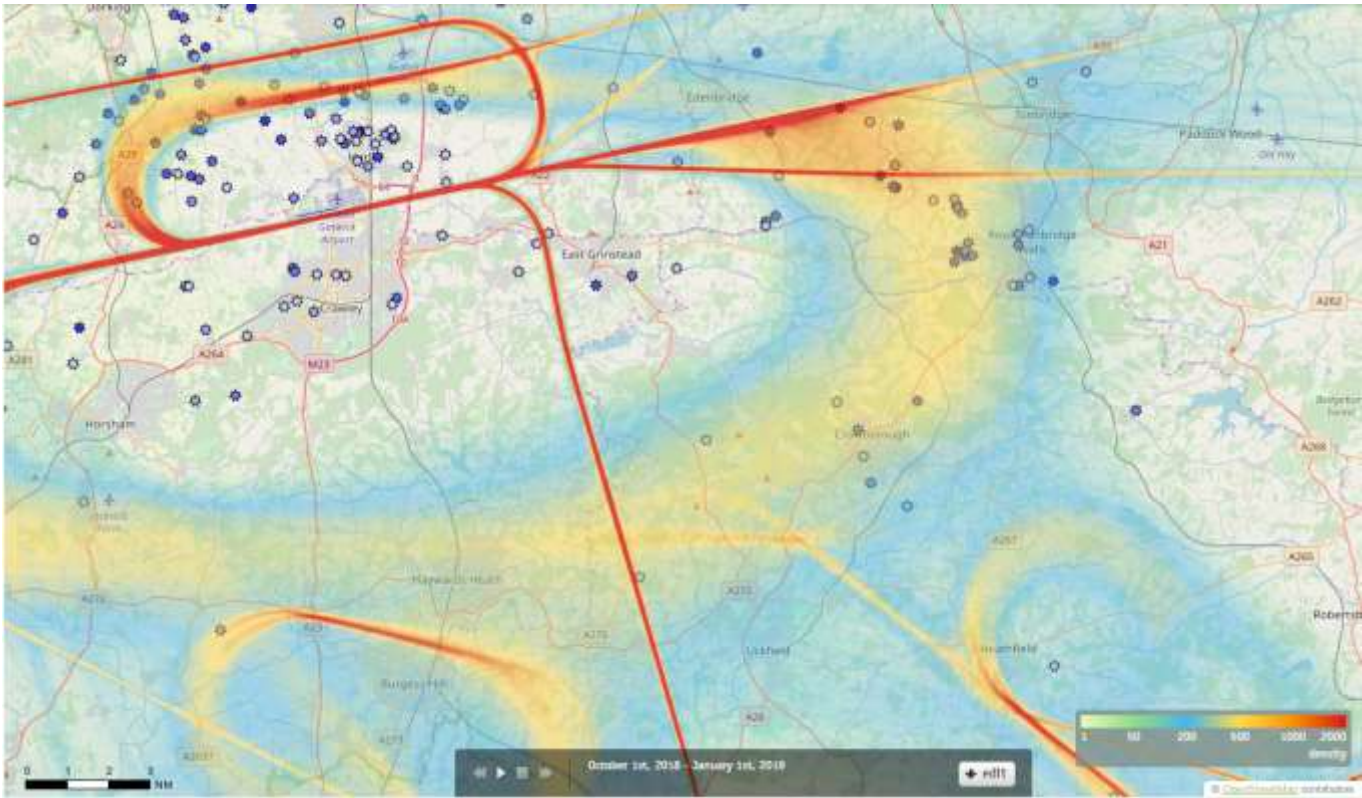


THE MAP BELOW ILLUSTRATES THE LOCATION OF NOISE COMPLAINTS RECEIVED BETWEEN OCTOBER - DECEMBER 2018

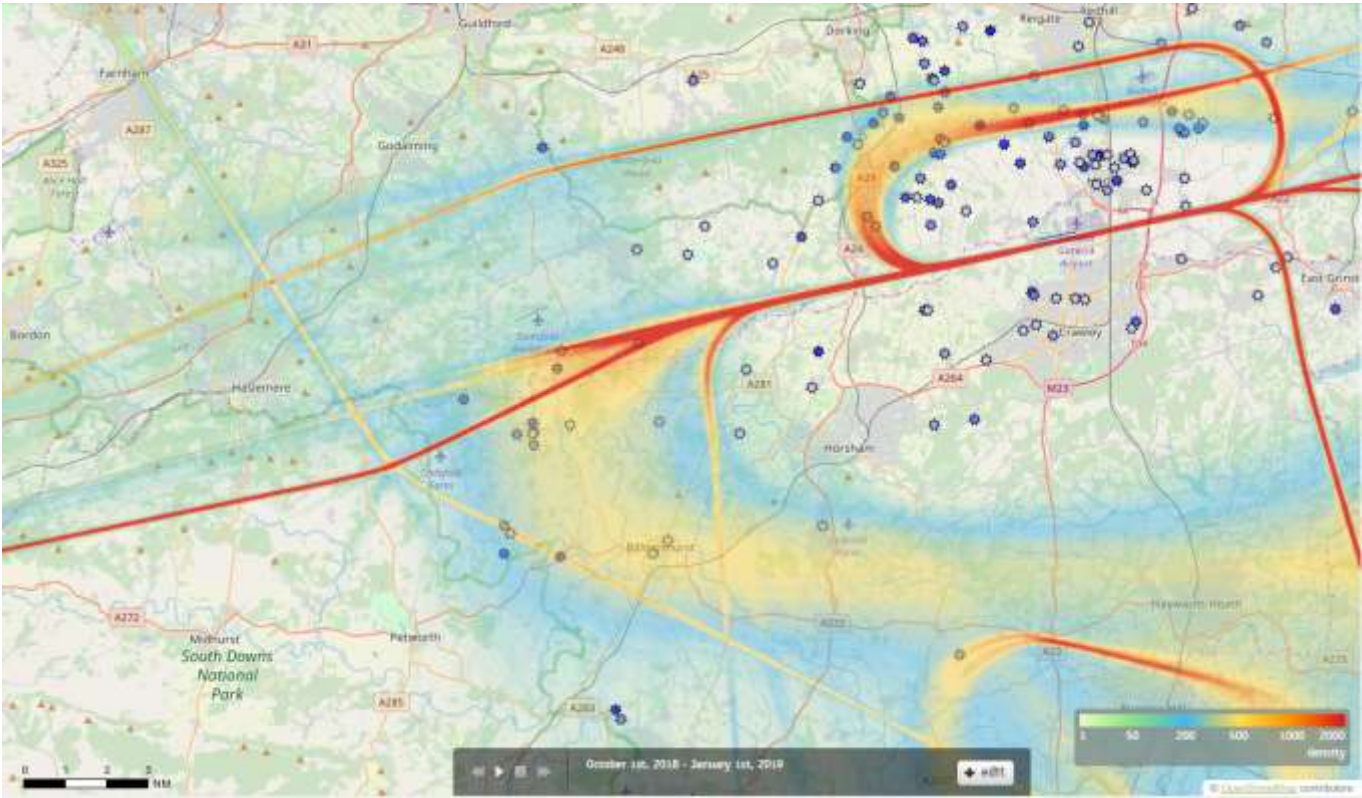




THE MAP BELOW ILLUSTRATES NOISE COMPLAINTS RECEIVED TO THE EAST (OCTOBER-DECEMBER 2018)



THE MAP BELOW ILLUSTRATES NOISE COMPLAINTS RECEIVED TO THE WEST (OCTOBER-DECEMBER 2018)



# Ground Noise Complaints

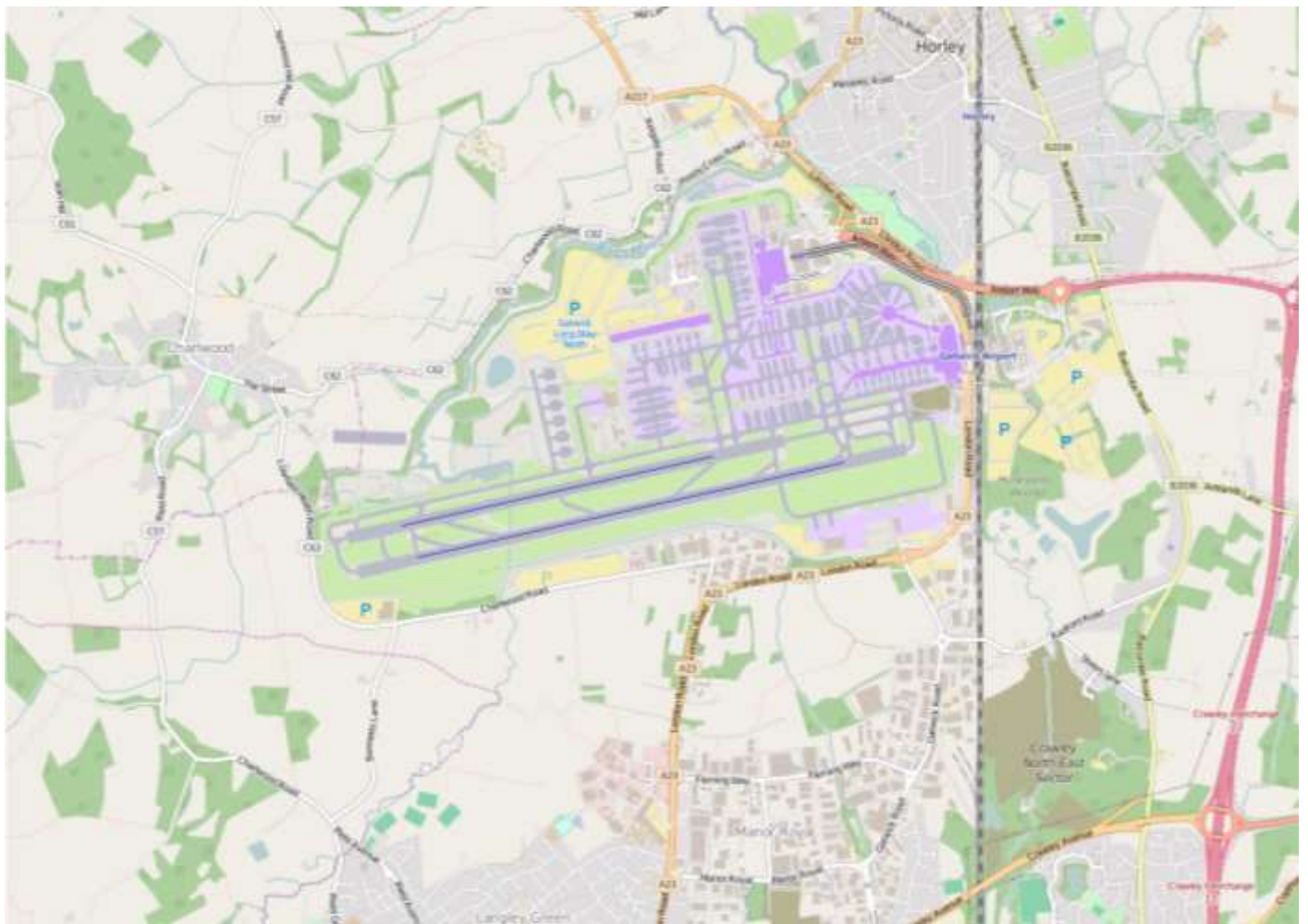
We occasionally receive complaints about disturbance from noise from within the boundary of the airfield. These can be caused by the normal operation of aircraft moving about the airfield, taking off and landing. Additional sources of noise disturbance can be the use of Auxiliary Power Units (APU) by 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 this 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*