Gatwick Airport
Flight Performance Report

This report covers the period
(1st January – 31st March 2016)

YOUR LONDON AIRPORT
Gatwick

Contents

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 – 1st JANUARY 2016 – 31st MARCH 2016

Parameter		12 month performance averages*			
		Year to date (2016)	Previous year (2015)	2011	2006
Track keeping performance (% on track)	▲	99.66%	99.57%	97.47%	98.17%**
24hr CDO (% achievement)	▼	88.53%	92.65%	90.49%	80.79%
Day/Shoulder CDO (% achievement)	▼	87.91%	92.38%	90.19%	79.9%
Core night CDO (% achievement)	▲	95.00%	95.34%	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
Callers	▲	1700	3499	343	587
Noise complaints* **	▲	15692	23420	2673	4791
Enquiry response performance target is 95% within 8 days (January – March 2016)	▲	99.88%	99.95%	KPI 95%	
West/East Runway Split (%)	-	70/30	66/34	67/33	68/32

* The colour indicates the most recent 12 month performance compared to 2011, with green showing improvement and red a decline in performance.
** This figure did not include deviations from prop types or those due to weather.
*** Complaints are recorded in line with our published complaints handling policy. The revised policy, published in November 2014, advises that only one complaint per day is recorded per individual.

Executive Summary Performance Headlines

AIRPORT OPERATIONS

Between 1st January and 31st March 2016, there were a total of 58,308 fixed wing aircraft movements at Gatwick, an increase in traffic of about 5.67% compared to the same period in 2015. The direction of operation is determined by wind direction and this was split 70% on the westerly runway and 30% on the easterly runway for the period. The rolling 20 year average for the split in runway usage is approximately 70% westerly and 30% 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 292 movements from the northern runway.

TRACK KEEPING

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

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

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

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. During the winter months of 2015/16, there was a procession of severe winter storms driven by Atlantic weather systems.

COMMUNITY NOISE MONITORING

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

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

COMPLAINTS

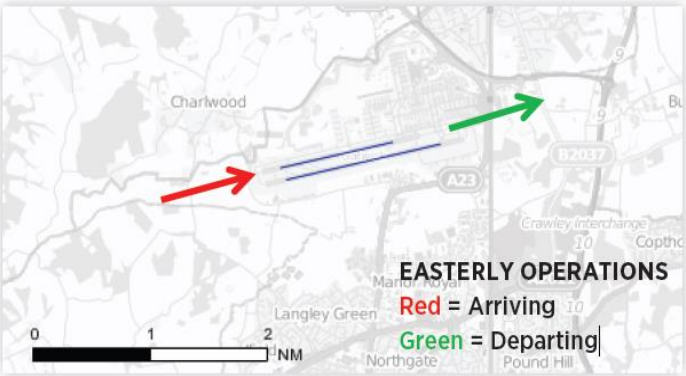
The number of recorded complaints has decreased compared to the previous twelve months as well as the number of individual callers which have also declined. Despite this, the number of recorded complaints has still remained higher than in 2011. The past year has been the busiest year in the airport's history and there has also been a large amount of publicity surrounding the potential second runway, and the community issues related to the ADNID trial, which may be contributing factors for the number of complaints in 2015.

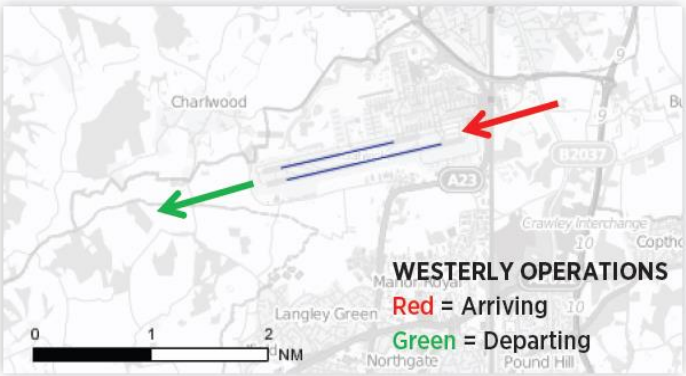
The postcode areas with the greatest number of enquiries during the three month period were Tunbridge Wells, Crowborough, Reigate and the Holmwoods. The number of individual complainants between January and March 2016 was **562**. Complaints about aircraft operations are processed in accordance with our published Complaints Handling Policy. Details of this policy are available on our website. With regards to individuals making multiple complaints, these are recorded as one complaint per individual per day.

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.

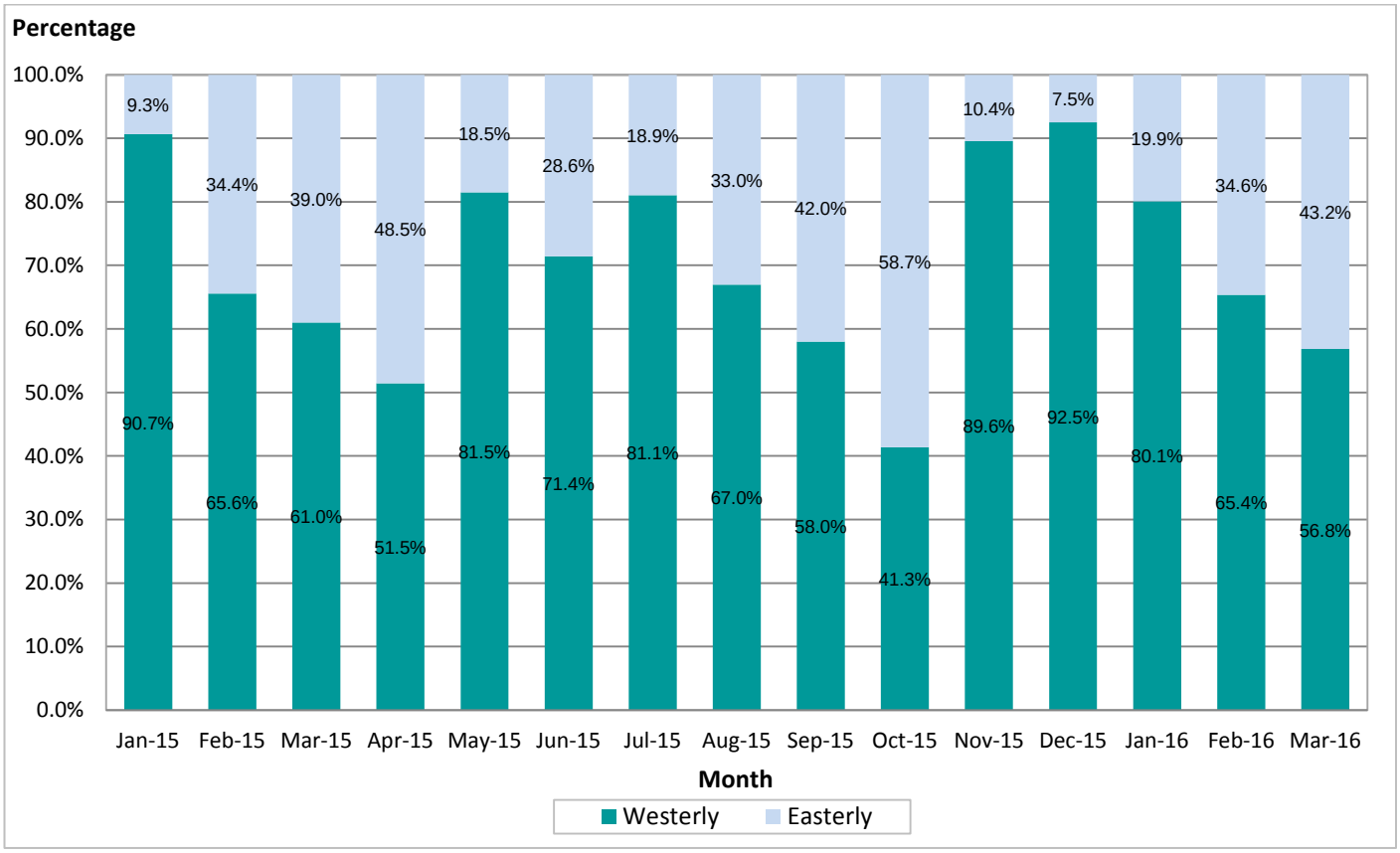
Although the long term average is approximately 70:30 in favour of westerly operations, it is not unusual to experience long periods of prolonged operation in either one direction or another.





RUNWAY DIRECTION SPLIT

THE GRAPH BELOW SHOWS THE SPLIT OVER THE 15 MONTH PERIOD (JANUARY 2015 – MARCH 2016)



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 (0700 to 2300 hours local time) as measured at any noise monitoring terminal at any of the sites referred to in sub-paragraph (2).* This is to ensure that departing aircraft do not exceed the stated level during the day.

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

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 (2300 to 0700 hours local time) and that it will not cause more than 87 dBA Lmax during the night quota period (2330 to 0600 hours local time) as measured at any noise monitoring terminal at any of the sites referred to in sub-paragraph (2).* This is to ensure that departing aircraft do not exceed the stated levels during the night and shoulder periods.

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

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 1,000ft aal (above airfield level) at 6.5 km from start of roll as measured along the departure track of the aircraft.* This is to ensure departing aircraft achieve at least that climb gradient in order to reduce the impact on the ground.

Comment:

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

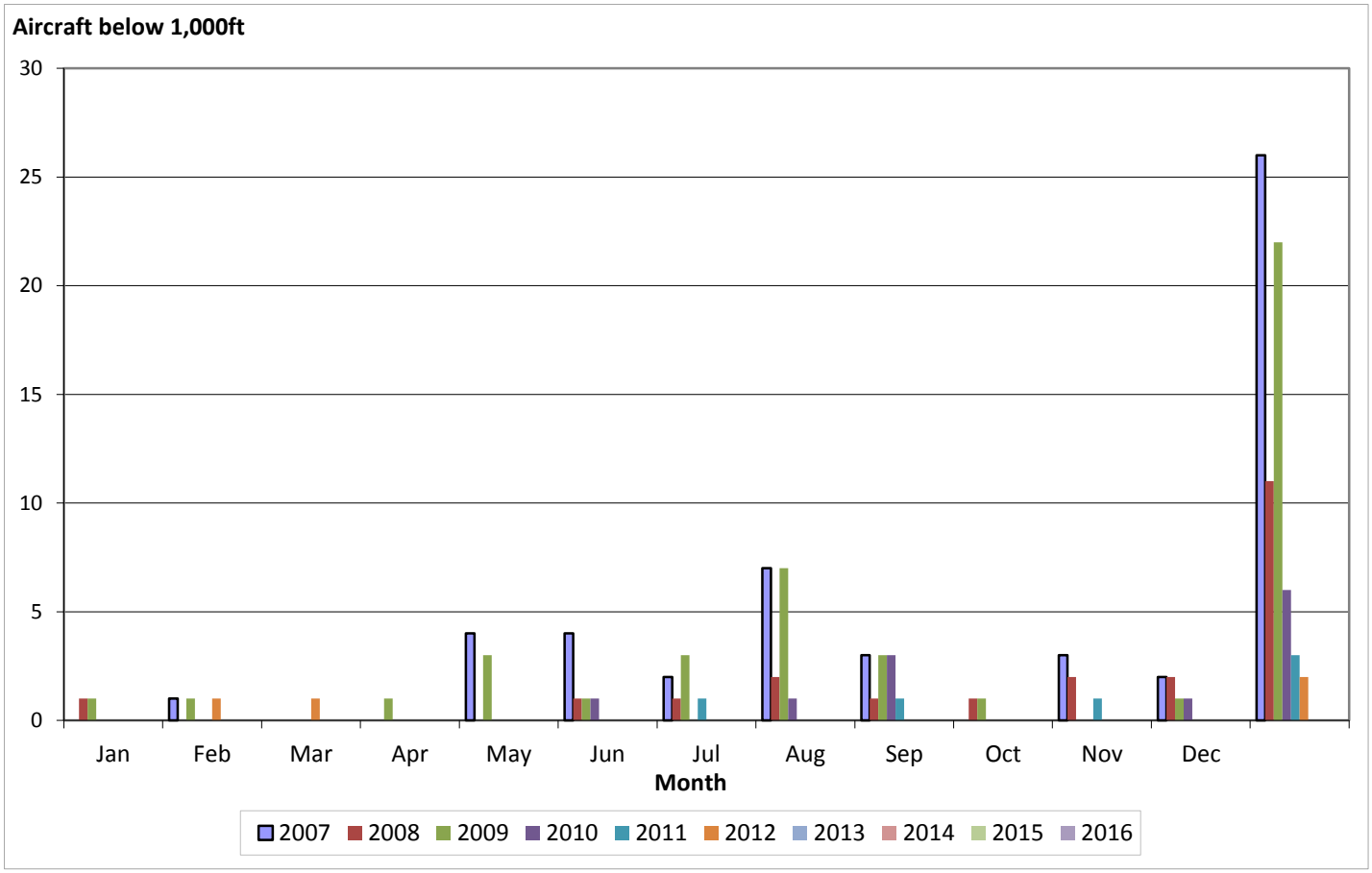
Historically, the summer months are typically the peak period for aircraft failing to meet the 1,000ft requirement, primarily due to the warmer weather which reduces aircraft climb performance.

1,000ft INFRINGEMENT TABLE

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

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 on our website: **www.gatwickairport.com/noise**

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.

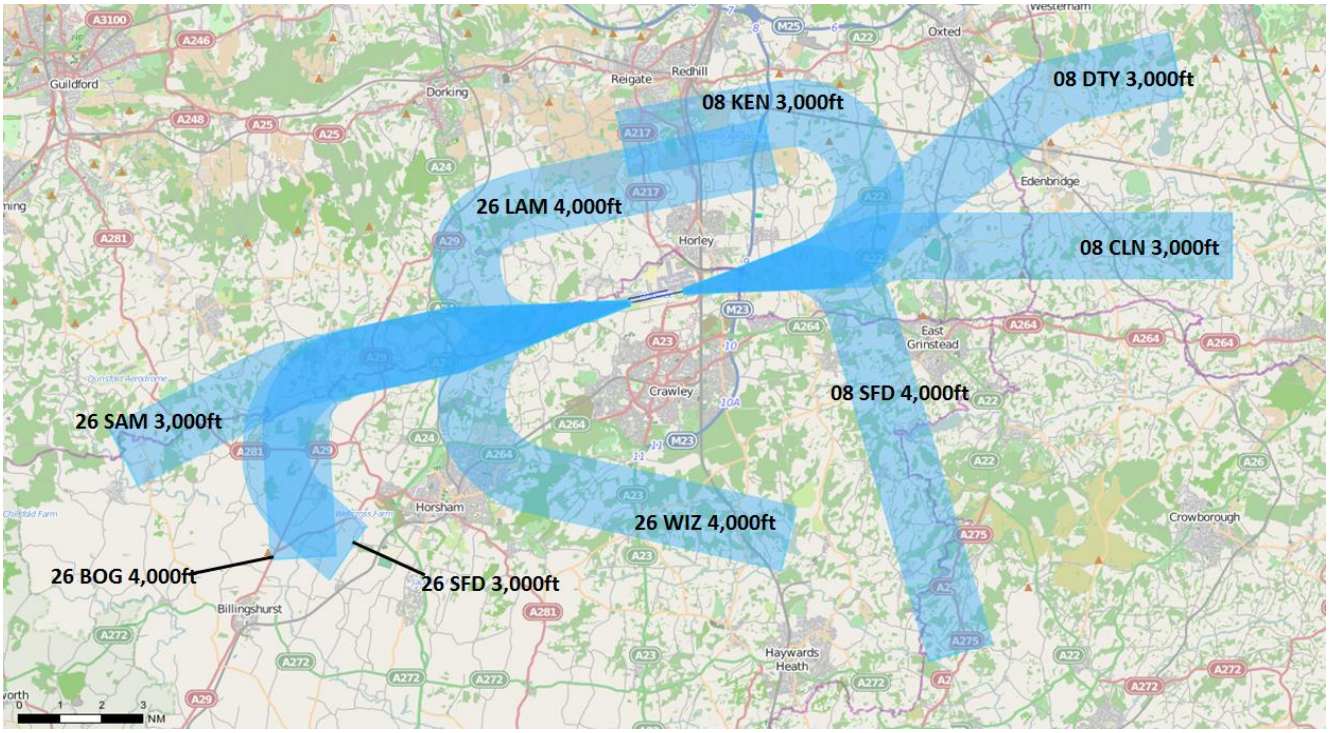
Implementing P-RNAV on the published departure routes has resulted in the tracks of departing aircraft being more concentrated within the boundaries of the current NPR's, with one exception.

This is the NPR designed 26LAM 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 now requires aircraft to fly outside of the current NPR. Therefore, as approved by the CAA, aircraft on a P-RNAV departure on this route are not classified as off-track as they are following the published route.

Following the introduction of P-RNAV at Gatwick, the CAA conducted a Post Implementation Review on all routes. The Review has recommended that this particular route be modified so that departing aircraft are compliant and remain within the published NPR swathe. The Airport is currently in the process of designing these modifications.

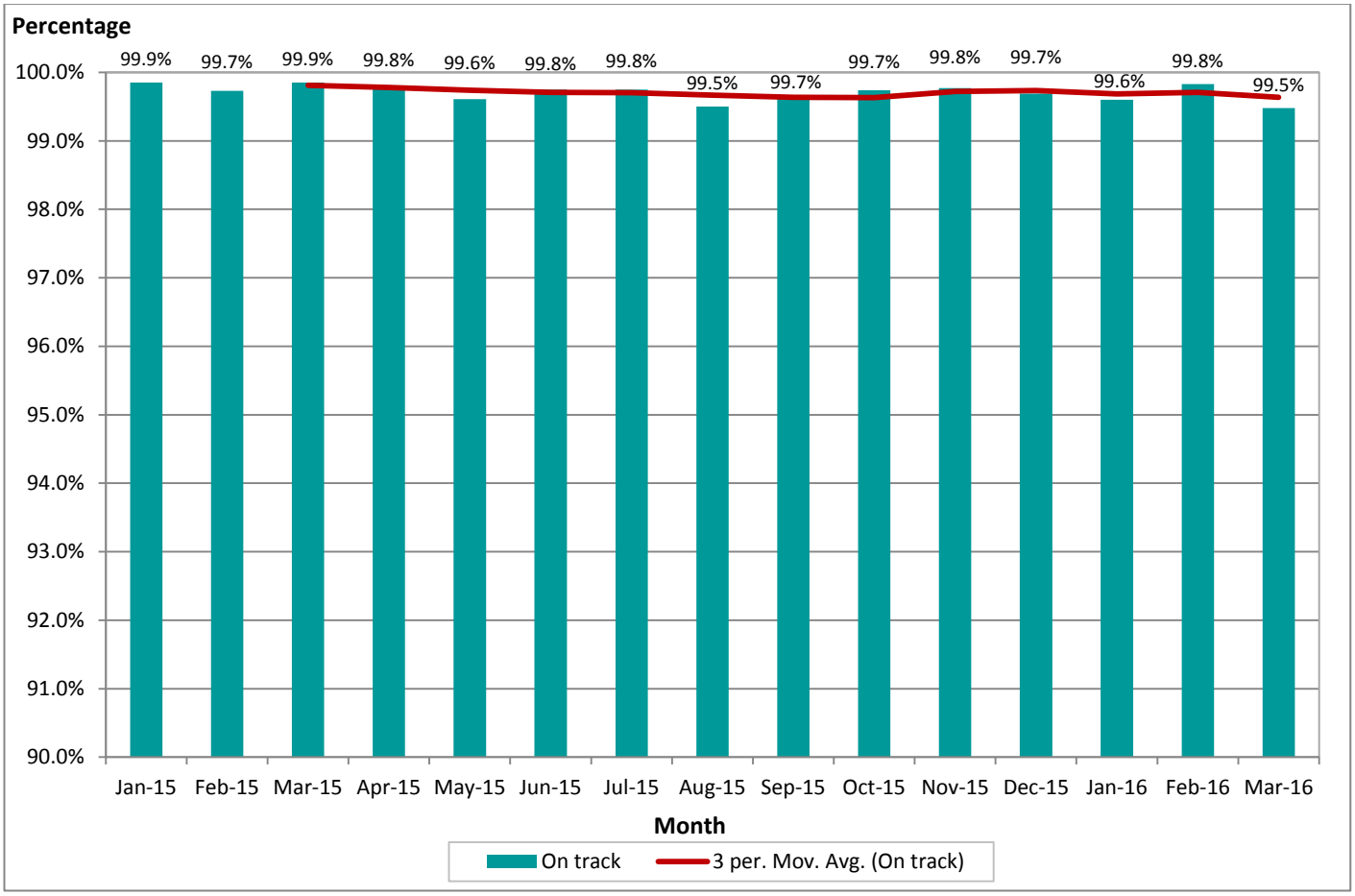
THE MAP BELOW ILLUSTRATES THE NOISE PREFERENTIAL ROUTES USED BY DEPARTING AIRCRAFT WITH MINIMUM VECTORING ALTITUDE FIGURES



THE TABLE BELOW ILLUSTRATES TRACK KEEPING PERFORMANCE OVER 15 MONTHS

	Total			Westerly			Easterly		
Month	Deviations	Departures	% Deviations	Deviations	Departures	% Deviations	Deviations	Departures	% Deviations
Jan-15	13	8849	0.15%	13	8030	0.16%	0	819	0.00%
Feb-15	23	8584	0.27%	14	5601	0.25%	9	2983	0.30%
Mar-15	15	10066	0.15%	7	3962	0.18%	8	6104	0.13%
Apr-15	26	10916	0.24%	16	5610	0.29%	10	5306	0.19%
May-15	47	12206	0.39%	46	10001	0.46%	1	2205	0.05%
Jun-15	31	12440	0.25%	19	8910	0.21%	12	3530	0.34%
Jul-15	34	13448	0.25%	26	10843	0.24%	8	2605	0.31%
Aug-15	68	13716	0.50%	31	9158	0.34%	37	4558	0.81%
Sep-15	44	12904	0.34%	34	7505	0.45%	10	5399	0.19%
Oct-15	31	11960	0.26%	19	6941	0.27%	12	5019	0.24%
Nov-15	21	9057	0.23%	19	8100	0.23%	2	957	0.21%
Dec-15	30	9704	0.31%	27	8873	0.30%	3	831	0.36%
Jan-16	37	9297	0.40%	28	7392	0.38%	9	1905	0.47%
Feb-16	16	9347	0.17%	12	6086	0.20%	4	3261	0.12%
Mar-16	55	10506	0.52%	50	5944	0.84%	5	4562	0.11%

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



Departures – Over Congested Areas

THE WIZAD NOISE PREFERENTIAL ROUTE

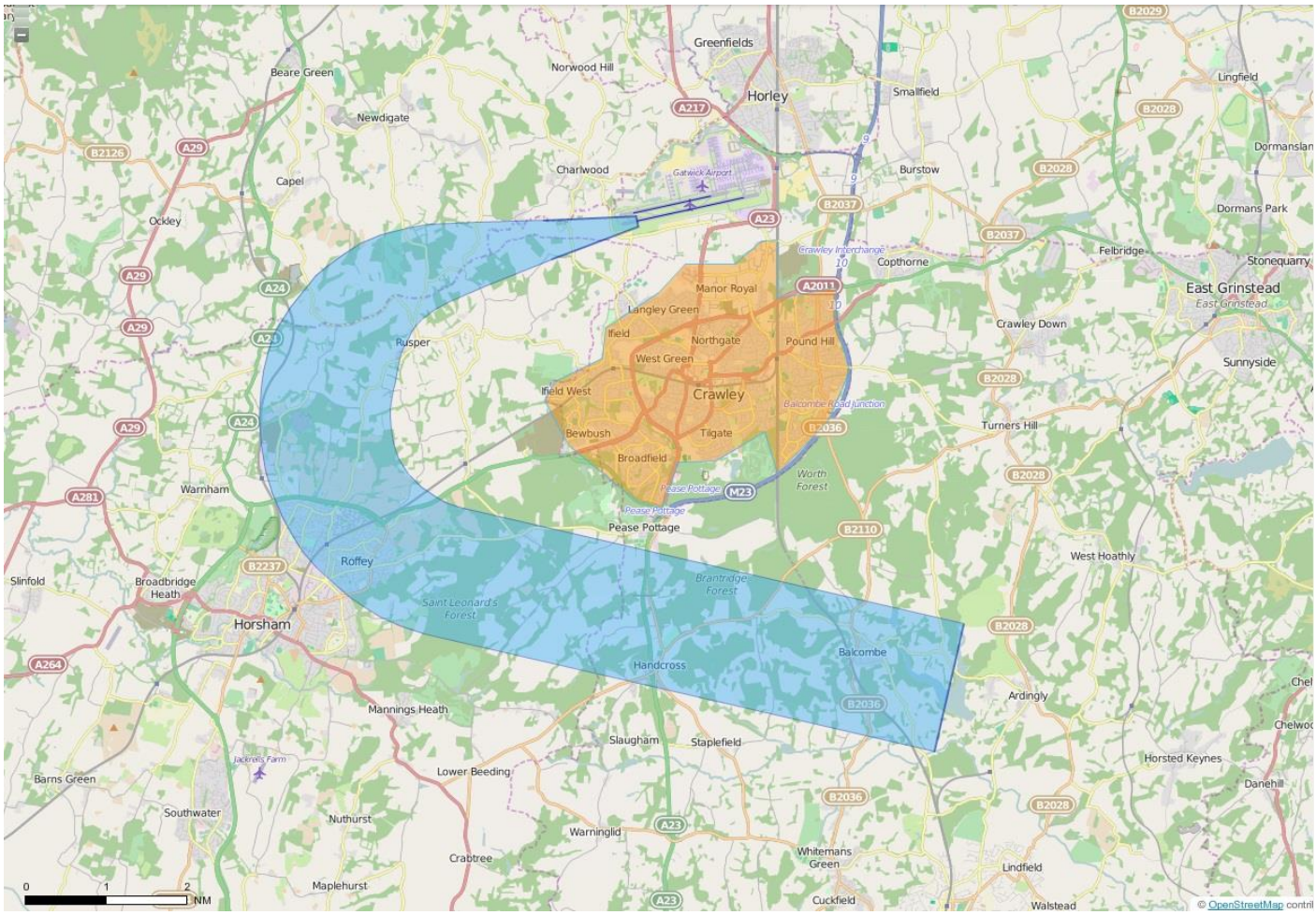
The Wizad Noise Preferential Route was designated by the Government at the same time as all other Gatwick departure routes; however, it is not used on an equal basis with the other routes. It is a Tactical Offload Route and is not usually offered as part of a flight path. If the 26 LAM Route (to the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



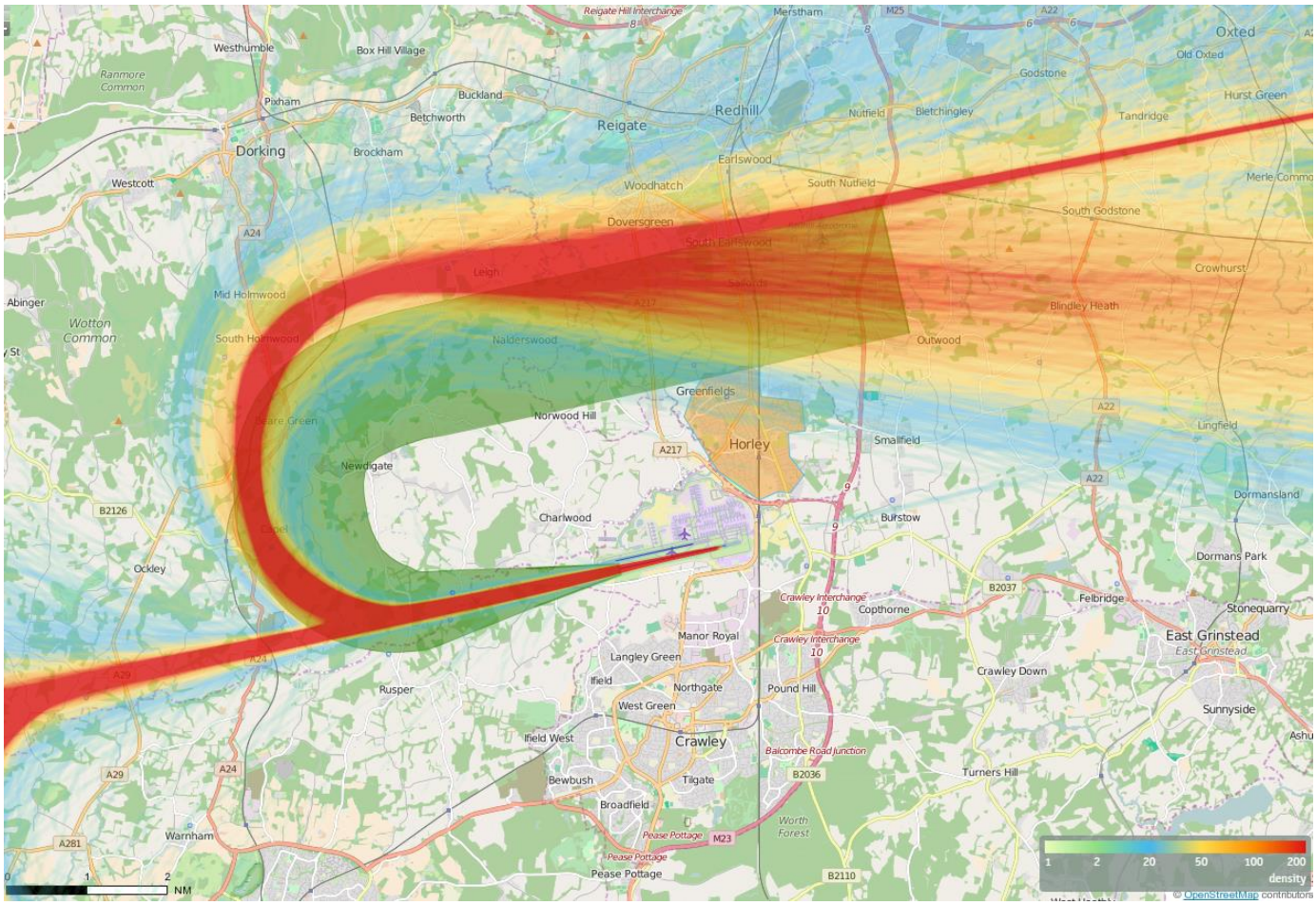
Overflight of Crawley and Horley

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

Comment:

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

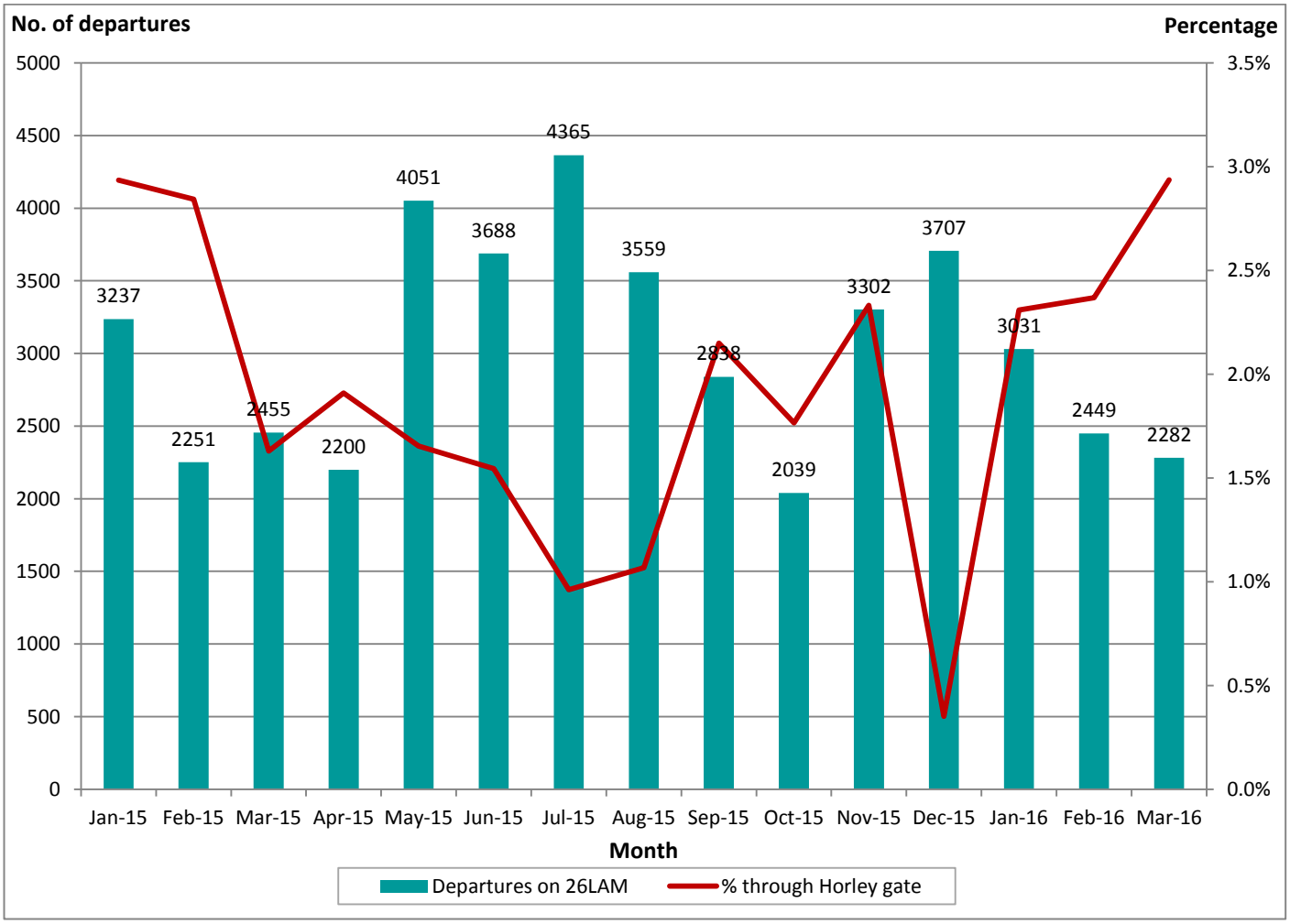
THE MAP BELOW ILLUSTRATES THE TRACK DENSITY OF DEPARTING AIRCRAFT ON THE '26 LAM' DEPARTURE ROUTE DURING THE THREE MONTH PERIOD WITH HORLEY TOWN HIGHLIGHTED



THE 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-14	3048	50	1.64%	**Jan-15**	3237	102	3.15%	**Jan-16**	3031	70	2.31%
Feb-14	3089	60	1.94%	**Feb-15**	2251	66	2.93%	**Feb-16**	2449	58	2.37%
Mar-14	2447	60	2.45%	**Mar-15**	2455	40	1.63%	**Mar-16**	2282	67	2.94%
Apr-14	2043	40	1.96%	**Apr-15**	2200	42	1.91%	**Apr-16**	-	-	-
May-14	2805	46	1.64%	**May-15**	4051	67	1.65%	**May-16**	-	-	-
Jun-14	2606	38	1.46%	**Jun-15**	3688	57	1.55%	**Jun-16**	-	-	-
Jul-14	3466	52	1.50%	**Jul-15**	4365	42	0.96%	**Jul-16**	-	-	-
Aug-14	4512	35	0.78%	**Aug-15**	3559	38	1.07%	**Aug-16**	-	-	-
Sep-14	1686	24	1.42%	**Sep-15**	2838	61	2.15%	**Sep-16**	-	-	-
Oct-14	3826	31	0.81%	**Oct-15**	2039	36	1.77%	**Oct-16**	-	-	-
Nov-14	1881	19	1.01%	**Nov-15**	3302	78	2.36%	**Nov-16**	-	-	-
Dec-14	3079	79	2.57%	**Dec-15**	3707	13	0.35%	**Dec-16**	-	-	-

GRAPH OF 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 6,000ft. 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 6,000ft 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.'

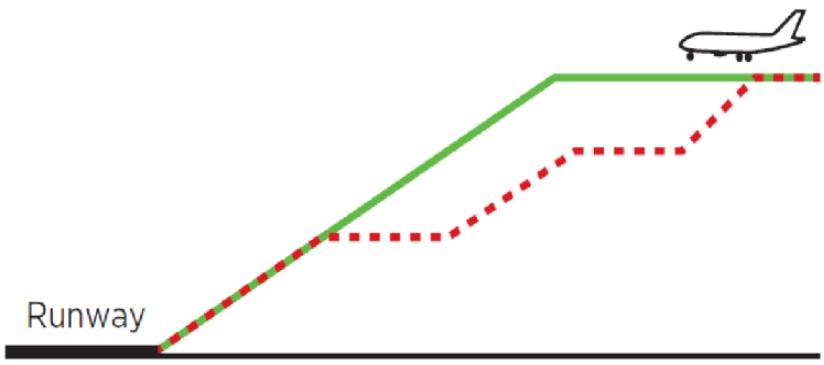
A CDO is not a precise art and relies on the accuracy of track miles provided by ATC to the flight crew coupled with pilot skill, weather conditions and operational circumstances. Additionally, different aircraft types perform differently requiring varying operating practices to be utilised in order 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 it ATC clearance to minimise noise disturbance by the use of continuous decent and low power, low drag, operating procedures (referred to in Detailed Procedures for descent clearance in AD (2-EGKK-1-17)). 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 reduce flaps, 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.

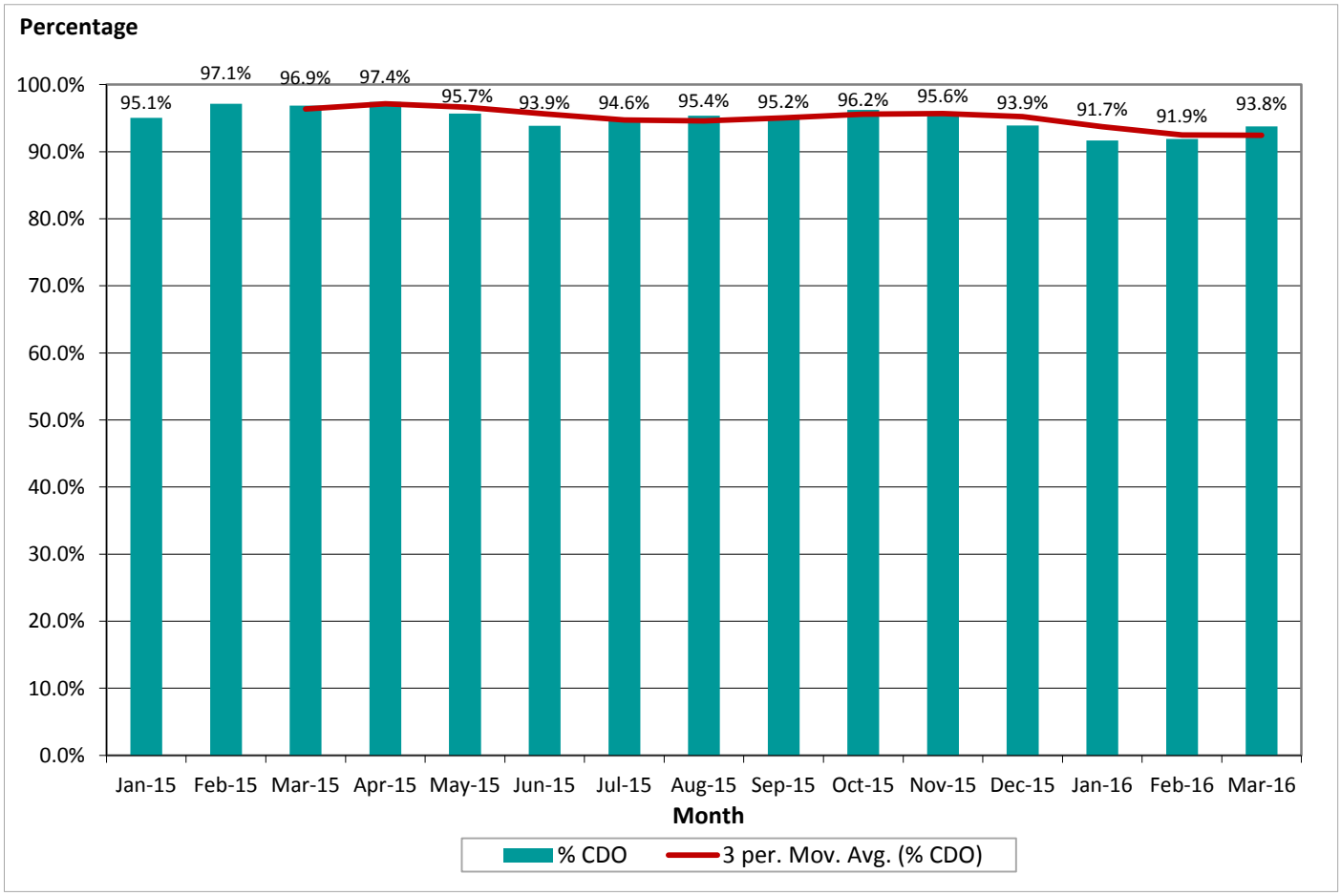


CORE NIGHT PERIOD (2330-0600)

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-15	324	16	95.06%	20	1	95.00%	304	15	95.07%
Feb-15	280	8	97.14%	70	1	98.57%	210	7	96.67%
Mar-15	386	12	96.89%	135	3	97.78%	251	9	96.41%
Apr-15	847	22	97.40%	408	7	98.28%	439	15	96.58%
May-15	1299	56	95.69%	295	20	93.22%	1004	36	96.41%
Jun-15	1569	96	93.88%	416	22	94.71%	1153	74	93.58%
Jul-15	1887	102	94.59%	360	18	95.00%	1527	84	94.50%
Aug-15	1849	86	95.35%	579	36	93.78%	1270	50	96.06%
Sept-15	1597	77	95.18%	737	57	92.27%	860	20	97.67%
Oct-15	1061	40	96.23%	651	25	96.16%	410	15	96.34%
Nov-15	339	15	95.58%	124	4	96.77%	215	11	94.88%
Dec-15	361	22	93.91%	11	0	100.00%	350	22	93.71%
Jan-16	301	25	91.69%	55	0	100.00%	246	25	89.84%
Feb-16	321	26	91.90%	136	10	92.65%	185	16	91.35%
Mar-16	402	25	93.78%	159	11	93.08%	243	14	94.24%

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

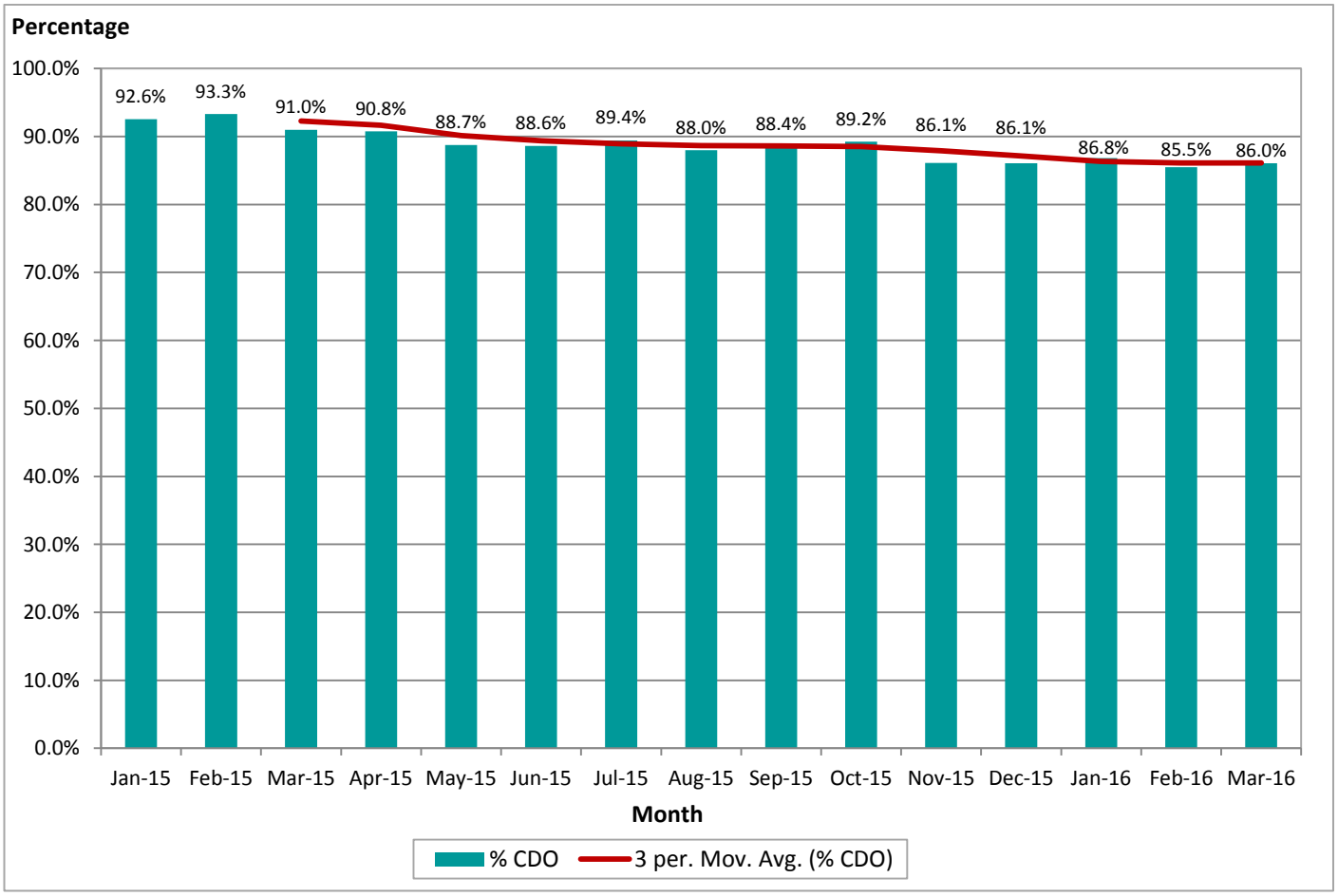


DAYTIME AND SHOULDER PERIOD CDO ACHIEVEMENT (0600-2330)

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-15	8487	632	92.55%	811	84	89.64%	7676	548	92.86%
Feb-15	8278	555	93.30%	2842	207	92.72%	5436	348	93.60%
Mar-15	9633	870	90.97%	3731	442	88.15%	5902	428	92.75%
Apr-15	10028	927	90.76%	4849	475	90.20%	5179	452	91.27%
May-15	10825	1219	88.74%	1999	237	88.14%	8826	982	88.87%
Jun-15	10802	1230	88.61%	3107	402	87.06%	7695	828	89.24%
Jul-15	11518	1281	88.88%	2132	286	86.59%	9386	995	89.40%
Aug-15	11822	1421	87.98%	3914	521	86.69%	7908	900	88.62%
Sep-15	11284	1306	88.43%	4687	543	88.41%	6597	763	88.43%
Oct-15	10879	1171	89.24%	6434	720	88.81%	4445	451	89.85%
Nov-15	8695	1209	86.10%	805	144	82.11%	7890	1065	86.50%
Dec-15	9321	1300	86.05%	615	110	82.11%	8706	1190	86.33%
Jan-16	8951	1178	86.84%	1737	225	87.05%	7214	953	86.79%
Feb-16	9005	1308	85.47%	3070	461	84.98%	5935	947	84.04%
Mar-16	10070	1405	86.05%	4334	588	86.43%	5736	817	85.76%

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

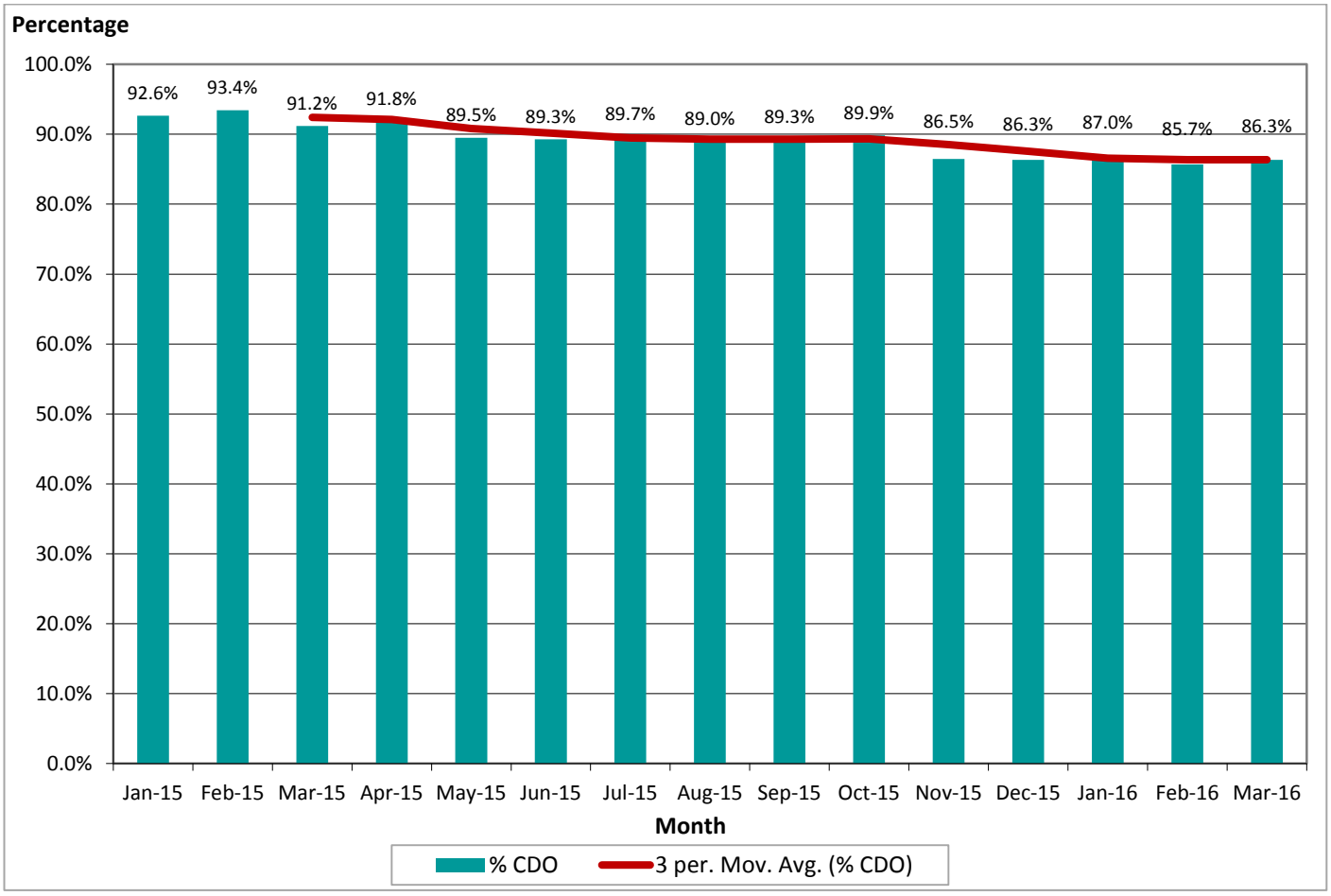


24 HOUR PERIOD CDO ACHIEVEMENT

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

	All Arrivals			08 Easterly Arrivals			26 Westerly Arrivals		
Month	**Total**	**Non CDO**	**% CDO**	**Total**	**Non CDO**	**% CDO**	**Total**	**Non CDO**	**% CDO**
Jan-15	8811	648	92.65%	831	85	89.77%	7980	563	92.94%
Feb-15	8558	563	93.42%	2912	208	92.86%	5646	355	93.71%
Mar-15	10019	882	91.20%	3866	445	88.49%	6153	437	92.90%
Apr-15	10875	949	91.27%	5257	482	90.83%	5618	467	91.69%
May-15	12124	1275	89.48%	2294	257	88.80%	9830	1018	89.64%
Jun-15	12371	1326	89.28%	3523	424	87.96%	8848	902	89.81%
Jul-15	13405	1383	89.68%	2492	304	87.80%	10913	1079	90.11%
Aug-15	13671	1507	88.98%	4493	557	87.60%	9178	950	89.65%
Sep-15	12885	1384	89.26%	5424	600	88.94%	7461	784	89.49%
Oct-15	11940	1211	89.86%	7085	745	89.48%	4855	466	90.40%
Nov-15	9034	1224	86.45%	929	148	84.07%	8105	1076	86.72%
Dec-15	9682	1322	86.35%	626	110	82.43%	9056	1212	86.62%
Jan-16	9252	1203	87.00%	1792	225	87.44%	7460	978	86.89%
Feb-16	9326	1334	85.70%	3206	471	85.31%	6120	863	85.90%
Mar-16	10472	1430	86.34%	4493	599	86.67%	5979	831	86.10%

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 practical and shall not fly over the congested areas of Crawley, East Grinstead, Horley and Horsham at an altitude of less than 3,000ft (Gatwick QNH), nor over the congested area of Lingfield at an altitude of less than 2,000ft (Gatwick QNH).*

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

Comment: There were no arriving flights which passed over the towns of Crawley and Horley below the required altitude for this period.

The map overleaf illustrates these analysis zones.

OVERFLIGHT OF CONGESTED AREAS BELOW 2,000ft

EGKK AD 2.21 (13(a)) *Where the aircraft is using the ILS in IMC or VMC, it shall not descent below 2,000ft (Gatwick QNH) below the glide path. This is aimed at keeping aircraft as high as possible for as long as possible.*

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 16 arrivals that passed through this area.

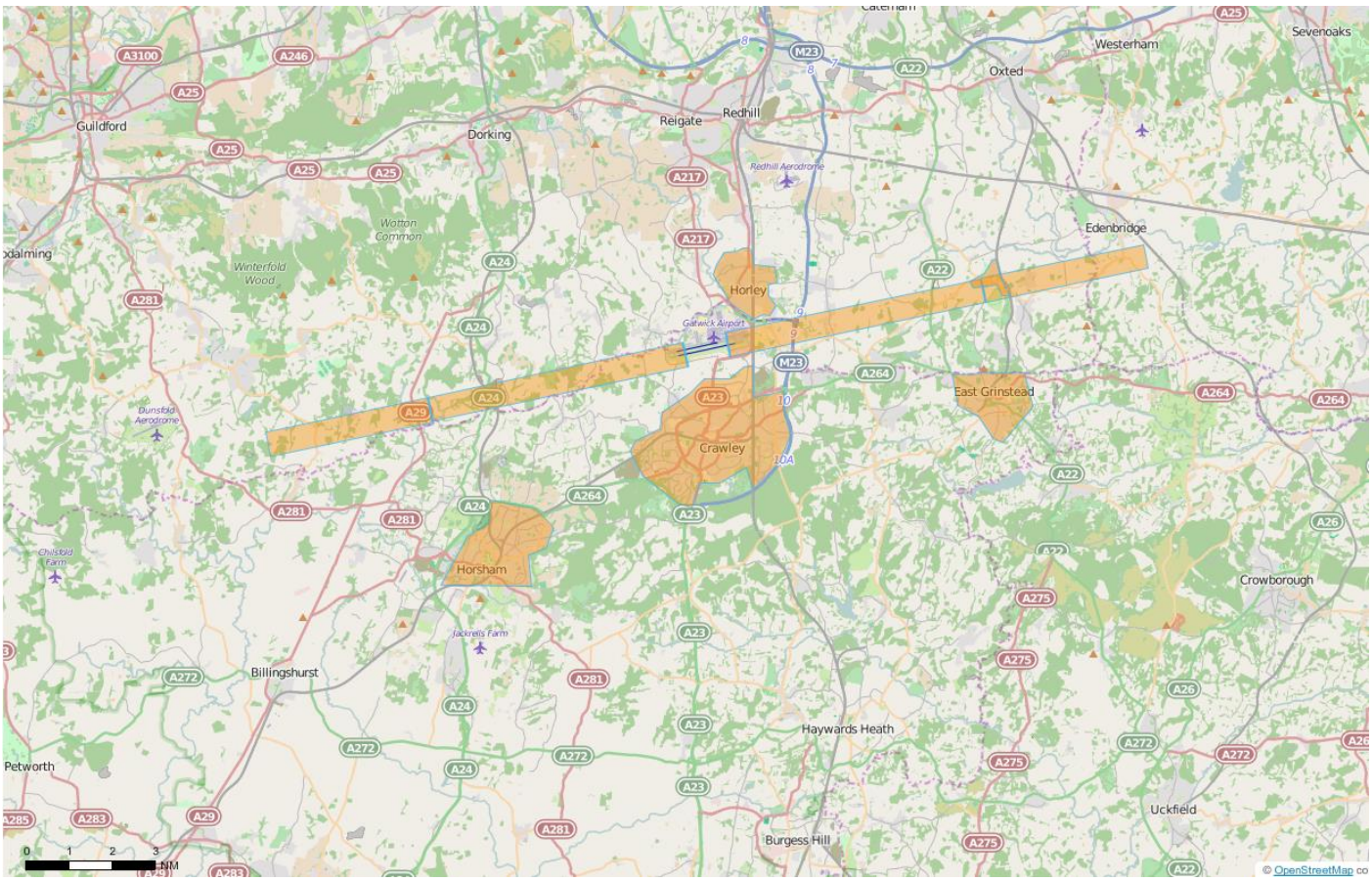
Comment: Aircraft tracks were analysed for January, February and March 2016 and with the exception of a small number of go-arounds, there were no flights that passed over Lingfield below the altitude of 1,698ft (2,000ft Gatwick QNH). There were no arriving flights that passed over East Grinstead below the required altitude.

A) DAY TIME JOINING HEIGHT (0700-2300)

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 29,172 arrivals recorded by the Casper NTK system between 1st January and 31st March 2016. 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 36 (0.12%). In addition, there were 16 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)

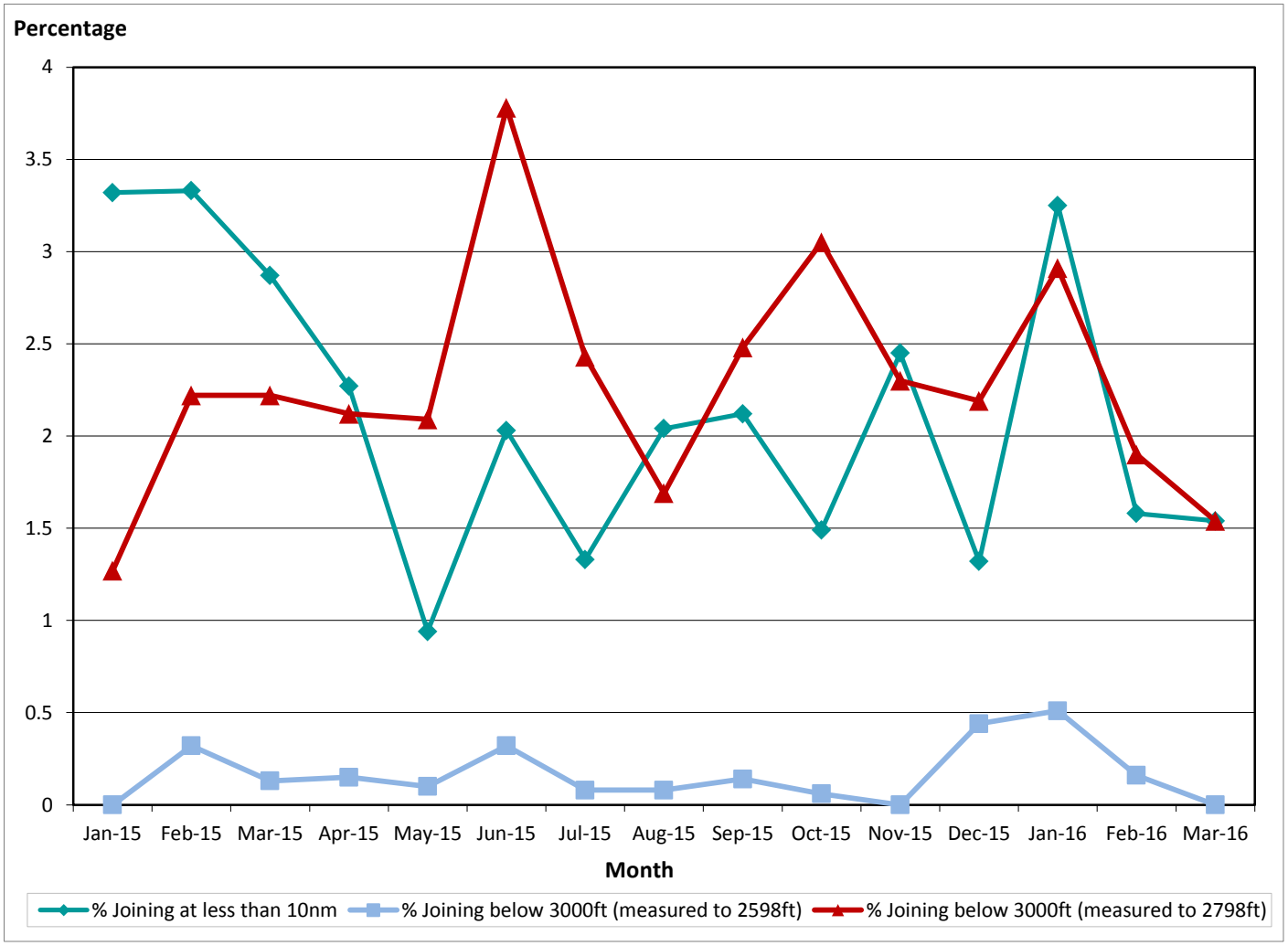
EGKK AD 2.21 (14) *Aircraft which land at Gatwick Airport between the hours of 2300 (local time) and 0700 (local time), whether or not making use of the ILS localizer and irrespective of weight or type of approach, shall not join the centre line:*

a) below 3,000ft, or

b) closer than 10 nm from touchdown.

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

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



Go-Around Statistics 2004 - 2016

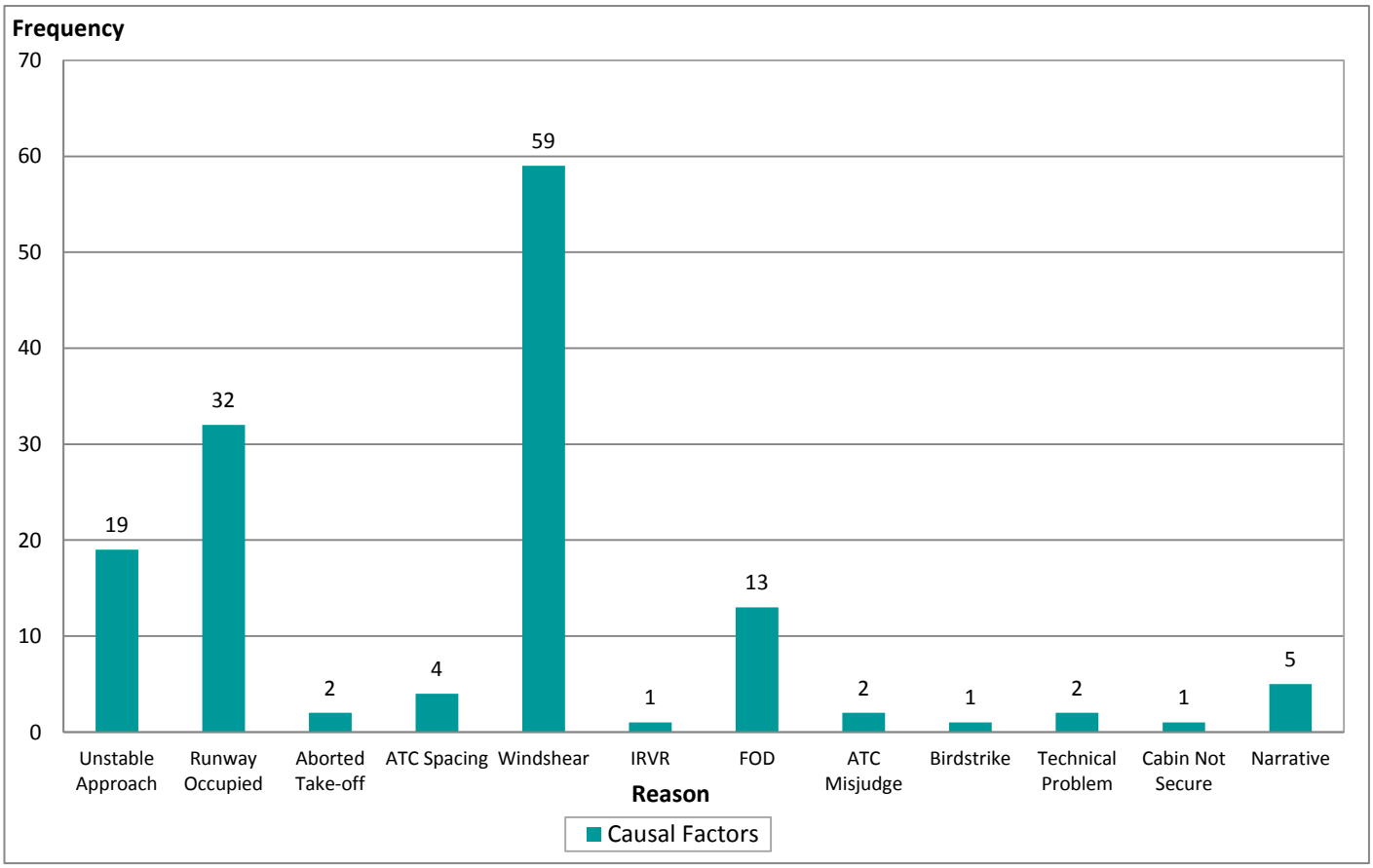
A go-around is a procedure adopted when an arriving aircraft on final approach aborts landing by applying take-off power and climbing away from the airport. It is a set procedure to be followed by the flight crew in the event of an aircraft being unable to land. The procedure is published so that Air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

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

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

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

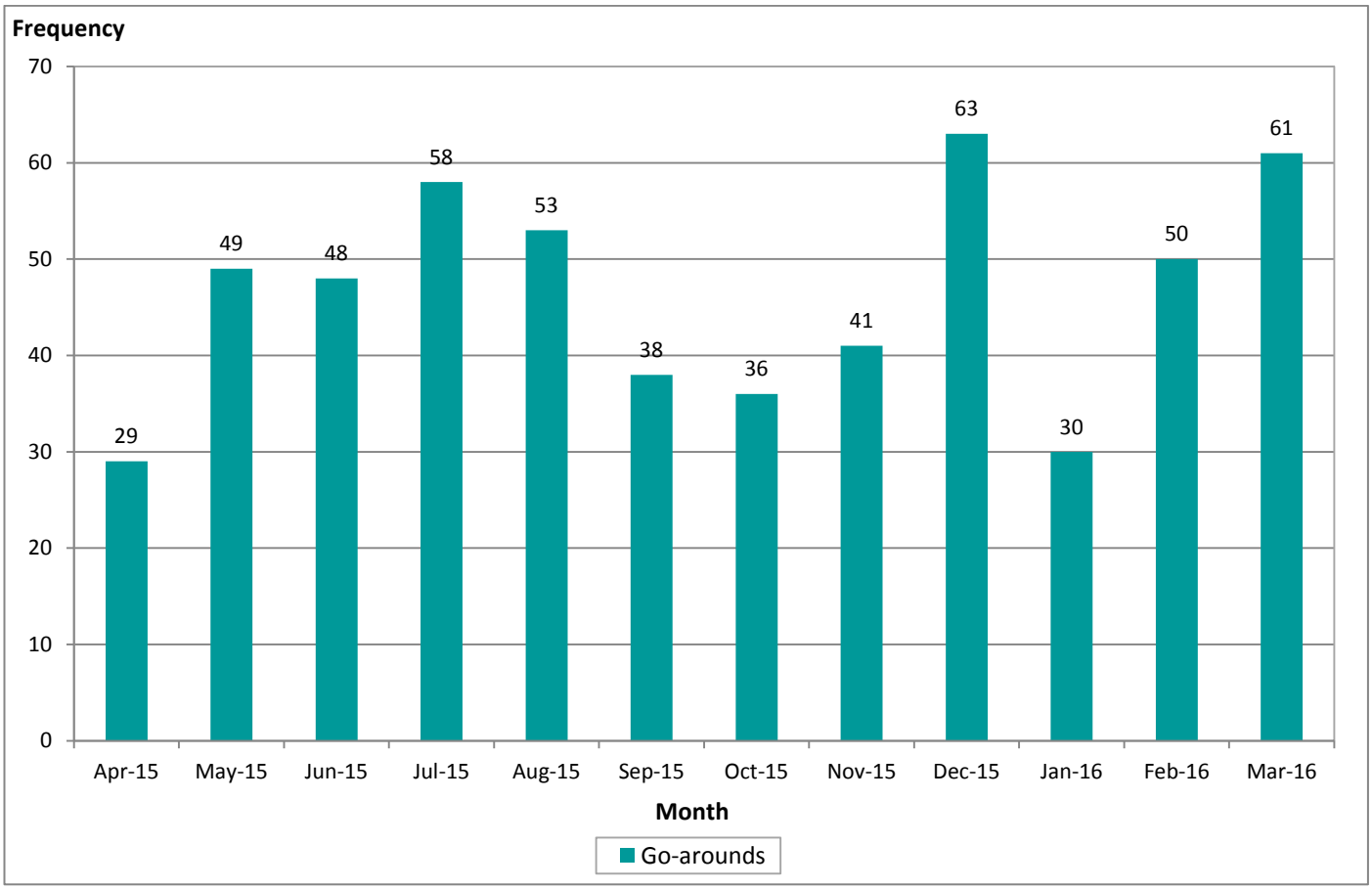
NATS AND ANS CURRENTLY RECORD GO-AROUNDS UNDER ONE OF THE FOLLOWING CAUSAL FACTORS (JANUARY – MARCH 2016)



THE TABLE BELOW ILLUSTRATES GO-AROUND STATISTICS 2004 – 2016

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	141	29120	0.48

THE GRAPH BELOW ILLUSTRATES TOTAL NUMBER OF GO-AROUNDS PER MONTH (APRIL 2015 – MARCH 2016)



Night Flights

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

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

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

Overleaf is an end-of-season report for winter 2015/2016. The total number of movements available for the winter season was 3250.

DISPENSATIONS

There have been a total of 104 dispensations applied during the winter season which began on the 24th October 2015 and ended on the 27th March 2016.

- 88 dispensations were due to arrival flow rate restrictions at the beginning of November 2015.
- 4 dispensations were due to disruption caused by a security incident which resulted in closure of Gatwick Airport's North Terminal for a 6 hour period on the 14th November 2015.
- 12 dispensations were due to knock on delays caused by an oil spill on the main runway on the 29th February 2016. The main runway was closed between 10:29 and 13:57 and the northern runway was in use during this period.

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

RESTRICTIONS

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

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

London Gatwick

AIRPORT MOVEMENTS and QUOTA SUMMARY to WEEK 23 (24 OCTOBER 2015 to 27 MARCH 2016 inc.)

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

Wk No.	Week Ending Date	QC0.25 No.	QC0.5 No.	QC1 No.	QC2 No.	QC4 No.	QC8 No.	QC16 No.	Total Quota Value	Mvmts Against Limit	Exmpt Types	Not Cnt'd Delays	Not Cnt'd Govt	Not Cnt'd Emerg	Total Arvls No.	Total Arvls %	Total Deps No.	Total Deps %	Total Rnwy Mvmts
1	31/10/2015	77	85	19	1	0	0	0	82.75	182	5	0	0	0	166	88.8	21	11.2	187
2	07/11/2015	39	55	16	3	0	0	0	96.75	113	3	88	0	0	164	80.4	40	19.6	204
3	14/11/2015	22	34	7	3	0	0	0	91.5	66	4	0	0	0	60	85.7	10	14.3	70
4	21/11/2015	18	28	6	2	0	0	0	80.25	54	1	4	0	0	52	88.1	7	11.9	59
5	28/11/2015	10	31	5	2	0	0	0	27.00	48	5	0	0	0	47	88.7	6	11.3	53
6	05/12/2015	11	27	8	1	0	0	0	26.25	47	2	0	0	0	43	87.8	6	12.2	49
7	12/12/2015	28	32	8	3	0	0	0	37.00	71	2	0	0	0	66	90.4	7	9.6	73
8	19/12/2015	39	43	8	3	0	0	0	45.25	93	3	0	0	0	85	88.5	11	11.5	96
9	26/12/2015	63	45	8	5	0	0	0	56.25	121	1	0	0	0	110	90.2	12	9.8	122
10	02/01/2016	53	46	5	4	0	0	0	49.25	108	3	0	0	0	98	88.3	13	11.7	111
11	09/01/2016	36	50	11	4	0	0	0	53.00	101	2	0	0	0	89	86.4	14	13.6	103
12	16/01/2016	11	44	7	2	0	0	0	35.75	64	2	0	0	0	60	90.9	6	9.1	66
13	23/01/2016	18	40	10	3	0	0	0	40.50	71	1	0	0	0	62	86.1	10	13.9	72
14	30/01/2016	16	33	4	2	0	0	0	28.50	55	1	0	0	0	52	92.9	4	7.1	56
15	06/02/2016	15	42	7	3	0	0	0	37.75	67	0	0	0	0	58	86.6	9	13.4	67
16	13/02/2016	27	42	12	2	0	0	0	43.75	83	1	0	0	0	76	90.5	8	9.5	84
17	20/02/2016	34	29	9	3	0	0	0	48.00	95	6	0	0	0	88	87.1	13	12.9	101
18	27/02/2016	29	46	10	2	0	0	0	44.25	87	7	0	0	0	76	80.9	18	19.1	94
19	05/03/2016	29	39	5	4	0	0	0	39.75	77	8	12	0	0	87	89.7	10	10.3	97
20	12/03/2016	19	45	5	5	0	0	0	42.25	74	5	0	0	0	66	83.5	13	16.5	79
21	19/03/2016	25	44	4	1	0	0	0	34.25	74	3	0	0	0	67	87.0	10	13.0	77
22	26/03/2016	55	51	11	4	0	0	0	58.25	121	0	0	0	0	104	86.0	17	14.0	121
23	27/03/2016	0	0	0	0	0	0	0	0.00	0	0	0	0	0					
	TOTALS	**674**	**951**	**185**	**62**	**0**	**0**	**0**	**953.00**	**1872**	**65**	**104**	**0**	**0**	**1776**	**87.0**	**265**	**13.0**	**2041**

Quota Points Available	1047.0	Movements Available	1378
Quota Points Used	47.6	Movements % Used	57.6

Note 1 Not Cnt'd Delays — Delays likely to lead to serious congestion and delays resulting from widespread disruption of Air Traffic.

Note 2 Not Ctn'd Gov't — Exemptions granted by Gov't (VIP Passengers, Emergency Relief).

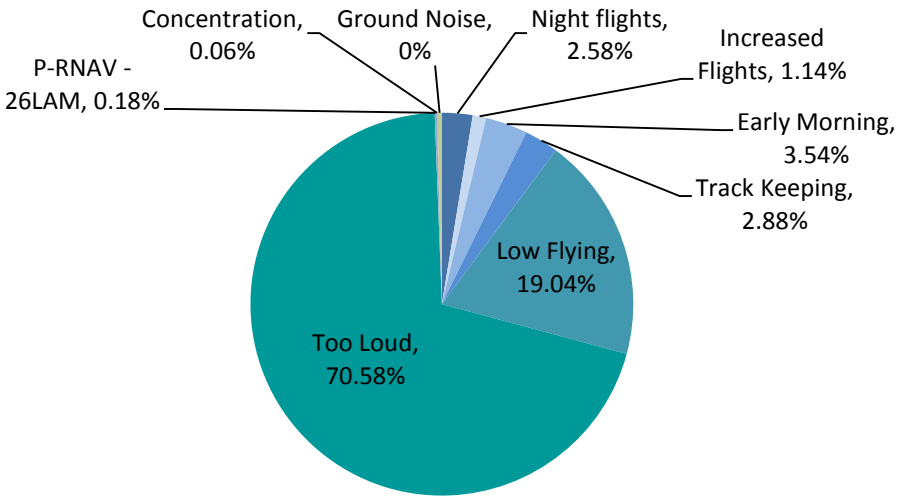
Note 3 Not Ctn'd Emerg — Emergency Take-offs and Landing

Noise Complaints

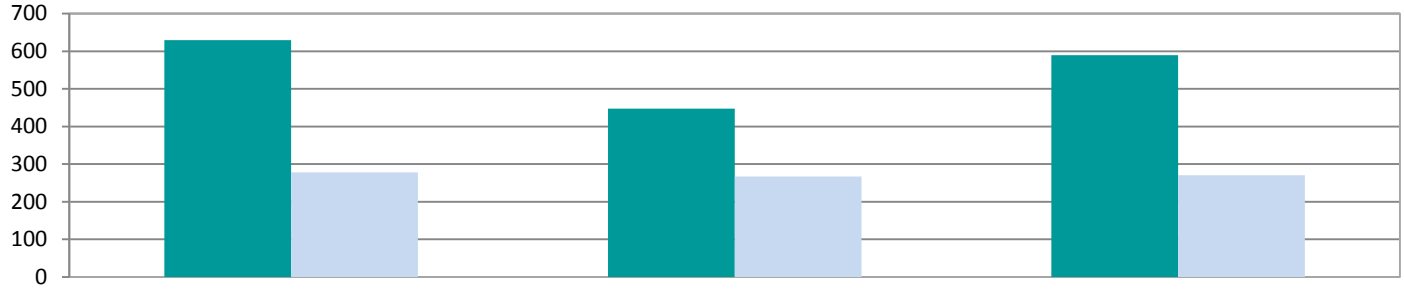
It is important that we understand the issues of noise disturbance from individuals and communities who live around the airport. By studying the complaints we receive and by communicating with the affected towns and villages surrounding the airport, we believe that this gives us a greater understanding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

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

REASON FOR SPECIFIC COMPLAINT BY PERCENTAGE

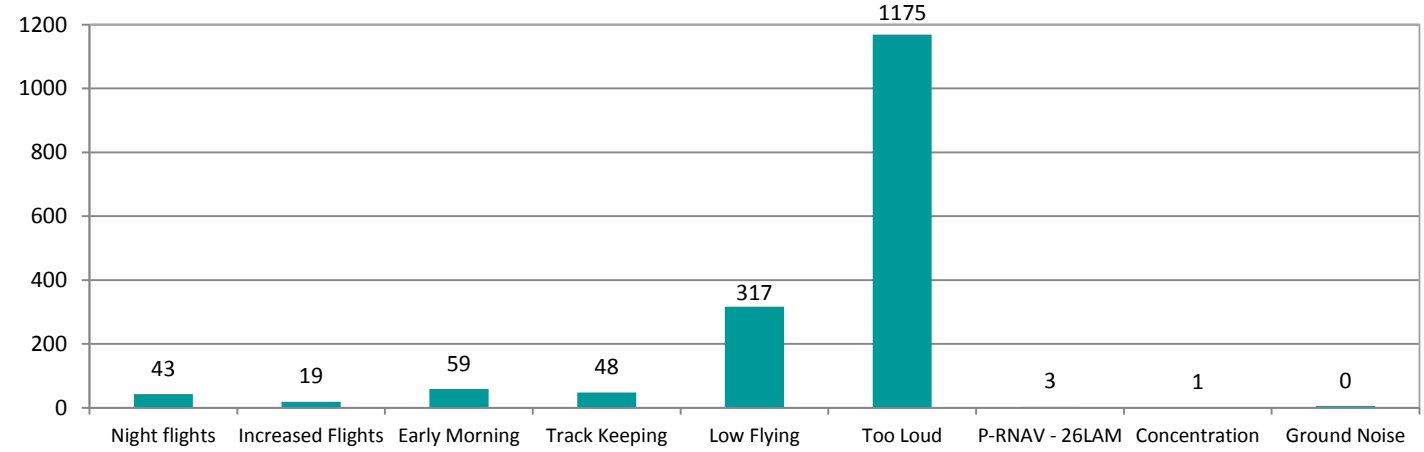


COMPLAINTS RECORDED BY MONTH



	Jan-16	Feb-16	Mar-16
Specific	629	447	589
Generic	278	267	270

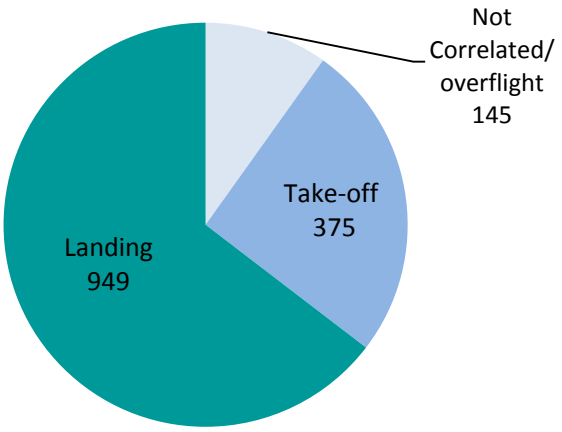
REASON FOR SPECIFIC COMPLAINT BY NUMBER



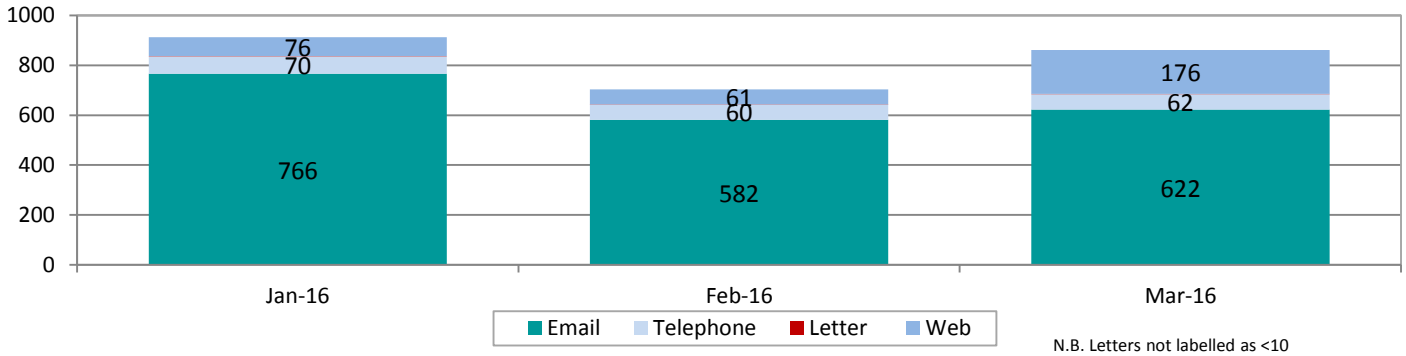
Noise is very subjective and can affect people in different ways. Some people can tolerate a certain noise level whilst it can cause disturbance to others. As well as identifying the issues of noise, it is important to understand the location of each individual complaint.

The charts below provide further analysis of the location of the complainants and whether they have been disturbed by arriving or departing flights, or by noise from within the airport boundary.

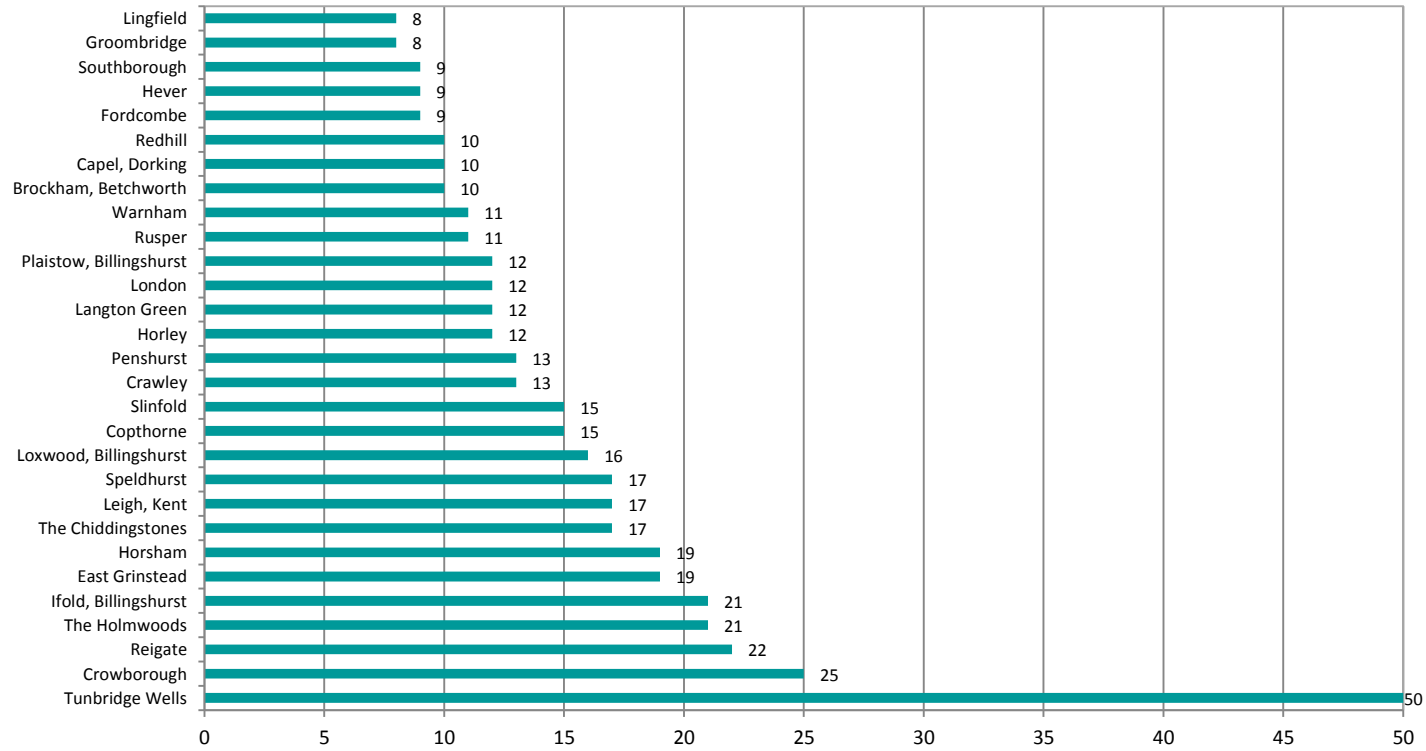
CATEGORIES OF AIRCRAFT OPERATION FROM SPECIFIC COMPLAINTS



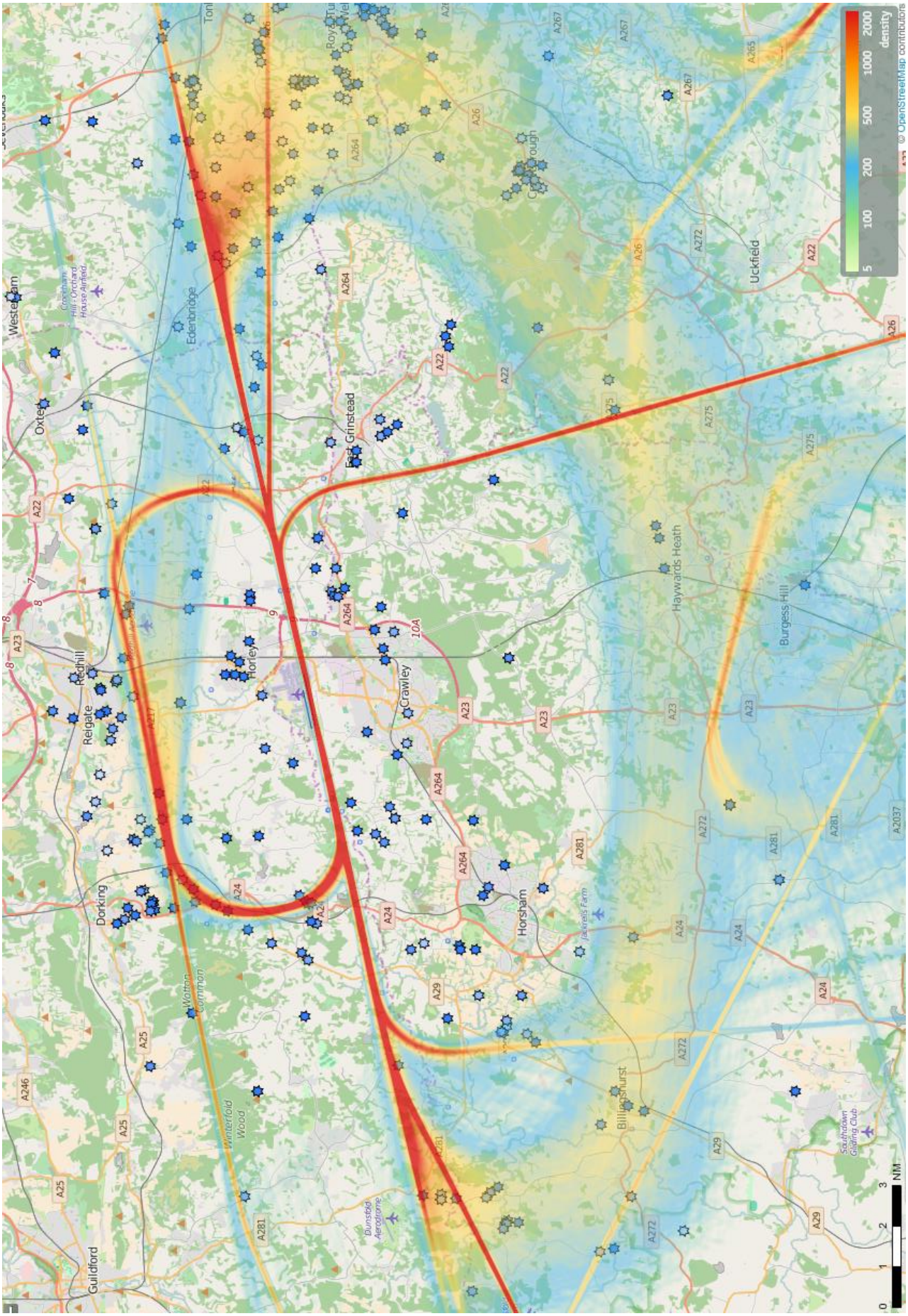
METHOD OF COMPLAINT



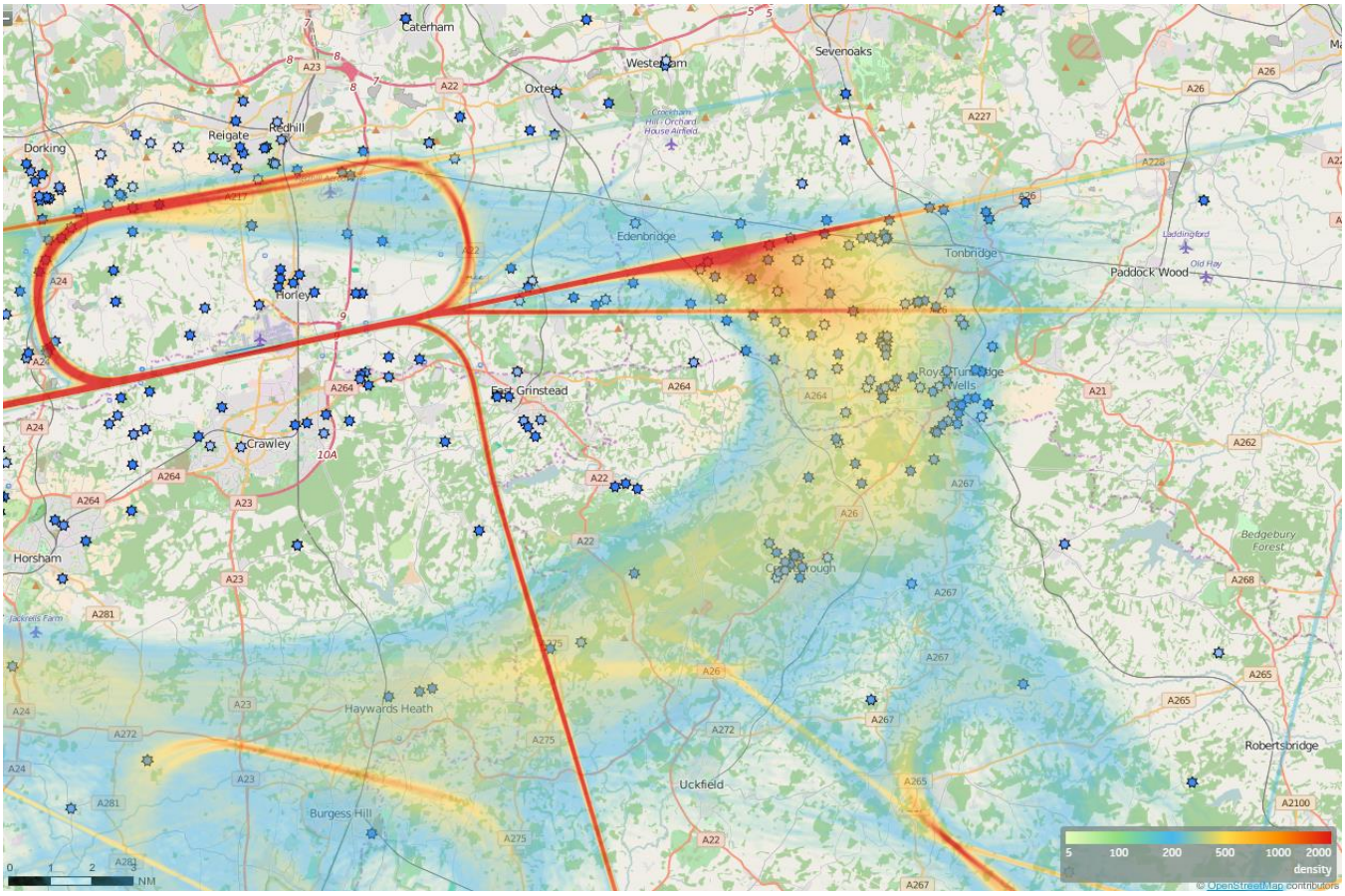
NUMBER OF INDIVIDUAL COMPLAINANTS BY TOWN/VILLAGE



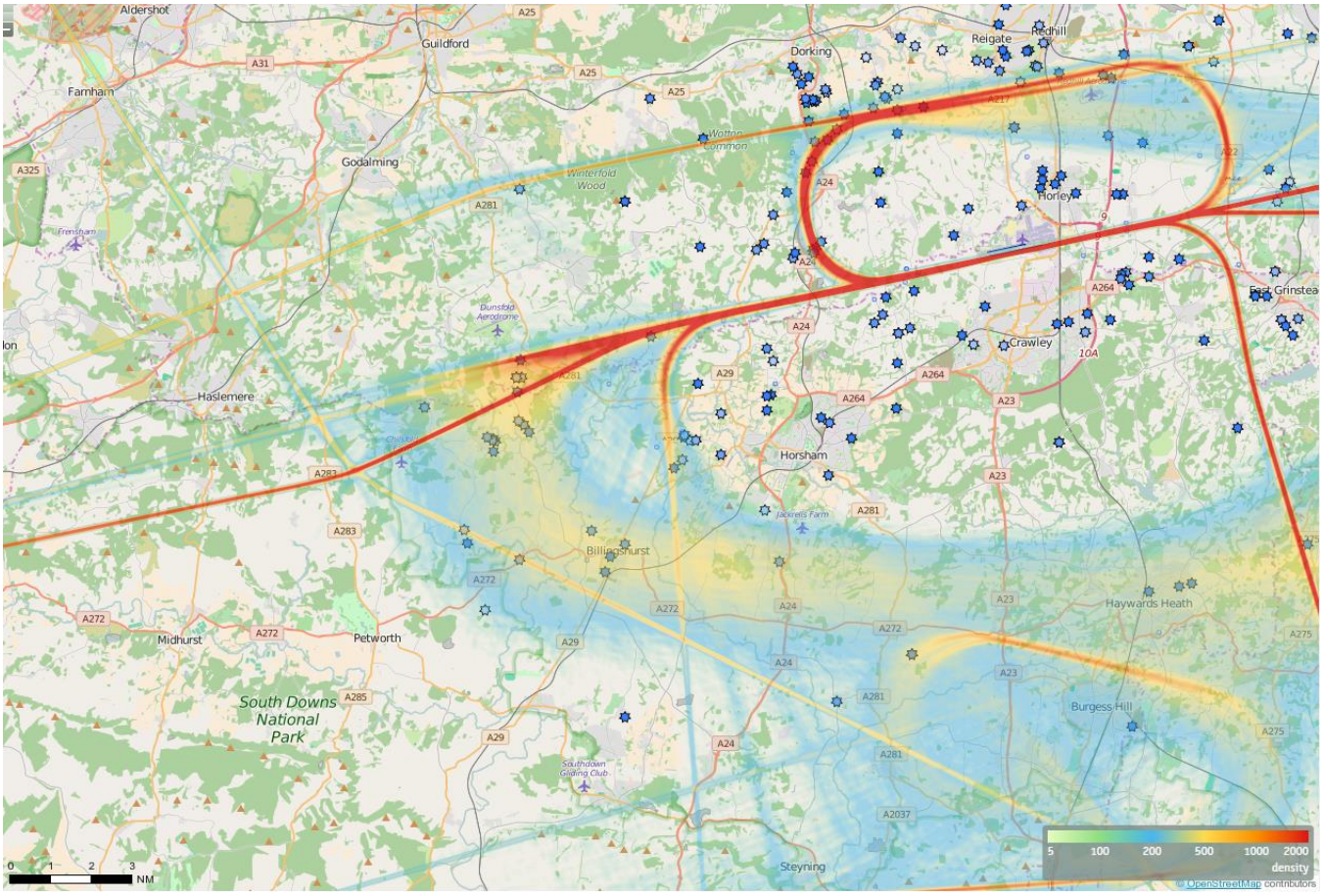
THE MAP BELOW ILLUSTRATES THE LOCATION OF NOISE COMPLAINTS RECEIVED BETWEEN JANUARY AND MARCH 2016



THE MAP BELOW ILLUSTRATES NOISE COMPLAINTS RECEIVED TO THE EAST (JANUARY - MARCH 2016)



THE MAP BELOW ILLUSTRATES NOISE COMPLAINTS RECEIVED TO THE WEST (JANUARY – MARCH 2016)



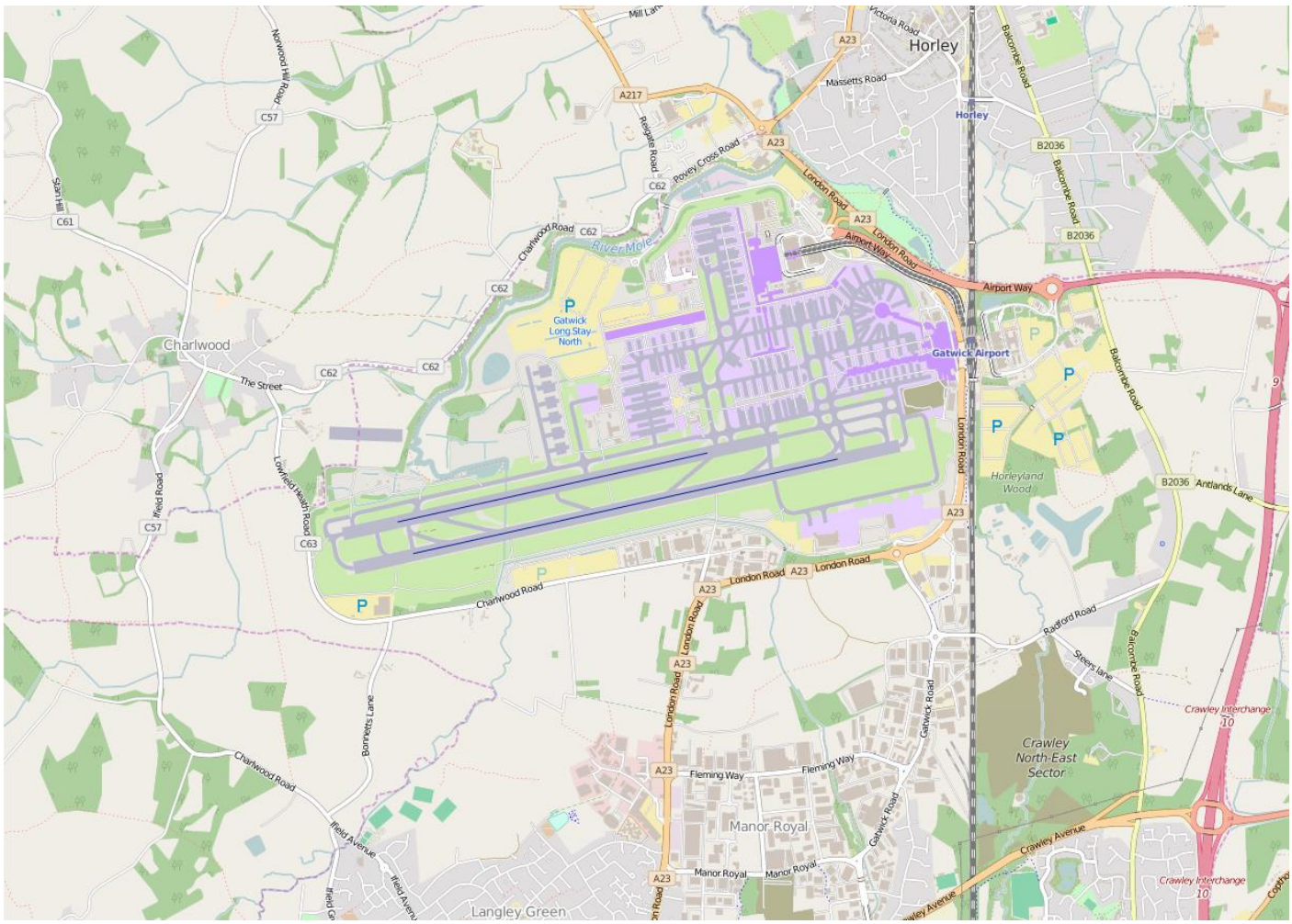
Ground Noise Complaints

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



Contact us: noise.line@gatwickairport.com

For more information visit us at: www.gatwickairport.com/noise

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. It is advisory but not compulsory.

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

Dft – Department for Transport

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

This report covers the period
(1st April – 30th June 2016)

YOUR LONDON AIRPORT
Gatwick

Contents

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 – 1st APRIL – 30th JUNE 2016

Parameter		12 month performance averages*			
		Year to date (2016)	Previous year (2015)	2011	2006
Track keeping performance (% on track)	▲	99.38%	99.61%	97.47%	98.17%**
24hr CDO (% achievement)	▼	88.08%	91.92%	90.49%	80.79%
Day/Shoulder CDO (% achievement)	▼	87.40%	91.57%	90.19%	79.9%
Core night CDO (% achievement)	▲	95.37%	95.50%	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
Callers	▲	1840	3159	343	587
Noise complaints* **	▲	14416	19540	2673	4791
Enquiry response performance target is 95% within 8 days (April-June 2016)	▼	80.93%	95.72%	KPI 95%	
West/East Runway Split (%)	-	66/34	68/32	67/33	68/32

* The colour indicates the most recent 12 month performance compared to 2011, with green showing improvement and red a decline in performance.
** This figure did not include deviations from prop types or those due to weather.
*** Complaints are recorded in line with our published complaints handling policy. The revised policy, published in November 2014, advises that only one complaint per day is recorded per individual.

Executive Summary Performance Headlines

AIRPORT OPERATIONS

Between 1st April and 30th June 2016, there were a total of 73,709 fixed wing aircraft movements at Gatwick, an increase in traffic of about 3.5% compared to the same period in 2015. The direction of operation is determined by wind direction and this was split 66% on the westerly runway and 34% on the easterly runway for the period. The rolling 20 year average for the split in runway usage is approximately 70% westerly and 30% 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 474 movements from the northern runway.

TRACK KEEPING

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

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

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

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

CONTINUOUS DESCENT OPERATIONS (CDO) PERFORMANCE

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

COMMUNITY NOISE MONITORING

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

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

COMPLAINTS

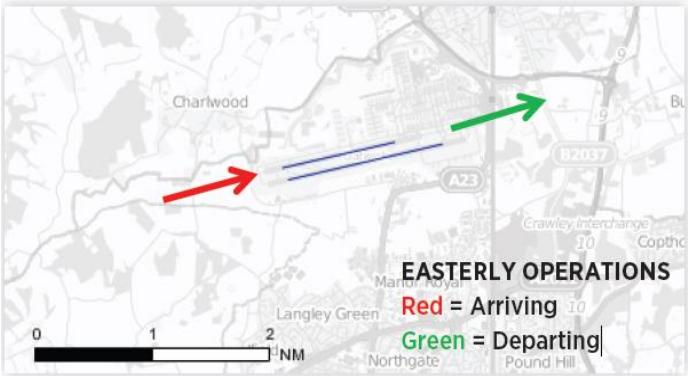
The number of recorded complaints has decreased compared to the previous twelve months as well as the number of individual callers which have also declined. Despite this, the number of recorded complaints has still remained higher than in 2011. The past year has been the busiest year in the airport's 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 2016.

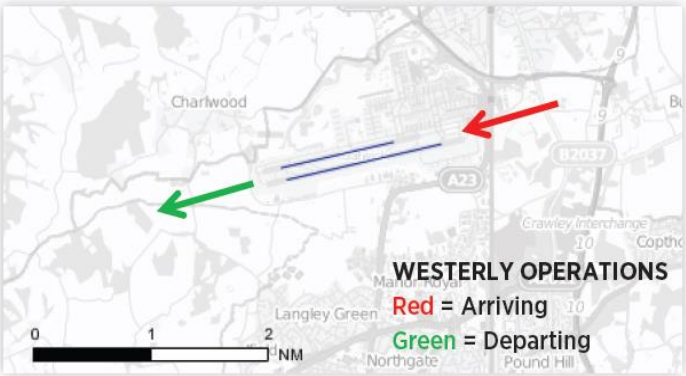
The postcode areas with the greatest number of enquiries during the three month period were Copthorne, Newdigate, Crawley and Horsham. The number of individual complainants between April and June 2016 was **901.** Complaints about aircraft operations are processed in accordance with our published Complaints Handling Policy. Details of this policy are available on our website. With regards to individuals making multiple complaints, these are recorded as one complaint per individual per day.

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.

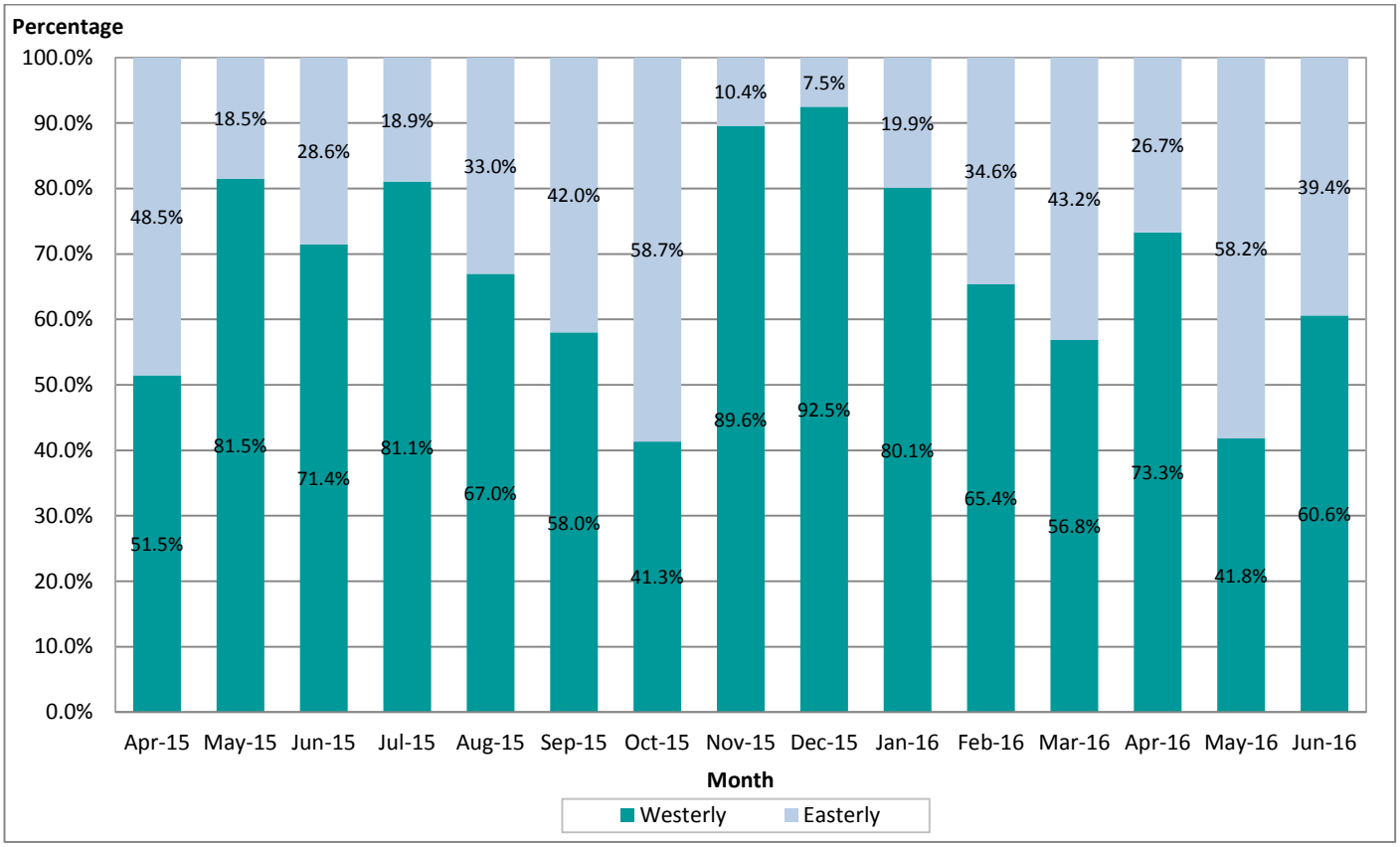
Although the long term average is approximately 70:30 in favour of westerly operations, it is not unusual to experience long periods of prolonged operation in either one direction or another.





RUNWAY DIRECTION SPLIT

THE GRAPH BELOW SHOWS THE SPLIT OVER THE 15 MONTH PERIOD (APRIL 2015 – JUNE 2016)



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 (0700 to 2300 hours local time) as measured at any noise monitoring terminal at any of the sites referred to in sub-paragraph (2).* This is to ensure that departing aircraft do not exceed the stated level during the day.

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

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 (2300 to 0700 hours local time) and that it will not cause more than 87 dBA Lmax during the night quota period (2330 to 0600 hours local time) as measured at any noise monitoring terminal at any of the sites referred to in sub-paragraph (2).* This is to ensure that departing aircraft do not exceed the stated levels during the night and shoulder periods.

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

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 1,000ft aal (above airfield level) at 6.5 km from start of roll as measured along the departure track of the aircraft.* This is to ensure departing aircraft achieve at least that climb gradient in order to reduce the impact on the ground.

Comment:

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

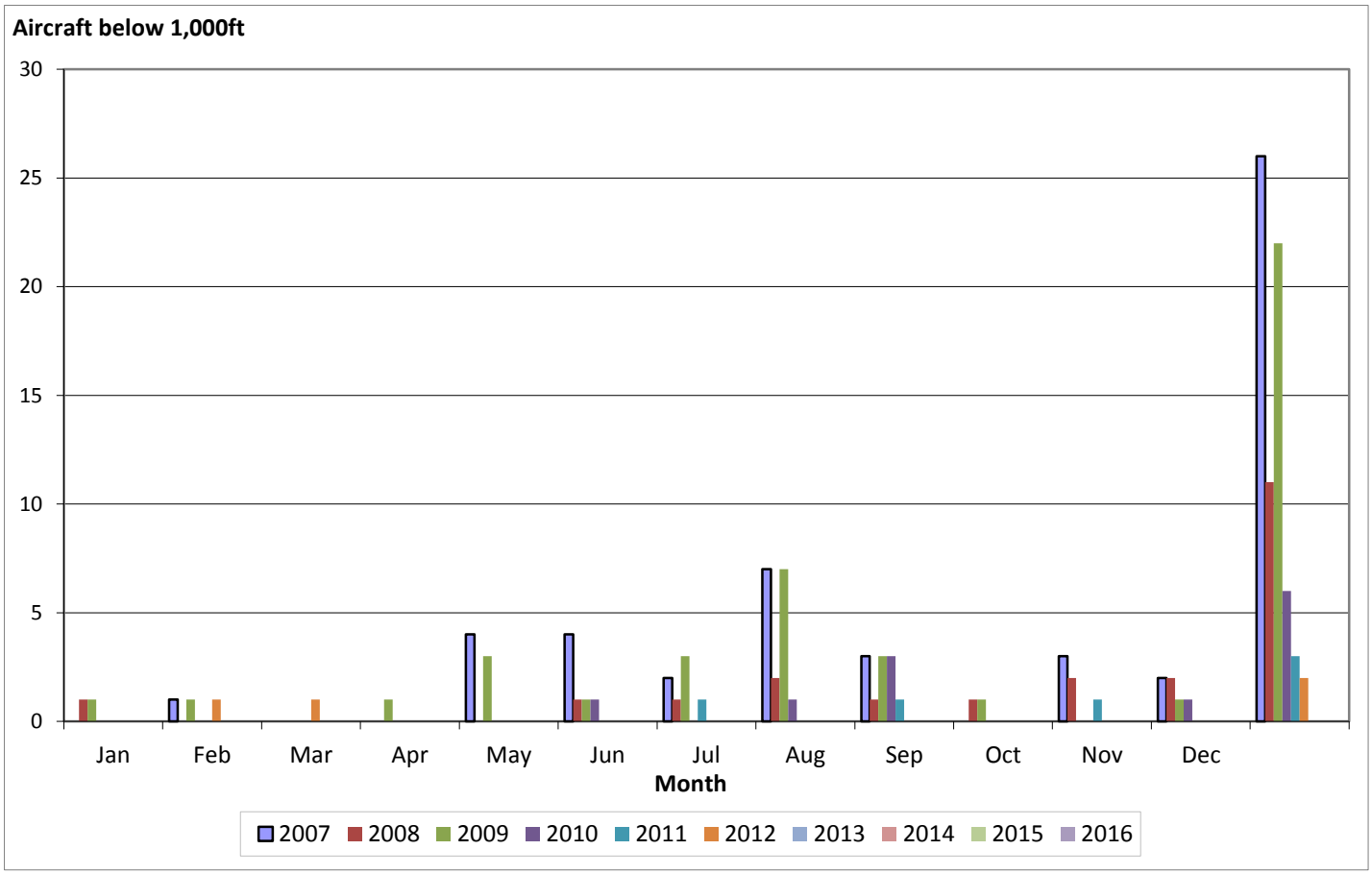
Historically, the summer months are typically the peak period for aircraft failing to meet the 1,000ft requirement, primarily due to the warmer weather which reduces aircraft climb performance.

1,000ft INFRINGEMENT TABLE

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

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 associated 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 on our website: **http://www.gatwickairport.com/aircraftnoiseandairspace**

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.

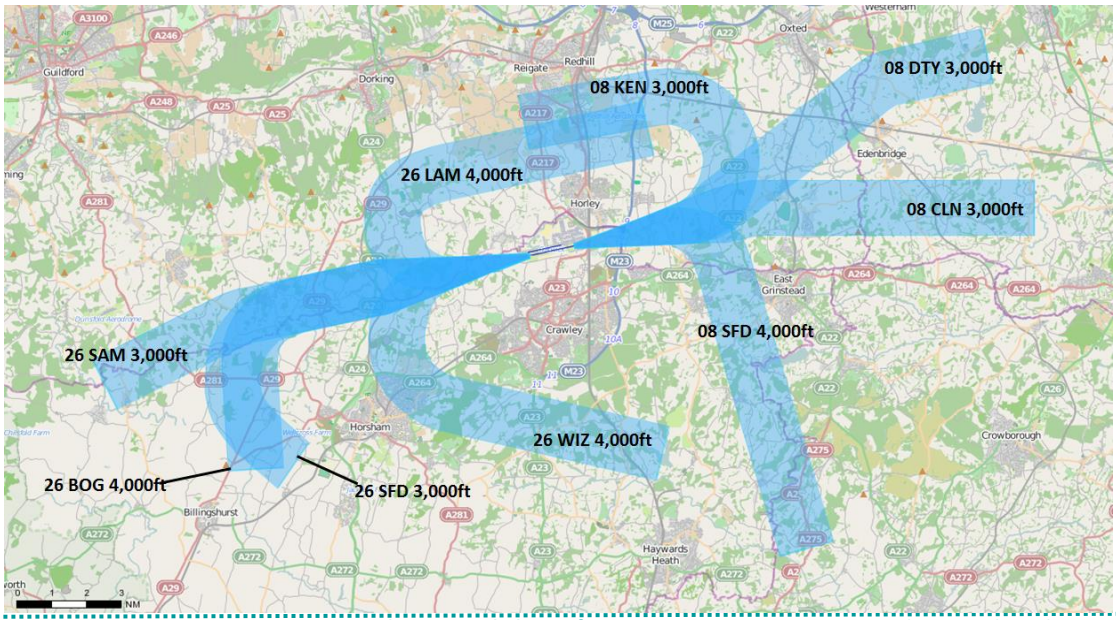
In 2012, Gatwick Airport publicly consulted on the implementation of a more modern form of aircraft navigation called P-RNAV (Precision Route Navigation). After having assessed all consultation feedback, the Civil Aviation Authority (CAA) granted the airport permission to implement P-RNAV on all of our 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 and those aircraft were not included in the track keeping statistics.

Following the introduction of P-RNAV at Gatwick, the CAA conducted a Post Implementation Review on all routes. The Review has recommended that this particular route be modified so that departing aircraft are compliant and remain within the published NPR swathe. This modification went into effect on the Route on the 26 May 2016 and will be monitored for a six-month period and we will continue to engage with our airlines, Air Traffic Control and airspace designers to improve adherence to the amended route. The CAA is also being kept informed of progress as we continue to discuss the amendment with our Airspace Regulator. There has been a decrease in track keeping since the amendment was introduced as all aircraft using this route are now included in our track keeping statistics where they were not previously; however we are working closely with our airlines to improve compliance on Route 4.

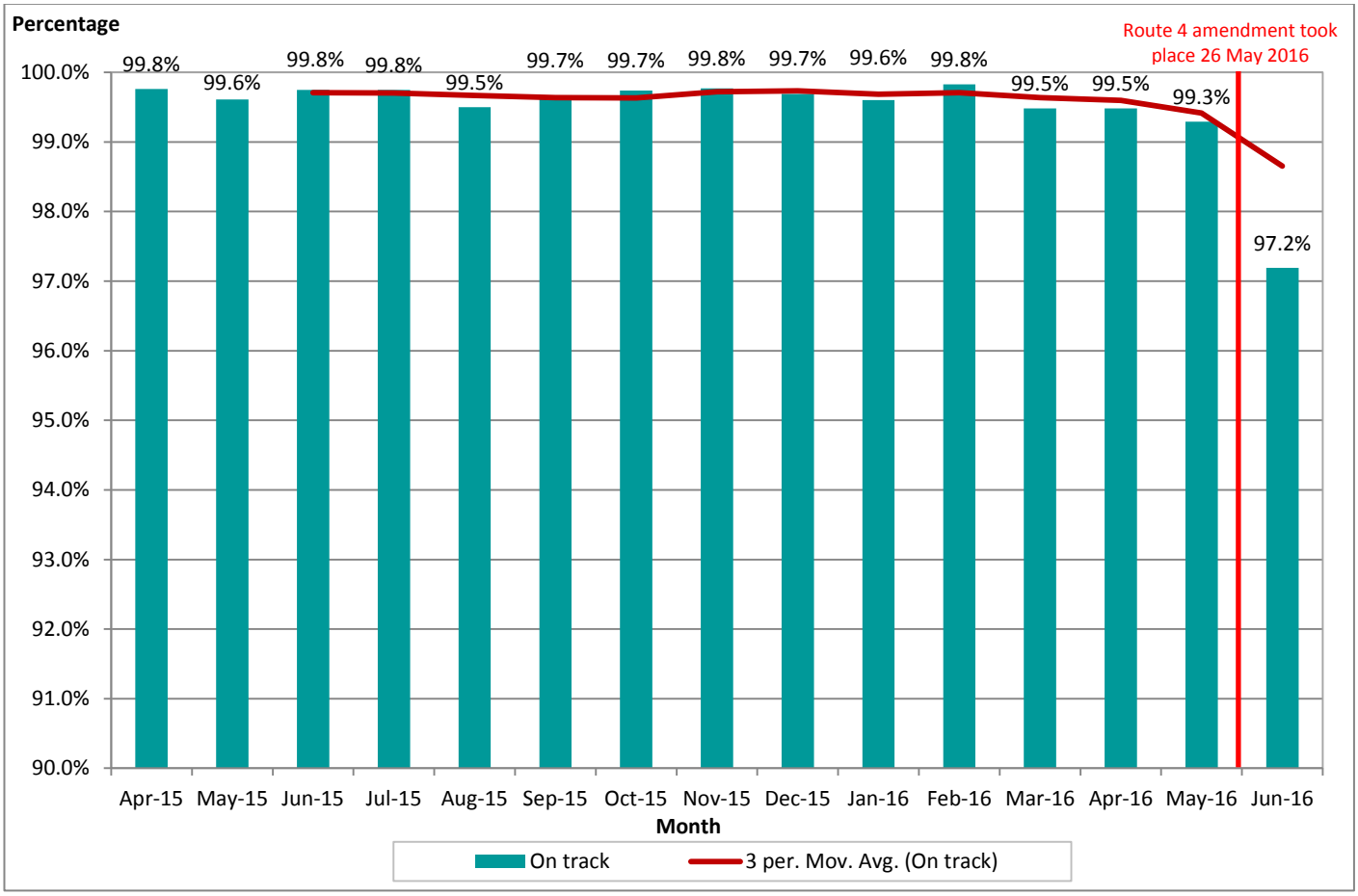
THE MAP BELOW ILLUSTRATES THE NOISE PREFERENTIAL ROUTES USED BY DEPARTING AIRCRAFT WITH MINIMUM VECTORING ALTITUDE FIGURES



THE TABLE BELOW ILLUSTRATES TRACK KEEPING PERFORMANCE OVER 15 MONTHS

	Total			Westerly			Easterly		
Month	Deviations	Departures	% Deviations	Deviations	Departures	% Deviations	Deviations	Departures	% Deviations
Apr-15	26	10916	0.24%	16	5610	0.29%	10	5306	0.19%
May-15	47	12206	0.39%	46	10001	0.46%	1	2205	0.05%
Jun-15	31	12440	0.25%	19	8910	0.21%	12	3530	0.34%
Jul-15	34	13448	0.25%	26	10843	0.24%	8	2605	0.31%
Aug-15	68	13716	0.50%	31	9158	0.34%	37	4558	0.81%
Sep-15	44	12904	0.34%	34	7505	0.45%	10	5399	0.19%
Oct-15	31	11960	0.26%	19	6941	0.27%	12	5019	0.24%
Nov-15	21	9057	0.23%	19	8100	0.23%	2	957	0.21%
Dec-15	30	9704	0.31%	27	8873	0.30%	3	831	0.36%
Jan-16	37	9297	0.40%	28	7392	0.38%	9	1905	0.47%
Feb-16	16	9347	0.17%	12	6086	0.20%	4	3261	0.12%
Mar-16	55	10506	0.52%	50	5944	0.84%	5	4562	0.11%
Apr-16	58	11247	0.52%	55	8239	0.67%	3	3008	0.10%
May-16	91	12758	0.71%	38	5403	0.70%	53	7355	0.72%
Jun-16	362	12877	2.81%	329	7750	4.25%	33	5127	0.64%

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



Departures – Over Congested Areas

THE WIZAD NOISE PREFERENTIAL ROUTE

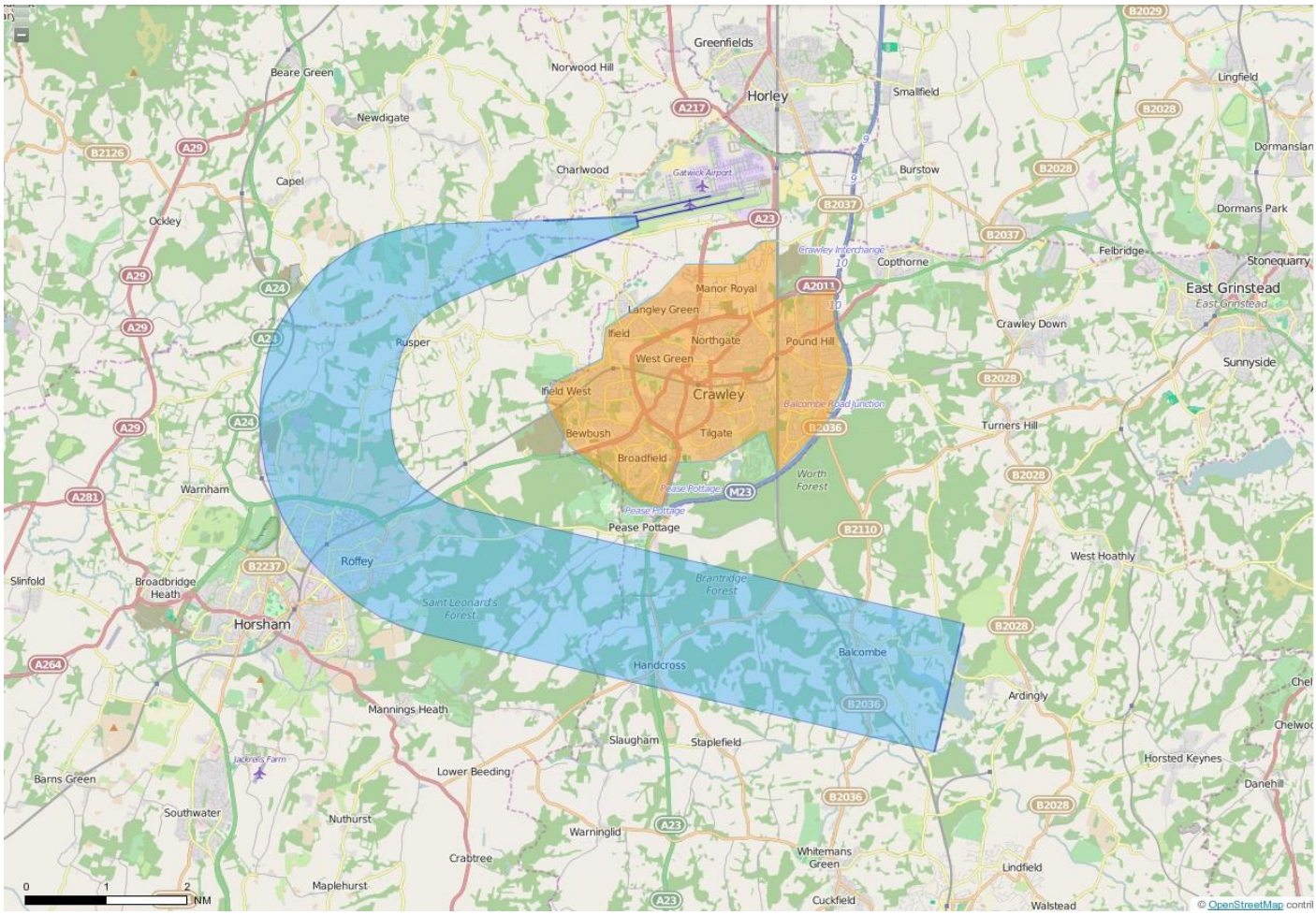
The Wizad Noise Preferential Route was designated by the Government at the same time as all other Gatwick departure routes; however, it is not used on an equal basis with the other routes. It is a Tactical Offload Route and is not usually offered as part of a flight path. If the 26 LAM Route (to the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



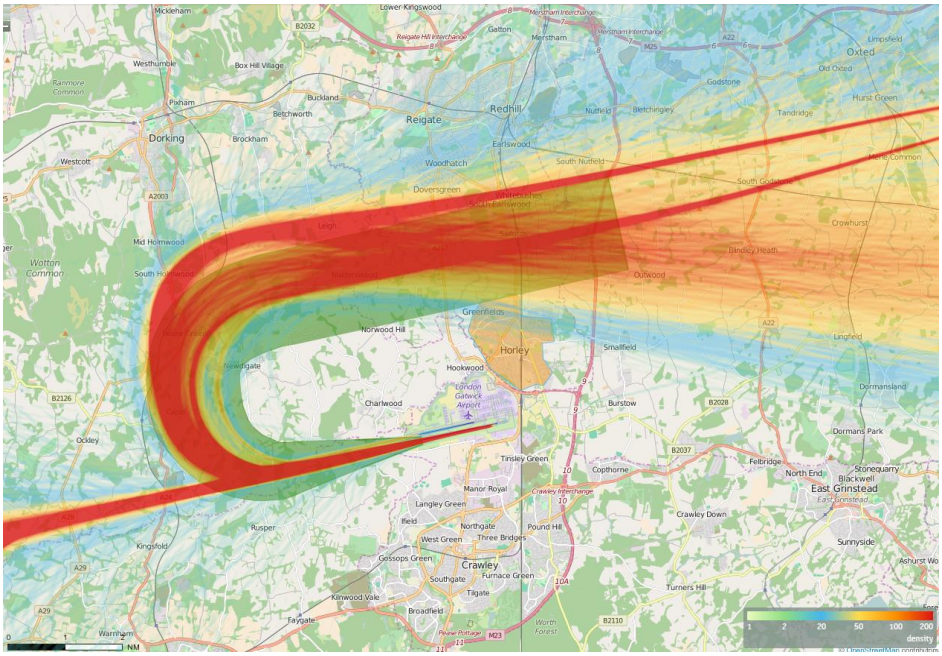
Overflight of Crawley and Horley

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

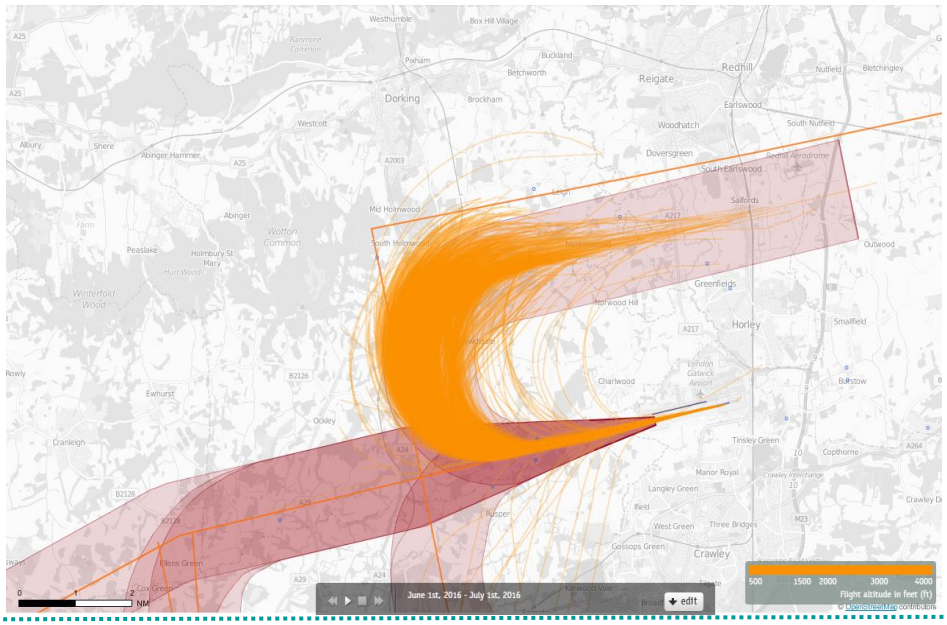
Comment:

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

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



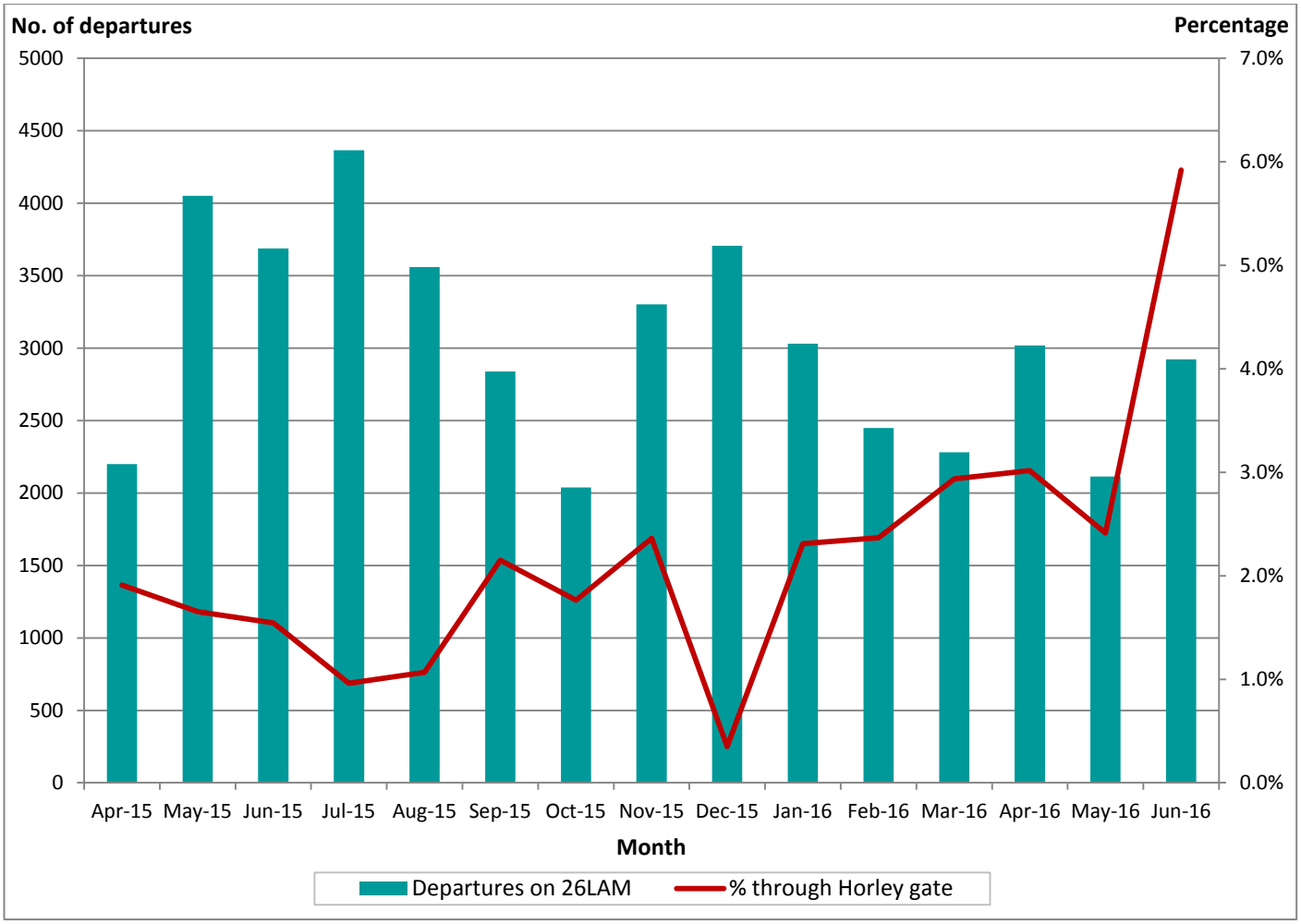
THE MAP BELOW ILLUSTRATES THE TRACK DENSITY OF DEPARTING AIRCRAFT ON THE '26 LAM' DEPARTURE ROUTE USING P-RNAV DURING JUNE 2016 UP TO AN ALTITUDE OF 4,000FT



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-14	3048	50	1.64%	**Jan-15**	3237	102	3.15%	**Jan-16**	3031	70	2.31%
Feb-14	3089	60	1.94%	**Feb-15**	2251	66	2.93%	**Feb-16**	2449	58	2.37%
Mar-14	2447	60	2.45%	**Mar-15**	2455	40	1.63%	**Mar-16**	2282	67	2.94%
Apr-14	2043	40	1.96%	**Apr-15**	2200	42	1.91%	**Apr-16**	3018	91	3.02%
May-14	2805	46	1.64%	**May-15**	4051	67	1.65%	**May-16**	2114	51	2.41%
Jun-14	2606	38	1.46%	**Jun-15**	3688	57	1.55%	**Jun-16**	2922	173	5.92%
Jul-14	3466	52	1.50%	**Jul-15**	4365	42	0.96%	**Jul-16**	-	-	-
Aug-14	4512	35	0.78%	**Aug-15**	3559	38	1.07%	**Aug-16**	-	-	-
Sep-14	1686	24	1.42%	**Sep-15**	2838	61	2.15%	**Sep-16**	-	-	-
Oct-14	3826	31	0.81%	**Oct-15**	2039	36	1.77%	**Oct-16**	-	-	-
Nov-14	1881	19	1.01%	**Nov-15**	3302	78	2.36%	**Nov-16**	-	-	-
Dec-14	3079	79	2.57%	**Dec-15**	3707	13	0.35%	**Dec-16**	-	-	-

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 6,000ft. 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 6,000ft 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.'

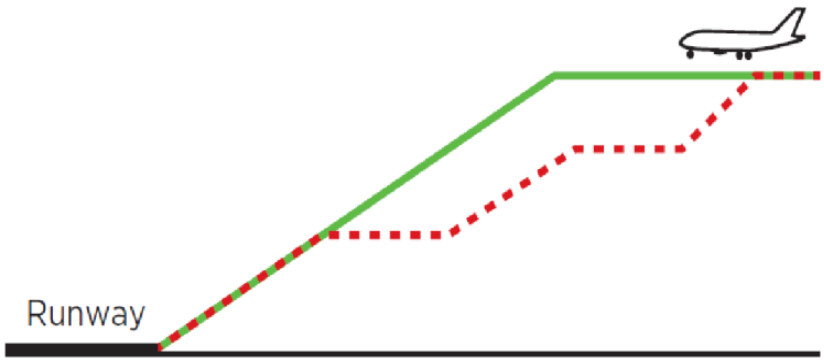
A CDO is not a precise art and relies on the accuracy of track miles provided by ATC to the flight crew coupled with pilot skill, weather conditions and operational circumstances. Additionally, different aircraft types perform differently requiring varying operating practices to be utilised in order 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 section 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 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.

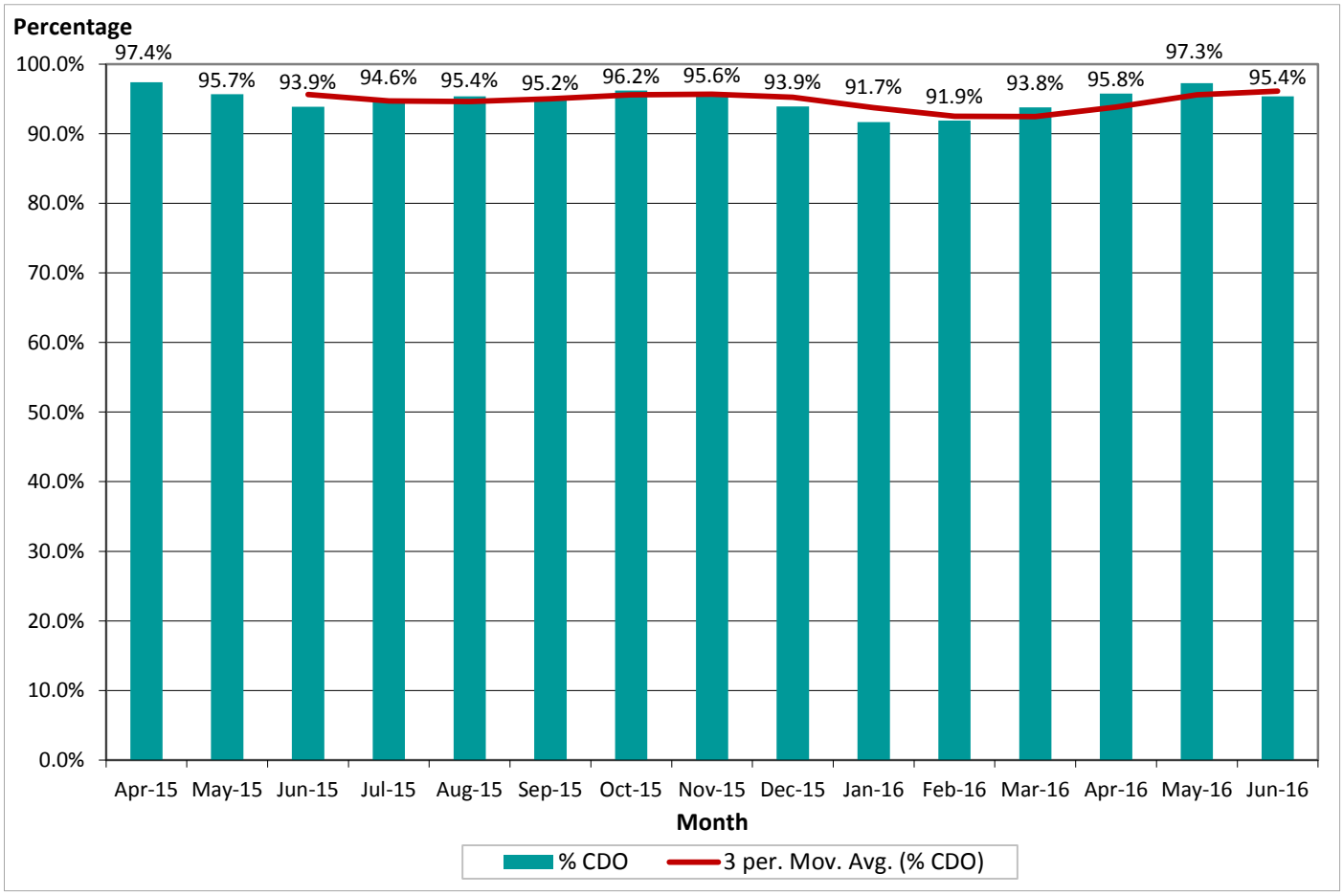


CORE NIGHT PERIOD (2330-0600)

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
Apr-15	847	22	97.40%	408	7	98.28%	439	15	96.58%
May-15	1299	56	95.69%	295	20	93.22%	1004	36	96.41%
Jun-15	1569	96	93.88%	416	22	94.71%	1153	74	93.58%
Jul-15	1887	102	94.59%	360	18	95.00%	1527	84	94.50%
Aug-15	1849	86	95.35%	579	36	93.78%	1270	50	96.06%
Sept-15	1597	77	95.18%	737	57	92.27%	860	20	97.67%
Oct-15	1061	40	96.23%	651	25	96.16%	410	15	96.34%
Nov-15	339	15	95.58%	124	4	96.77%	215	11	94.88%
Dec-15	361	22	93.91%	11	0	100.00%	350	22	93.71%
Jan-16	301	25	91.69%	55	0	100.00%	246	25	89.84%
Feb-16	321	26	91.90%	136	10	92.65%	185	16	91.35%
Mar-16	402	25	93.78%	159	11	93.08%	243	14	94.24%
Apr-16	832	35	95.79%	227	3	98.68%	605	32	94.71%
May-16	1204	33	97.26%	764	25	96.73%	440	8	98.18%
Jun-16	1686	78	95.37%	646	25	96.13%	1040	53	94.90%

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

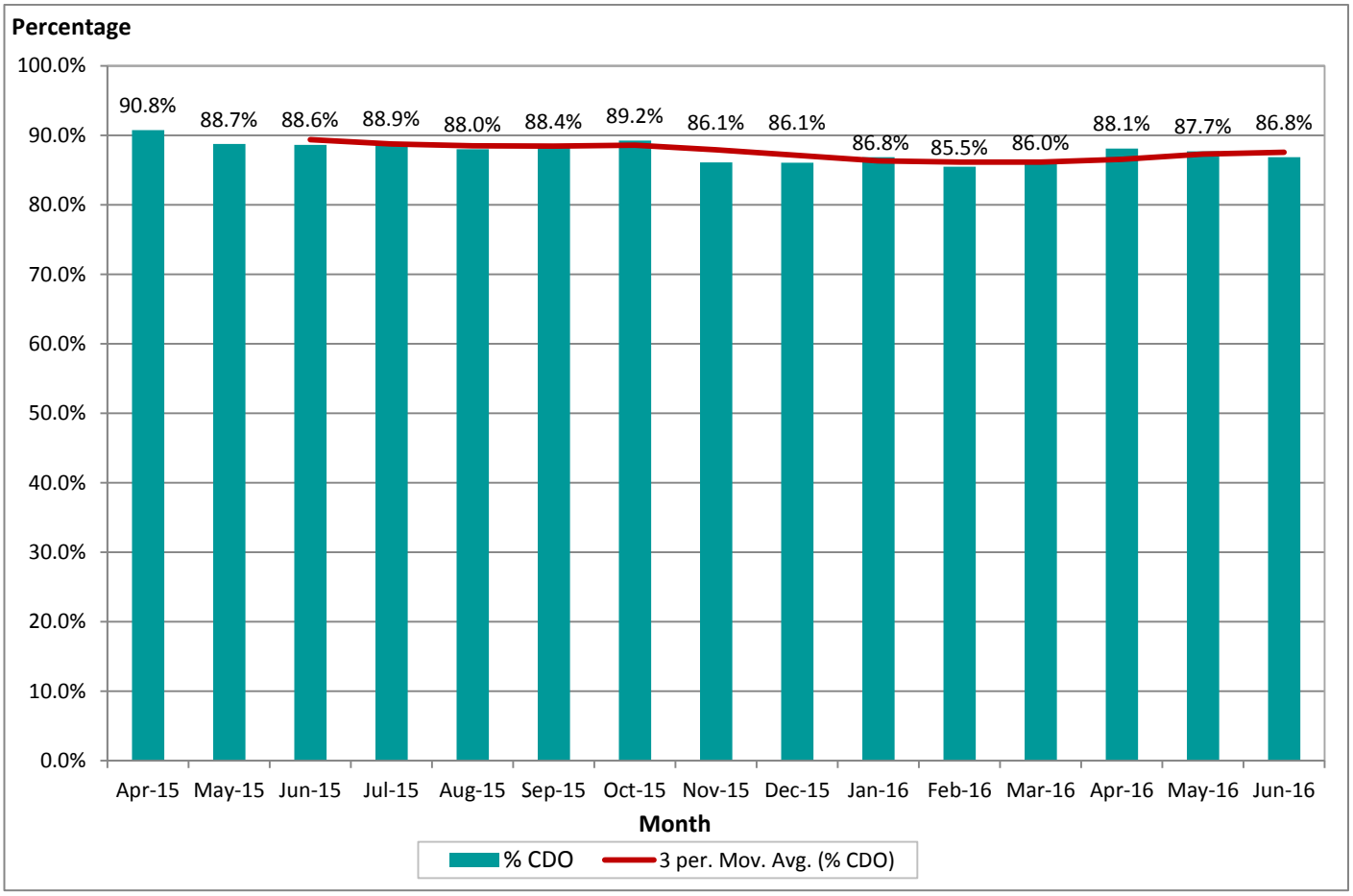


DAYTIME AND SHOULDER PERIOD CDO ACHIEVEMENT (0600-2330)

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

	All Arrivals			08 Easterly Arrivals			26 Westerly Arrivals		
Month	Total	Non CDO	% CDO	Total	Non CDO	% CDO	Total	Non CDO	% CDO
Apr-15	10028	927	90.76%	4849	475	90.20%	5179	452	91.27%
May-15	10825	1219	88.74%	1999	237	88.14%	8826	982	88.87%
Jun-15	10802	1230	88.61%	3107	402	87.06%	7695	828	89.24%
Jul-15	11518	1281	88.88%	2132	286	86.59%	9386	995	89.40%
Aug-15	11822	1421	87.98%	3914	521	86.69%	7908	900	88.62%
Sep-15	11284	1306	88.43%	4687	543	88.41%	6597	763	88.43%
Oct-15	10879	1171	89.24%	6434	720	88.81%	4445	451	89.85%
Nov-15	8695	1209	86.10%	805	144	82.11%	7890	1065	86.50%
Dec-15	9321	1300	86.05%	615	110	82.11%	8706	1190	86.33%
Jan-16	8951	1178	86.84%	1737	225	87.05%	7214	953	86.79%
Feb-16	9005	1308	85.47%	3070	461	84.98%	5935	947	84.04%
Mar-16	10070	1405	86.05%	4334	588	86.43%	5736	817	85.76%
Apr-16	10359	1237	88.06%	2765	329	88.10%	7594	908	88.04%
May-16	11528	1418	87.70%	6703	866	87.08%	4825	552	88.56%
Jun-16	11130	1466	86.83%	4362	604	86.15%	6768	862	87.26%

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

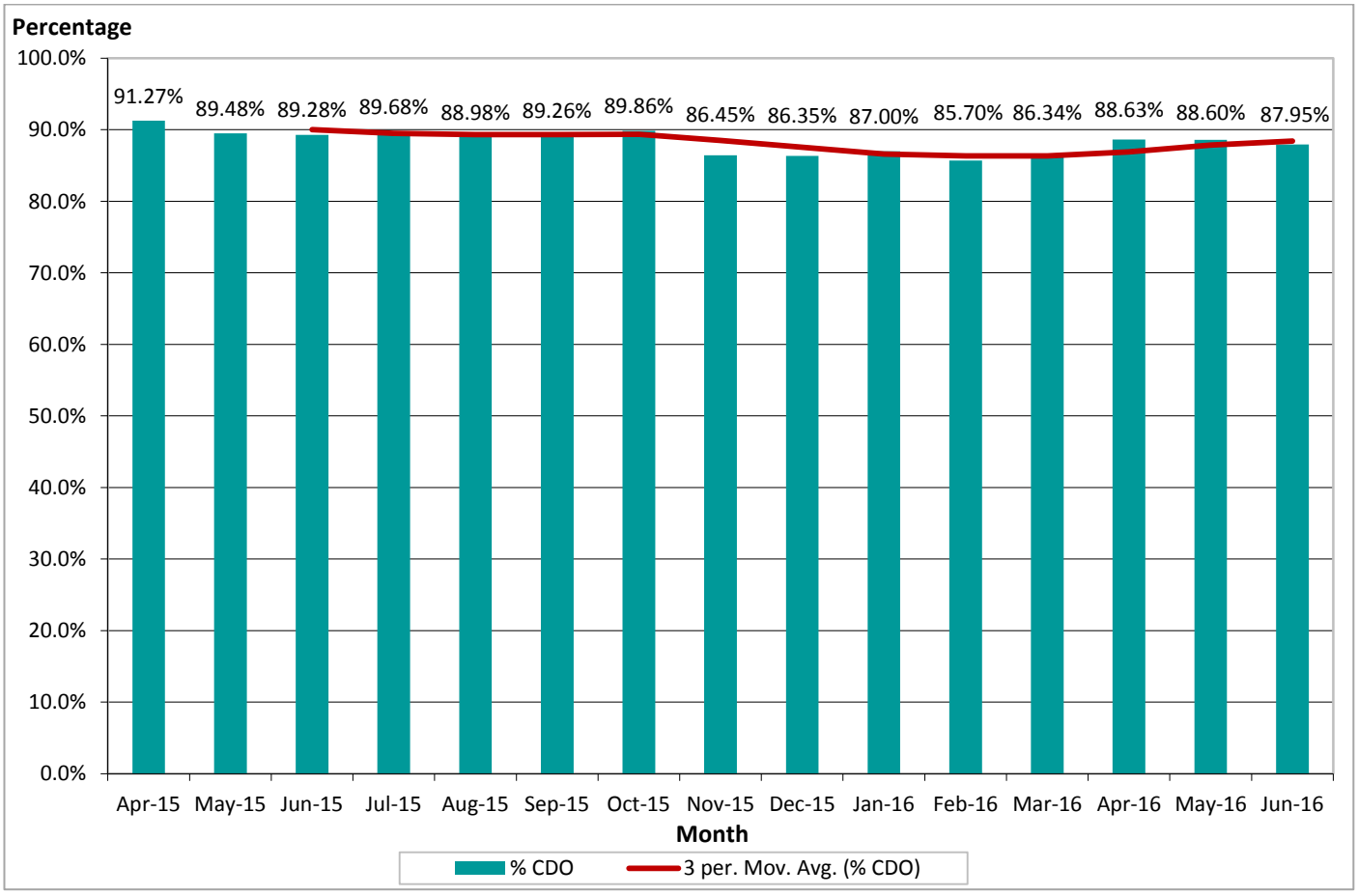


24 HOUR PERIOD CDO ACHIEVEMENT

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

	All Arrivals			08 Easterly Arrivals			26 Westerly Arrivals		
Month	**Total**	**Non CDO**	**% CDO**	**Total**	**Non CDO**	**% CDO**	**Total**	**Non CDO**	**% CDO**
Apr-15	10875	949	91.27%	5257	482	90.83%	5618	467	91.69%
May-15	12124	1275	89.48%	2294	257	88.80%	9830	1018	89.64%
Jun-15	12371	1326	89.28%	3523	424	87.96%	8848	902	89.81%
Jul-15	13405	1383	89.68%	2492	304	87.80%	10913	1079	90.11%
Aug-15	13671	1507	88.98%	4493	557	87.60%	9178	950	89.65%
Sep-15	12885	1384	89.26%	5424	600	88.94%	7461	784	89.49%
Oct-15	11940	1211	89.86%	7085	745	89.48%	4855	466	90.40%
Nov-15	9034	1224	86.45%	929	148	84.07%	8105	1076	86.72%
Dec-15	9682	1322	86.35%	626	110	82.43%	9056	1212	86.62%
Jan-16	9252	1203	87.00%	1792	225	87.44%	7460	978	86.89%
Feb-16	9326	1334	85.70%	3206	471	85.31%	6120	863	85.90%
Mar-16	10472	1430	86.34%	4493	599	86.67%	5979	831	86.10%
Apr-16	11191	1272	88.63%	2992	332	88.90%	8199	940	88.54%
May-16	12732	1451	88.60%	7467	891	88.07%	5265	560	89.36%
Jun-16	12816	1544	87.95%	5008	629	87.44%	7808	915	88.28%

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 practical and shall not fly over the congested areas of Crawley, East Grinstead, Horley and Horsham at an altitude of less than 3,000ft (Gatwick QNH), nor over the congested area of Lingfield at an altitude of less than 2,000ft (Gatwick QNH).*

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

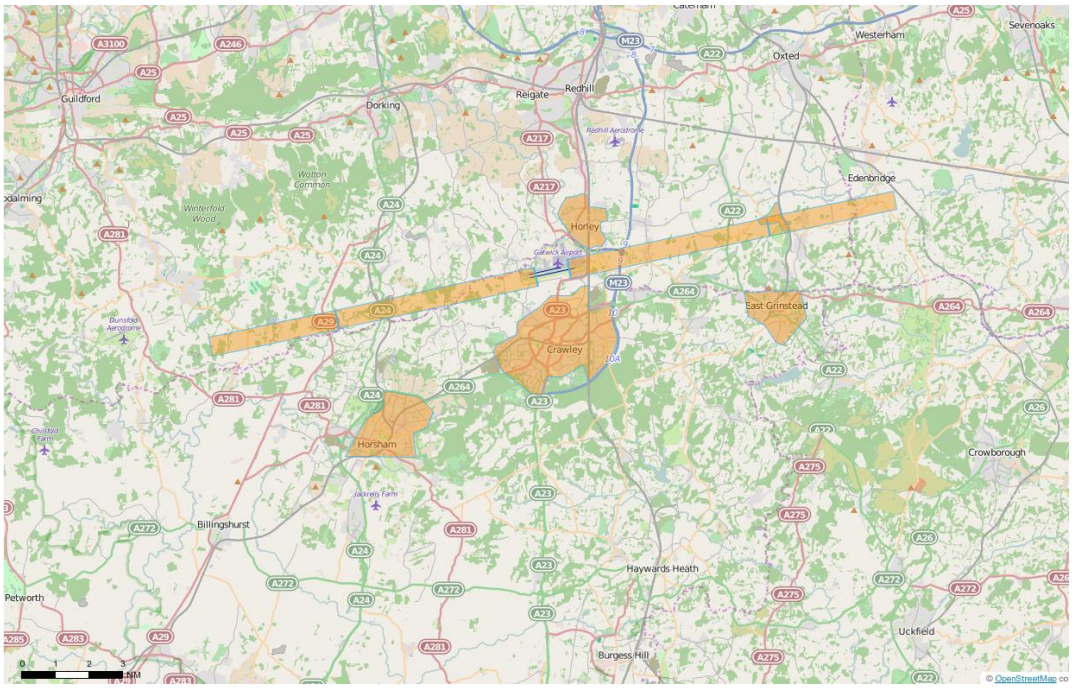
Comment: There were no arriving flights which passed over the towns of Crawley and Horley below the required altitude for this period. The map below illustrates these analysis zones. A polygon located over the urban area at about 7 nautical miles (nm) from touchdown is normally used to analyse tracks over the Lingfield area. During the analysis period, there were a total of 16 arrivals that passed through this area. Aircraft tracks were analysed for April, May and June 2016 and with the exception of a small number of go-arounds, there were no flights that passed over Lingfield below the altitude of 1,698ft (2,000ft Gatwick QNH). There were no arriving flights that passed over East Grinstead below the required altitude.

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 descent below 2,000ft (Gatwick QNH) below the glide path. 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 36,895 arrivals recorded by the Casper NTK system between 1st April and 30th June 2016. 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 29 (0.08%). In addition, there were 21 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)

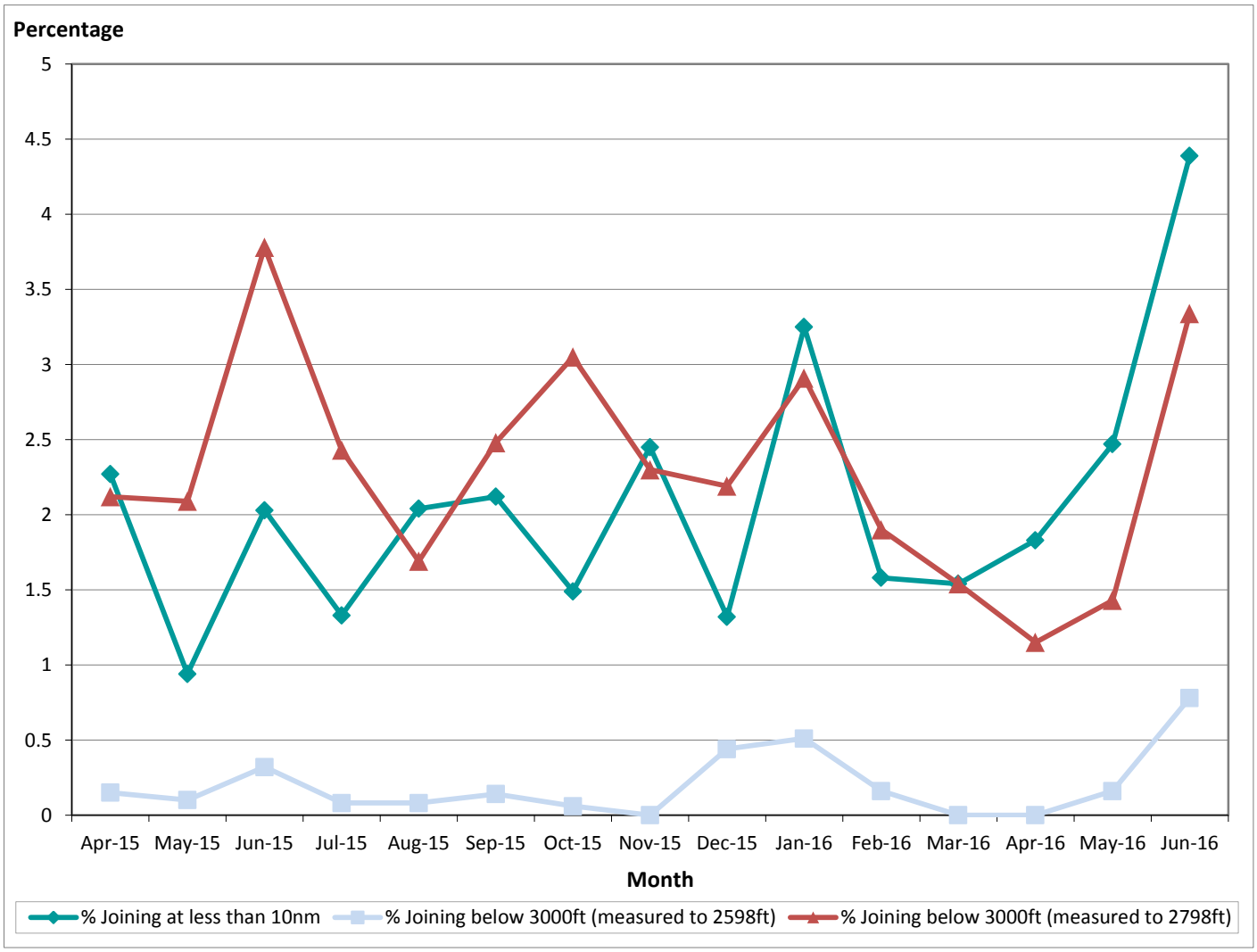
EGKK AD 2.21 (14) *Aircraft which land at Gatwick Airport between the hours of 2300 (local time) and 0700 (local time), whether or not making use of the ILS localizer and irrespective of weight or type of approach, shall not join the centre line:*

a) below 3,000ft, or

b) closer than 10 nm from touchdown.

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

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



Go-Around Statistics 2004 - 2016

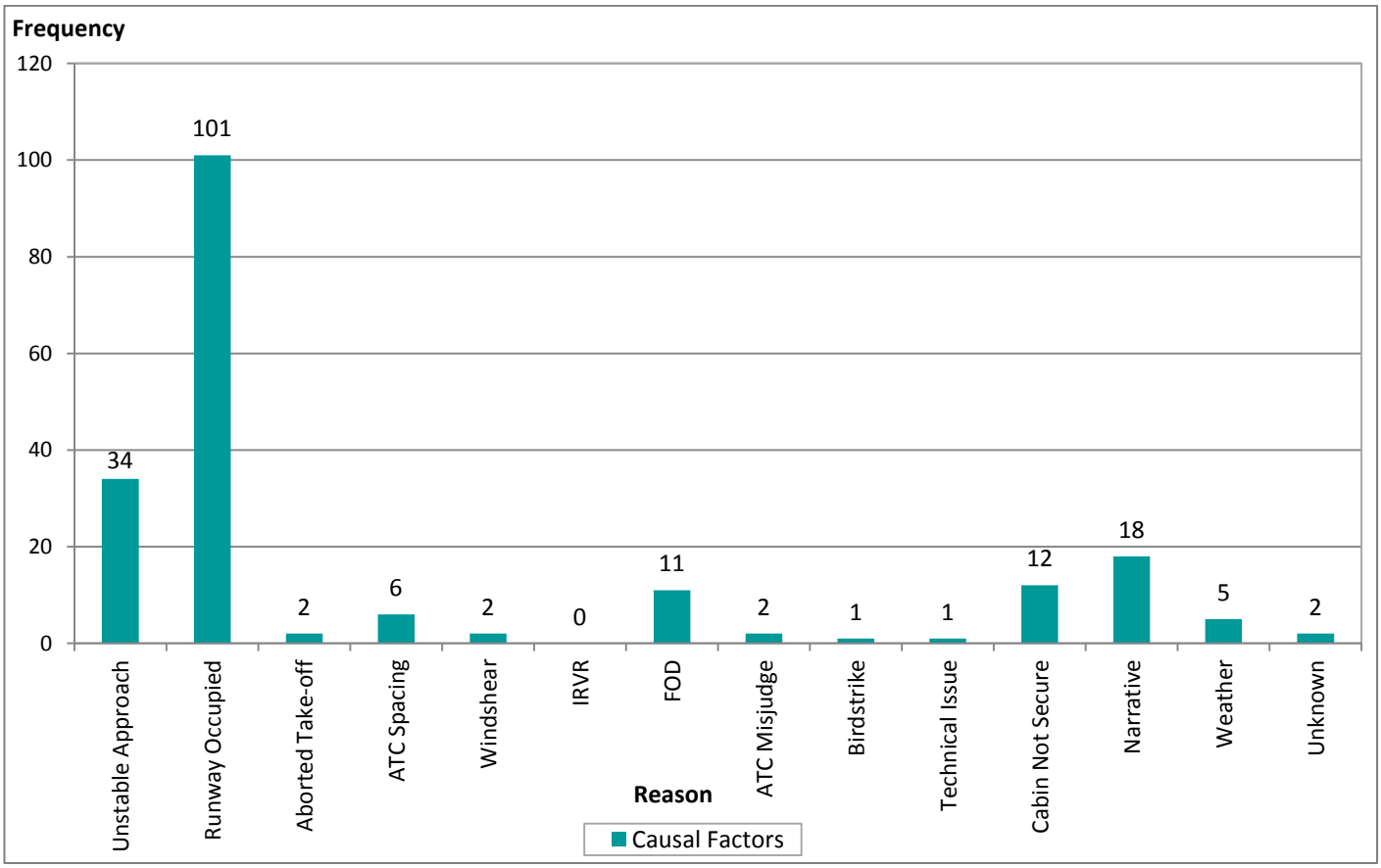
A go-around is a procedure adopted when an arriving aircraft on final approach aborts landing by applying take-off power and climbing away from the airport. It is a set procedure to be followed by the flight crew in the event of an aircraft being unable to land. The procedure is published so that Air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

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

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

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

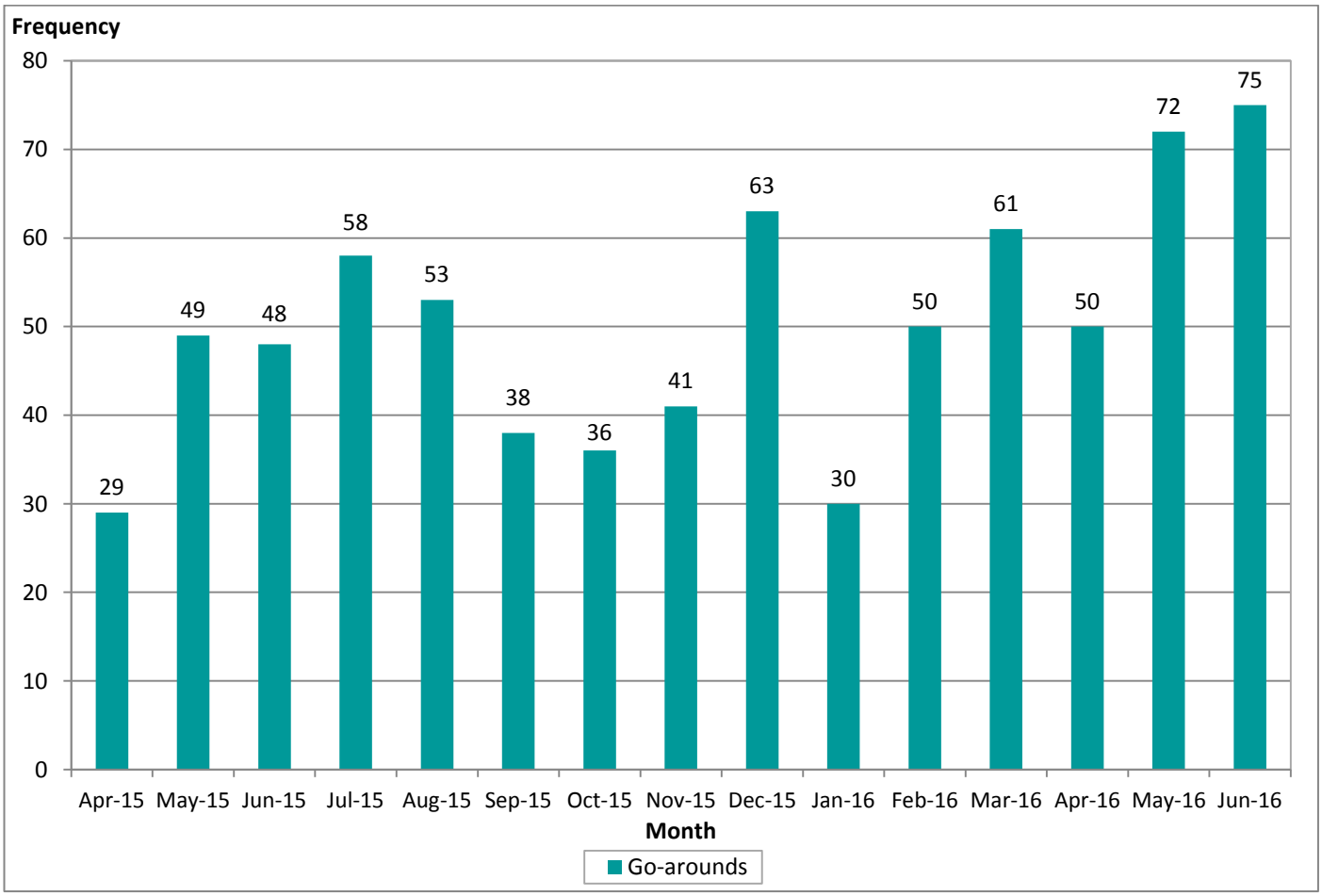
NATS AND ANS CURRENTLY RECORD GO-AROUNDS UNDER ONE OF THE FOLLOWING CAUSAL FACTORS (APRIL - JUNE 2016)



THE TABLE BELOW ILLUSTRATES GO-AROUND STATISTICS 2004 – 2016

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	338	66010	0.51

THE GRAPH BELOW ILLUSTRATES TOTAL NUMBER OF GO-AROUNDS PER MONTH (APRIL 2015 - JUNE 2016)



Night Flights

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

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

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

Overleaf is a mid-season report for Summer 2016. The total number of movements available for the summer season is 11525, which includes a 10% carry over of the unused quota from the winter season.

DISPENSATIONS

There have been a total of 265 dispensations applied during this summer season which began on the 27th March 2016.

- 169 dispensations were due to various French Air Traffic Control strikes across the three month period.
- 45 dispensations were due to adverse weather conditions (e.g. thunderstorms).
- 41 dispensations were due to the closure of the main runway on 12th June 2016.
- 7 dispensations were due to an Italian Air Traffic Control strike on 17th June 2016.
- 3 dispensations were due to a German General Workers strike (including airport personnel) on the 29th April 2016.

QC4, QC8 and QC16 MOVEMENTS

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

RESTRICTIONS

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

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

London Gatwick

AIRPORT MOVEMENTS and QUOTA SUMMARY to WEEK 16 (27 MARCH 2016 to 12 JULY 2016 inc.)

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

Wk No.	Week Ending Date	QC0.25 No.	QC0.5 No.	QC1 No.	QC2 No.	QC4 No.	QC8 No.	QC16 No.	Total Quota Value	Mvmts Against Limit	Exmpt Types	Not Cnt'd Delays	Not Cnt'd Govt	Not Cnt'd Emerg	Total Arvls No.	Total Arvls %	Total Deps No.	Total Deps %	Total Rnwy Mvmts
1	02/04/2016	114	46	16	3	0	0	0	73.50	179	1	52	0	0	197	84.9	35	15.1	232
2	09/04/2016	172	74	17	0	0	0	0	97.00	263	3	0	0	0	238	89.5	28	10.5	266
3	16/04/2016	126	53	19	0	0	0	0	77.00	198	4	0	0	0	174	86.1	28	13.9	202
4	23/04/2016	119	60	14	0	0	0	0	73.75	193	0	0	0	0	166	86.0	27	14.0	193
5	30/04/2016	138	48	22	1	0	0	0	82.50	209	0	11	0	0	188	85.5	32	14.5	220
6	07/05/2016	129	89	18	2	0	0	0	98.75	238	1	0	0	0	207	86.6	32	13.4	239
7	14/05/2016	145	100	26	1	0	0	0	114.25	272	6	0	0	0	241	86.7	37	13.3	278
8	21/05/2016	154	103	29	2	0	0	0	123.00	288	1	7	0	0	257	86.8	39	13.2	296
9	28/05/2016	188	119	46	4	0	0	0	160.50	357	0	19	0	0	327	87.0	49	13.0	376
10	04/06/2016	230	120	34	4	0	0	0	159.50	388	2	32	0	0	385	91.2	37	8.8	422
11	11/06/2016	212	136	41	5	0	0	0	172.00	394	3	33	0	0	381	88.6	49	11.4	430
12	18/06/2016	202	143	45	4	0	0	0	175.00	394	3	72	0	0	407	86.8	62	13.2	469
13	25/06/2016	233	126	48	5	0	0	0	179.25	412	0	52	0	0	398	85.8	66	14.2	464
14	02/07/2016	233	140	47	5	0	0	0	185.25	425	0	39	0	0	411	88.6	53	11.4	464
15	09/07/2016	262	167	41	4	0	0	0	198.00	474	0	0	0	0	423	89.2	51	10.8	474
16	12/07/2016	129	75	28	4	0	0	0	105.75	236	0	0	0	0	200	84.7	36	15.3	236
	TOTALS	**2786**	**1599**	**491**	**44**	**0**	**0**	**0**	**2075.0**	**4920**	**24**	**317**	**0**	**0**	**4600**	**87.4**	**661**	**12.6**	**5261**

Quota Points Available	4325.0	Movements Available	6605
Quota % Points Used	32.4	Movements % Used	42.7

Note 1 Not Cnt'd Delays — Delays likely to lead to serious congestion and delays resulting from widespread disruption of Air Traffic.

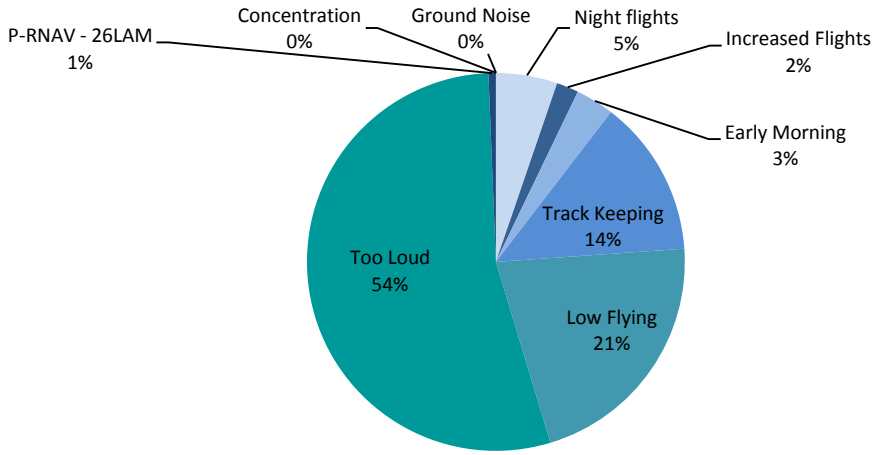
Note 2 Not Ctn'd Gov't — Exemptions granted by Gov't (VIP Passengers, Emergency Relief).

Note 3 Not Ctn'd Emerg — Emergency Take-offs and Landing

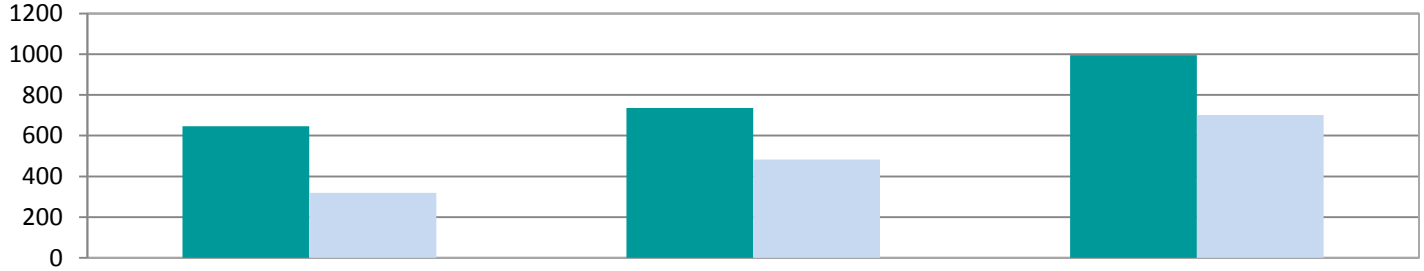
Noise Complaints

It is important that we understand the issues of noise disturbance from individuals and communities who live around the airport. By studying the complaints we receive and by communicating with the affected towns and villages surrounding the airport, we believe that this gives us a greater understanding of the issues related to noise. This means that we can work together to improve the noise climate around the airport. The complaints we have received are either about specific aircraft events that cause disturbance or generic complaints about airport operations in general. The following charts provide an analysis of the reasons for the numbers of complaints.

REASON FOR SPECIFIC COMPLAINT BY PERCENTAGE

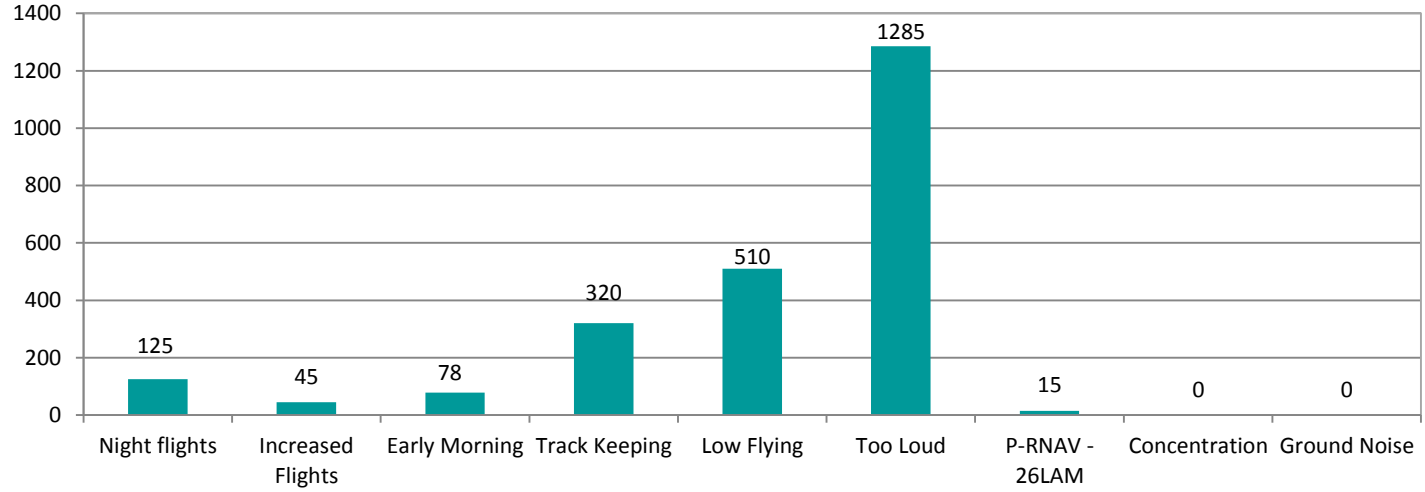


COMPLAINTS RECORDED BY MONTH



	Apr-16	May-16	Jun-16
Specific	646	736	996
Generic	319	483	701

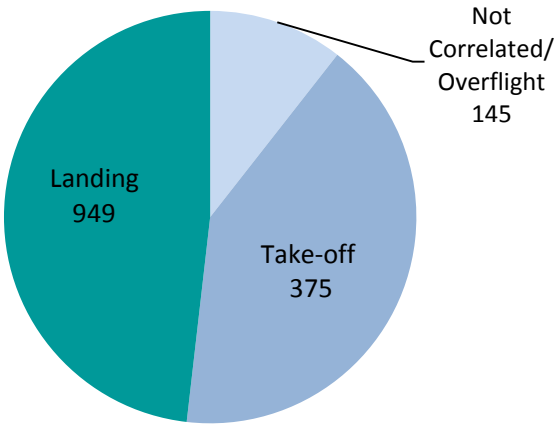
REASON FOR SPECIFIC COMPLAINT BY NUMBER



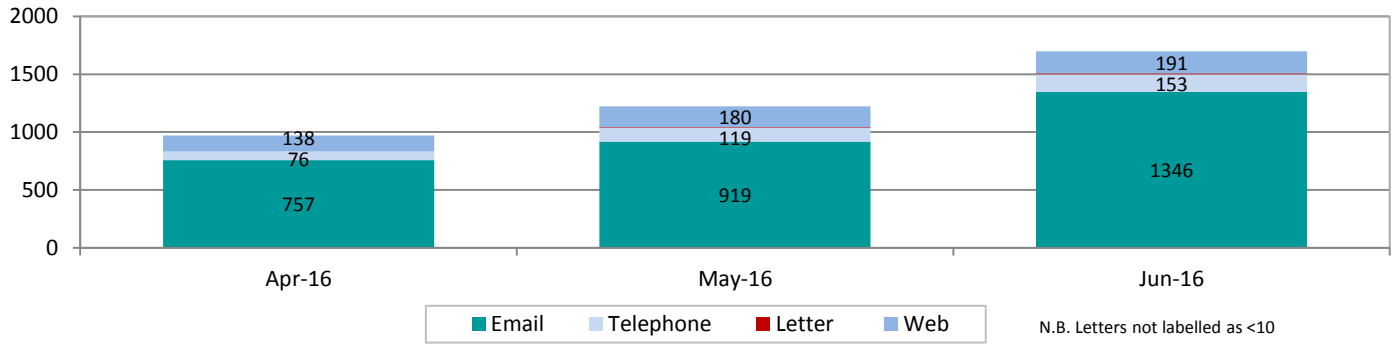
Noise is very subjective and can affect people in different ways. Some people can tolerate a certain noise level whilst it can cause disturbance to others. As well as identifying the issues of noise, it is important to understand the location of each individual complaint.

The charts below provide further analysis of the location of the complainants and whether they have been disturbed by arriving or departing flights, or by noise from within the airport boundary.

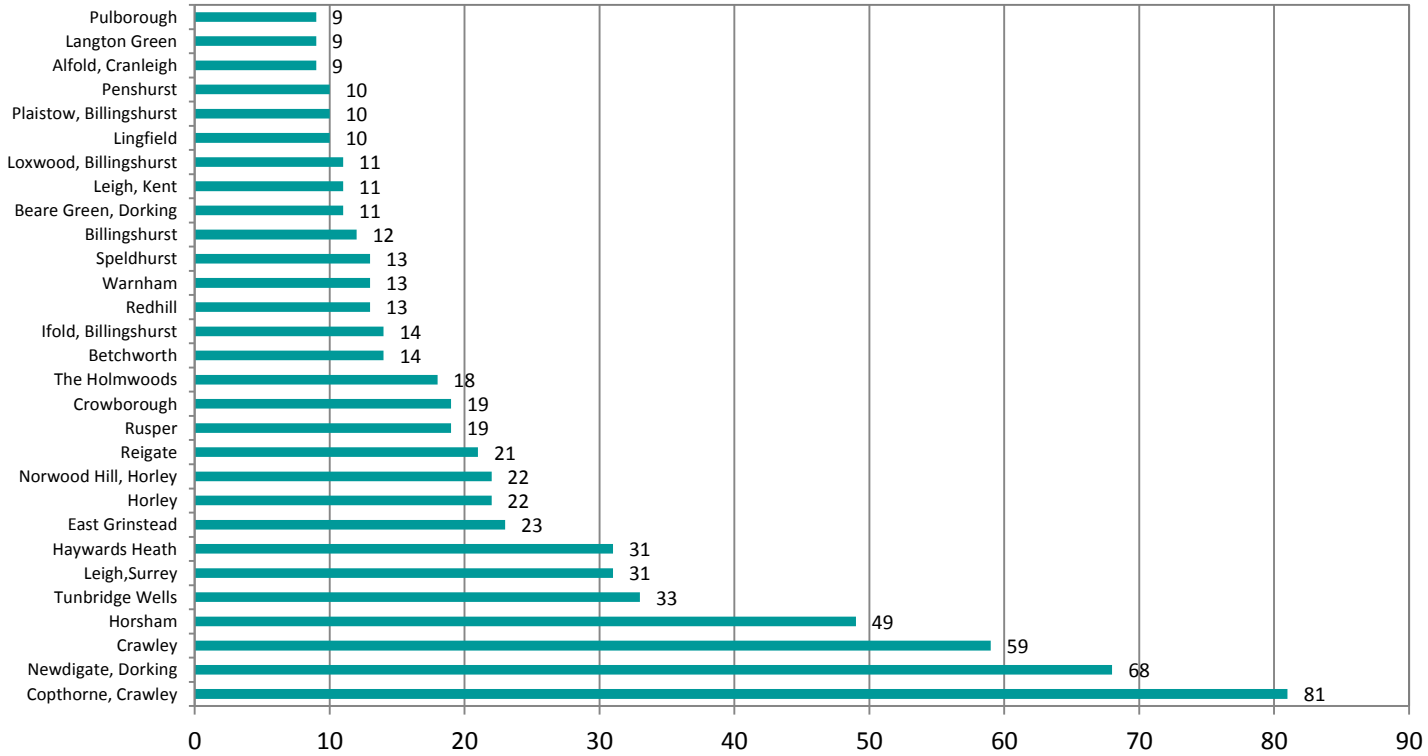
CATEGORIES OF AIRCRAFT OPERATION FROM SPECIFIC COMPLAINTS



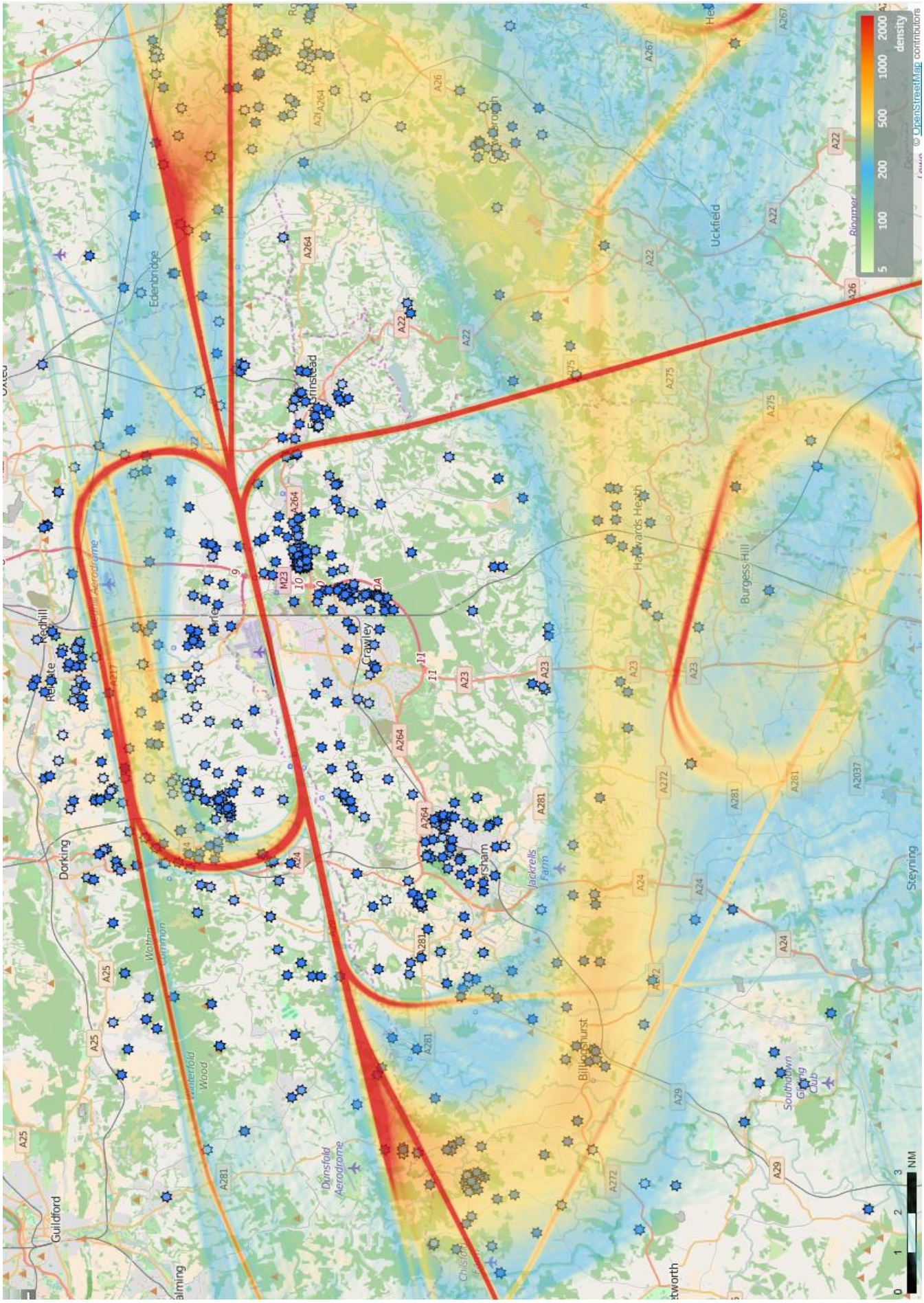
METHOD OF COMPLAINT



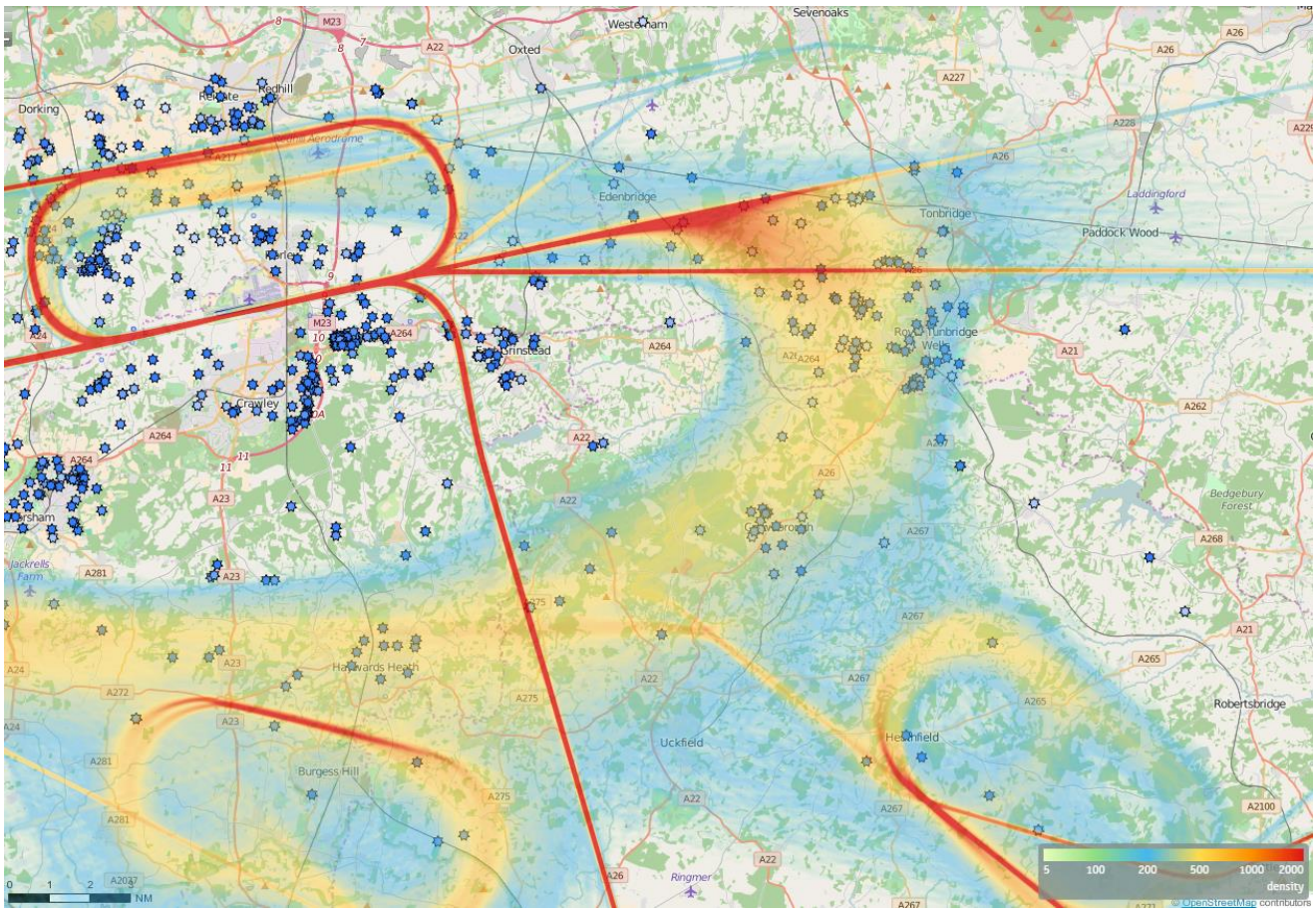
NUMBER OF INDIVIDUAL COMPLAINANTS BY TOWN/VILLAGE



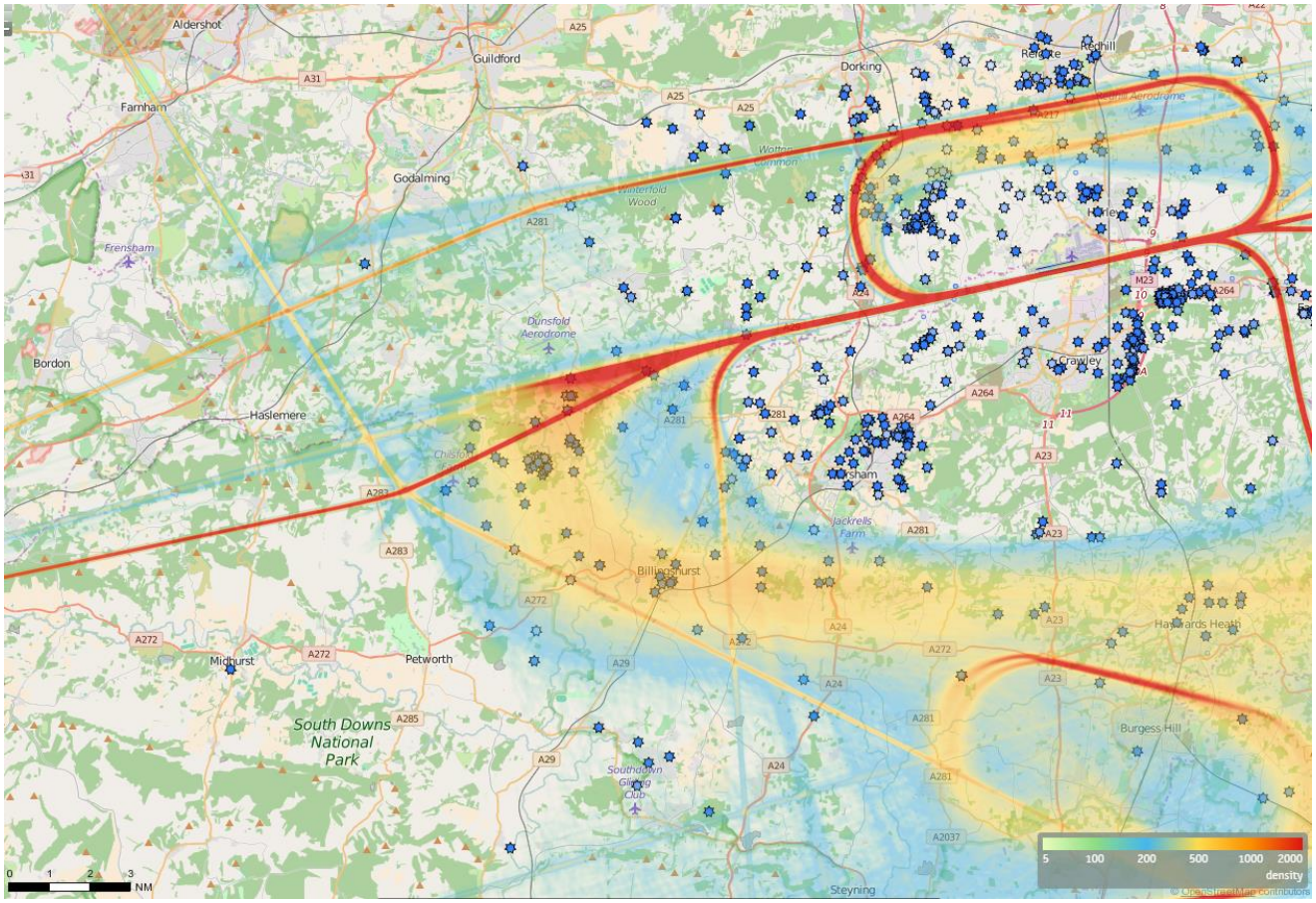
THE MAP BELOW ILLUSTRATES THE LOCATION OF NOISE COMPLAINTS RECEIVED BETWEEN APRIL AND JUNE 2016



THE MAP BELOW ILLUSTRATES NOISE COMPLAINTS RECEIVED TO THE EAST (APRIL - JUNE 2016)



THE MAP BELOW ILLUSTRATES NOISE COMPLAINTS RECEIVED TO THE WEST (APRIL - JUNE 2016)



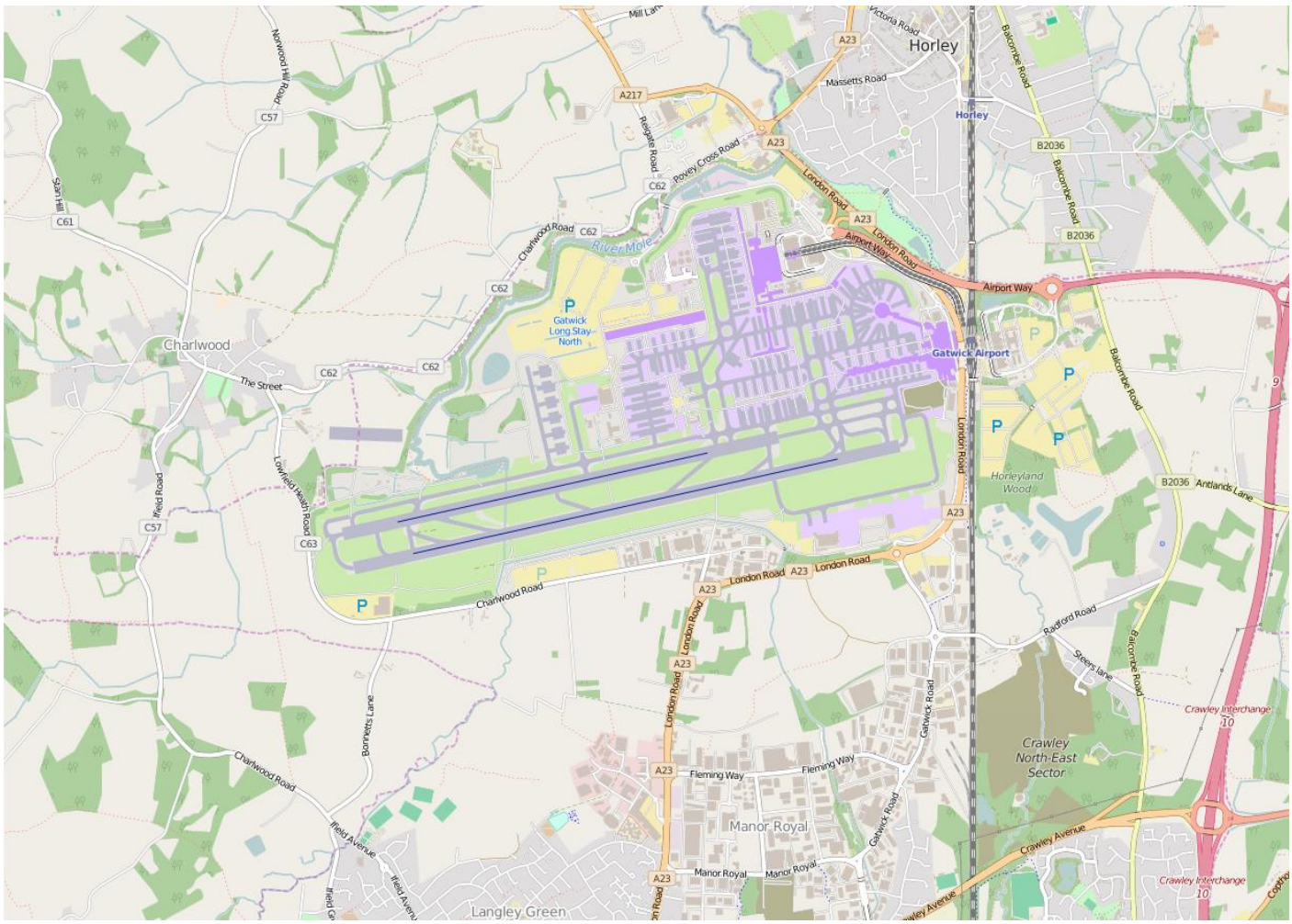
Ground Noise Complaints

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. It is advisory but not compulsory.

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

This report covers the period
(1st July – 30th September 2016)

YOUR LONDON AIRPORT
Gatwick

Contents

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 – 1st JULY 2016 – 30th SEPTEMBER 2016

Parameter		12 month performance averages*			
		Year to date (2016)	Previous year (2015)	2011	2006
Track keeping performance (% on track)	▲	98.78%**	99.61%	97.47%	98.17%***
24hr CDO (% achievement)	▼	88.08%	90.91%	90.49%	80.79%
Day/Shoulder CDO (% achievement)	▼	87.55%	90.49%	90.19%	79.9%
Core night CDO (% achievement)	▼	93.68%	95.13%	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	▲	2363	2402	343	587
Total noise complaints received****	▲	18265	19291	2673	4791
Enquiry response performance target is 95% within 8 days (July to September 2016)	▼	52.30%	83.50%	KPI 95%	
West/East Runway Split (%)	-	71/29	71/29	67/33	68/32

* The colour indicates the most recent 12 month performance compared to 2011, with green showing improvement and red a decline in performance.
** Track keeping statistics measurement changed on the 26th May 2016 due to the Route 4 amendment, all SID's are now included in the total figure.
*** This figure did not include deviations from prop types or those due to weather.
**** Complaints are recorded in line with our published complaints handling policy. The revised policy, published in November 2014, advises that only one complaint per day is recorded per individual. On the 29th September 2016, there was a revision to our complaints handling policy which now allows individuals to make multiple complaints per day and these will each be recorded.

Executive Summary Performance Headlines

AIRPORT OPERATIONS

Between 1st July and 30th September 2016, there were a total of 83,046 fixed wing aircraft movements at Gatwick, an increase in traffic of about 3.5% compared to the same period in 2015. The direction of operation is determined by wind direction and this was split 71% on the westerly runway and 29% on the easterly runway for the period. The rolling 20 year average for the split in runway usage is approximately 70% westerly and 30% 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 1275 movements from the northern runway.

TRACK KEEPING

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

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

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

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

CONTINUOUS DESCENT OPERATIONS (CDO) PERFORMANCE

While the Noise and Track Keeping (NTK) system utilises the most up-to-date format of radar data currently available, the algorithm that measures CDO performance has remained unchanged since the definition was initially defined several years ago. As part of a development project to improve the accuracy of CDO measurement, the Flight Performance Team has worked closely with NATS to upgrade the current algorithm. The core algorithm remains unaltered, although some additional rules have been added with the result that some marginal profiles, previously classified as CDO compliant, will now be re-classified as non-CDO flights. These changes came into effect from May 2015 and the resulting variance in recorded levels of performance is in the order of 1%, therefore we expect to see a minor drop off in recorded performance from this date. Historical observations have consistently shown a reduction in performance during the winter months due to instances of inclement weather. It is important to note that as recommended by the Independent Review of Arrivals, the altitude at which CDO is measured has changed as of 1st August 2016, more details later in the report.

COMMUNITY NOISE MONITORING

In addition to fixed monitors located close to the ends of the runway, there are currently mobile noise monitors deployed at sites in Lingfield, Rusper, Oakwood Hill, Cowden, South Holmwood, Irons Bottom, Leigh and Newick Way, East Grinstead. The Slinfold monitor was removed in September.

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

COMPLAINTS

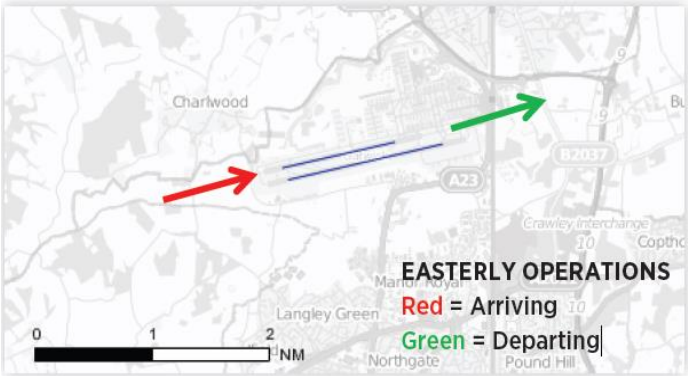
The number of recorded complaints has decreased compared to the previous twelve months as well as the number of individual callers which have also declined. Despite this, the number of recorded complaints has still remained higher than in 2011. The past year has been the busiest year in the airport's 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 2016.

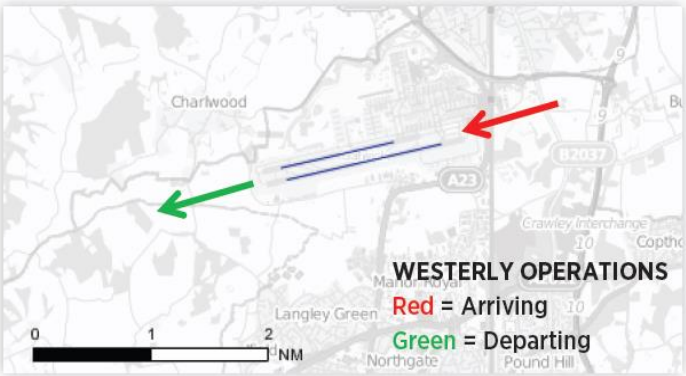
The postcode areas with the greatest number of enquiries during the three month period were Horley, Newdigate, Capel, Salfords and Tunbridge Wells. The number of individual complainants between July and Sept 2016 was **1391.** Complaints about aircraft operations are processed in accordance with our published Complaints Handling Policy. Details of this policy are available on our website. With regards to individuals making multiple complaints, these are recorded as one complaint per individual per day.

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.

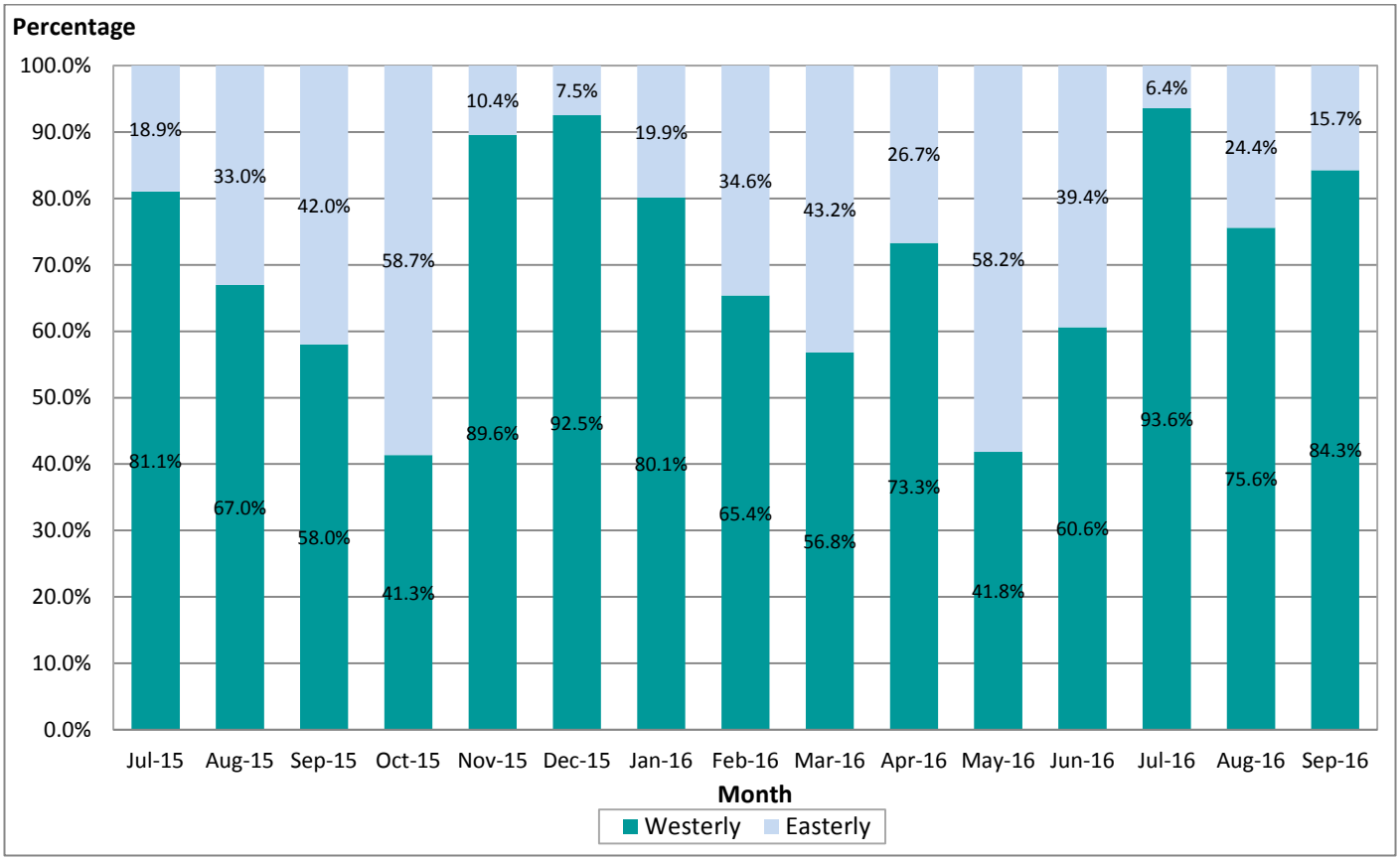
Although the long term average is approximately 70:30 in favour of westerly operations, it is not unusual to experience long periods of prolonged operation in either one direction or another.





RUNWAY DIRECTION SPLIT

THE GRAPH BELOW SHOWS THE SPLIT OVER THE 15 MONTH PERIOD (JULY 2015 – SEPTEMBER 2016)



The Aeronautical Information Publication

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

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

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

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

ADHERENCE TO NOISE MITIGATION MEASURES AS DETAILED IN THE GATWICK AIP

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

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

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

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

Departures - Noise Infringements

DEPARTURE NOISE LIMITS (DAYTIME)

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

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

DEPARTURE NOISE LIMITS (CORE NIGHT & SHOULDERS)

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

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

Departures - Initial Climb Performance

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

Comment:

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

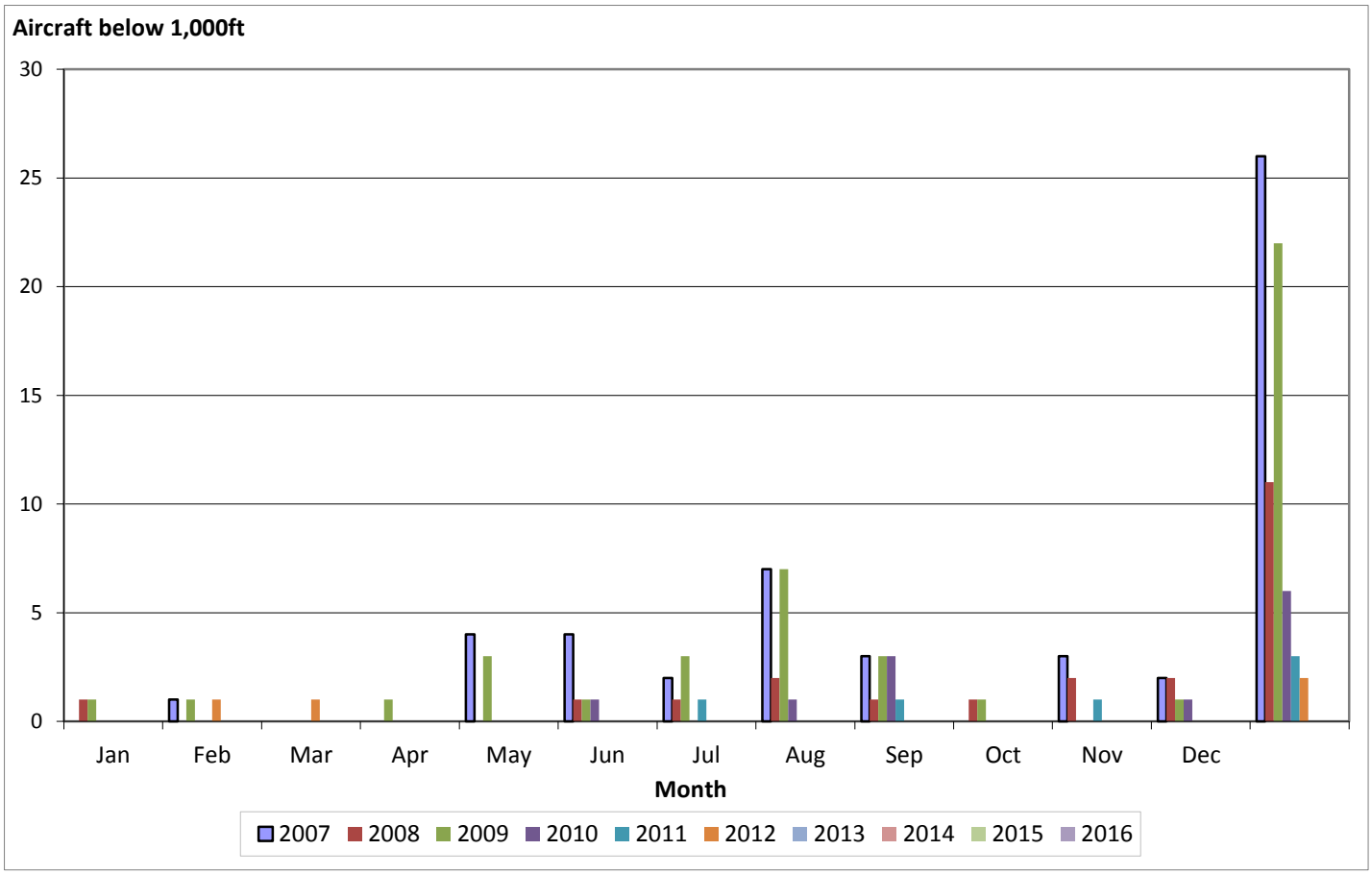
Historically, the summer months are typically the peak period for aircraft failing to meet the 1,000ft requirement, primarily due to the warmer weather which reduces aircraft climb performance.

1,000ft INFRINGEMENT TABLE

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

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

Initial Climb Performance



Departures – Track Keeping

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

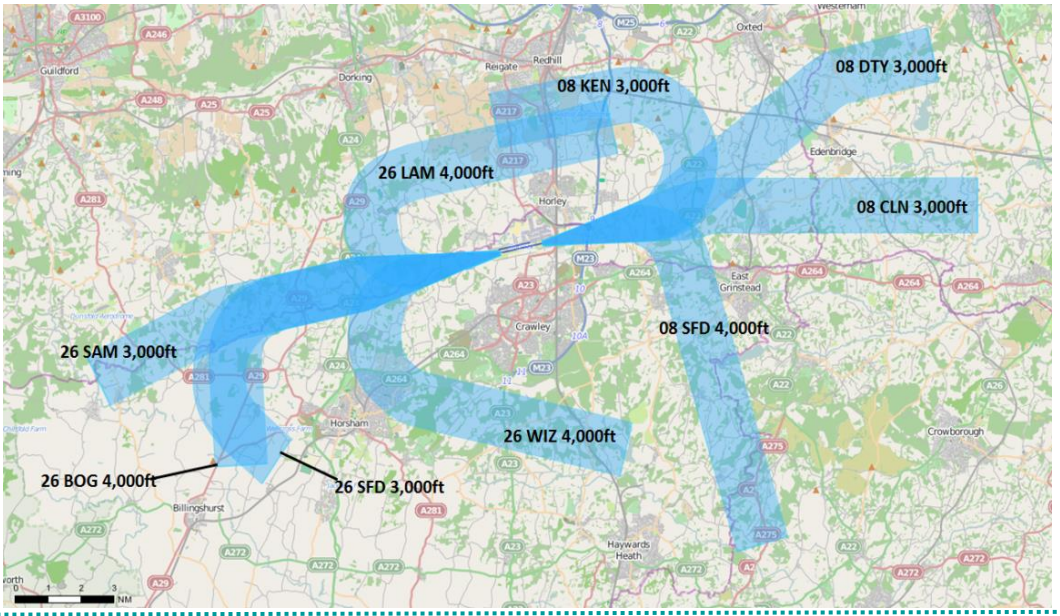
Air Traffic Control (ATC) are responsible for the routing of aircraft once airborne and when 3,000 or 4,000ft has been reached, they may give a flight a more direct heading, known as vectoring, off the route. This is subject to certain factors, including weather conditions and other traffic in the vicinity.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

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

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

Following the introduction of P-RNAV at Gatwick Airport, the CAA conducted a Post Implementation Review on all routes. The Review has recommended that this particular route (Route 4) be modified so that departing aircraft are compliant and remain within the published NPR swathe. It now requires all Standard Instrument Departure routes (SID's) to be counted in the track keeping statistics whereas previously, the P-RNAV SID's were not included. This modification came into effect on the Route on the 26 May 2016 and we will continue to monitor for a six-month period. We will continue to engage with our airlines, Air Traffic Control and airspace designers to improve adherence to the amended route. The CAA is also being kept informed of progress as we continue to discuss the amendment with our Airspace Regulator. There has been a decrease in track keeping since the amendment was introduced due to the inclusion of all SID routes in the statistics; however we are working closely with our airlines to improve compliance on Route 4.

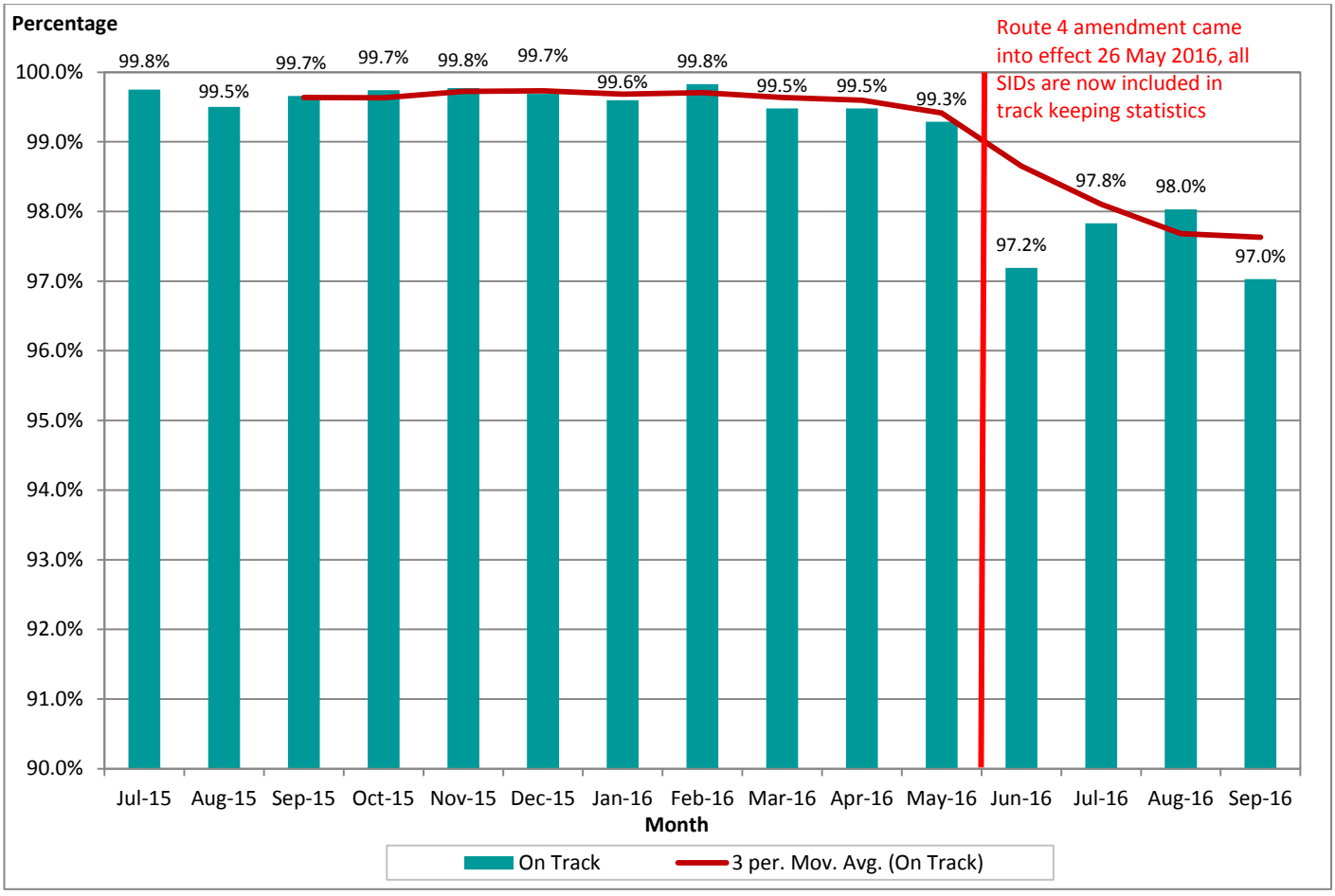
THE MAP BELOW ILLUSTRATES THE NOISE PREFERENTIAL ROUTES USED BY DEPARTING AIRCRAFT WITH MINIMUM VECTORING ALTITUDE FIGURES



THE TABLE BELOW ILLUSTRATES TRACK KEEPING PERFORMANCE OVER 15 MONTHS

	Total			Westerly			Easterly		
Month	Deviations	Departures	% Deviations	Deviations	Departures	% Deviations	Deviations	Departures	% Deviations
Jul-15	34	13448	0.25%	26	10843	0.24%	8	2605	0.31%
Aug-15	68	13716	0.50%	31	9158	0.34%	37	4558	0.81%
Sep-15	44	12904	0.34%	34	7505	0.45%	10	5399	0.19%
Oct-15	31	11960	0.26%	19	6941	0.27%	12	5019	0.24%
Nov-15	21	9057	0.23%	19	8100	0.23%	2	957	0.21%
Dec-15	30	9704	0.31%	27	8873	0.30%	3	831	0.36%
Jan-16	37	9297	0.40%	28	7392	0.38%	9	1905	0.47%
Feb-16	16	9347	0.17%	12	6086	0.20%	4	3261	0.12%
Mar-16	55	10506	0.52%	50	5944	0.84%	5	4562	0.11%
Apr-16	58	11247	0.52%	55	8239	0.67%	3	3008	0.10%
May-16	91	12758	0.71%	38	5403	0.70%	53	7355	0.72%
Jun-16	362	12877	2.81%	329	7750	4.25%	33	5127	0.64%
Jul-16	302	13915	1.97%	294	13022	2.26%	8	893	0.90%
Aug-16	278	14131	2.97%	257	10627	2.42%	21	3504	0.60%
Sep-16	401	12705	1.05%	397	11428	3.47%	4	2070	0.22%

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



Departures – Over Congested Areas

THE WIZAD NOISE PREFERENTIAL ROUTE

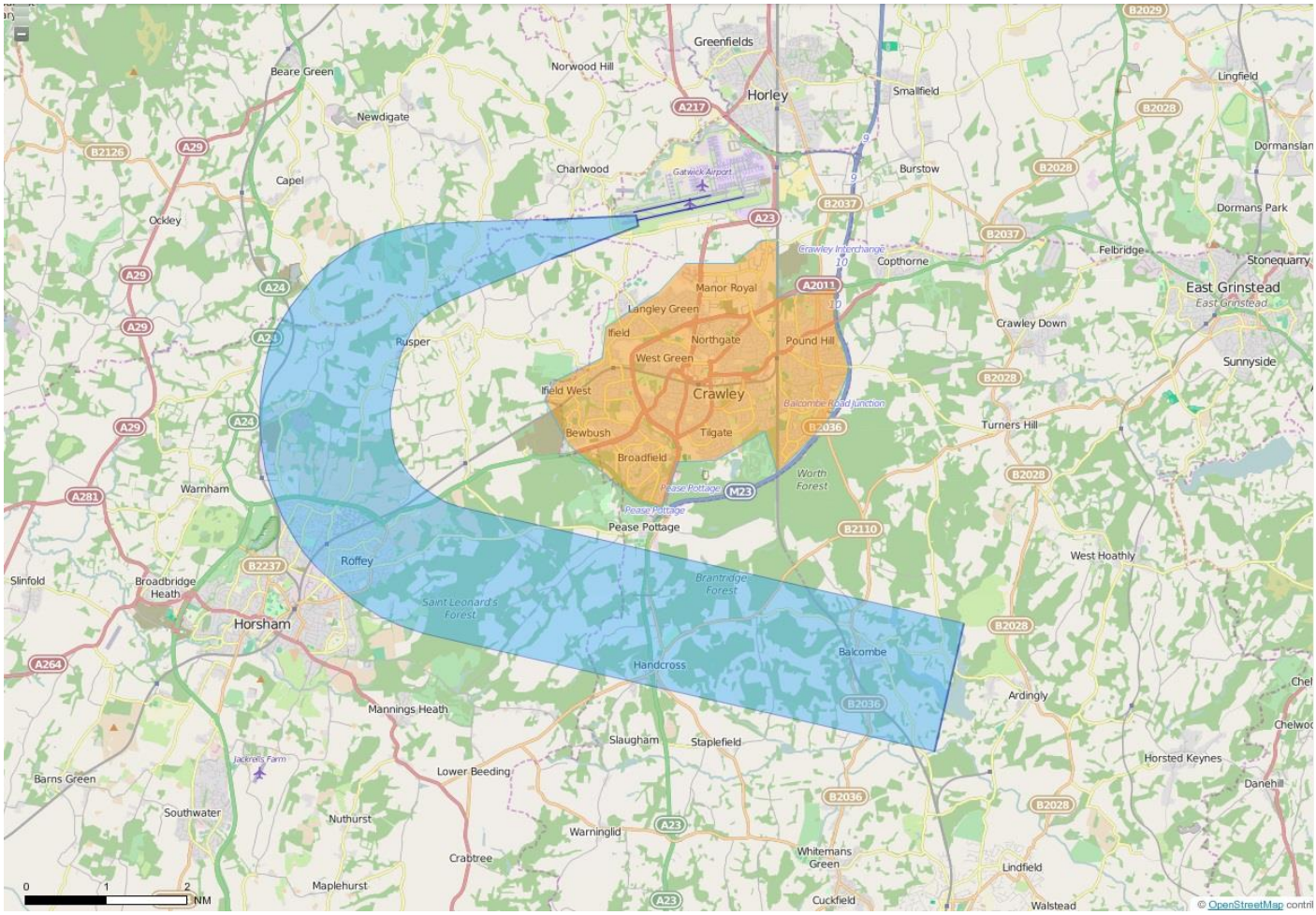
The Wizad Noise Preferential Route was designated by the Government at the same time as all other Gatwick departure routes; however, it is not used on an equal basis with the other routes. It is a Tactical Offload Route and is not usually offered as part of a flight path. If the 26 LAM Route (to the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

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

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

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

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

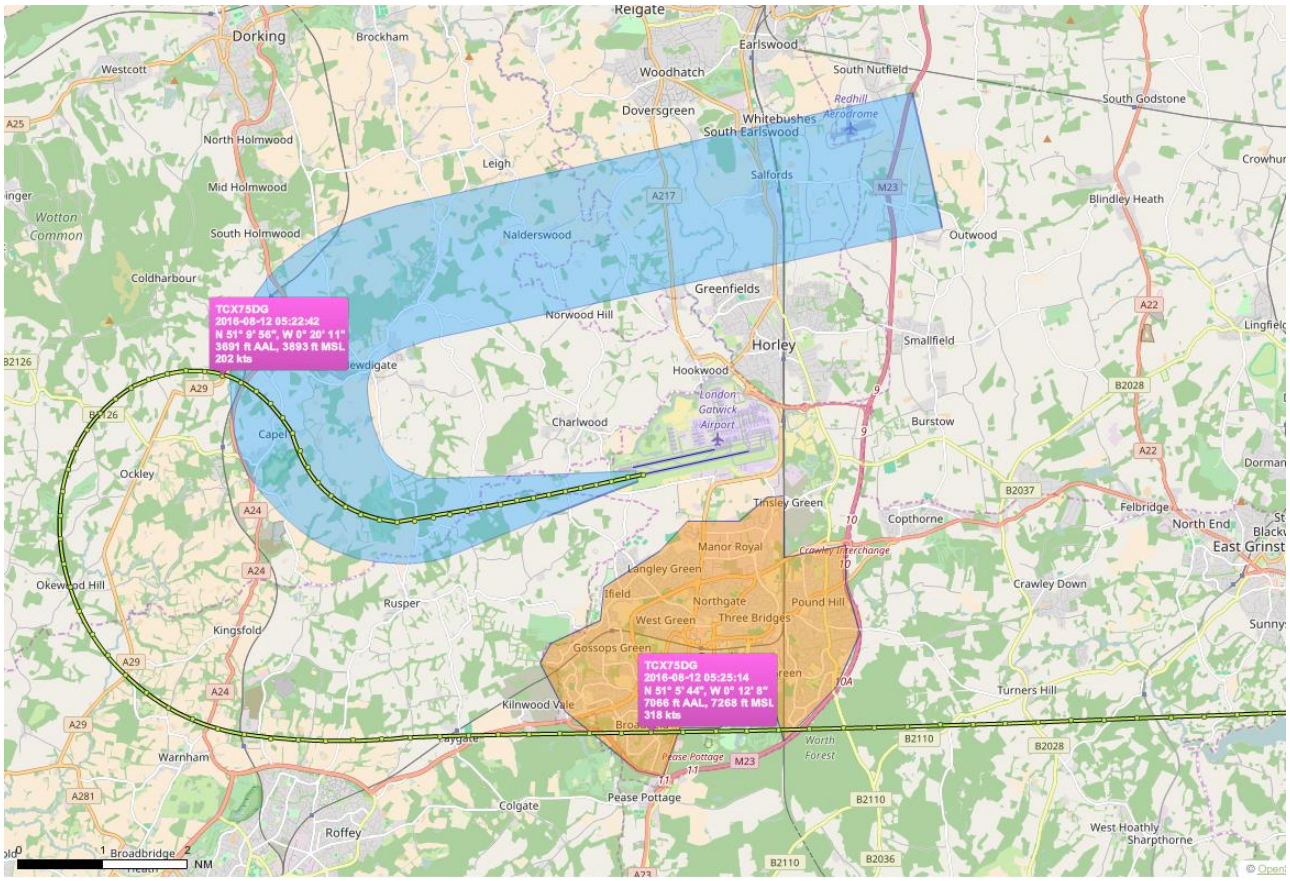


Overflight of Crawley and Horley

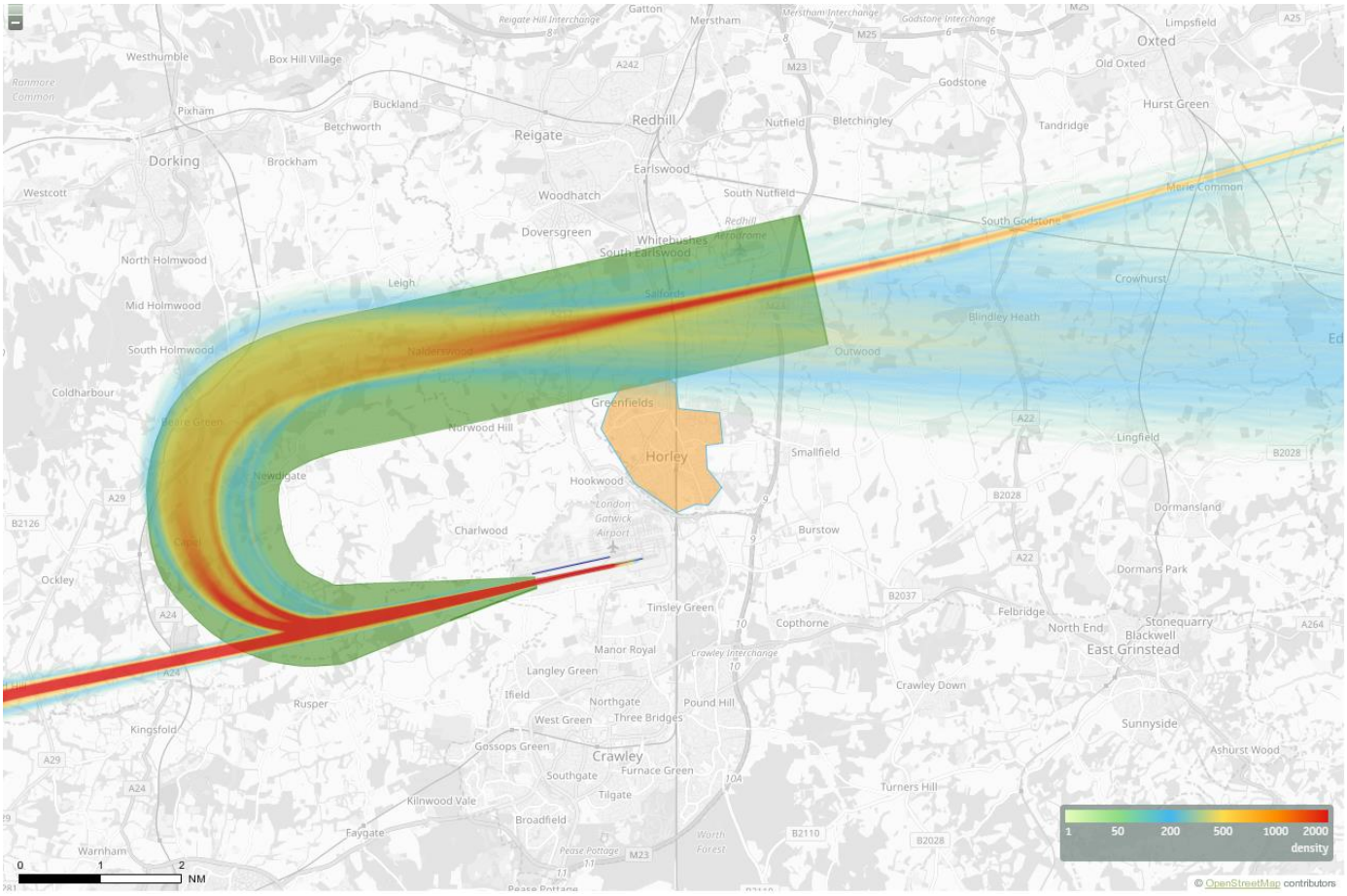
EGKK AD 2.21 (9) *After taking off the aircraft shall avoid flying over the congested areas of Horley and Crawley.* This is to avoid aircraft noise from departing aircraft over areas of high population.

Comment: During this period, there was a single departing flight that passed over Crawley at 7268ft. This was a Thomas Cook Airbus A321 following the NPR 26 LAM on the 12th August 2016 at 05:25. This flight is mapped below. The airline was contacted and the reason for this deviation was to facilitate continuous climb for this aircraft and continuous descent for an arrival at Heathrow.

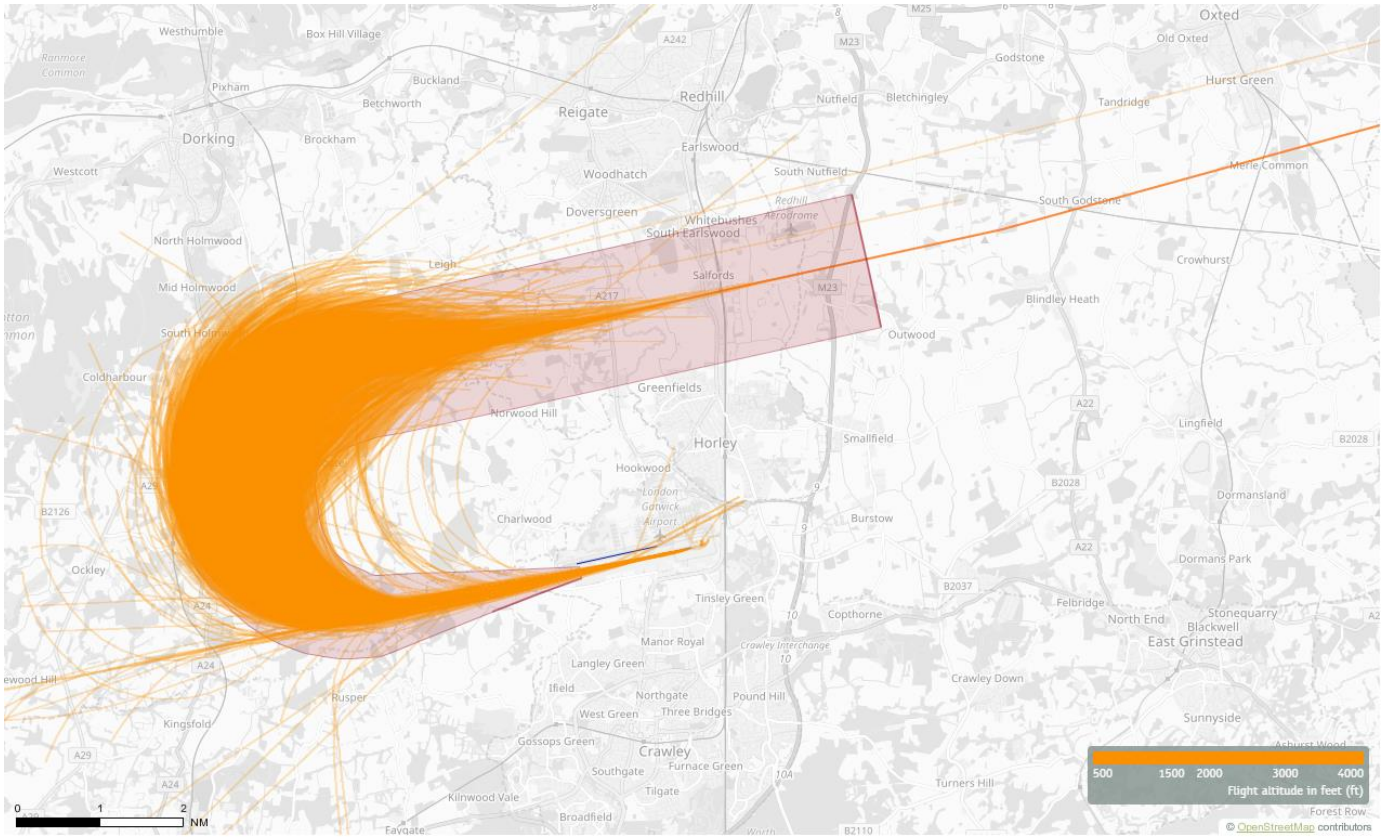
THE MAP BELOW ILLUSTATES THE AIRCRAFT OVERFLYING CRAWLEY DURING THE THREE MONTH PERIOD



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



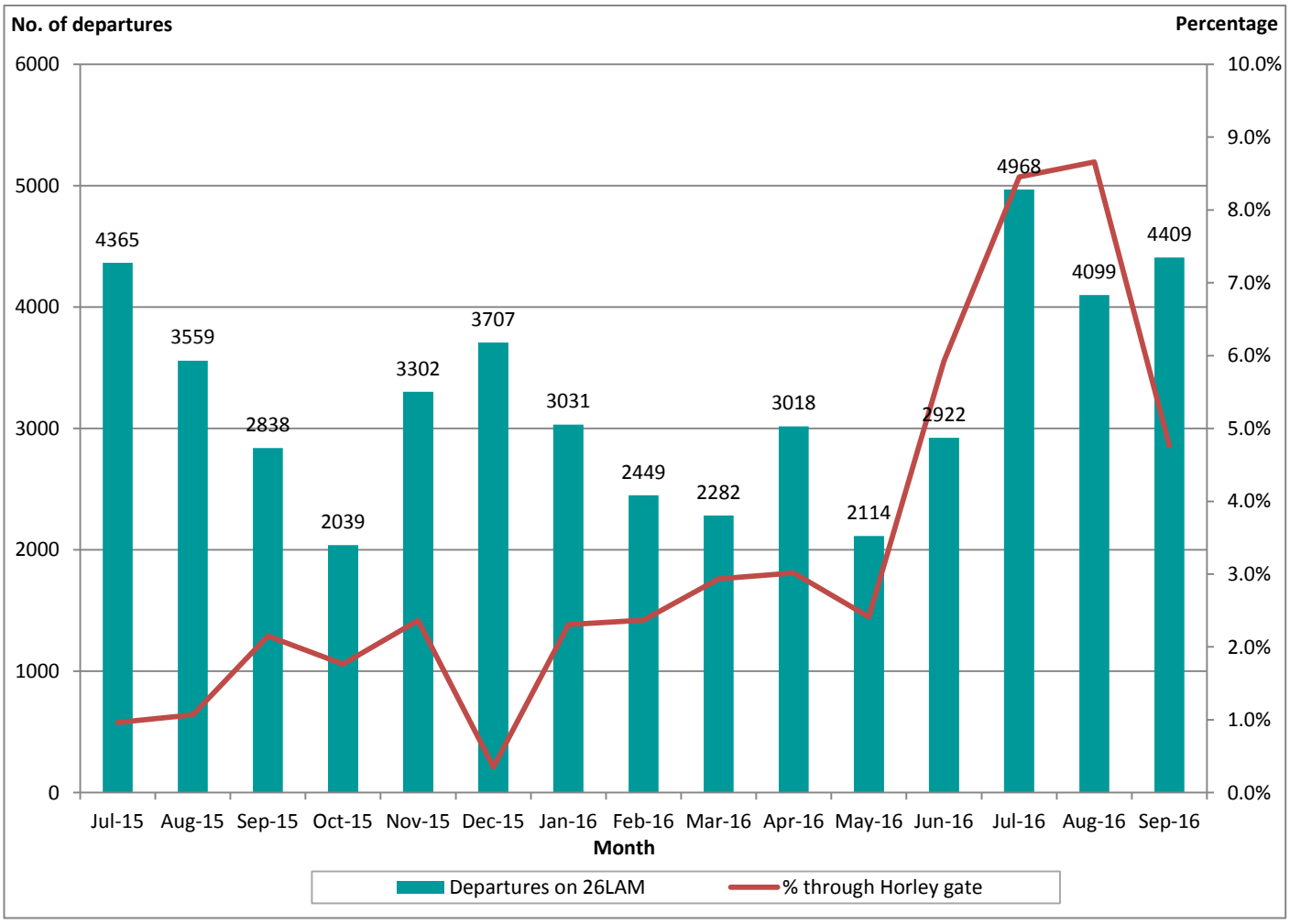
THE MAP BELOW ILLUSTRATES THE TRACKS OF DEPARTING AIRCRAFT ON THE '26 LAM' DEPARTURE ROUTE USING P-RNAV DURING THE THREE MONTH PERIOD UP TO AN ALTITUDE OF 4,000FT



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-14	3048	50	1.64%	**Jan-15**	3237	102	3.15%	**Jan-16**	3031	70	2.31%
Feb-14	3089	60	1.94%	**Feb-15**	2251	66	2.93%	**Feb-16**	2449	58	2.37%
Mar-14	2447	60	2.45%	**Mar-15**	2455	40	1.63%	**Mar-16**	2282	67	2.94%
Apr-14	2043	40	1.96%	**Apr-15**	2200	42	1.91%	**Apr-16**	3018	91	3.02%
May-14	2805	46	1.64%	**May-15**	4051	67	1.65%	**May-16**	2114	51	2.41%
Jun-14	2606	38	1.46%	**Jun-15**	3688	57	1.55%	**Jun-16**	2922	173	5.92%
Jul-14	3466	52	1.50%	**Jul-15**	4365	42	0.96%	**Jul-16**	4968	420	8.45%
Aug-14	4512	35	0.78%	**Aug-15**	3559	38	1.07%	**Aug-16**	4099	355	8.66%
Sep-14	1686	24	1.42%	**Sep-15**	2838	61	2.15%	**Sep-16**	4409	210	4.76%
Oct-14	3826	31	0.81%	**Oct-15**	2039	36	1.77%	**Oct-16**	-	-	-
Nov-14	1881	19	1.01%	**Nov-15**	3302	78	2.36%	**Nov-16**	-	-	-
Dec-14	3079	79	2.57%	**Dec-15**	3707	13	0.35%	**Dec-16**	-	-	-

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.

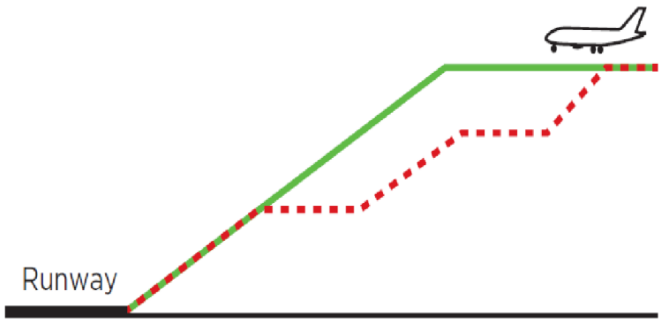
CDO data is measured over three time periods:

- 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 it ATC clearance, minimise noise disturbance by the use of continuous decent 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 CDA monitoring altitude be increased from 6,000ft to 7,000ft as of 1st August 2016.

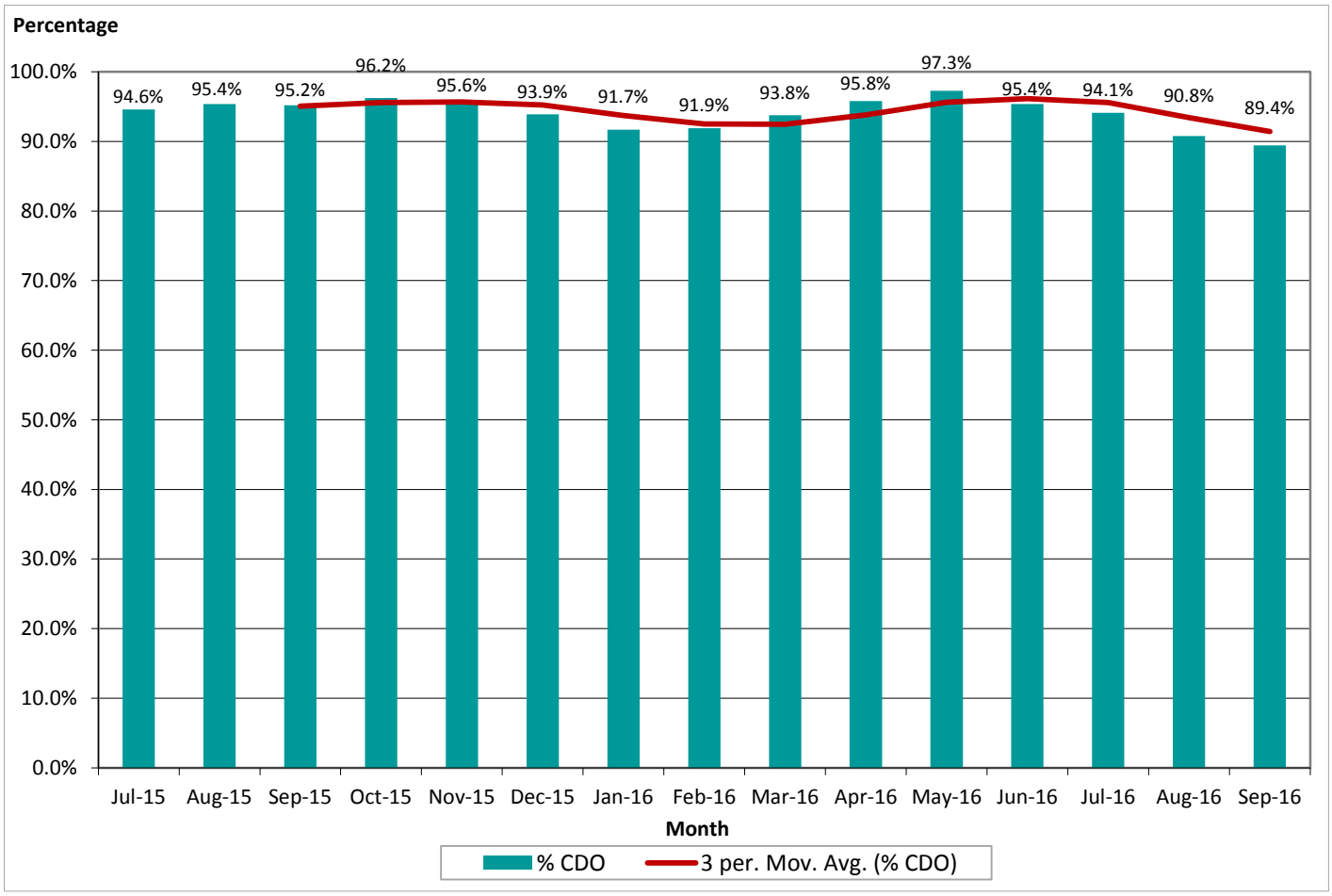


CORE NIGHT PERIOD (2330-0600)

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

Month	All Arrivals			08 Easterly Arrivals			26 Westerly Arrivals		
	Total	Non CDO	% CDO	Total	Non CDO	% CDO	Total	Non CDO	% CDO
Jul-15	1887	102	94.59%	360	18	95.00%	1527	84	94.50%
Aug-15	1849	86	95.35%	579	36	93.78%	1270	50	96.06%
Sept-15	1597	77	95.18%	737	57	92.27%	860	20	97.67%
Oct-15	1061	40	96.23%	651	25	96.16%	410	15	96.34%
Nov-15	339	15	95.58%	124	4	96.77%	215	11	94.88%
Dec-15	361	22	93.91%	11	0	100.00%	350	22	93.71%
Jan-16	301	25	91.69%	55	0	100.00%	246	25	89.84%
Feb-16	321	26	91.90%	136	10	92.65%	185	16	91.35%
Mar-16	402	25	93.78%	159	11	93.08%	243	14	94.24%
Apr-16	832	35	95.79%	227	3	98.68%	605	32	94.71%
May-16	1204	33	97.26%	764	25	96.73%	440	8	98.18%
Jun-16	1686	78	95.37%	646	25	96.13%	1040	53	94.90%
Jul-16	1915	113	94.10%	118	3	97.46%	1797	110	93.88%
Aug-16	1751	162	90.75%	396	17	95.71%	1355	145	89.30%
Sep-16	1626	172	89.42%	364	23	93.68%	1262	149	88.19%

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

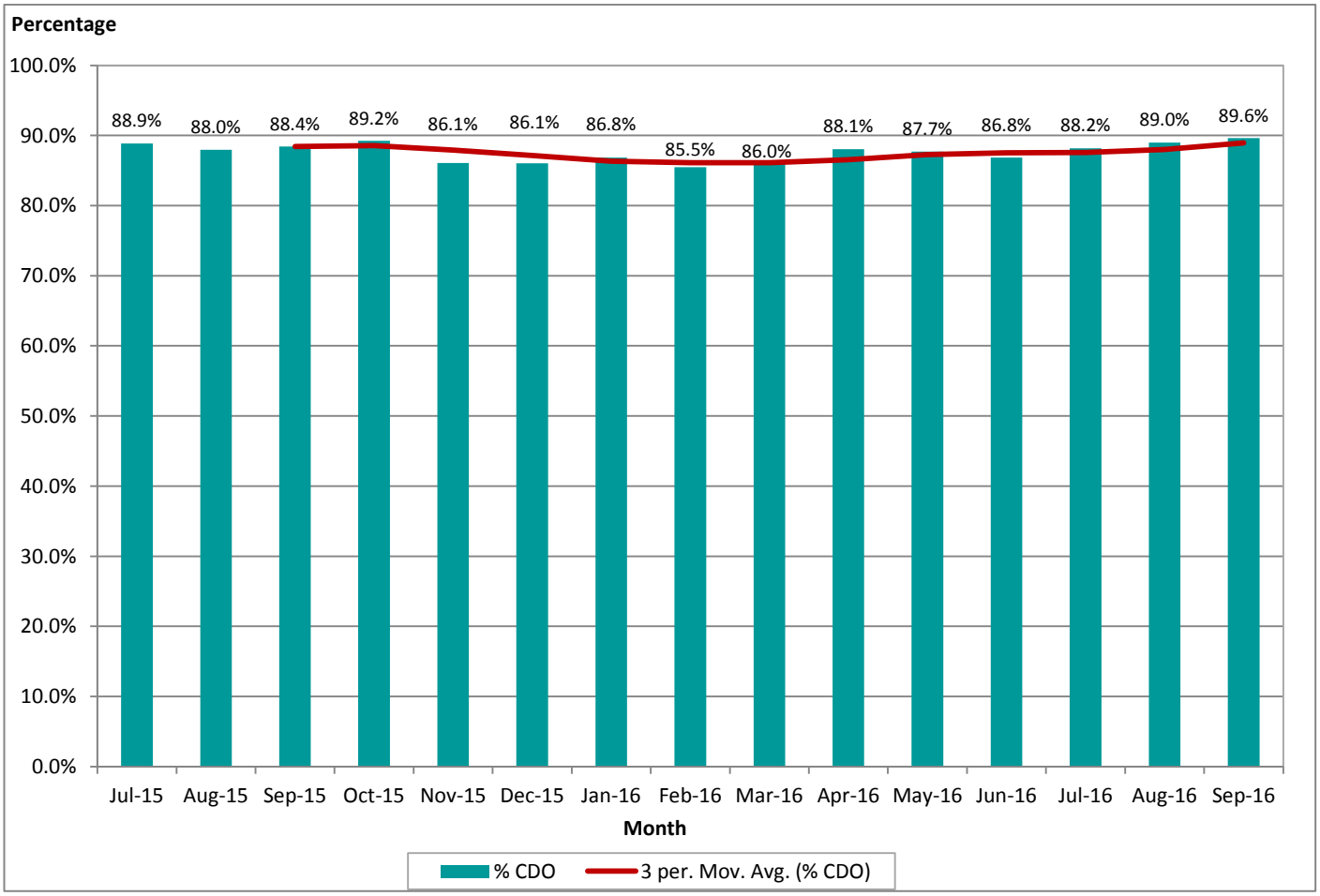


DAYTIME AND SHOULDER PERIOD CDO ACHIEVEMENT (0600-2330)

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

	All Arrivals			08 Easterly Arrivals			26 Westerly Arrivals		
Month	Total	Non CDO	% CDO	Total	Non CDO	% CDO	Total	Non CDO	% CDO
Jul-15	11518	1281	88.88%	2132	286	86.59%	9386	995	89.40%
Aug-15	11822	1421	87.98%	3914	521	86.69%	7908	900	88.62%
Sep-15	11284	1306	88.43%	4687	543	88.41%	6597	763	88.43%
Oct-15	10879	1171	89.24%	6434	720	88.81%	4445	451	89.85%
Nov-15	8695	1209	86.10%	805	144	82.11%	7890	1065	86.50%
Dec-15	9321	1300	86.05%	615	110	82.11%	8706	1190	86.33%
Jan-16	8951	1178	86.84%	1737	225	87.05%	7214	953	86.79%
Feb-16	9005	1308	85.47%	3070	461	84.98%	5935	947	84.04%
Mar-16	10070	1405	86.05%	4334	588	86.43%	5736	817	85.76%
Apr-16	10359	1237	88.06%	2765	329	88.10%	7594	908	88.04%
May-16	11528	1418	87.70%	6703	866	87.08%	4825	552	88.56%
Jun-16	11130	1466	86.83%	4362	604	86.15%	6768	862	87.26%
Jul-16	11943	1412	88.18%	778	105	86.50%	11165	1307	88.29%
Aug-16	12331	1358	88.99%	2994	313	89.55%	9337	1045	88.81%
Sep-16	11821	1228	89.61%	1804	185	89.75%	10017	1043	89.59%

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

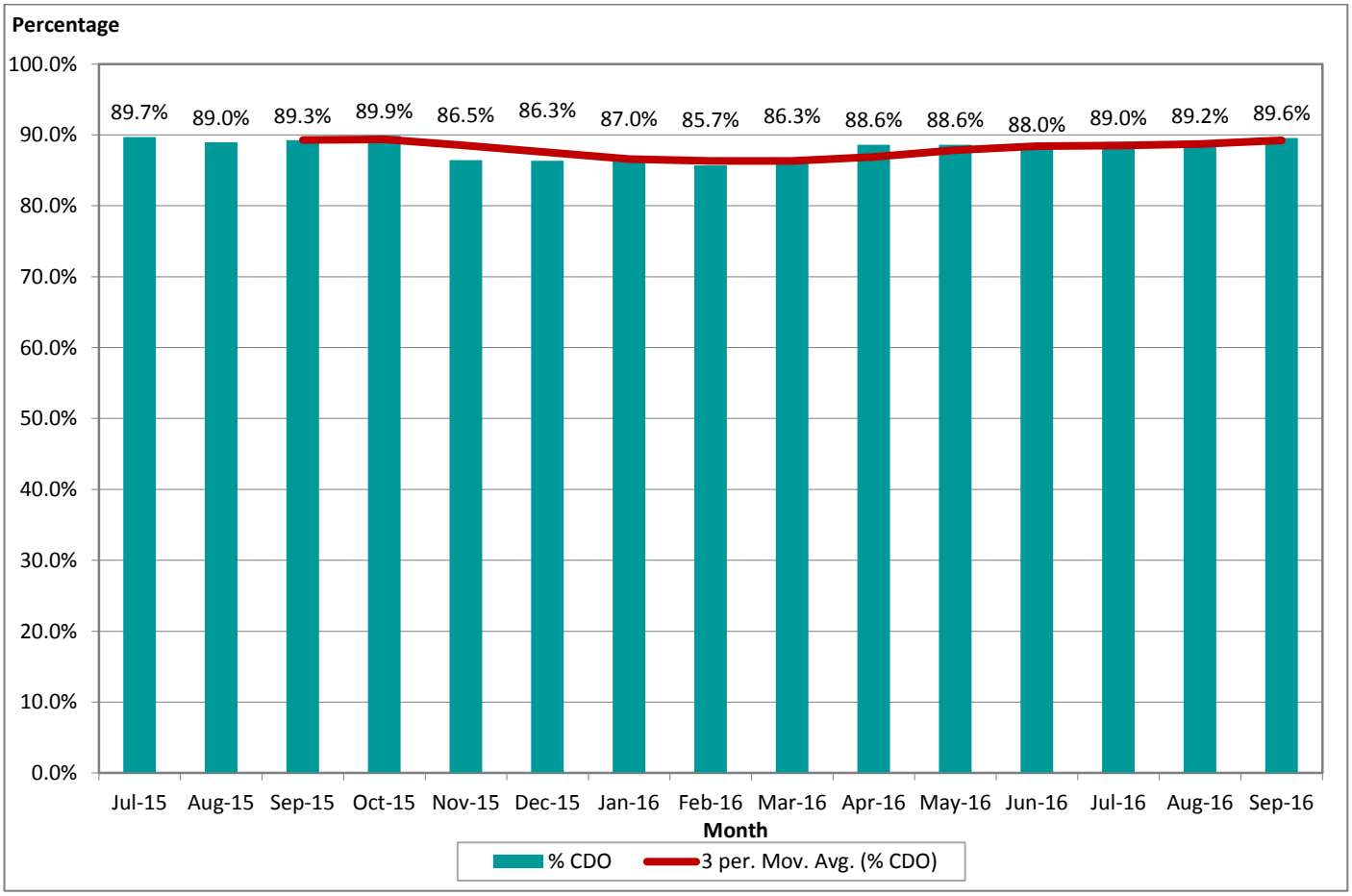


24 HOUR PERIOD CDO ACHIEVEMENT

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

	All Arrivals			08 Easterly Arrivals			26 Westerly Arrivals		
Month	**Total**	**Non CDO**	**% CDO**	**Total**	**Non CDO**	**% CDO**	**Total**	**Non CDO**	**% CDO**
Jul-15	13405	1383	89.68%	2492	304	87.80%	10913	1079	90.11%
Aug-15	13671	1507	88.98%	4493	557	87.60%	9178	950	89.65%
Sep-15	12885	1384	89.26%	5424	600	88.94%	7461	784	89.49%
Oct-15	11940	1211	89.86%	7085	745	89.48%	4855	466	90.40%
Nov-15	9034	1224	86.45%	929	148	84.07%	8105	1076	86.72%
Dec-15	9682	1322	86.35%	626	110	82.43%	9056	1212	86.62%
Jan-16	9252	1203	87.00%	1792	225	87.44%	7460	978	86.89%
Feb-16	9326	1334	85.70%	3206	471	85.31%	6120	863	85.90%
Mar-16	10472	1430	86.34%	4493	599	86.67%	5979	831	86.10%
Apr-16	11191	1272	88.63%	2992	332	88.90%	8199	940	88.54%
May-16	12732	1451	88.60%	7467	891	88.07%	5265	560	89.36%
Jun-16	12816	1544	87.95%	5008	629	87.44%	7808	915	88.28%
Jul-16	13858	1525	89.00%	896	108	87.95%	12962	1417	89.07%
Aug-16	14082	1520	89.21%	3390	330	90.27%	10692	1190	88.87%
Sep-16	13447	1400	89.59%	2168	208	90.41%	11279	1192	89.43%

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



Arrivals – Over Congested Areas

OVERFLIGHT OF CONGESTED AREAS

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

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

Comment: There were no arriving flights which passed over the towns of Crawley and Horley below the required altitude for this period. The map below 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 67 arrivals that passed through this area. Aircraft tracks were analysed for July, August and September 2016 and with the exception of a small number of go-arounds, there were no flights that passed over Lingfield below the altitude of 1,698ft (2,000ft Gatwick QNH). There were no arriving flights that passed over East Grinstead below the required altitude.

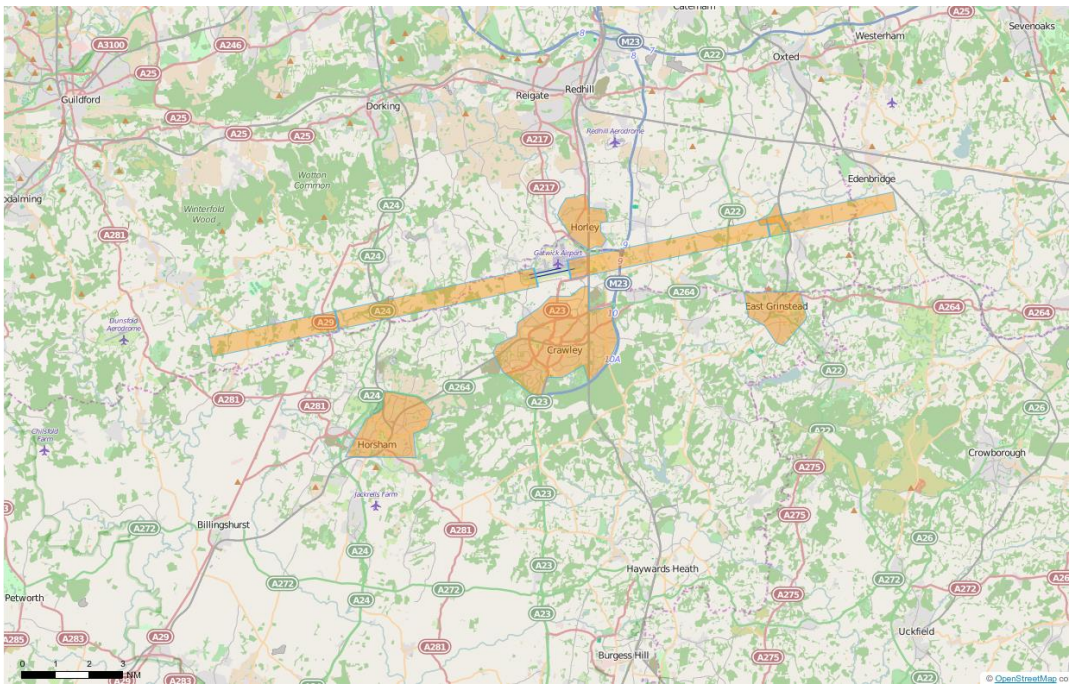
A) DAY TIME JOINING HEIGHT (0700-2300)

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

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

There were 41,555 arrivals recorded by the Casper NTK system between 1st July and 30th September 2016. 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 108 (0.26%). 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)

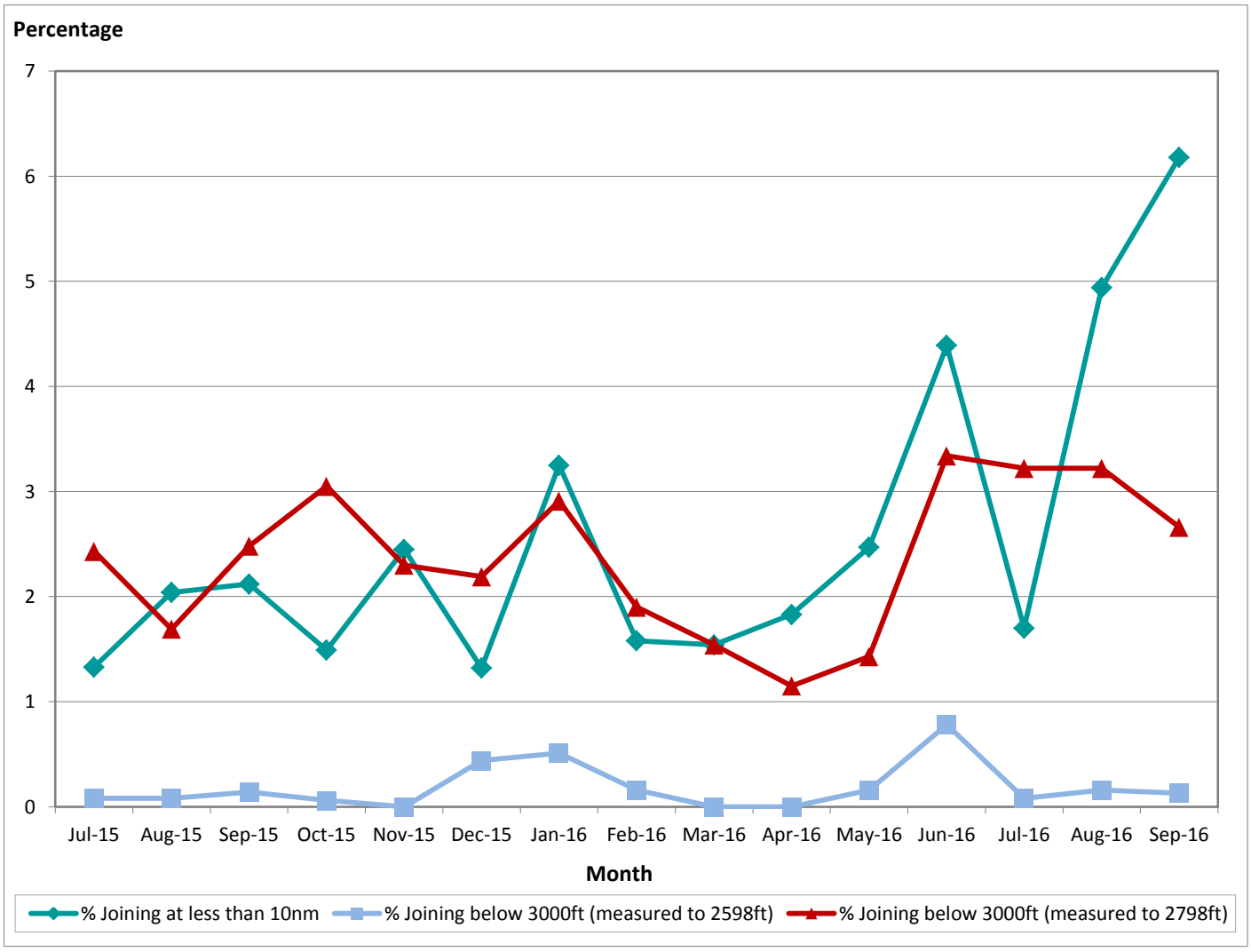
EGKK AD 2.21 (14) *Aircraft which land at Gatwick Airport - London between the hours of 2300 (local) and 0700 (local), whether or not making use of the ILS localizer and irrespective of weight or type of approach, shall not join the centre-line:*

a) below 3000ft, or

b) closer than 10 nm from touchdown.

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

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



Go-Around Statistics 2004 - 2016

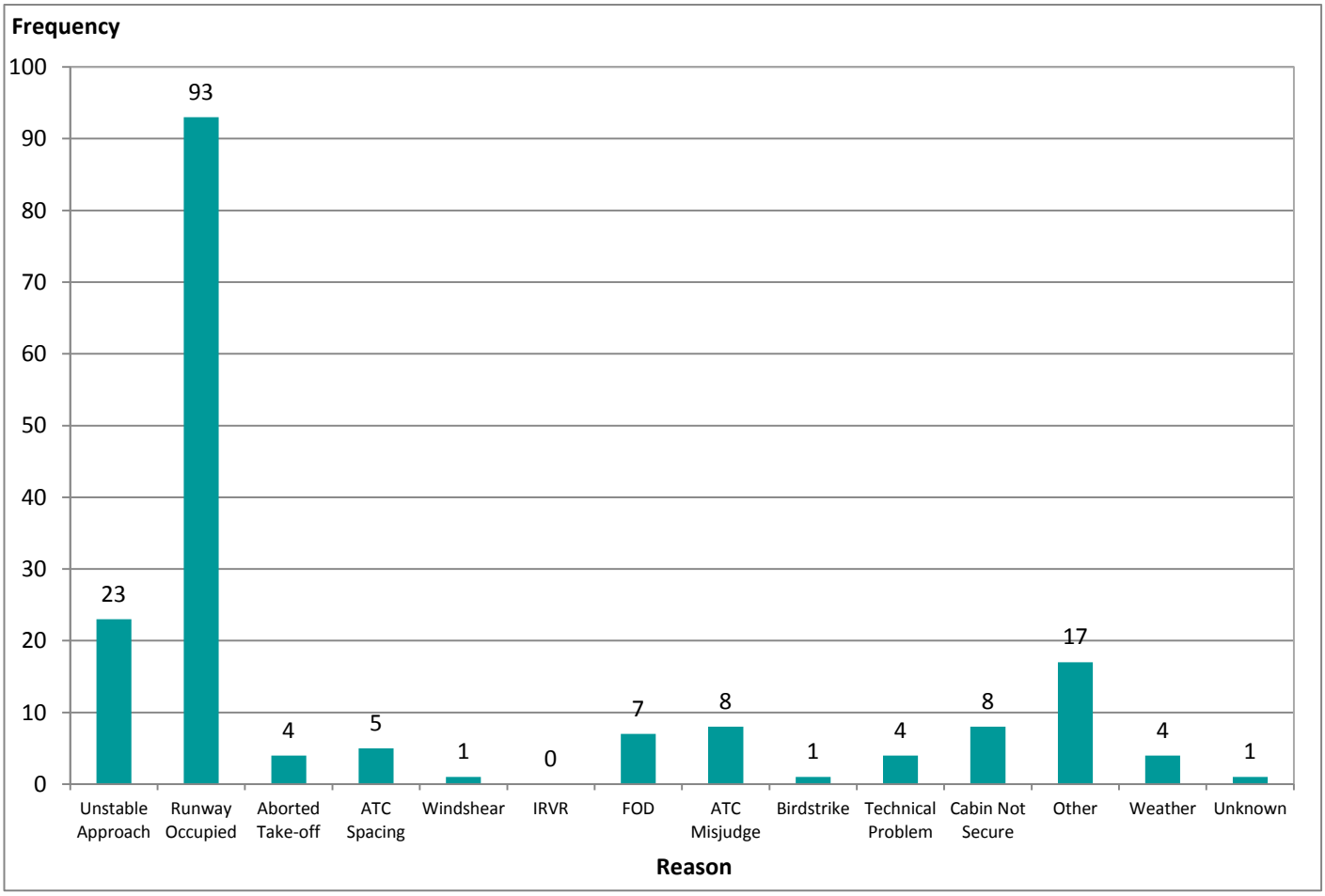
A go-around is a procedure adopted when an arriving aircraft on final approach aborts landing by applying take-off power and climbing away from the airport. It is a set procedure to be followed by the flight crew in the event of an aircraft being unable to land. The procedure is published so that Air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

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

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

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

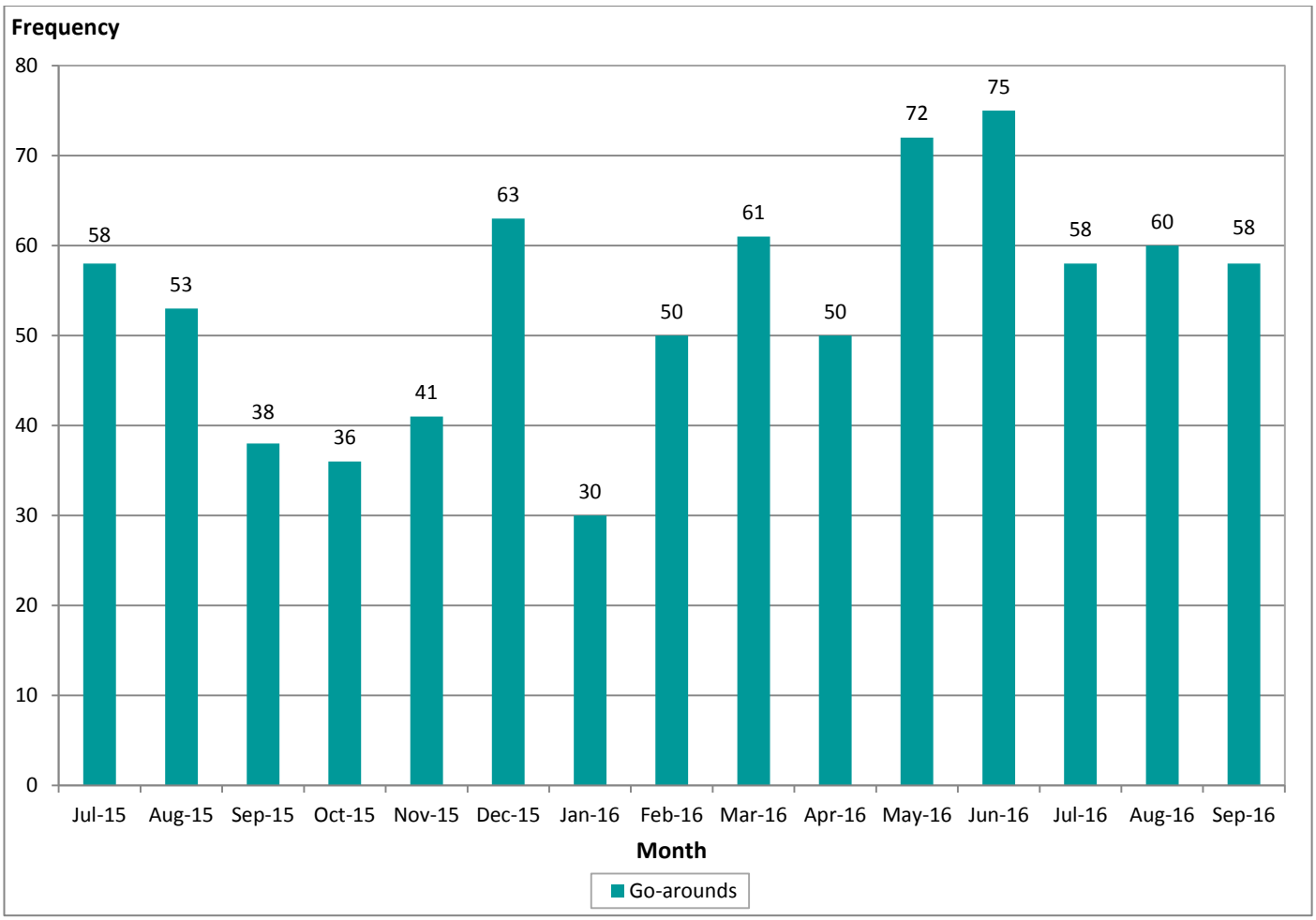
NATS AND ANS CURRENTLY RECORD GO-AROUNDS UNDER ONE OF THE FOLLOWING CAUSAL FACTORS (JULY - SEPTEMBER 2016)



THE TABLE BELOW ILLUSTRATES GO-AROUND STATISTICS 2004 – 2016

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	514	107556	0.48

THE GRAPH BELOW ILLUSTRATES TOTAL NUMBER OF GO-AROUNDS PER MONTH (JULY - SEPTEMBER 2016)



Night Flights

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

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

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

Overleaf is an end of season report for Summer 2016. The total number of movements available for the Summer season was 11525, which included a 10% carry over of the unused quota from the Winter 2015/16 season.

DISPENSATIONS

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

A summary of the number and reasons for all dispensations applied throughout the most recent season are outlined below. There have been 474 dispensations applied during the Summer 2016 period:

- 280 dispensations were due to French and Italian Air Traffic Control strikes across the summer.
- 117 dispensations were due to adverse weather conditions (e.g. thunderstorms).
- 76 dispensations were due to exceptional circumstances such as the closure of the main runway on the 12th June due to a runway breakout.
- 1 dispensation was due to the aircraft fire at Dubai Airport leading to cancellations or delays.

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

RESTRICTIONS

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

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

London Gatwick

AIRPORT MOVEMENTS and QUOTA SUMMARY to WEEK 31 (27 MARCH 2016 to 29 OCTOBER 2016 inc.)

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

Wk No.	Week Ending Date	QC0.25 No.	QC0.5 No.	QC1 No.	QC2 No.	QC4 No.	QC8 No.	QC16 No.	Total Quota Value	Mvmts Against Limit	Exmpt Types	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 Mvmts
1	02/04/2016	114	46	16	3	0	0	0	73.50	179	1	52	0	0	197	84.9	35	15.1	232
2	09/04/2016	172	74	17	0	0	0	0	97.00	263	3	0	0	0	238	89.5	28	10.5	266
3	16/04/2016	126	53	19	0	0	0	0	77.00	198	4	0	0	0	174	86.1	28	13.9	202
4	23/04/2016	119	60	14	0	0	0	0	73.75	193	0	0	0	0	166	86.0	27	14.0	193
5	30/04/2016	138	48	22	1	0	0	0	82.50	209	0	11	0	0	188	85.5	32	14.5	220
6	07/05/2016	129	89	18	2	0	0	0	98.75	238	1	0	0	0	207	86.6	32	13.4	239
7	14/05/2016	145	100	26	1	0	0	0	114.25	272	6	0	0	0	241	86.7	37	13.3	278
8	21/05/2016	154	103	29	2	0	0	0	123.00	288	1	7	0	0	257	86.8	39	13.2	296
9	28/05/2016	188	119	46	4	0	0	0	160.50	357	0	19	0	0	327	87.0	49	13.0	376
10	04/06/2016	230	120	34	4	0	0	0	159.50	388	2	32	0	0	385	91.2	37	8.8	422
11	11/06/2016	212	136	41	5	0	0	0	172.00	394	3	33	0	0	381	88.6	49	11.4	430
12	18/06/2016	202	143	45	4	0	0	0	175.00	394	3	72	0	0	407	86.8	62	13.2	469
13	25/06/2016	233	126	48	5	0	0	0	179.25	412	0	52	0	0	398	85.8	66	14.2	464
14	02/07/2016	233	140	47	5	0	0	0	185.25	425	0	39	0	0	411	88.6	53	11.4	464
15	09/07/2016	237	161	41	4	0	0	0	188.75	443	0	31	0	0	423	89.2	51	10.8	474
16	16/07/2016	297	166	59	7	0	0	0	230.25	529	5	0	0	0	454	85.0	80	15.0	534
17	23/07/2016	271	167	60	7	0	0	0	225.25	505	0	0	0	0	428	84.8	77	15.2	505
18	30/07/2016	262	189	54	7	0	0	0	228.00	512	4	0	0	0	439	85.1	77	14.9	516
19	06/08/2016	267	185	54	8	2	0	0	237.25	516	0	1	0	0	443	85.7	74	14.3	517
20	13/08/2016	227	167	44	9	0	0	0	202.25	447	1	0	0	0	382	85.3	66	14.7	448
21	20/08/2016	253	178	53	7	0	0	0	219.25	491	2	0	0	0	416	84.4	77	15.6	493
22	27/08/2016	230	147	49	3	0	0	0	186.00	429	0	0	0	0	374	87.2	55	12.8	429
23	03/09/2016	234	161	59	4	0	0	0	206.00	458	2	0	0	0	390	84.8	70	15.2	460
24	10/09/2016	234	148	46	6	0	0	0	190.50	434	0	35	0	0	402	85.7	67	14.3	469
25	17/09/2016	209	153	49	3	0	0	0	183.75	414	3	42	0	0	400	87.1	59	12.9	459
26	24/09/2016	228	137	50	4	0	0	0	183.50	419	3	0	0	0	370	87.7	52	12.3	422
27	01/10/2016	216	123	58	3	0	0	0	179.50	400	1	1	0	0	342	85.1	60	14.9	402
28	08/10/2016	149	96	39	1	0	0	0	126.25	285	2	0	0	0	250	87.1	37	12.9	287
29	15/10/2016	136	83	28	1	0	0	0	105.50	248	2	0	0	0	216	86.4	34	13.6	250
30	22/10/2016	128	98	36	3	0	0	0	123.00	265	1	8	0	0	230	83.9	44	16.1	274
31	29/10/2016	164	99	34	1	0	0	0	126.50	298	3	39	0	0	296	87.1	44	12.9	340
	TOTALS	**6137**	**3815**	**1235**	**114**	**2**	**0**	**0**	**4912.75**	**11303**	**53**	**474**	**0**	**0**	**10232**	**86.5**	**1598**	**13.5**	**11830**

Quota Points Available	1487.25	Movements Available	222
Quota % Points Used	76.8	Movements % Used	98.1

Note 1 Not Cont'd Delays — Delays likely to lead to serious congestion and delays resulting from widespread disruption of Air Traffic.

Note 2 Not Cont'd Gov't — Exemptions granted by Gov't (VIP Passengers, Emergency Relief).

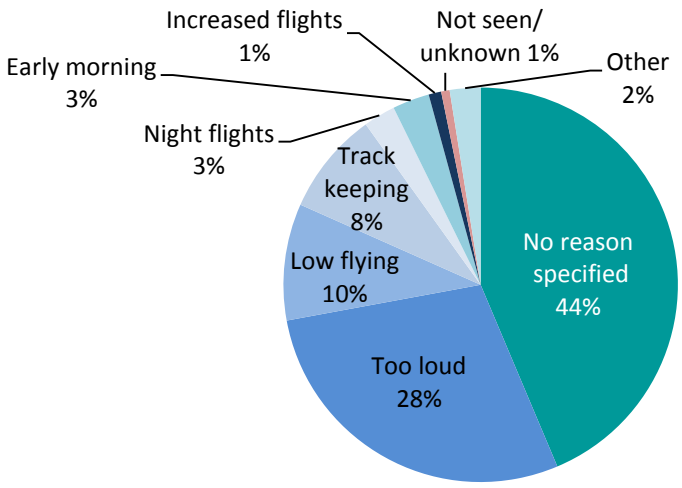
Note 3 Not Cont'd Emerg — Emergency Take-offs and Landing

Noise Complaints

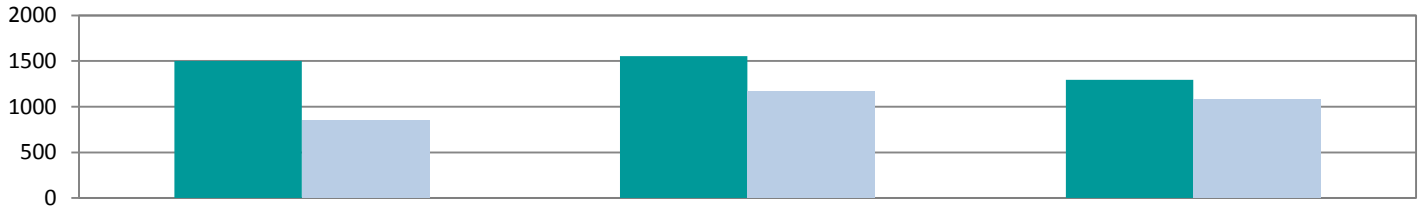
It is important that we understand the issues of noise disturbance from individuals and communities who live around the airport. By studying the complaints we receive and by communicating with the affected towns and villages surrounding the Airport, we believe that this gives us a greater understanding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

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

REASON FOR SPECIFIC COMPLAINT BY PERCENTAGE

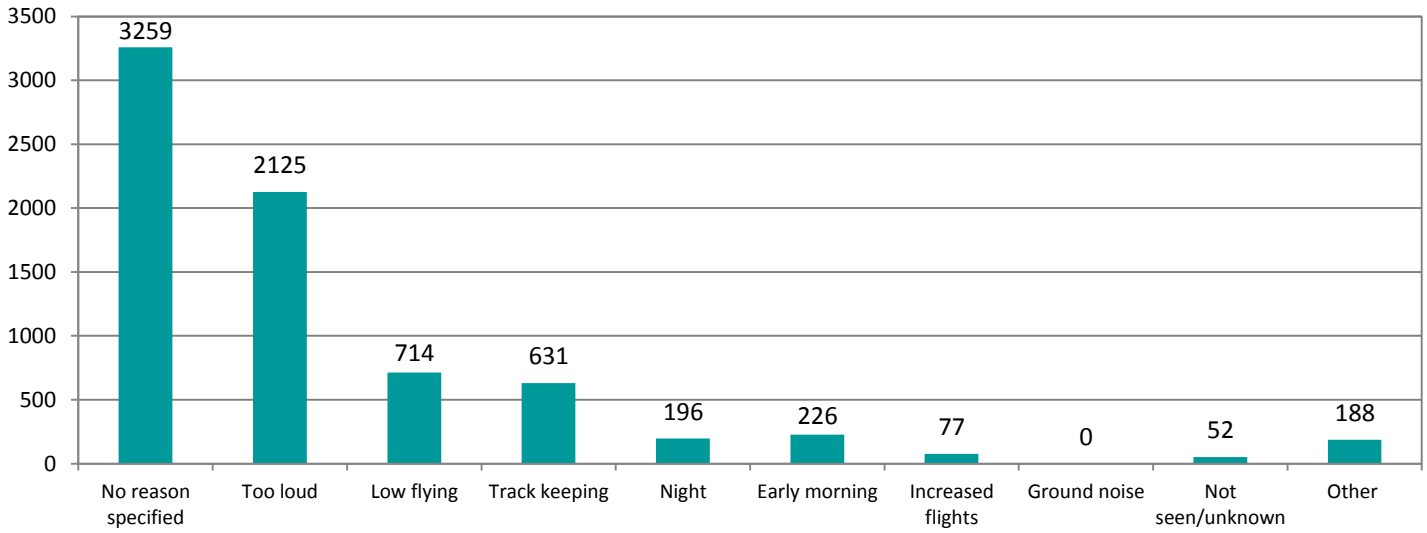


COMPLAINTS RECORDED BY MONTH



	Jul-16	Aug-16	Sep-16
Specific	1502	1554	1293
Generic	844	1165	1085

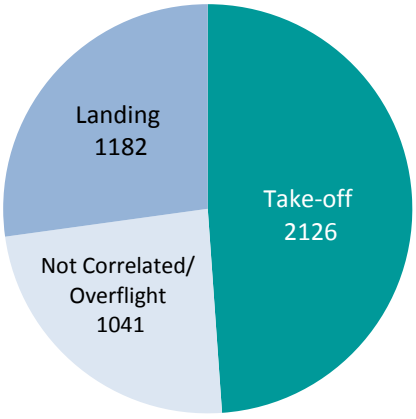
REASON FOR SPECIFIC COMPLAINT BY NUMBER



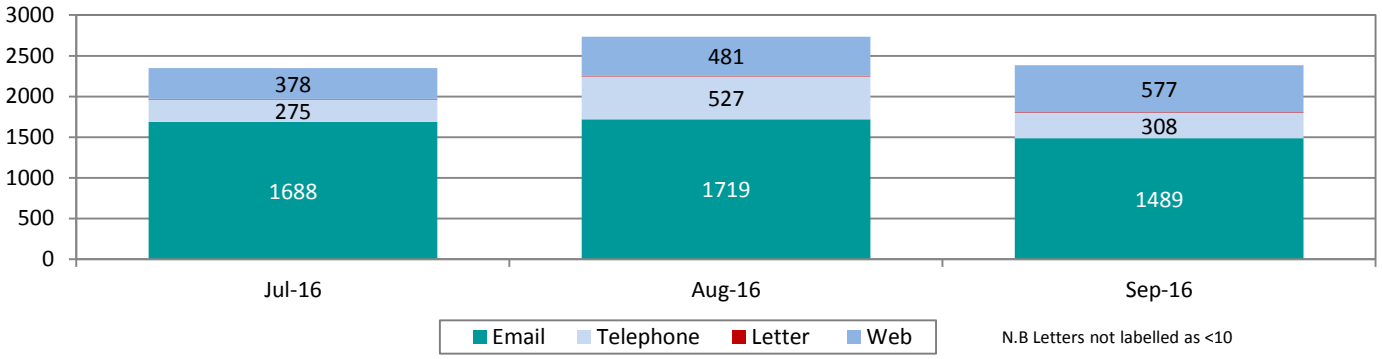
Noise is very subjective and can affect people in different ways. Some people can tolerate a certain noise level whilst it can cause disturbance to others. As well as identifying the issues of noise, it is important to understand the location of each individual complaint.

The charts below provide further analysis of the location of the complainants and whether they have been disturbed by arriving or departing flights, or by noise from within the Airport boundary.

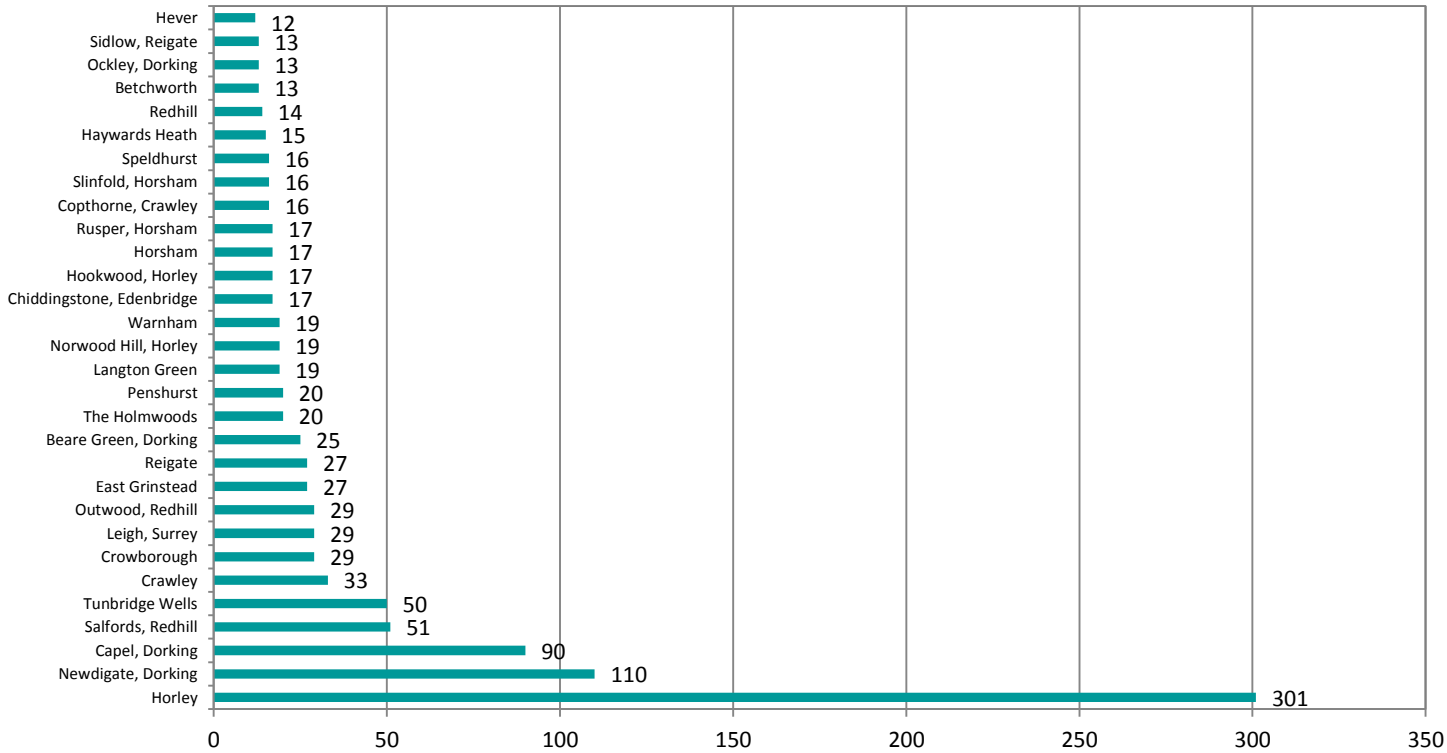
CATEGORIES OF AIRCRAFT OPERATION FROM SPECIFIC COMPLAINTS



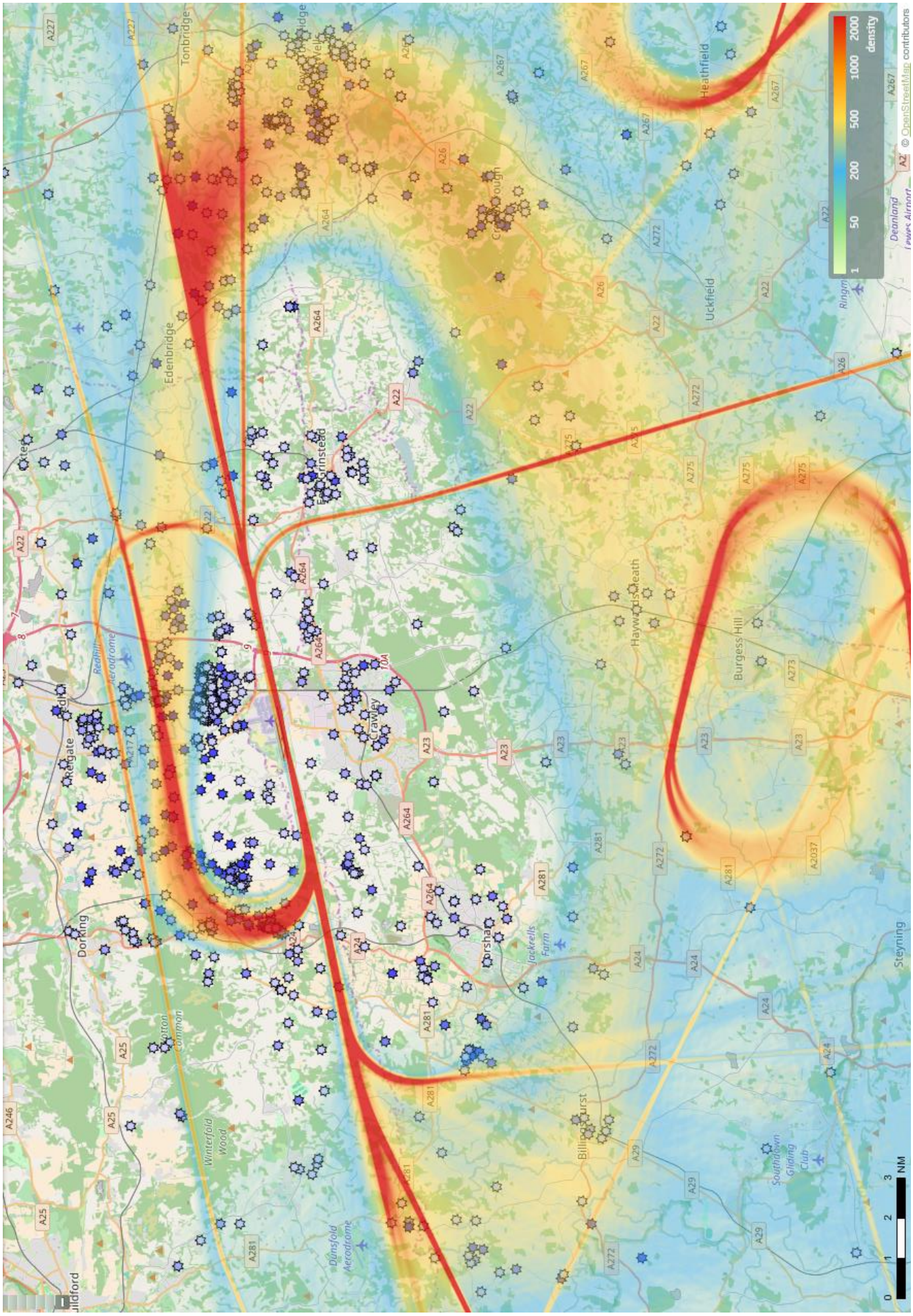
METHOD OF COMPLAINT



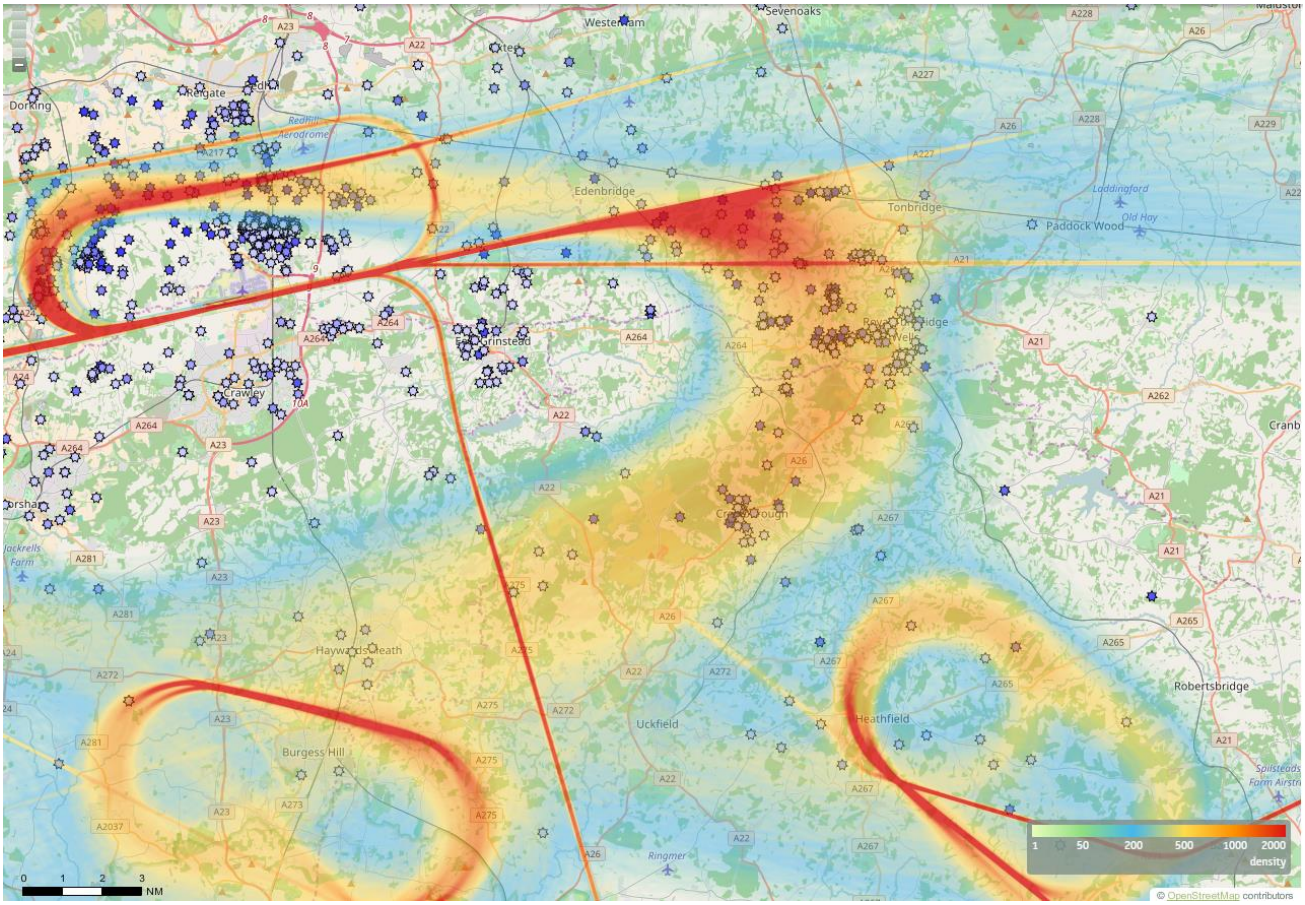
NUMBER OF INDIVIDUAL COMPLAINANTS BY TOWN/VILLAGE



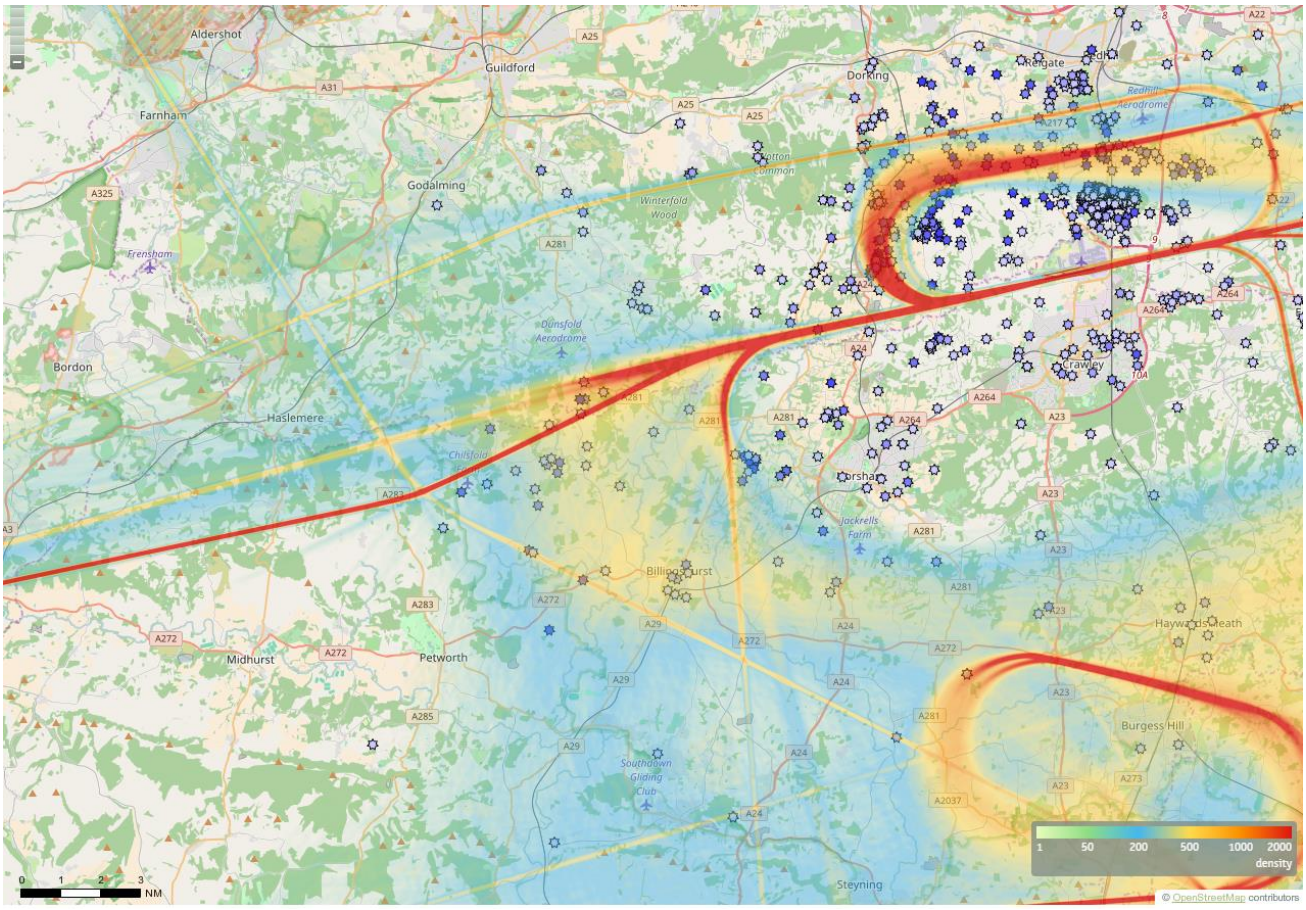
THE MAP BELOW ILLUSTRATES THE LOCATION OF NOISE COMPLAINTS RECEIVED BETWEEN JULY - SEPTEMBER 2016



THE MAP BELOW ILLUSTRATES NOISE COMPLAINTS RECEIVED TO THE EAST (JULY – SEPTEMBER 2016)



THE MAP BELOW ILLUSTRATES NOISE COMPLAINTS RECEIVED TO THE WEST (JULY - SEPTEMBER 2016)



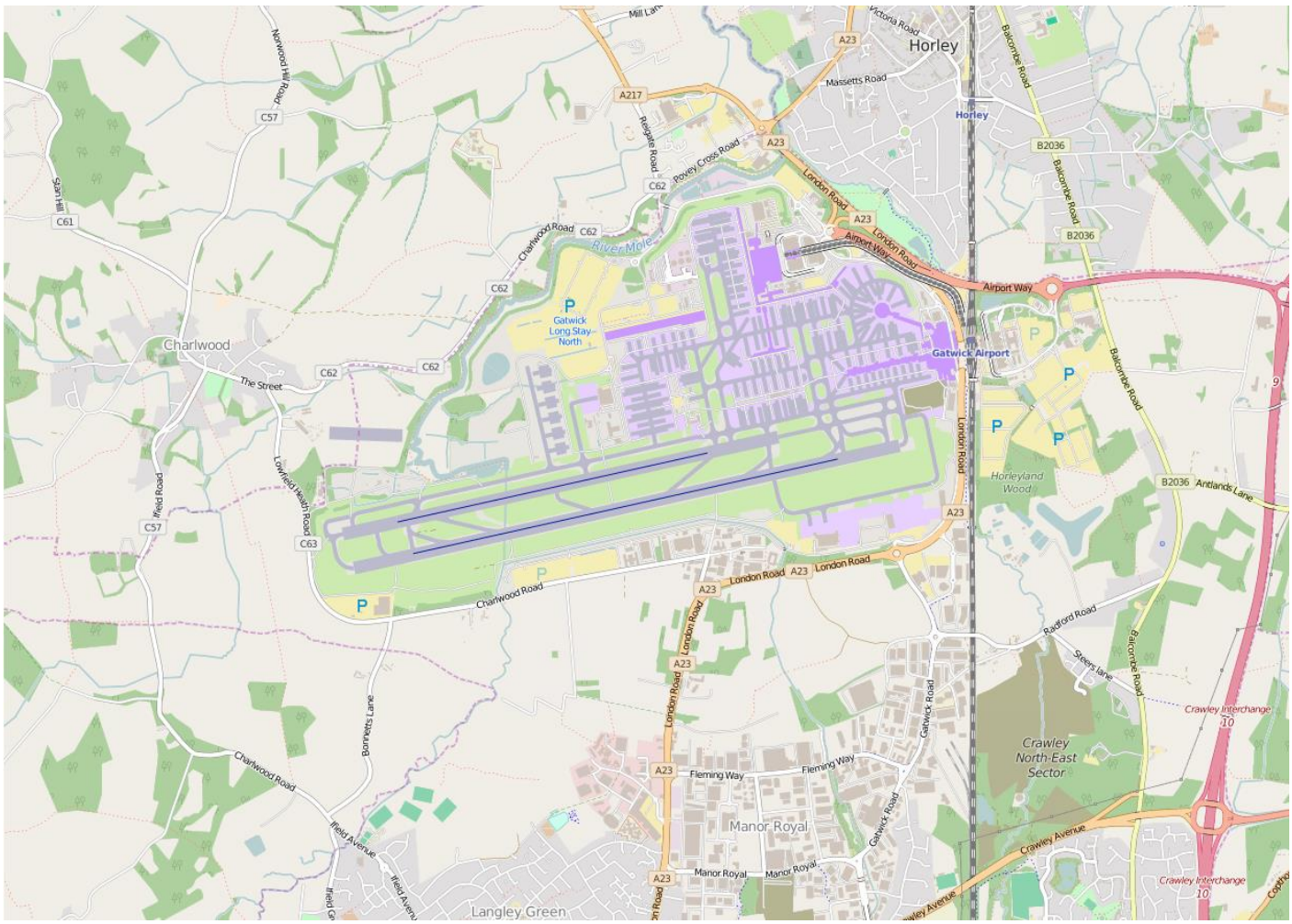
Ground Noise Complaints

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

This report covers the period
(1st October – 31st December 2016)

YOUR LONDON AIRPORT
Gatwick

Contents

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 – 1st OCTOBER 2016 – 31ST DECEMBER 2016

Parameter		12 month performance averages*			
		Year to date (2016)	Previous year (2015)	2011	2006
Track keeping performance (% on track)	▲	98.56%**	99.71%	97.47%	98.17%***
24hr CDO (% achievement)****	▼	88.58%	89.75%	90.49%	80.79%
Day/Shoulder CDO (% achievement)	▼	88.18%	89.21%	90.19%	79.9%
Core night CDO (% achievement)	▼	92.90%	95.32%	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)	▼	1	0	4	2
Individual complainants	▲	2324	1746	343	587
Total noise complaints received*****	▲	17715	15189	2673	4791
Enquiry response performance target is 95% within 8 days (October to December 2016)	▼	46.55%	93.89%	KPI 95%	
West/East Runway Split (%)	-	67/33	70/30	67/33	68/32

* The colour indicates the most recent 12 month performance compared to 2011, with green showing improvement and red a decline in performance.
** Track keeping statistics measurement changed on the 26th May 2016 due to the Route 4 amendment, all SID's are now included in the total figure.
*** This figure did not include deviations from prop types or those due to weather.
**** 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 1st August 2016.
***** 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 29th September 2016, there was a further revision to our complaints handling policy which now allows individuals to make multiple complaints per day and these will each be recorded.

Executive Summary Performance Headlines

AIRPORT OPERATIONS

Between 1st October and 31st December 2016, there were a total of 64,898 fixed wing aircraft movements at Gatwick, an increase in traffic of about 5.55% compared to the same period in 2015. The direction of operation is determined by wind direction and this was split 67% on the westerly runway and 33% on the easterly runway for the period. The rolling 16 year average for the split in runway usage is approximately 68% westerly and 32% easterly.

NORTHERN RUNWAY (26R/08L) USAGE

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

The northern runway is normally only utilised during the night when maintenance on the main runway is planned. During these three months, there were a total of 526 movements from the northern runway.

TRACK KEEPING

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

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

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

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

CONTINUOUS DESCENT OPERATIONS (CDO) PERFORMANCE

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

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

COMMUNITY NOISE MONITORING

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

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

COMPLAINTS

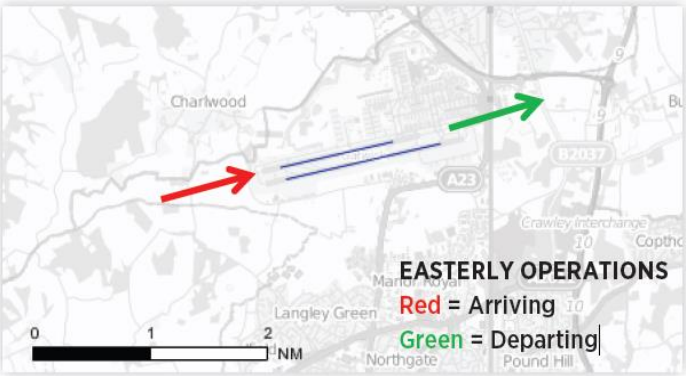
The number of recorded complaints has increased compared to the previous twelve months as well as the number of individuals which have also increased. The past year has been the busiest year in the airport's history and there has also been a large amount of publicity surrounding the potential second runway, and the community issues related to the Route 4 amendment, which may be contributing factors for the number of complaints in 2016.

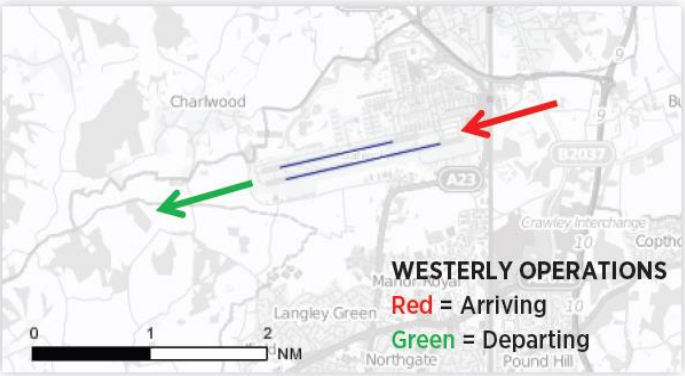
The postcode areas with the greatest number of enquiries during the three month period were Horley, Outwood, Newdigate and East Grinstead. The number of individual complainants between October and December 2016 was **540.** Complaints about aircraft operations are processed in accordance with our published 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.

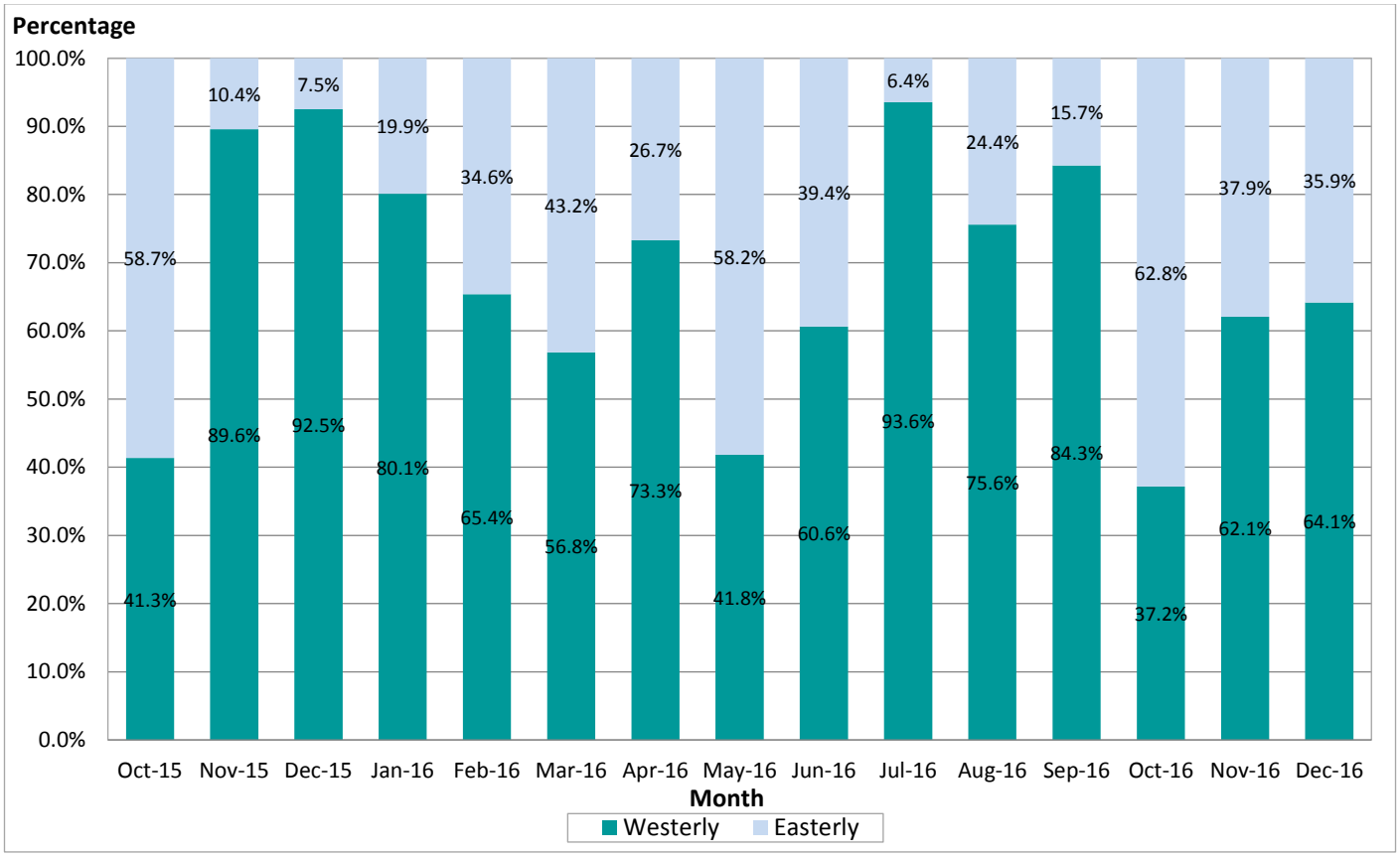
Although the long term average is approximately 68:32 in favour of westerly operations, it is not unusual to experience long periods of prolonged operation in either one direction or another.





RUNWAY DIRECTION SPLIT

THE GRAPH BELOW SHOWS THE SPLIT OVER THE 15 MONTH PERIOD (OCTOBER 2015 – DECEMBER 2016)



The Aeronautical Information Publication

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

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

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

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

ADHERENCE TO NOISE MITIGATION MEASURES AS DETAILED IN THE GATWICK AIP

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

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

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

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

Departures - Noise Infringements

DEPARTURE NOISE LIMITS (DAYTIME)

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

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

DEPARTURE NOISE LIMITS (CORE NIGHT & SHOULDERS)

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

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

Departures - Initial Climb Performance

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

Comment:

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

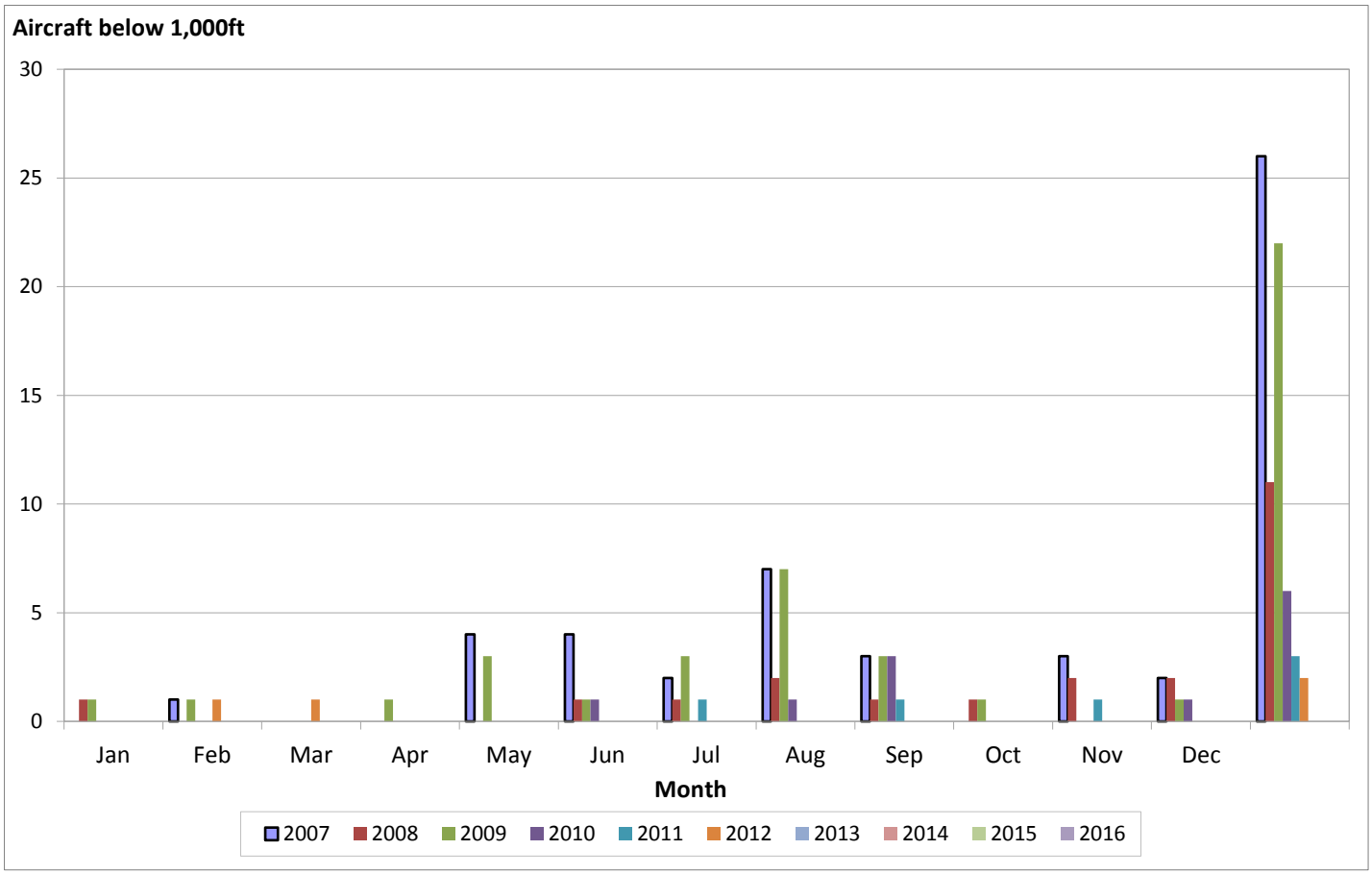
Historically, the summer months are typically the peak period for aircraft failing to meet the 1,000ft requirement, primarily due to the warmer weather which reduces aircraft climb performance.

1,000ft INFRINGEMENT TABLE

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

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

Initial Climb Performance



Departures – Track Keeping

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

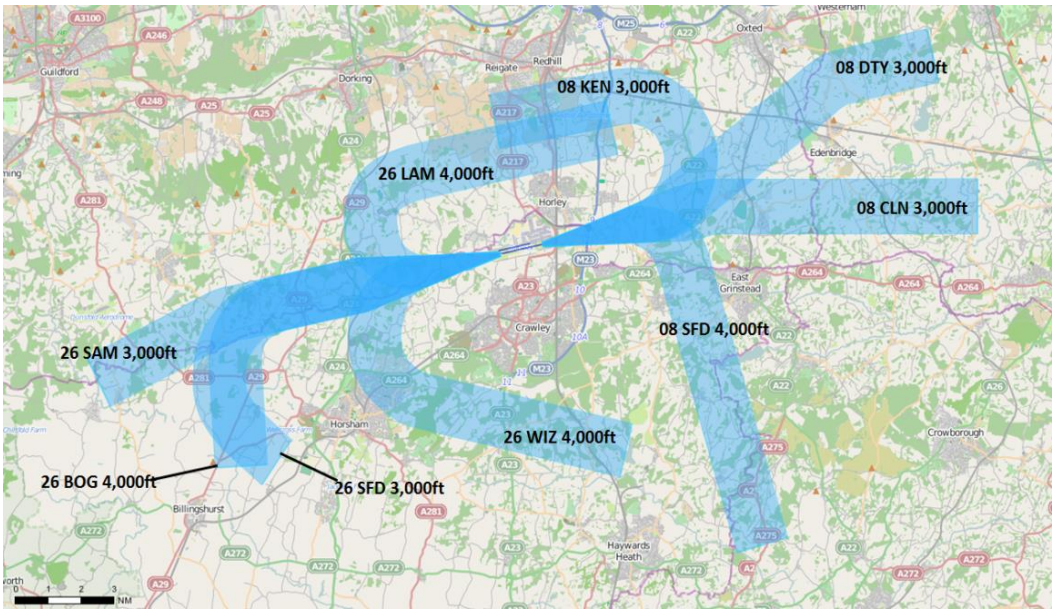
Air Traffic Control (ATC) are responsible for the routing of aircraft once airborne and when 3,000 or 4,000ft has been reached, they may give a flight a more direct heading, known as vectoring, off the route. This is subject to certain factors, including weather conditions and other traffic in the vicinity.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

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

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

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

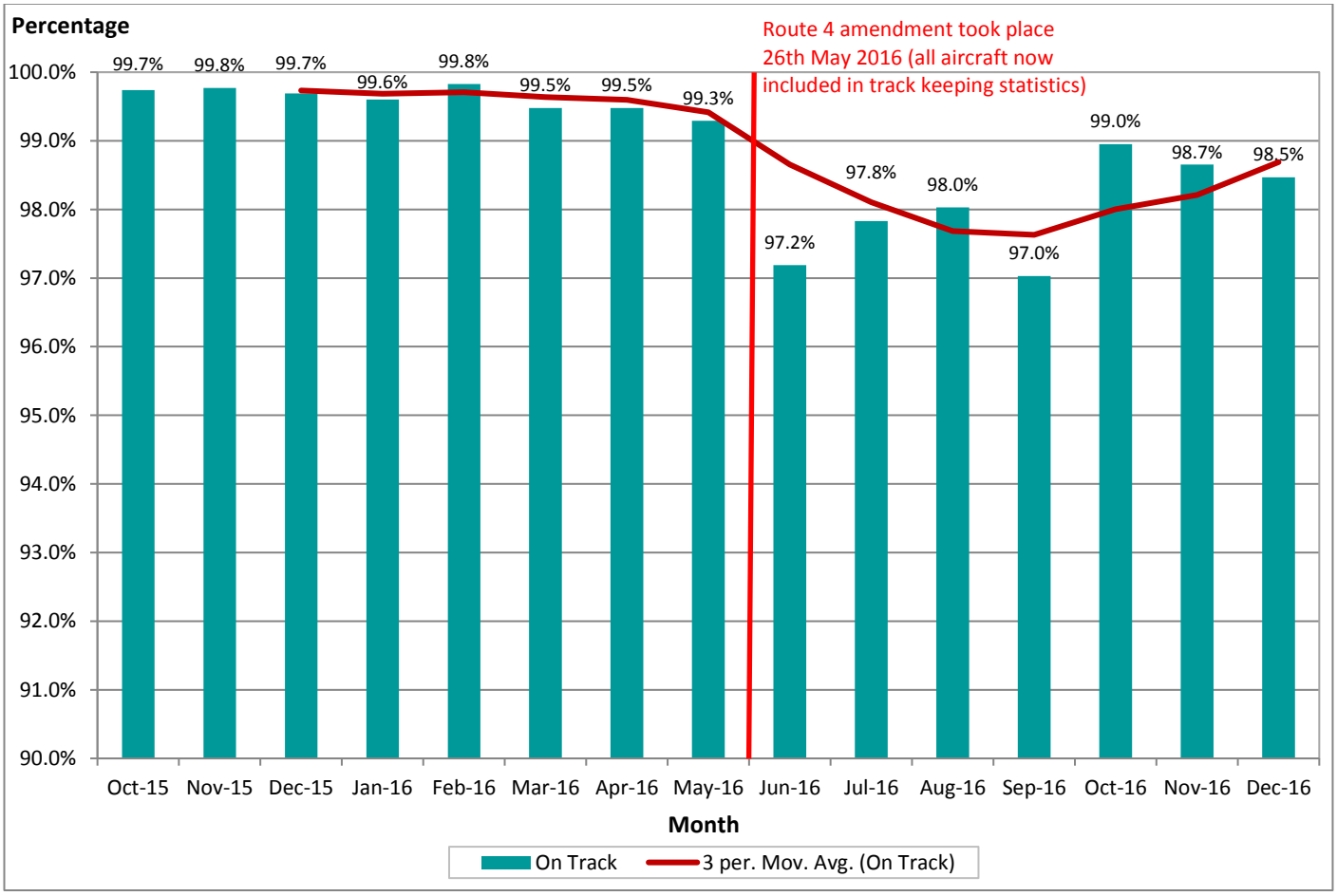
THE MAP BELOW ILLUSTRATES THE NOISE PREFERENTIAL ROUTES USED BY DEPARTING AIRCRAFT WITH MINIMUM VECTORING ALTITUDE FIGURES



THE TABLE BELOW ILLUSTRATES TRACK KEEPING PERFORMANCE OVER 15 MONTHS

	Total			Westerly			Easterly		
Month	Deviations	Departures	% Deviations	Deviations	Departures	% Deviations	Deviations	Departures	% Deviations
Oct-15	31	11960	0.26%	19	6941	0.27%	12	5019	0.24%
Nov-15	21	9057	0.23%	19	8100	0.23%	2	957	0.21%
Dec-15	30	9704	0.31%	27	8873	0.30%	3	831	0.36%
Jan-16	37	9297	0.40%	28	7392	0.38%	9	1905	0.47%
Feb-16	16	9347	0.17%	12	6086	0.20%	4	3261	0.12%
Mar-16	55	10506	0.52%	50	5944	0.84%	5	4562	0.11%
Apr-16	58	11247	0.52%	55	8239	0.67%	3	3008	0.10%
May-16	91	12758	0.71%	38	5403	0.70%	53	7355	0.72%
Jun-16	362	12877	2.81%	329	7750	4.25%	33	5127	0.64%
Jul-16	302	13915	2.17%	294	13022	2.26%	8	893	0.90%
Aug-16	278	14131	1.97%	257	10627	2.42%	21	3504	0.60%
Sep-16	401	13498	2.97%	397	11428	3.47%	4	2070	0.19%
Oct-16	133	12705	1.05%	115	4688	2.45%	18	8017	0.22%
Nov-16	126	9360	1.35%	118	5818	2.03%	8	3542	0.23%
Dec-16	159	10375	1.53%	139	6604	2.10%	20	3771	0.53%

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



Departures – Over Congested Areas

THE WIZAD NOISE PREFERENTIAL ROUTE

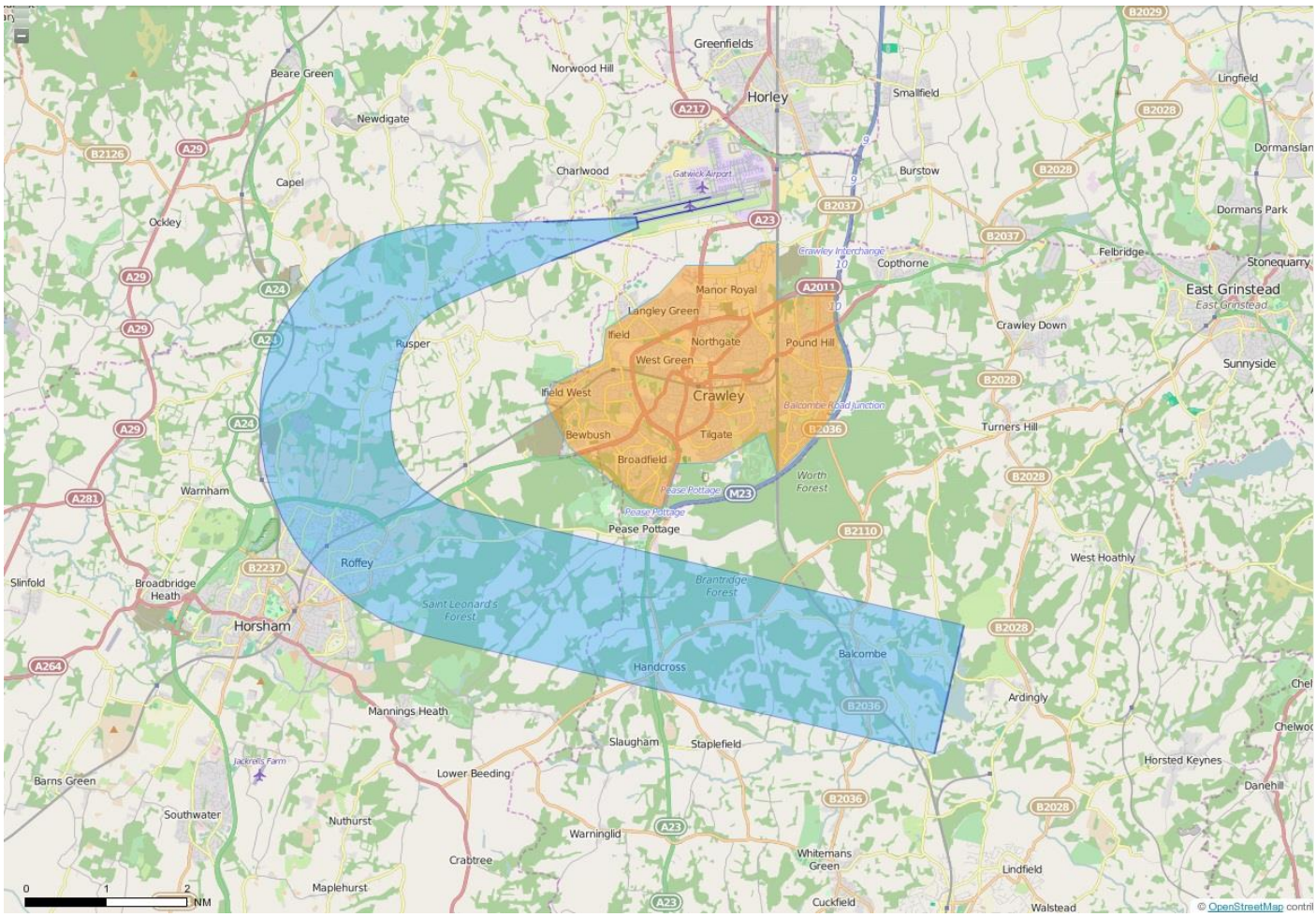
The Wizad Noise Preferential Route was designated by the Government at the same time as all other Gatwick departure routes; however, it is not used on an equal basis with the other routes. It is a Tactical Offload Route and is not usually offered as part of a flight path. If the 26 LAM Route (to the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

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

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

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

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

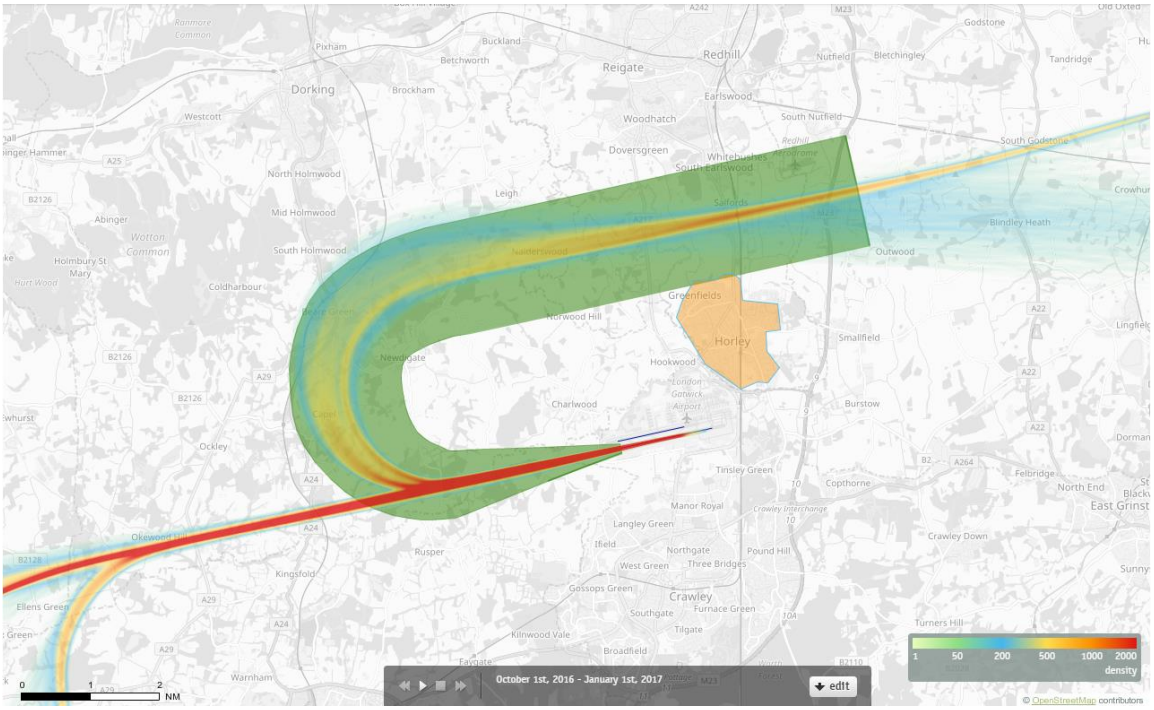


Overflight of Crawley and Horley

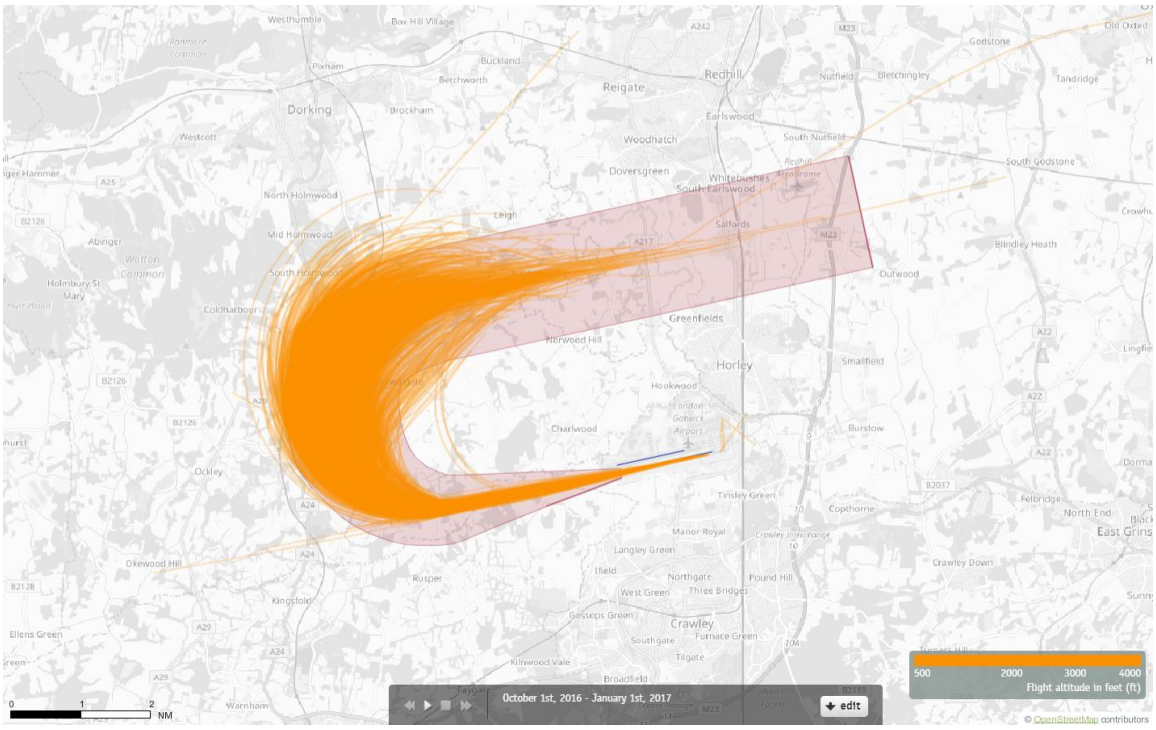
EGKK AD 2.21 (9) *After taking off the aircraft shall avoid flying over the congested areas of Horley and Crawley.*
This is to avoid aircraft noise from departing aircraft over areas of high population.

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

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



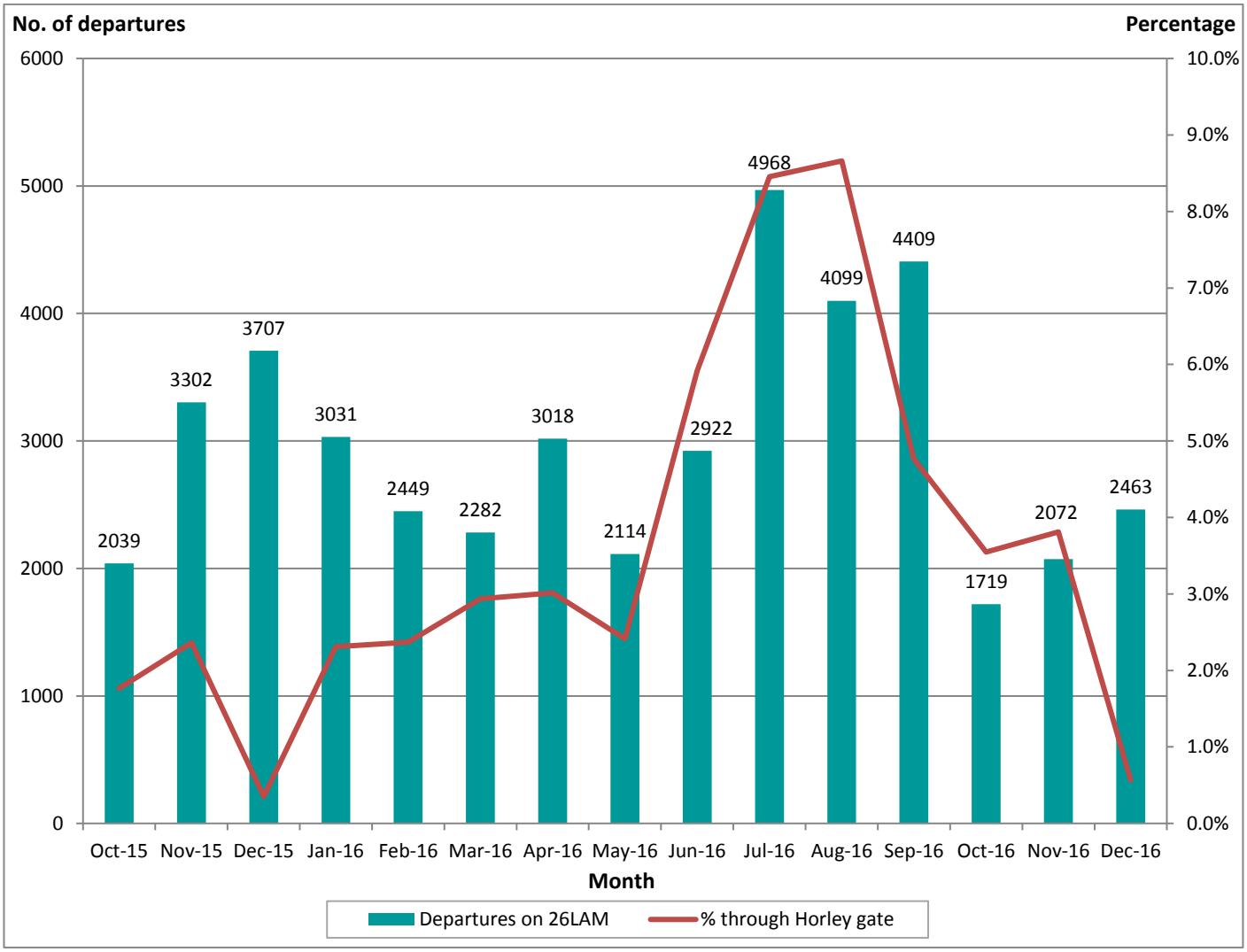
THE MAP BELOW ILLUSTRATES THE TRACKS OF DEPARTING AIRCRAFT ON THE '26 LAM' DEPARTURE ROUTE USING P-RNAV DURING THE THREE MONTH PERIOD UP TO AN ALTITUDE OF 4,000FT



THE TABLE BELOW ILLUSTRATES THE ANALYSIS OF HORLEY OVERFLIGHT

Month	Departures on 26LAM	Horley gate	% through Horley gate	Month	Departures on 26LAM	Horley gate	% through Horley gate	Month	Departures on 26LAM	Horley gate	% through Horley gate
Jan-14	3048	50	1.64%	**Jan-15**	3237	102	3.15%	**Jan-16**	3031	70	2.31%
Feb-14	3089	60	1.94%	**Feb-15**	2251	66	2.93%	**Feb-16**	2449	58	2.37%
Mar-14	2447	60	2.45%	**Mar-15**	2455	40	1.63%	**Mar-16**	2282	67	2.94%
Apr-14	2043	40	1.96%	**Apr-15**	2200	42	1.91%	**Apr-16**	3018	91	3.02%
May-14	2805	46	1.64%	**May-15**	4051	67	1.65%	**May-16**	2114	51	2.41%
Jun-14	2606	38	1.46%	**Jun-15**	3688	57	1.55%	**Jun-16**	2922	173	5.92%
Jul-14	3466	52	1.50%	**Jul-15**	4365	42	0.96%	**Jul-16**	4968	420	8.45%
Aug-14	4512	35	0.78%	**Aug-15**	3559	38	1.07%	**Aug-16**	4099	355	8.66%
Sep-14	1686	24	1.42%	**Sep-15**	2838	61	2.15%	**Sep-16**	4409	210	4.76%
Oct-14	3826	31	0.81%	**Oct-15**	2039	36	1.77%	**Oct-16**	1719	61	3.55%
Nov-14	1881	19	1.01%	**Nov-15**	3302	78	2.36%	**Nov-16**	2072	79	3.81%
Dec-14	3079	79	2.57%	**Dec-15**	3707	13	0.35%	**Dec-16**	2463	14	0.57%

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.

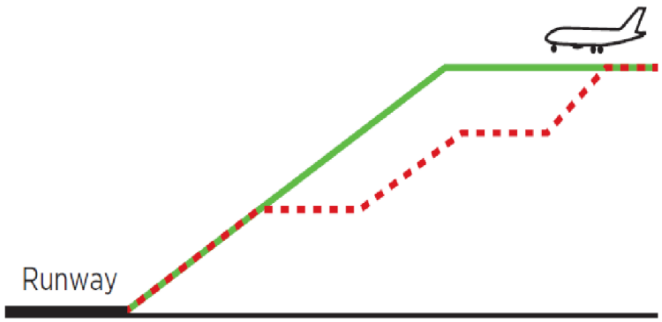
CDO data is measured over three time periods:

- 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 it ATC clearance, minimise noise disturbance by the use of continuous decent 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 1st August 2016.

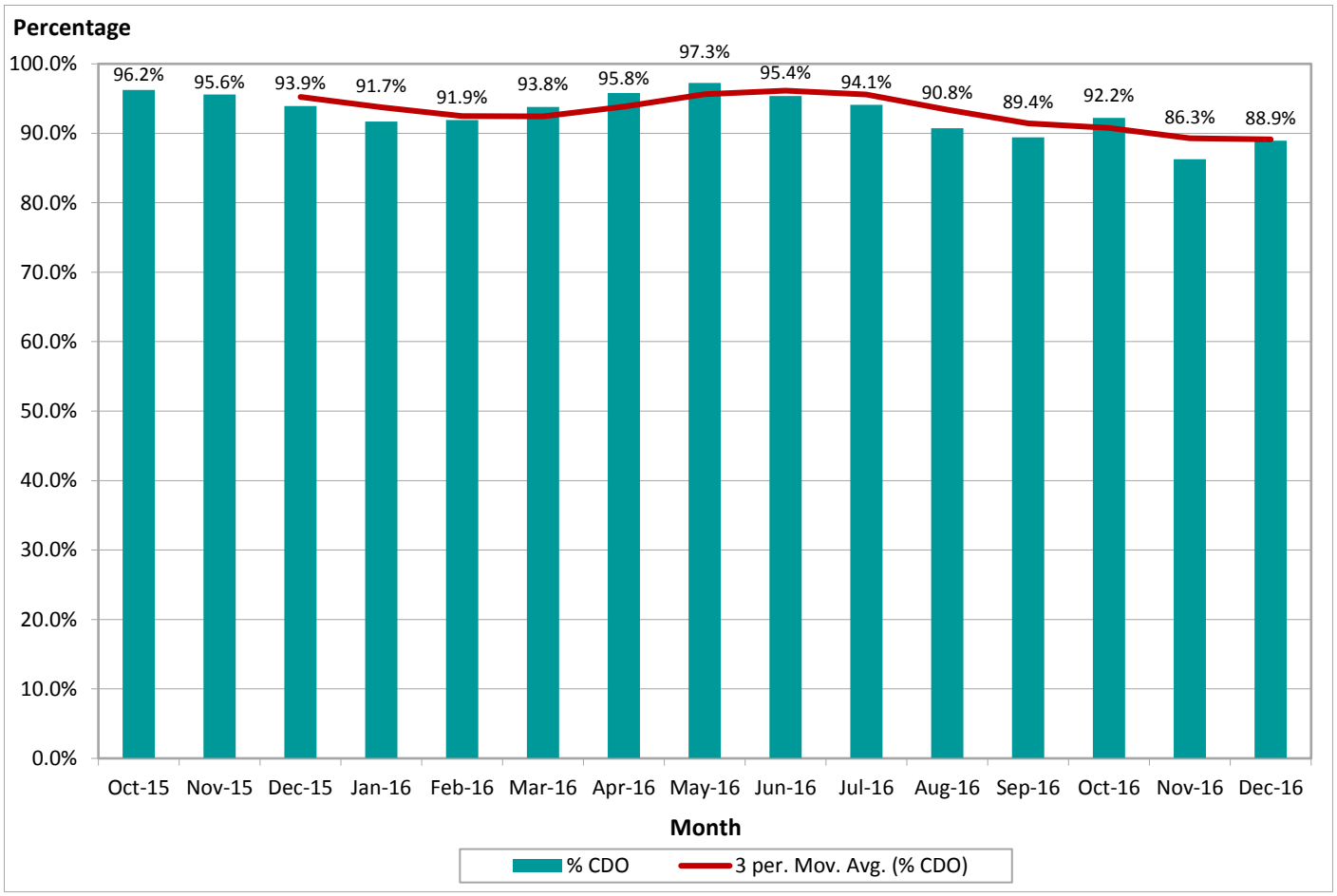


CORE NIGHT PERIOD (2330-0600)

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

Month	All Arrivals			08 Easterly Arrivals			26 Westerly Arrivals		
	Total	Non CDO	% CDO	Total	Non CDO	% CDO	Total	Non CDO	% CDO
Oct-15	1061	40	96.23%	651	25	96.16%	410	15	96.34%
Nov-15	339	15	95.58%	124	4	96.77%	215	11	94.88%
Dec-15	361	22	93.91%	11	0	100.00%	350	22	93.71%
Jan-16	301	25	91.69%	55	0	100.00%	246	25	89.84%
Feb-16	321	26	91.90%	136	10	92.65%	185	16	91.35%
Mar-16	402	25	93.78%	159	11	93.08%	243	14	94.24%
Apr-16	832	35	95.79%	227	3	98.68%	605	32	94.71%
May-16	1204	33	97.26%	764	25	96.73%	440	8	98.18%
Jun-16	1686	78	95.37%	646	25	96.13%	1040	53	94.90%
Jul-16	1915	113	94.10%	118	3	97.46%	1797	110	93.88%
Aug-16	1751	162	90.75%	396	17	95.71%	1355	145	89.30%
Sep-16	1626	172	89.42%	364	23	93.68%	1262	149	88.19%
Oct-16	1141	89	92.20%	700	56	92.43%	441	36	91.84%
Nov-16	240	33	86.25%	102	14	86.27%	138	19	86.23%
Dec-16	506	56	88.93%	116	5	95.69%	390	51	86.92%

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

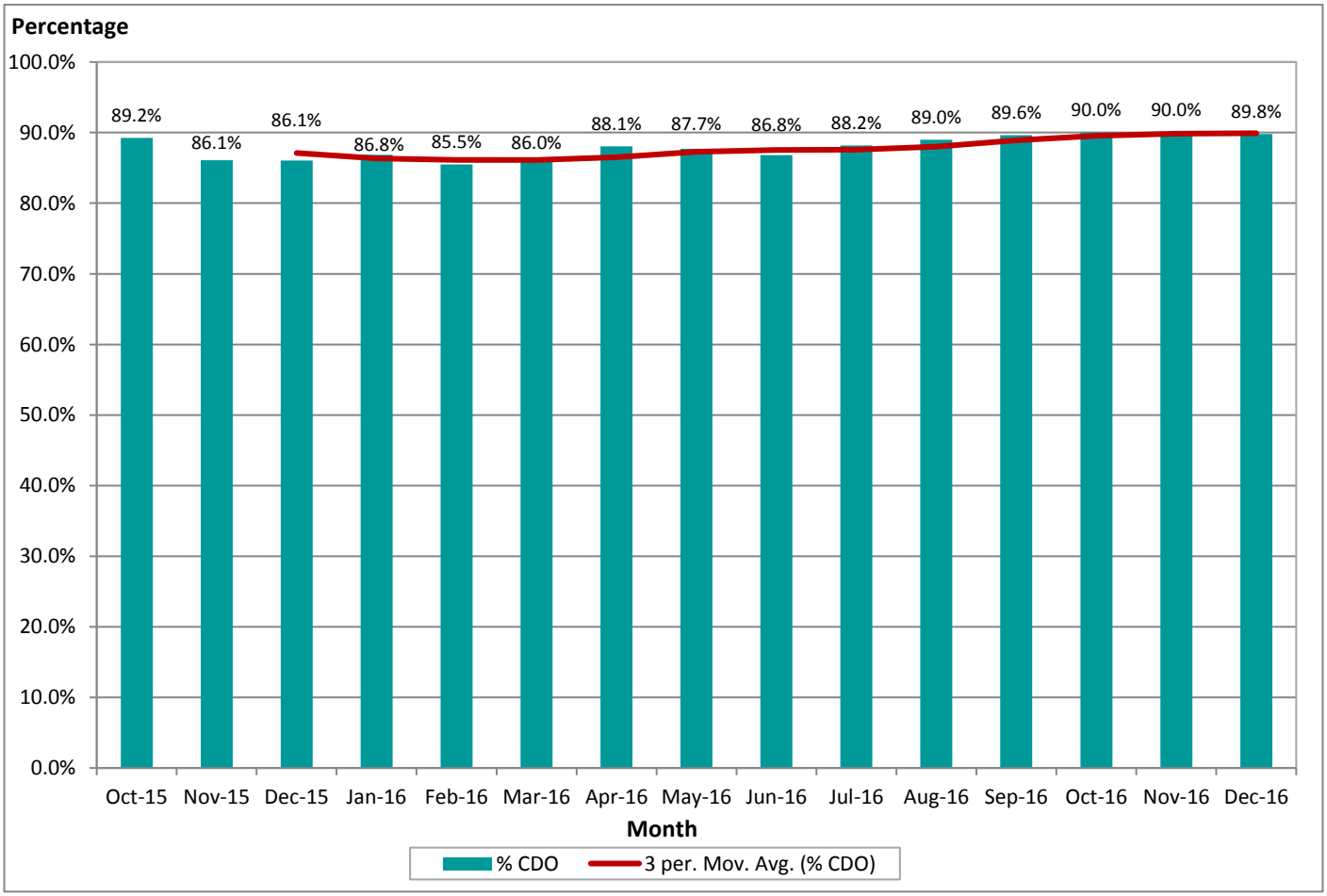


DAYTIME AND SHOULDER PERIOD CDO ACHIEVEMENT (0600-2330)

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

	All Arrivals			08 Easterly Arrivals			26 Westerly Arrivals		
Month	Total	Non CDO	% CDO	Total	Non CDO	% CDO	Total	Non CDO	% CDO
Oct-15	10879	1171	89.24%	6434	720	88.81%	4445	451	89.85%
Nov-15	8695	1209	86.10%	805	144	82.11%	7890	1065	86.50%
Dec-15	9321	1300	86.05%	615	110	82.11%	8706	1190	86.33%
Jan-16	8951	1178	86.84%	1737	225	87.05%	7214	953	86.79%
Feb-16	9005	1308	85.47%	3070	461	84.98%	5935	947	84.04%
Mar-16	10070	1405	86.05%	4334	588	86.43%	5736	817	85.76%
Apr-16	10359	1237	88.06%	2765	329	88.10%	7594	908	88.04%
May-16	11528	1418	87.70%	6703	866	87.08%	4825	552	88.56%
Jun-16	11130	1466	86.83%	4362	604	86.15%	6768	862	87.26%
Jul-16	11943	1412	88.18%	778	105	86.50%	11165	1307	88.29%
Aug-16	12331	1358	88.99%	2994	313	89.55%	9337	1045	88.81%
Sep-16	11821	1228	89.61%	1804	185	89.75%	10017	1043	89.59%
Oct-16	11554	1155	90.00%	7141	745	89.75%	4413	410	90.71%
Nov-16	9079	912	89.95%	3338	319	90.44%	5741	593	89.67%
Dec-16	9838	1005	89.78%	3447	304	91.18%	6391	701	89.03%

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

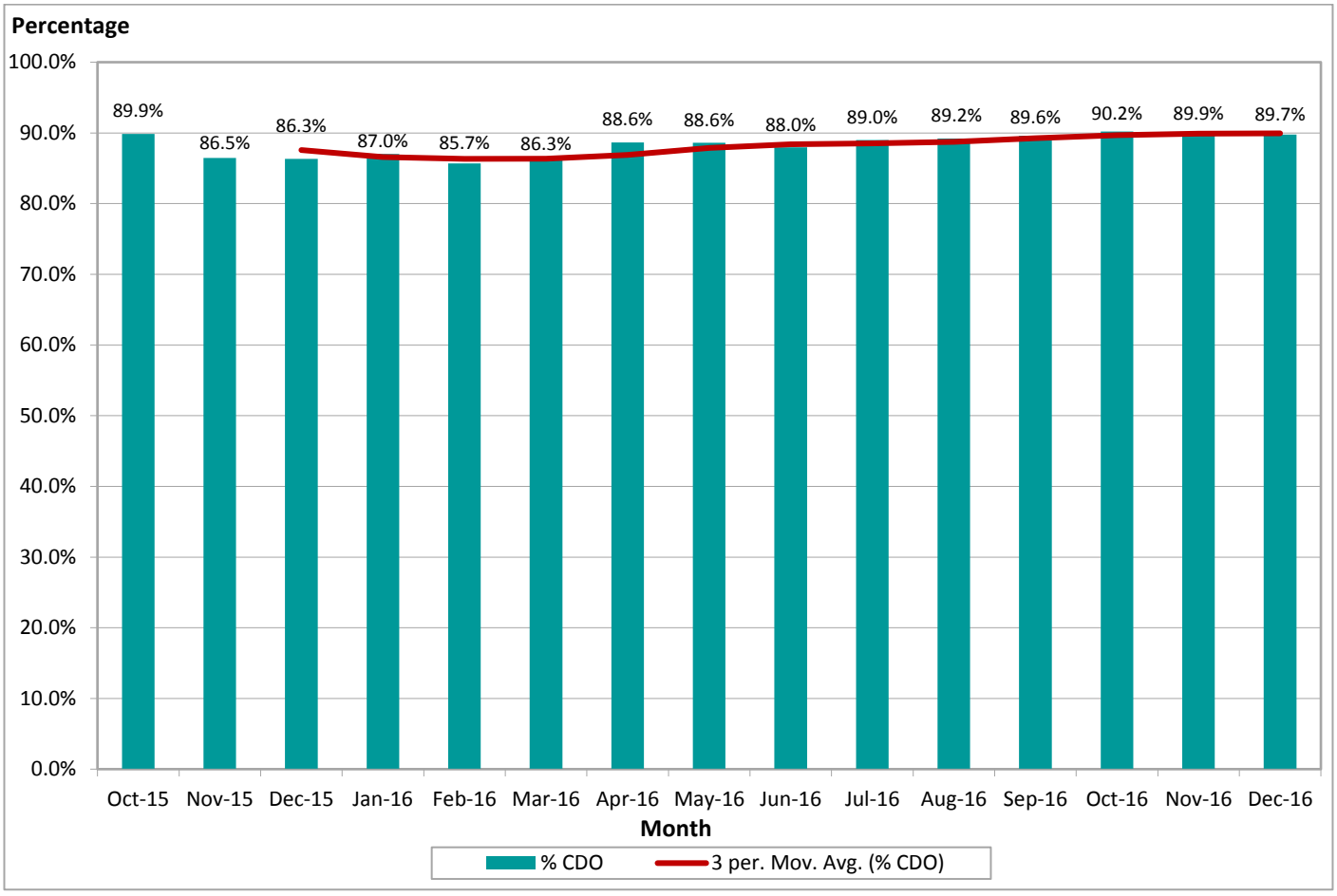


24 HOUR PERIOD CDO ACHIEVEMENT

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

	All Arrivals			08 Easterly Arrivals			26 Westerly Arrivals		
Month	**Total**	**Non CDO**	**% CDO**	**Total**	**Non CDO**	**% CDO**	**Total**	**Non CDO**	**% CDO**
Oct-15	11940	1211	89.86%	7085	745	89.48%	4855	466	90.40%
Nov-15	9034	1224	86.45%	929	148	84.07%	8105	1076	86.72%
Dec-15	9682	1322	86.35%	626	110	82.43%	9056	1212	86.62%
Jan-16	9252	1203	87.00%	1792	225	87.44%	7460	978	86.89%
Feb-16	9326	1334	85.70%	3206	471	85.31%	6120	863	85.90%
Mar-16	10472	1430	86.34%	4493	599	86.67%	5979	831	86.10%
Apr-16	11191	1272	88.63%	2992	332	88.90%	8199	940	88.54%
May-16	12732	1451	88.60%	7467	891	88.07%	5265	560	89.36%
Jun-16	12816	1544	87.95%	5008	629	87.44%	7808	915	88.28%
Jul-16	13858	1525	89.00%	896	108	87.95%	12962	1417	89.07%
Aug-16	14082	1520	89.21%	3390	330	90.27%	10692	1190	88.87%
Sep-16	13447	1400	89.59%	2168	208	90.41%	11279	1192	89.43%
Oct-16	12695	1244	90.20%	7841	798	89.82%	4854	446	90.81%
Nov-16	9319	945	89.86%	3440	333	90.32%	5879	612	89.59%
Dec-16	10344	1061	89.74%	3563	309	91.33%	6781	752	88.91%

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



Arrivals – Over Congested Areas

OVERFLIGHT OF CONGESTED AREAS

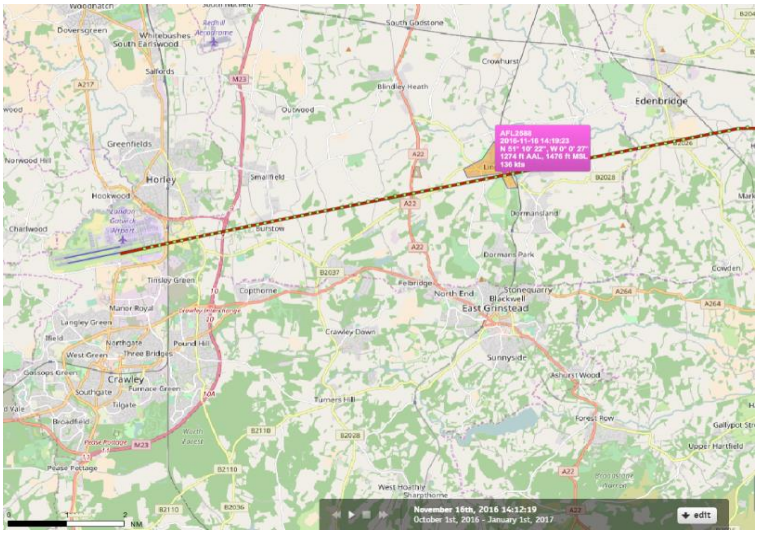
AD 2-EGKK1-12 (11) *Before landing at the aerodrome the aircraft shall maintain as high an altitude as practicable and shall not fly over the congested areas of Crawley, East Grinstead, Horley and Horsham at an altitude of less than 3,000ft (Gatwick QNH) nor over the congested area of Lingfield at an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

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

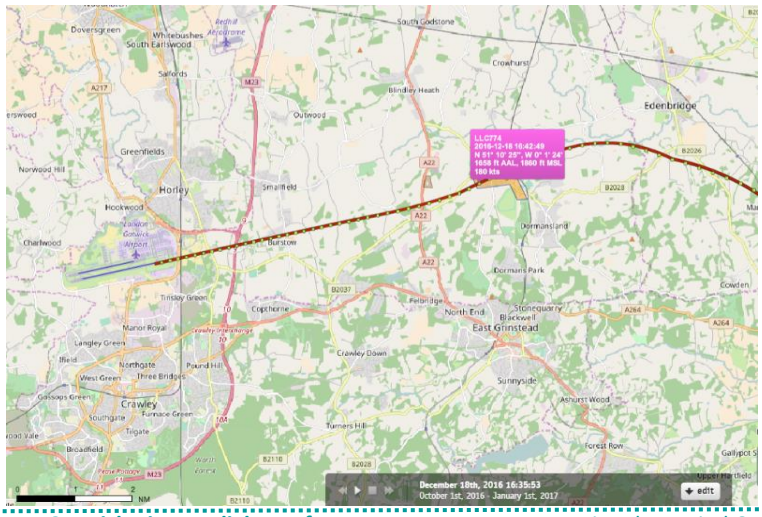
Comment: There were no arriving flights which passed over the towns of Crawley and Horley below the required altitude for this period. The map below illustrates these analysis zones. A polygon located over the urban area at about 7 nautical miles (nm) from touchdown is normally used to analyse tracks 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 October, November and December 2016 and with the exception of a small number of go-arounds, there were 3 flights that passed over Lingfield below the altitude of 1,698ft (2,000ft Gatwick QNH) mapped below. The first was an Aeroflot A320 which passed over Lingfield at 1476ft AMSL on the 16th December 2016 at 14:19. The second was a Small Planet A320 which passed over Lingfield at 1860ft AMSL on the 18th December 2016 at 16:42. The third was a Pegasus A320 which passed over Lingfield at 1802ft AMSL on the 27th December 2016 at 10:50. These flights are currently being investigated with the airlines concerned. There was a single arrival that passed over East Grinstead below the required altitude. This was a Norwegian Boeing 737-800 Series which passed over East Grinstead at 2968ft AMSL. This flight is also being investigated with the airline. There were no flights that passed over Horsham below the required altitude.

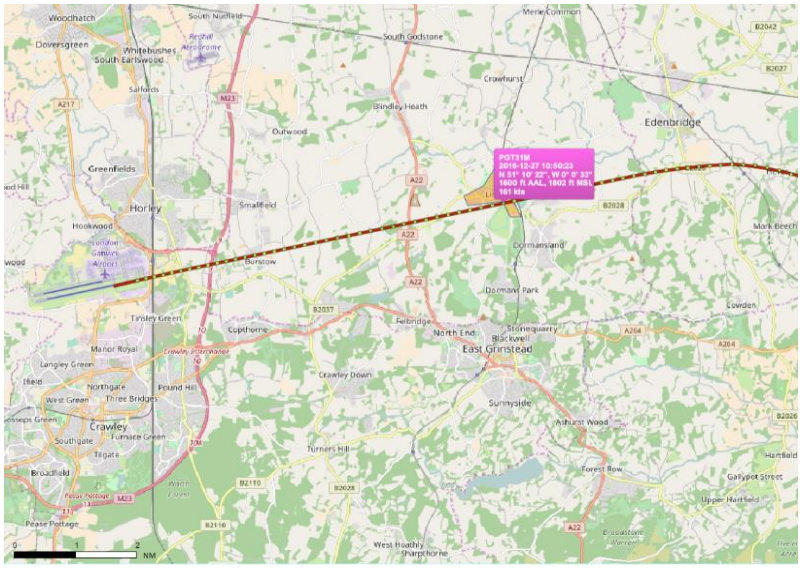
THE MAP BELOW SHOWS THE AEROFLOT AIRCRAFT WHICH PASSED OVER LINGFIELD AT 1476ft AMSL



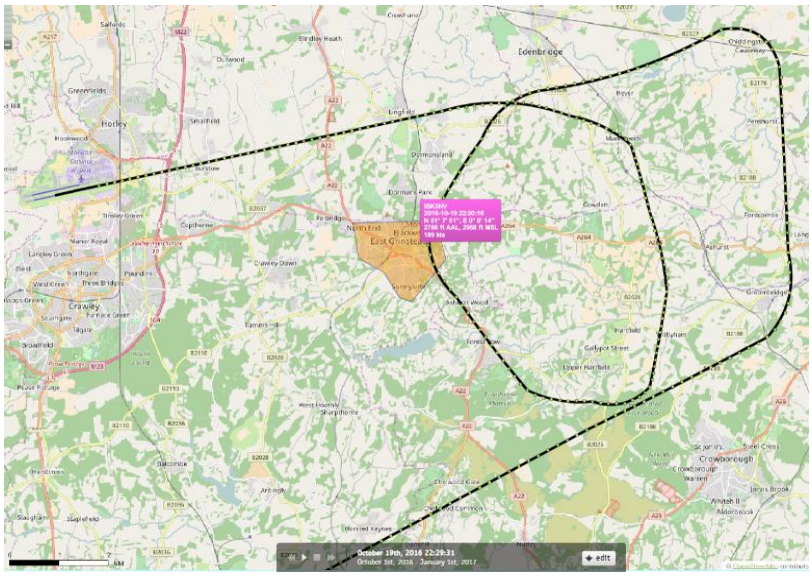
THE MAP BELOW SHOWS THE SMALL PLANET AIRCRAFT WHICH PASSED OVER LINGFIELD AT 1860ft AMSL



THE MAP BELOW SHOWS THE PEGASUS AIRCRAFT WHICH PASSED OVER LINGFIELD AT 1802ft AMSL



THE MAP BELOW SHOWS THE NORWEGIAN AIRCRAFT WHICH PASSED OVER EAST GRINSTEAD AT 2968FT AMSL



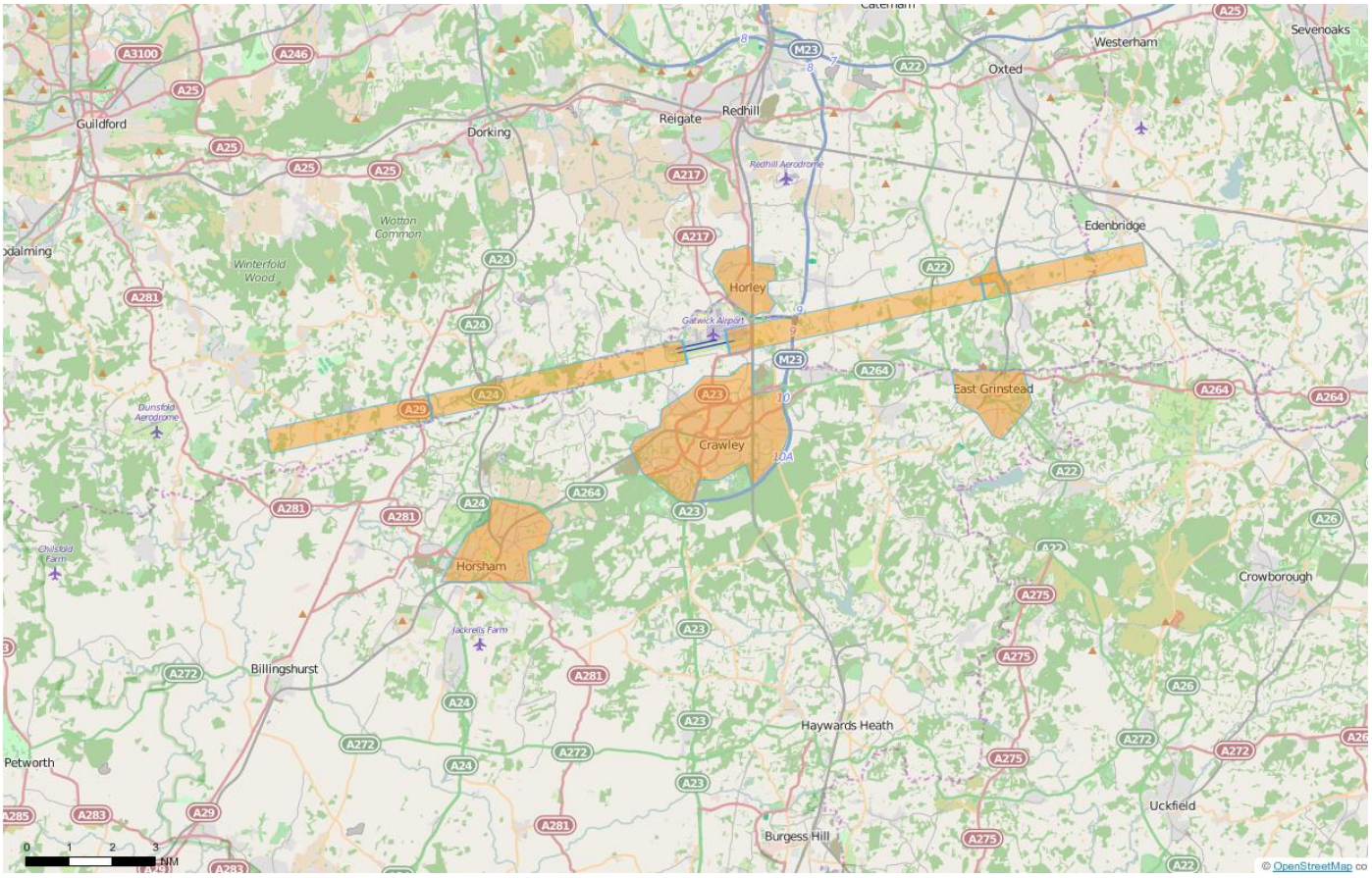
A) DAY TIME JOINING HEIGHT (0700-2300)

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

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

There were 32,461 arrivals recorded by the Casper NTK system between 1st October and 31st December 2016. 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 104 (0.32%). 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)

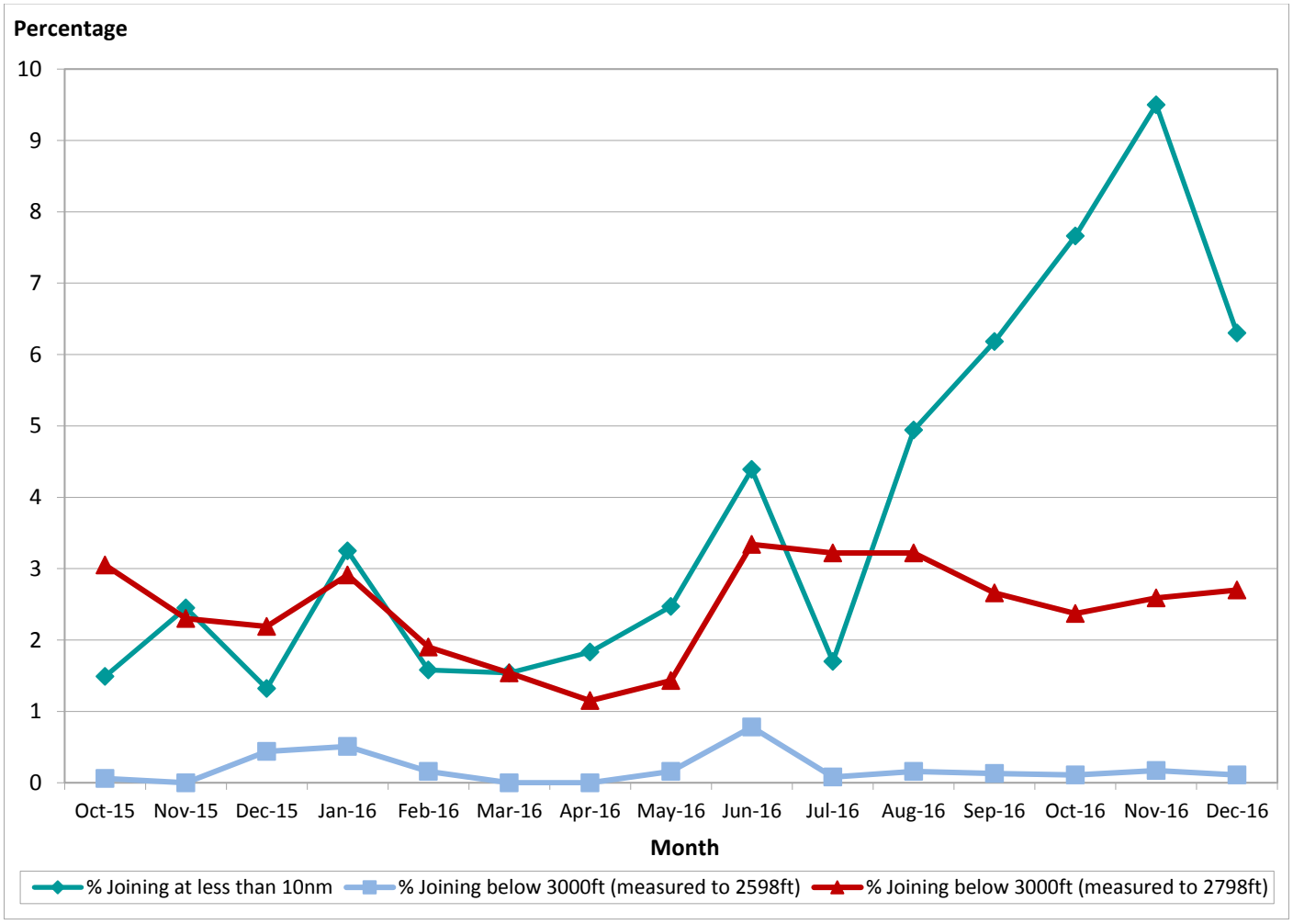
EGKK AD 2.21 (14) *Aircraft which land at Gatwick Airport - London between the hours of 2300 (local) and 0700 (local), whether or not making use of the ILS localizer and irrespective of weight or type of approach, shall not join the centre-line:*

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.

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



Go-Around Statistics 2004 - 2016

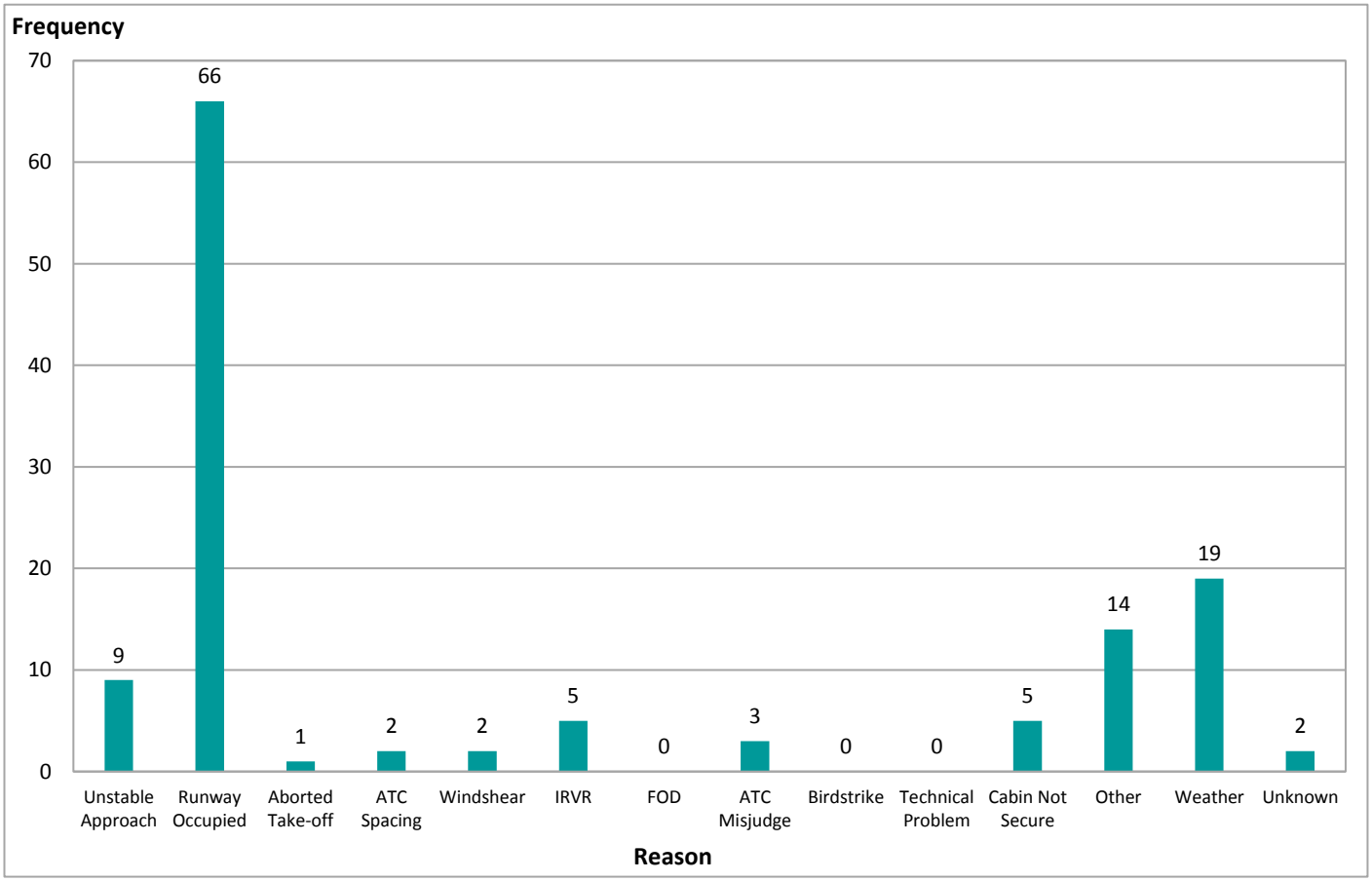
A go-around is a procedure adopted when an arriving aircraft on final approach aborts landing by applying take-off power and climbing away from the airport. It is a set procedure to be followed by the flight crew in the event of an aircraft being unable to land. The procedure is published so that Air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

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

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

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

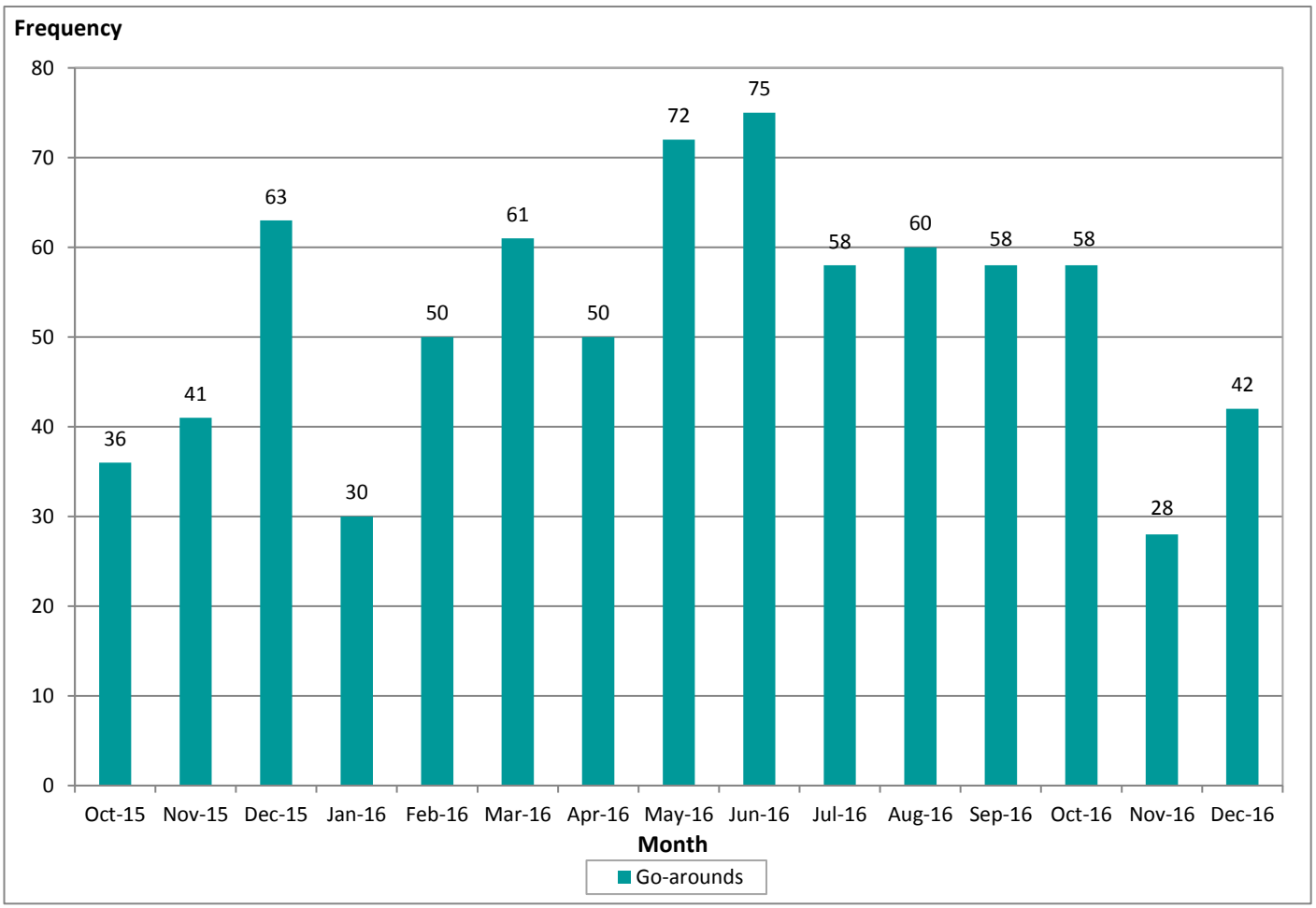
NATS AND ANS CURRENTLY RECORD GO-AROUNDS UNDER ONE OF THE FOLLOWING CAUSAL FACTORS (OCTOBER – DECEMBER 2016)



THE TABLE BELOW ILLUSTRATES GO-AROUND STATISTICS 2004 – 2016

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

THE GRAPH BELOW ILLUSTRATES TOTAL NUMBER OF GO-AROUNDS PER MONTH (OCTOBER - DECEMBER 2016)



Night Flights

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

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

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

Overleaf is a mid-season report for Winter 2016/17 which commenced at 02:00 on 30th October 2016. 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 162 dispensations applied during the Winter 2016 period. These were caused by arrival flow rate restrictions during times of low visibility.

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 10 unscheduled QC4 movements during the 'night quota period'. QC4 types may not be scheduled to take off or land during this period.

RESTRICTIONS

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

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

London Gatwick

AIRPORT MOVEMENTS and QUOTA SUMMARY to WEEK 10 (29 OCTOBER 2016 to 04 JANUARY 2017 inc.)

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

Wk No.	Week Ending Date	QC0.25 No.	QC0.5 No.	QC1 No.	QC2 No.	QC4 No.	QC8 No.	QC16 No.	Total Quota Value	Mvmts Against Limit	Exmpt Types	Not Cont'd Delays	Not Cont'd Gov't	Not Cont'd Emerg	Total Arrival No.	Total Arrivals %	Total Deps No.	Total Deps %	Total Runway Mvmts
1	05/11/2016	73	71	19	6	1	0	0	88.75	170	2	0	0	0	151	87.8	21	12.2	172
2	12/11/2016	17	32	13	3	0	0	0	39.25	65	1	0	0	0	58	87.9	8	12.1	66
3	19/11/2016	18	34	15	0	0	0	0	36.50	67	0	0	0	0	58	86.6	9	13.4	67
4	26/11/2016	17	25	14	0	0	0	0	30.75	56	2	0	0	0	50	86.2	8	13.8	58
5	03/12/2016	14	28	13	1	0	0	0	32.50	56	1	0	0	0	50	87.7	7	12.3	57
6	10/12/2016	16	35	17	2	2	0	0	50.50	72	0	19	0	0	81	89.0	10	11.0	91
7	17/12/2016	28	33	21	3	1	0	0	54.50	86	6	3	0	0	77	81.1	18	18.9	95
8	24/12/2016	62	67	27	5	4	0	0	102.00	165	0	30	0	0	164	84.1	31	15.9	195
9	31/12/2016	88	83	30	2	2	0	0	105.50	205	1	0	0	0	166	80.6	40	19.4	206
10	04/01/2017	29	37	12	7	1	0	0	55.75	86	0	0	0	0	66	76.7	20	23.3	86
	TOTALS	**362**	**445**	**181**	**29**	**11**	**0**	**0**	**596.00**	**1028**	**13**	**52**	**0**	**0**	**921**	**84.3**	**172**	**15.7**	**1093**

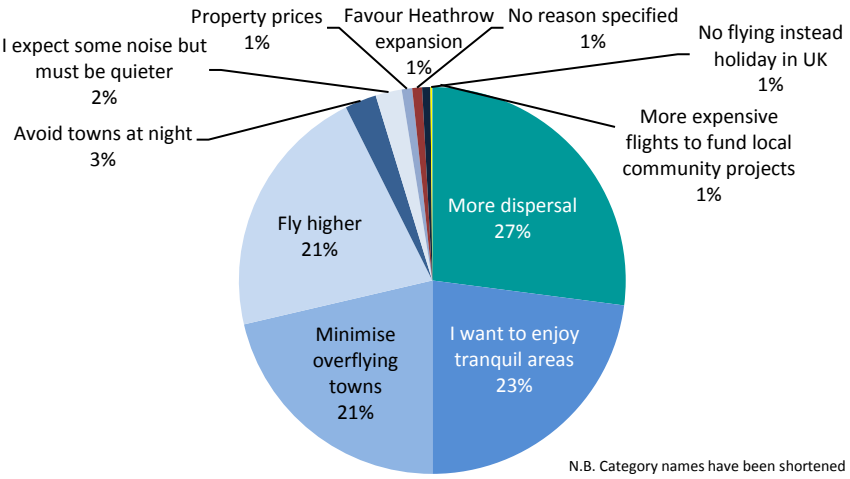
Quota Points Available	1404.00	Movements Available	2222
Quota % Points Used	29.8	Movements % Used	31.6

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

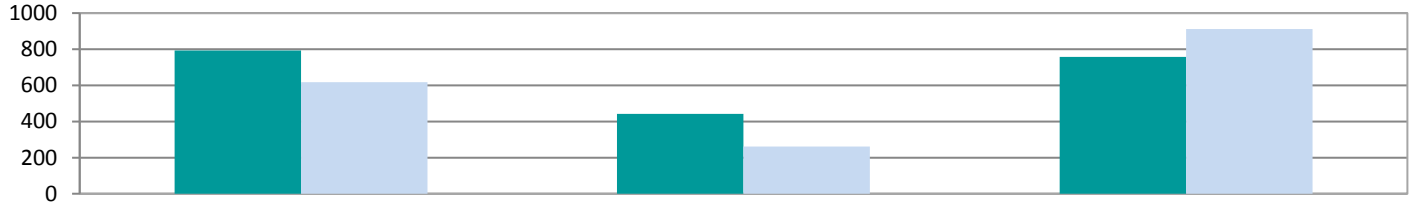
Noise Complaints

It is important that we understand the issues of noise disturbance from individuals and communities who live around the airport. By studying the complaints we receive and by communicating with the affected towns and villages surrounding the Airport, we believe that this gives us a greater understanding of the issues related to noise. This means that we can work together to improve the noise climate around the Airport. The complaints we have received are either about specific aircraft events that cause disturbance or generic complaints about airport operations in general. The following charts provide an analysis of the reasons for the numbers of complaints.

REASON FOR SPECIFIC COMPLAINT BY PERCENTAGE

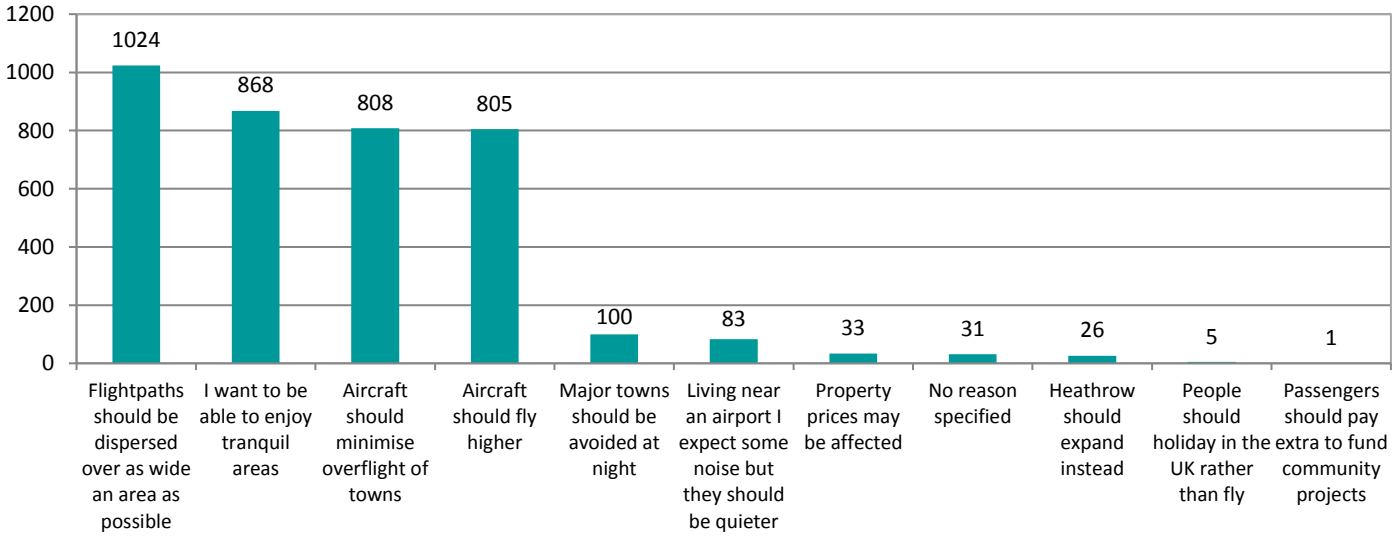


COMPLAINTS RECORDED BY MONTH



	Oct-16	Nov-16	Dec-16
Specific	793	442	757
Generic	618	262	912

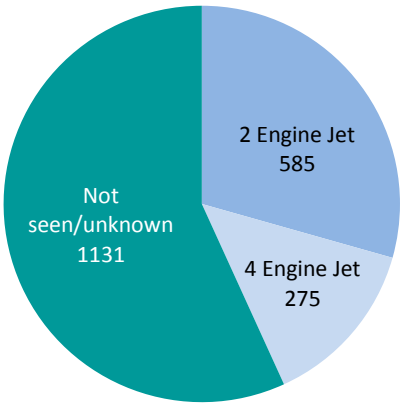
REASON FOR SPECIFIC COMPLAINT BY NUMBER



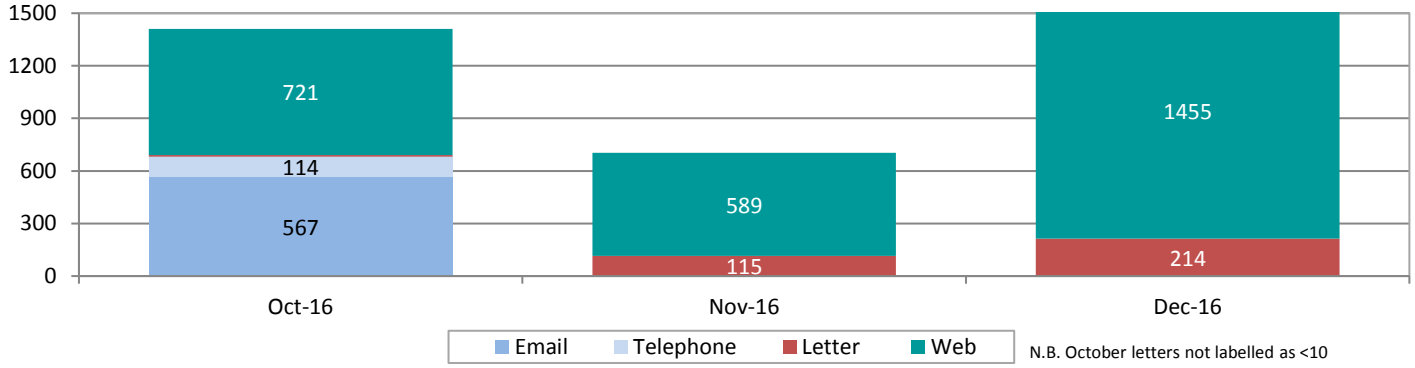
Noise is very subjective and can affect people in different ways. Some people can tolerate a certain noise level whilst it can cause disturbance to others. As well as identifying the issues of noise, it is important to understand the location of each individual complaint.

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

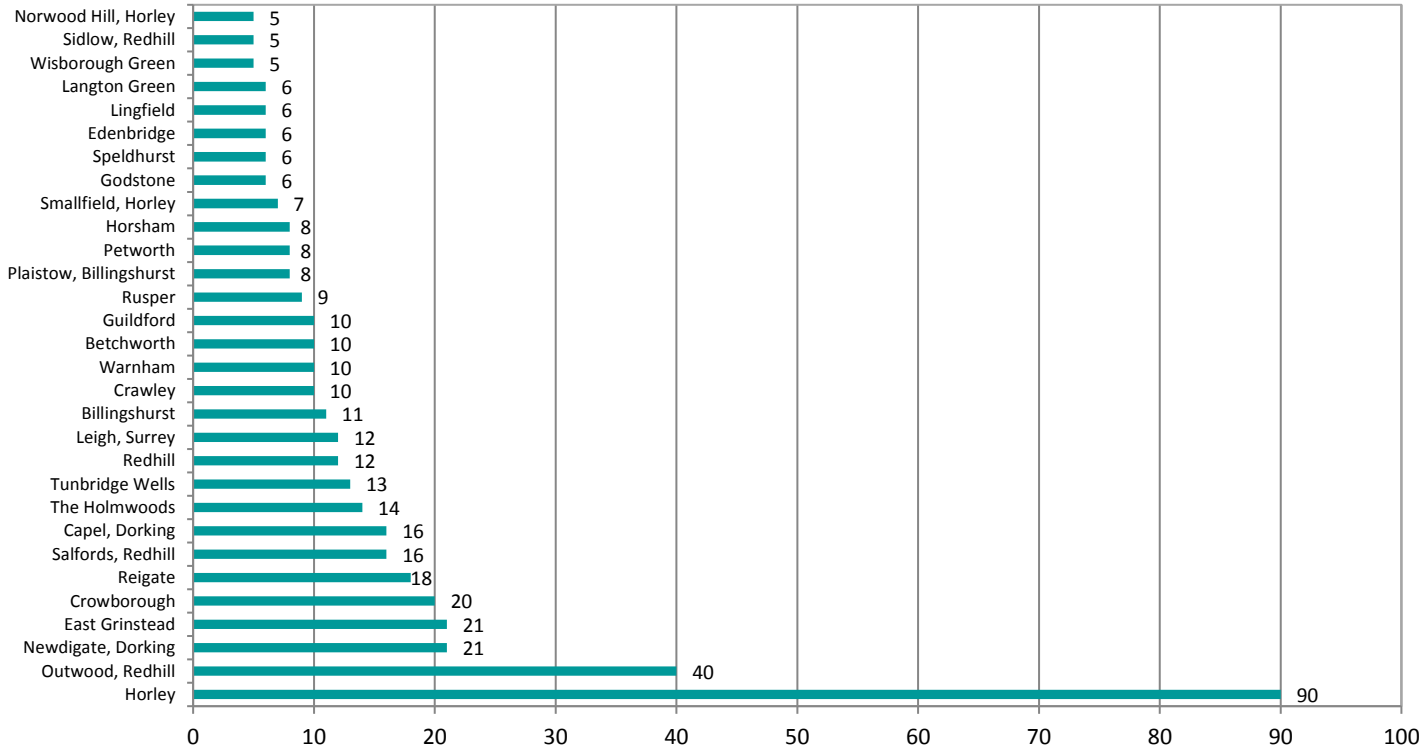
CATEGORIES OF AIRCRAFT TYPES FROM SPECIFIC COMPLAINTS



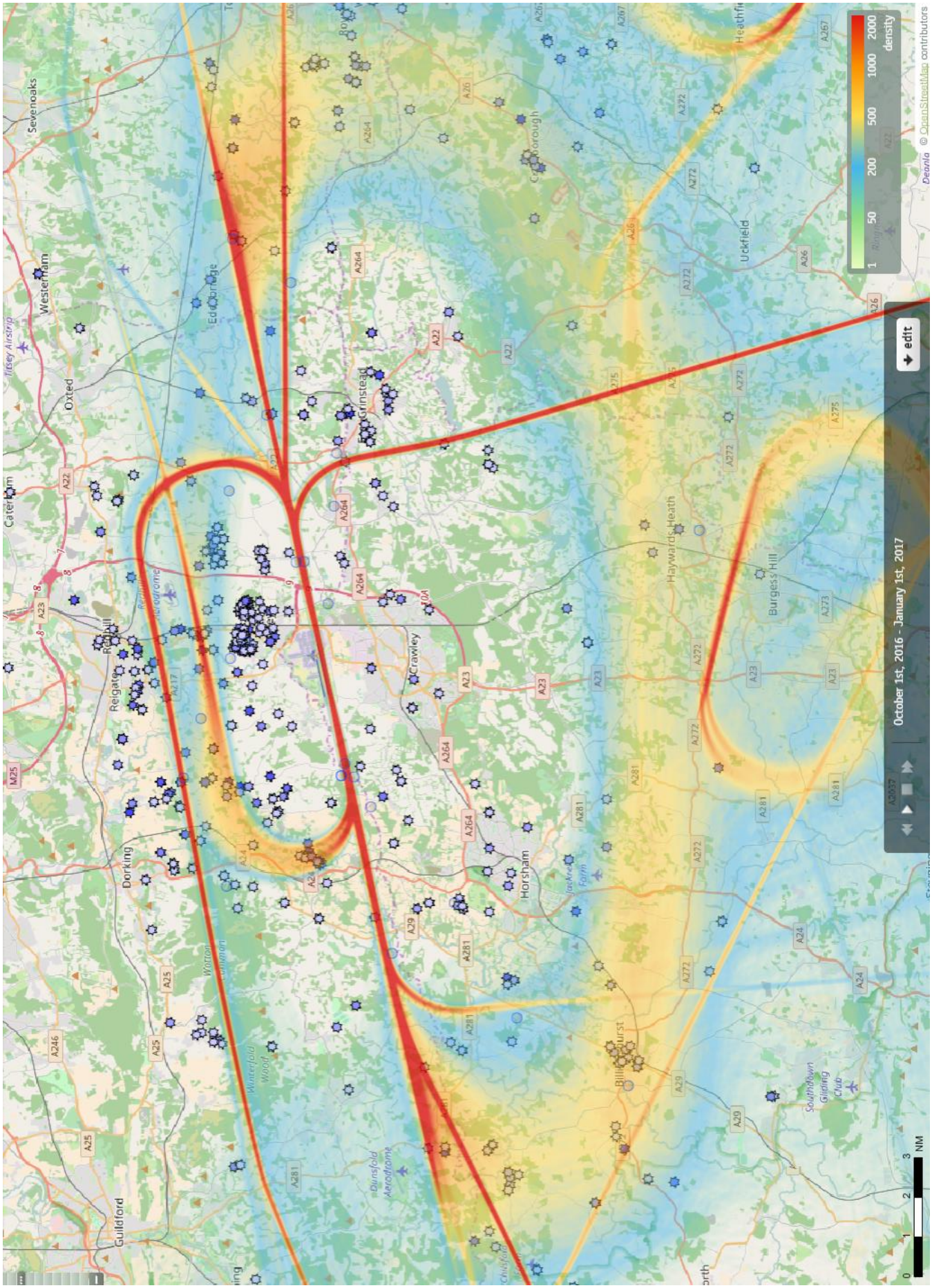
METHOD OF COMPLAINT



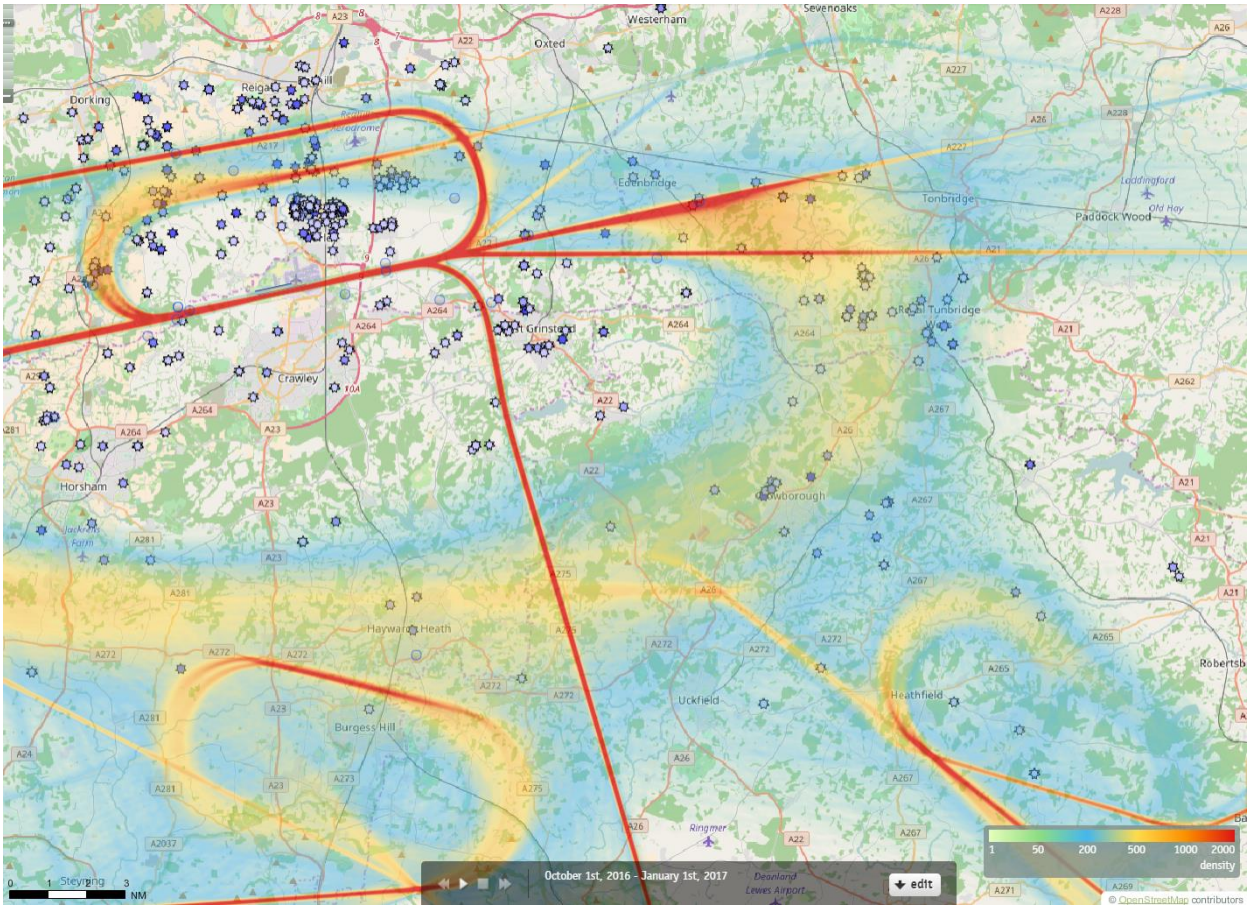
NUMBER OF INDIVIDUAL COMPLAINANTS BY TOWN/VILLAGE



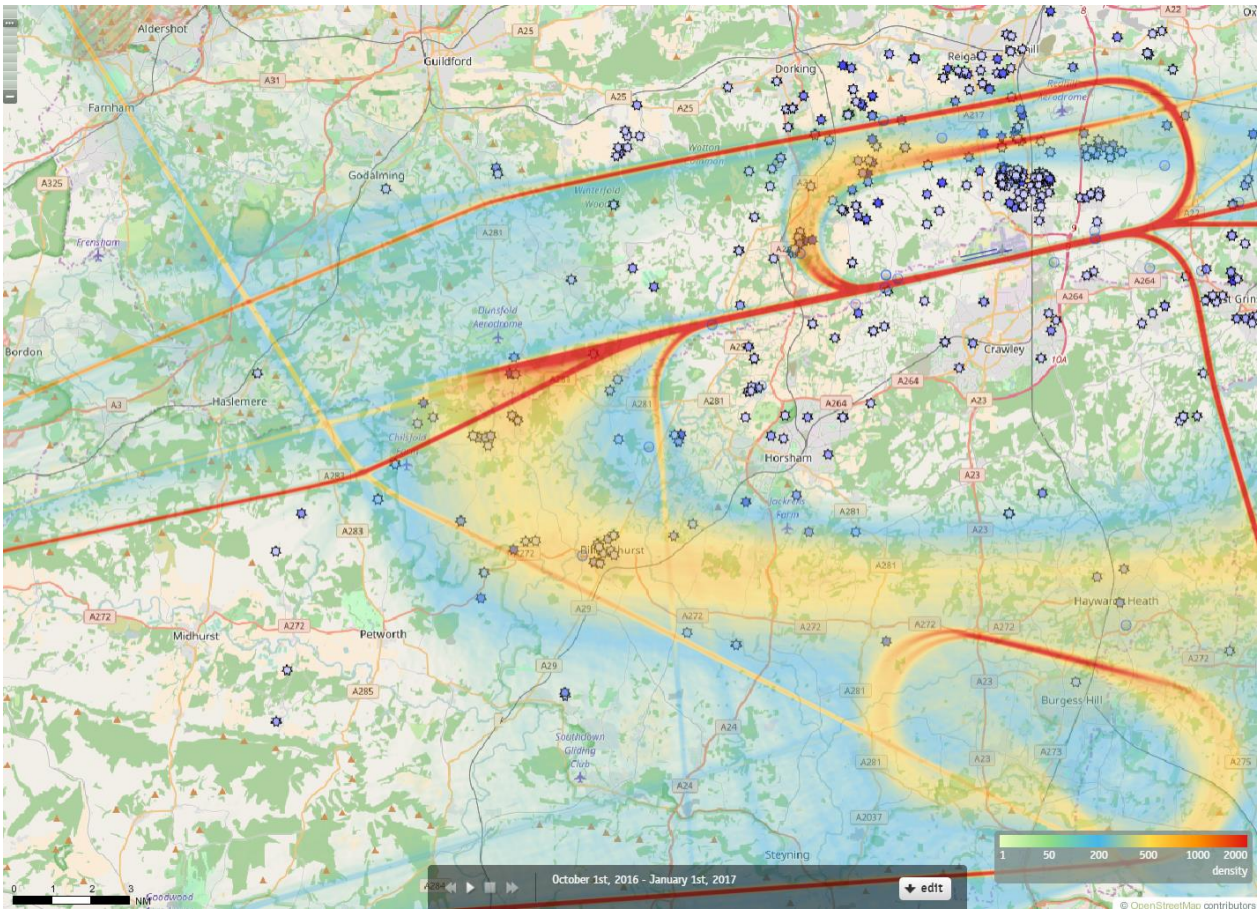
THE MAP BELOW ILLUSTRATES THE LOCATION OF NOISE COMPLAINTS RECEIVED BETWEEN OCTOBER – DECEMBER 2016



THE MAP BELOW ILLUSTRATES NOISE COMPLAINTS RECEIVED TO THE EAST (OCTOBER - DECEMBER 2016)



THE MAP BELOW ILLUSTRATES NOISE COMPLAINTS RECEIVED TO THE WEST (OCTOBER - DECEMBER 2016)



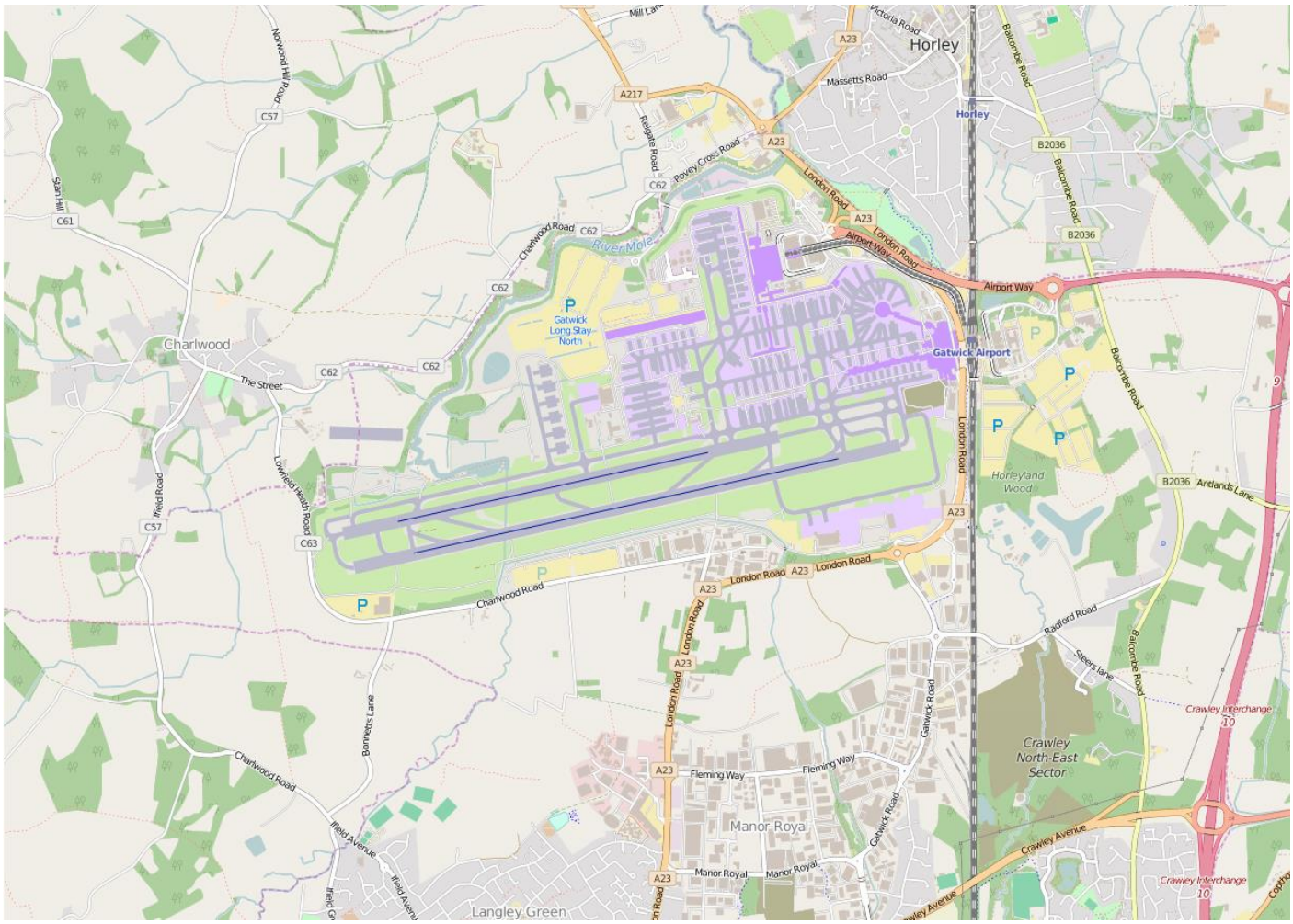
Ground Noise Complaints

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

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