London Gatwick Airspace Office 2022 Annual Report

This report covers the period 1st January – 31st December 2022

LONDON GATWICK

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Introduction and Executive Summary

We are pleased to share the London Gatwick Airspace Office Annual Report for 2022. This comprehensive report encapsulates key metrics related to noise, track keeping, and airfield performance, offering a detailed overview of Gatwick Airport's operational landscape over the year.

The year 2022 marked the commencement of London Gatwick Airport's recovery from the COVID-19 pandemic, as travel restrictions gradually eased. The reopening of the South Terminal in March 2022, witnessed the reinstatement of British Airways short haul operations, along with increased movements from other home carriers such as easyJet and Wizz Air. Noteworthy is the 98% and 236% increase in movements during Quarter 2 and Quarter 3, respectively, compared to the same periods in 2021. The Airline Noise Performance Table reflects this growth, through the inclusion of 13 additional airlines at London Gatwick.

There were 217,524 air traffic movements at London Gatwick in 2022, signifying a substantial 294% increase over 2021 and 76% of the traffic movements in 2019. Correspondingly, passenger numbers exhibited a parallel trend, with 32.9 million passengers passing through the airport in 2022, marking a 522% increase from 2021 and reaching 70% of the 2019 passenger numbers. During the 2022 summer season, 11,099 night flights took place during core hours and 902 have occurred in the 2022/2023 winter season night period to the year end.

The number of noise complaints recorded in 2022 was 16,431 by 664 individual complainants. These figures represent a 224% and 161% increase, respectively, over the complaints received in 2021. However, when compared to the 2019 baseline, there was a 64% reduction in complaints. The number of complaints received has a direct correlation to the increase of air traffic movements London Gatwick has operated in 2022 especially during the summer season build up, as residents start to experience similar to pre-pandemic seasonal traffic variation.

The Airspace Office continued to carefully monitor all aircraft activity, complete the relevant noise abatement compliance reporting, record and monitor noise levels through our network of Noise Monitoring Terminals, provide responses to noise complaints and requests for information, and monitor and report usage of the night flying restrictions applicable to the airport. In addition, the airport continued to implement its Section 106 obligations and selected actions from our Noise Action Plan and support the delivery of the Noise Management Board workplan.

In the summer of 2022, London Gatwick undertook the task of resurfacing the Main Runway, primarily conducted during the night period. This necessitated the use of the Northern Runway for arriving and departing aircraft on selected nights between May and October, contributing to a slight decline of 6.98% compared to 2021 in CDO performance during the core night period.

Annually, the UK's Civil Aviation Authority (CAA) conducts noise exposure contour analysis for London Gatwick. The 2022 report reveals that the airport's day noise footprint (54 dBA Leq) increased, by 158%: from an area of 18.3 km^2 in 2021 to 47.3 km^2 in 2022. It is, however, smaller compared to 2019 (-64%). The number of people living within this area increased to 4,700 people from 1,000. (-48% compared to 2019). Although 2022 had 76% of the traffic movements of 2019, the introduction of newer, more noise and fuel efficient aircraft to the fleet mix has help to reduce noise impacts which is reflected in the decrease in the area and population affected.

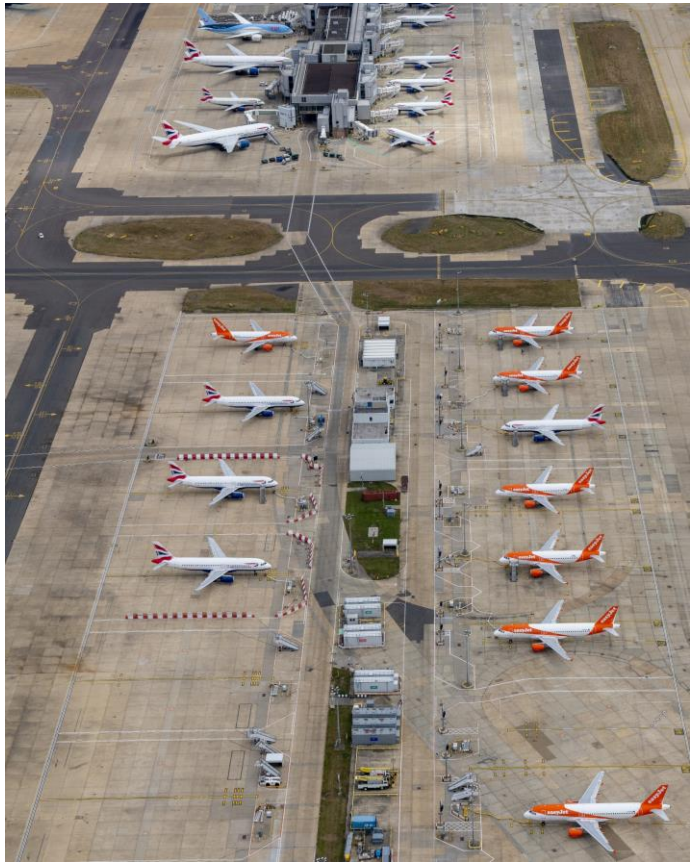
As well as the usual reports and updates to the Noise and Track Monitoring Advisory Group and the Noise Management Board, as air travel started to return the airport noise webpages were updated regularly in order to help local communities understand the levels of aircraft activity expected at London Gatwick.

Kim Heather

Airspace and Noise Programme Manager

About this report

This report is produced by the London Gatwick Airspace Office. 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 team also actively engages with airlines to help improve their adherence to the stipulated noise mitigation measures and in addition manages the night-time restrictions on flying at London Gatwick.
This report contains detailed data on aircraft activity at London Gatwick including the adherence to the noise mitigation measures detailed in the UK AIP, an airline noise performance table, a report on night flying during the period, and an analysis of noise complaints received during the period. Footnotes are explained in the Annex to provide insight into the regulatory basis of the reported figures.



Contents

Performance Summary
Gatwick Key Statistics 2022

- Total passengers: 32.7 million
- Aircraft movements: 217,524
- Total number of aircraft seats: 40.6 million
- Average load factor: 81.1%
- Biggest airline: easyJet carrying 16.5m passengers
- Long haul passengers: 11.8%
- Top destination served: Dublin

Performance Summary

Key Performance Indicators

This section details how the airport is performing according to a suite of Key Performance Indicators (KPIs), the change in traffic numbers over the course of the year and provides information of the types of aircraft and airlines which operate at the airport. The KPIs are in line with the noise mitigation measures set out in the UK Aeronautical Information Publication (AIP).

KPIs	Q1 2022	Q1 2022 vs Q1 2021	Q2 2022	Q2 2022 vs Q2 2021	Q3 2022	Q3 2022 vs Q3 2021	Q4 2022	Q4 2022 vs Q4 2021
Total Aircraft Movements	28,146	↑ 803.27%	62,850	↑ 91.46%	71,382	↑ 235.79%	55,146	↑ 116.40%
Percentage of Chapter 14 Aircraft	56.03%	↓ -13.57%	61.48%	↓ -7.25%	63.54%	↑ 3.94%	64.20%	↑ 10.05%
Percentage of Chapter 4 Aircraft & Above	99.85%	↑ 0.45%	98.78%	↑ 0.07%	99.10%	↓ -0.55%	99.51%	↓ -0.24%
Percentage of Chapter 3 & Below Aircraft	0.01%	↓ -0.59%	0.04%	↓ -0.32%	0.06%	↓ -0.06%	0.06%	↓ -0.01%
Continuous Descent Operations (CDO) Performance	91.73%	↑ 6.53%	87.09%	↓ -0.40%	87.78%	↓ -5.18%	89.83%	↓ -0.77%
Track Keeping Conformance	98.81%	↓ -0.08%	97.45%	↓ -0.20%	97.09%	↓ -0.93%	96.87%	↓ -1.50%
Total Noise Infringements	0	0	0	0	0	0	0	0
Noise Complaints Received	2882	↑ 654.45%	6389	↑ 91.63%	5147	↑ 166.96%	2014	↓ -9.40%
Individual Complainants	105	↑ 118.75%	246	↑ 246.48%	439	↑ 172.67%	110	↑ 6.80%
Enquiry Response Performance Target is 95% Within 8 Days	99.50%	↓ -0.48%	98.62%	↓ -1.38%	95.43%	↑ 16.28%	99.10%	↓ -0.90%

Figure 1: Summary of KPIs

Performance Summary
Key Performance Indicators – five-year view

This KPI table shows the last 5 years of statistics in line with the noise mitigation measures of the UK Aeronautical Information Publication (AIP).

	12 Month Performance								
Parameter	2022	2022 vs 2021	2021	2021 vs 2020	2020	2020 vs 2019	2019	2019 vs 2018	2018
Track Keeping Performance (% On Track)	97.36%	↓ -0.86%	98.20%	↓ -0.29%	98.49%	↑ 0.07%	98.42%	↑ 0.34%	98.08%
24hr CDO (% Achievement)	88.61%	↓ -2.51%	90.89%	↑ 1.45%	89.59%	↑ 0.01%	89.58%	↓ -1.16%	90.74%
Day/Shoulder CDO (% Achievement)	89.19%	↓ -1.92%	90.94%	↑ 1.28%	89.79%	↑ 0.10%	89.70%	↓ -1.10%	90.80%
Core night CDO (% Achievement)	83.83%	↓ -6.93%	90.07%	↑ 5.05%	85.74%	↓ -2.87%	88.27%	↓ -1.76%	90.03%
1000ft Infringements (No.)	0	- N/A	0	- N/A	0	- N/A	0	- N/A	0
Departure Noise Infringements	0	- N/A	0	- N/A	0	↓ -100.00%	0	↑ 100.00%	0
Individual Complainants	664	↑ 161.42%	254	↓ -18.85%	313	↓ -55.16%	698	↓ -16.51%	836
Total Noise Complaints Received	16,431	↑ 224.21%	5,068	↓ -23.54%	6,628	↓ -74.10%	25,593	↑ 4.69%	24,447
Enquiry Response Performance Target is 95% Within 8 Days	99.10%	↓ -0.88%	99.98%	↑ 0.49%	99.49%	↑ 28.16%	77.63%	↓ -22.35%	99.98%
Percentage of Chapter 4 (or equivalent) Aircraft %	99%	- 0.00%	99%	- N/A	99%	↑ 1.02%	98%	↓ -1.00%	99%
Percentage of Chapter 14 Aircraft %	62%	↑ 6.90%	58%	↓ -12.12%	66%	↑ 6.45%	62%	↑ 6.00%	56%
West/East Runway Split (%)	66/34	- N/A	68/32	- N/A	83/17	- N/A	68/32	- N/A	62/38
Total Air Traffic Movements	217,524	↑ 293.89%	55,225	↓ -30.37%	79,310	↓ -72.15%	284,736	↑ 0.29%	283,926

Figure 2: Summary of Annual KPIs

Performance Summary
Comparison to END 2016 Baseline

Parameter	+/-	12 Month Performance Averages[1] 2022	2021	2019	2016	2006
Track Keeping Performance (% On Track)[2]	▼	97.36%	98.20%	98.42%	98.56%	98.17%[3]
24hr CDO (% Achievement)[4]	▼	88.61%	90.89%	89.58%	88.58%	80.79%
Day/Shoulder CDO (% Achievement)	▼	89.19%	90.94%	89.70%	88.18%	79.9%
Core Night CDO (% Achievement)	▼	83.83%	90.07%	88.27%	92.90%	89.6%
1,000ft Infringements (No.)	-	0	0	0	0	11
1,000ft Infringements (No. below 900ft)	-	0	0	0	0	6
Departure Noise Infringements (Day)	-	0	0	1	0	10
Departure Noise Infringements (Night/Shoulder)	-	0	0	0	1	2
Individual Complainants	▲	664	254	698	2,324	587
Total Noise Complaints Received[5]	▲	16,431	5,068	25,593	17,715	4,791
Enquiry Response Performance Target is 95% Within 8 Days	▼	99.10%	99.98%	77.63%	46.55%	-
West/East Runway Split (%)	-	66/34	68/32	68/32	67/33	68/32

Figure 3: Summary of 2022 and 2021 KPIs against the 2016 END Baseline

[1] The colour indicates the most recent 12-month performance compared to the 2016 END Baseline, with green showing improvement and red a decline in performance, the directional arrow indicating performance compared to the previous 12-month performance.

[2] Track keeping statistics measurement changed on the 26th May 2016 due to the Route 4 amendment, all SIDs are now included in the total figure.

[3] This figure did not include deviations from prop types or those due to weather.

[4] 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.

[5] 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. It is important to note that since January 2018, complaints which have been deleted from the NTK system are no longer counted in the complaint statistics when they had been previously. Complaints are only deleted if they contain abusive, obscene or threatening language.

Airline Noise Performance Table

In order to drive continuous improvement and to help showcase airline performance in relation to noise, London Gatwick issues a quarterly Airline Noise Performance Table (ANPT), comparing operators' performance against strategic and operational metrics. This report presents the ANPT for all of 2022. Carriers with an established base at London Gatwick are highlighted in **bold.**

Rank by ATMs	Airline name	Total movements	QC/Seat	Rank (QC)	CDO performance	Rank (CDO)	TK conformance	Rank (TK)
1	**EasyJet**	113,441	0.0017	5	92.19%	4	99.72%	10
2	**British Airways**	20,981	0.00265	22	87.44%	8	99.66%	10
3	**TUI Airways**	13,345	0.00224	14	87.57%	7	99.66%	10
4	Vueling	13,108	0.00188	8	87.14%	9	99.59%	10
5	Norwegian	9,716	0.00366	25	90.35%	6	99.69%	10
6	Ryanair	7,266	0.00257	20	98.46%	1	99.82%	9
7	WizzAir Hungary	5,599	0.00167	4	63.48%	24	99.47%	10
8	**WizzAir UK**	4,255	0.00157	3	84.05%	12	99.31%	10
9	Aurigny	3,702	0.00229	17	96.76%	2	99.68%	10
10	Aer Lingus	3,530	0.00216	11	83.34%	13	99.71%	10
11	Turkish Airlines	2452	0.00215	10	86.38%	11	99.54%	10
12	TAP Portugal	2320	0.00217	13	78.62%	16	99.74%	10
13	Emirates	1492	0.00249	19	78.28%	18	100.00%	1
14	Air Europa	1458	0.00344	24	69.82%	20	100.00%	1
15	Air Baltic	1438	0.0013	2	82.20%	14	100.00%	1
16	Eastern Airways	1379	0.0018	7	65.22%	23	99.56%	10
17	Air Transat	1156	0.00229	16	86.85%	10	100.00%	1
18	JetBlue	1144	0.00225	15	69.76%	21	99.81%	10
19	WestJet	981	0.00191	9	75.76%	19	99.26%	10
20	Iberia Airlines	907	0.00217	12	78.59%	17	99.78%	10
21	SunExpress	644	0.00245	18	58.07%	25	100.00%	1
22	Corendon Airlines	576	0.00258	21	68.40%	22	100.00%	1
23	Norse Altlantic Airways	566	0.00111	1	92.93%	3	100.00%	1
24	Royal Air Maroc	544	0.00321	23	81.62%	15	100.00%	1
25	Icelandair	528	0.00172	6	91.67%	5	99.08%	10

Figure 4: Airline Noise Performance Table

Airlines are ranked by number of flights. The ranking within each metric is presented. The threshold for inclusion is an average of 10 movements per week.

There are an additional 13 airlines in the 2022 ANPT compared to the 2021. This is a result of carriers returning to the airport following the reopening of the South Terminal in March and the increase in traffic movements following the COVID-19 pandemic.
The Airspace Office conducted 12 airline engagement meetings where metrics included on this table were discussed as part of a conversation to help drive improvements with our airlines.

* Route 4 Track-Keeping performance is excluded from performance table.

Airline Noise Performance Table – Methodology Statement

This page describes the methodology used to calculate the three metrics that form the Airline Noise Performance Table (ANPT) and explains some of the key terms.

Noise Quota Count (QC) per Seat

This metric assesses the average Quota Count (QC) per seat per flight. Individual aircraft have a defined QC value for arrival and departure, which is determined by the Effective Perceived Noise Level (EPNdB) stated on its noise certificate and may be affected by the type of engines used, certified Maximum Take-Off Weight (MTOW) and any applicable noise modifications (e.g. landing gear plugs for B787). QC/seat is a strategic metric as it can only improve in the longer term when airlines change their fleet mix, introduce newer aircraft types, or modify existing aircraft to reduce their noise impact.

Airlines operating modern and quieter aircraft will have a lower QC/seat score. For example, a typical A320 has a QC value of 0.25 for arrival and 0.5 for departure and a typical number of seats would be around 180, although this may vary between airlines. Therefore, an A320 would normally have an average QC/seat score = (0.25 + 0.5) / (180 * 2) = **0.00208**, as each rotation of the aircraft requires one arrival and one departure. For comparison, an A320 NEO would typically have an arrival and departure QC equal to 0.125, which reflects the fact that it is much quieter than its predecessors within A320 family, but the number of seats is roughly the same. An A320 NEO's QC/seat score would therefore be = (0.125 + 0.125) / (180 * 2) = **0.00069**.

Continuous Descent Operations (CDO) Performance

CDO performance is the first operational metric in the ANPT and relates to the vertical profiles flown during arrival. CDO performance is equal to the proportion of arrivals that meet the criteria for CDO, i.e. no level segment longer than 2.5 nautical miles below the altitude of 7,000ft. Continuous descent approaches reduce the noise impact because they require lower engine thrust and the aircraft stays higher for longer. The airport-wide CDO performance is also presented separately in this report.

RAG definition: **Green ≥ 85%** **70% ≤ Amber < 85%** **Red < 70%**

Track Keeping (TK) Performance

Track keeping performance is the second operational metric in the ANPT and applies to the lateral departure track. All departures are required to stay within the Noise Preferential Routes (NPRs) defined by the Department for Transport to avoid more densely populated areas. Track keeping performance is equal to proportion of departures that stay within the NPRs until they reach an altitude of 3,000ft or 4,000ft depending on the route. Note that the Route 4 NPR has been excluded from the ANPT statistics for the time being due to the more challenging flyability and its inclusion would unfairly penalise airlines with higher proportion of Route 4 departures. Track keeping performance at airport level is also presented separately in this report.

RAG definition: **Green ≥ 95%** **90% ≤ Amber < 95%** **Red < 90%**

Airlines with CDO or Track keeping performance in the red or amber range will be considered as priority for engagement and we will work with them to improve their operational performance.

Airport and Runway Statistics

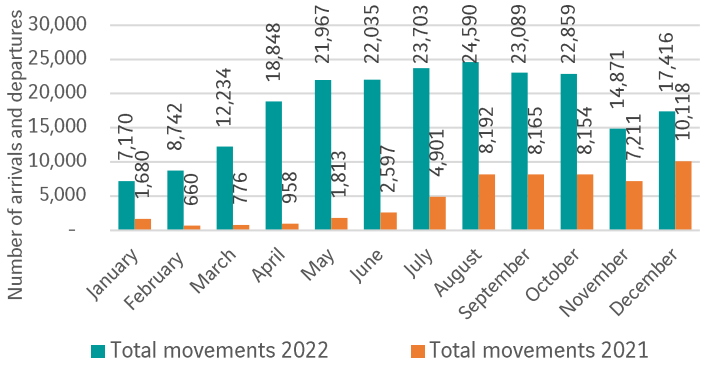


Figure 5: Comparison of arrival and departure numbers over the past two years

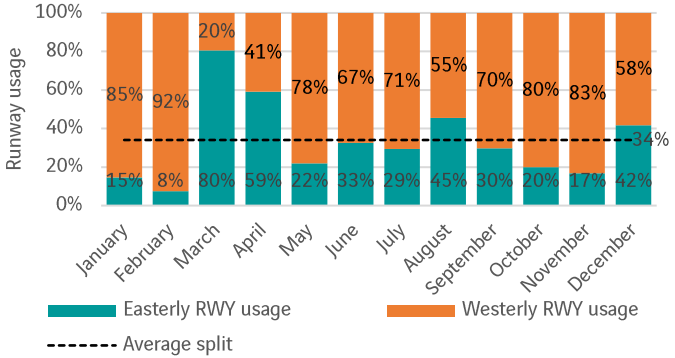


Figure 6: Comparison of easterly and westerly runway usage

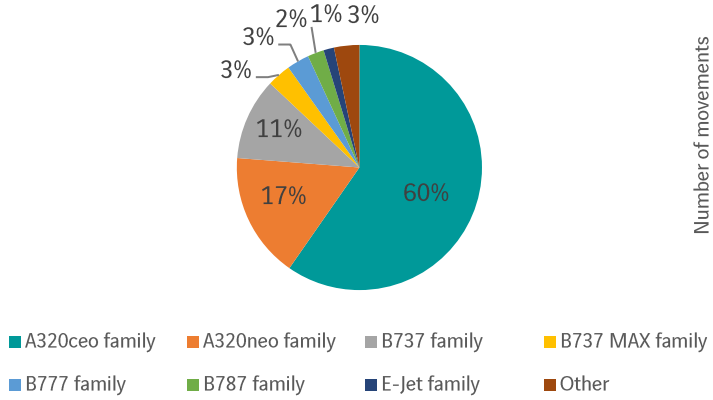


Figure 7: Aircraft fleet mix

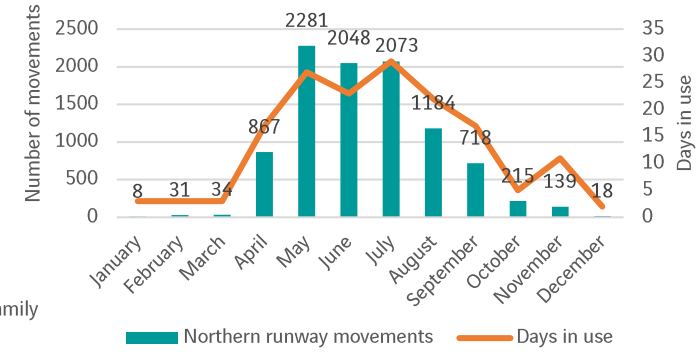


Figure 8: Northern runway usage

The lifting of travel restrictions resulted in more movements in the first quarter of 2022 compared to 2021 (Figure 5). The South Terminal reopening at the end of March 2022 saw an increase of ~6500 movements in April which continued into the summer months.

Prevailing meteorological conditions at London Gatwick means more frequent use of westerly operations, with an average use of 66% in 2022.

New generation aircraft such as A320Neo and B737 Max are included in the fleet mix for the first time in 2022 (Figure 7). Combined the A320 family at 77% continues to be the most common type of aircraft used in 2022, which is an increase of 6% from 2021.

Resurfacing works on the Main Runway during the summer and into the autumn led to the Northern Runway being used for more days during these months than in the winter period.

Movements by Aircraft Type

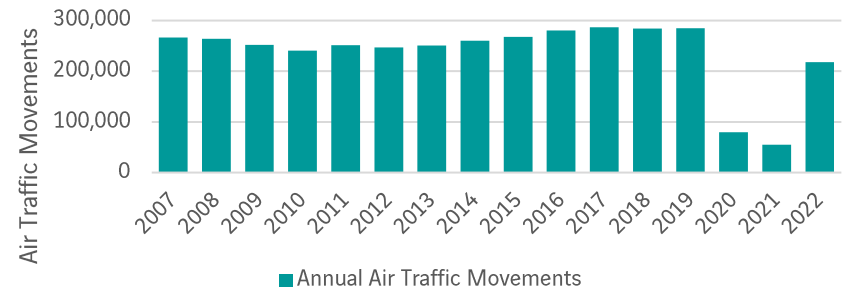


Figure 9: Annual Air Traffic Movements 2007-2022

Figure 9 shows the annual air traffic movements since 2007. A breakdown by different aircraft types is presented in Figure 10. 2022 saw a 294% increase in traffic movements compared to 2021 as the airport started to return to slightly below pre-pandemic levels from mid-summer season.

The largest percentage change in aircraft type was the Airbus A380 which returned to a regular service in December 2021. Narrow body aircraft (A320s, A321s and B737s) saw a higher percentage increase than widebody aircraft (B757, B777 and B787) as short haul travel recovered at a faster pace than long haul during 2022.

Smaller aircraft and business jets saw a slower increase or decline in movements as the airport return to more airline-based operations, with the exception being Embraer 135/145 and Embraer 190/195 being used on more domestic routes. Newer generation aircraft usage increased by a combined ~342%, these replace noisier and less fuel-efficient aircraft.

Aircraft Type	2022	2021	Percent +/-
Airbus A220 (Bombardier C-Series)	1618	1,049	54.24%
Airbus A310	2	2	0.00%
Airbus A319	46479	10,141	358.33%
Airbus A320 Ceo	79502	17,256	360.72%
Airbus A320 Neo	15278	7,230	111.31%
Airbus A321	3827	490	681.02%
Airbus A321 Neo	20742	3,905	431.17%
Airbus A330	448	82	446.34%
Airbus A340	8	4	100.00%
Airbus A350	18	4	350.00%
Airbus A380	1202	44	2631.82%
ATR 42/72	3008	257	1070.43%
BAe 146/Avro RJ	27	74	-63.51%
Beech B200	8	42	-80.95%
Boeing 737	23478	7,367	218.69%
Being 737 MAX	6835	1,399	388.56%
Boeing 747	2	2	0.00%
Boeing 757	309	156	98.08%
Boeing 767	172	94	82.98%
Boeing 777	6420	1,905	237.01%
Boeing 787	4705	1,703	176.28%
Bombardier Learjet	28	30	-6.67%
Cessna Citation/Challenger	94	116	-18.97%
Dassault Falcon	48	56	-14.29%
Embraer 135/145	34	26	30.77%
Embraer 170/175	0	12	-100.00%
Embraer 190/195	3003	1,563	92.13%
Embraer Phenom/Legacy	18	16	12.50%
Gulfstream	79	48	64.58%
Other Jet Aircraft	73	94	-22.34%
Other Propeller Aircraft	59	58	1.72%
Total	217,524	55,225	293.89%

Figure 10: Movements by Aircraft Type 2022 vs 2021

Westerly Operations

These charts depict aircraft tracks (Figure 11) and track density (Figure 12) on the busiest day of westerly operations in 2022. Westerly operations means that aircraft will depart towards the west and arrive from the east (see Annex F for more information on westerly operations).

The frequency and altitude of overflight over different locations depends on the weather, the destination/origin of the flights and the traffic volumes at the airport and the surrounding airspace. Flights to and from London Gatwick need to be integrated with traffic to and from other airports in the London Terminal Manoeuvring Area (LTMA).

During westerly operations, aircraft will arrive over East Sussex, Surrey and west Kent and depart over areas in Surrey, West Sussex and west Kent meaning that certain settlements in these areas will be overflown by Gatwick traffic.

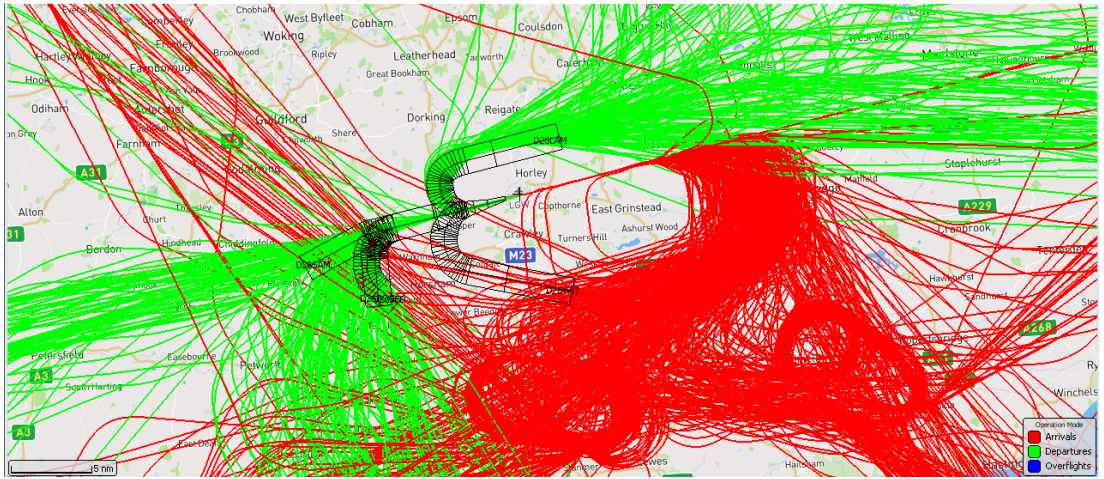


Figure 11: Westerly Operations Arrival and Departure Tracks

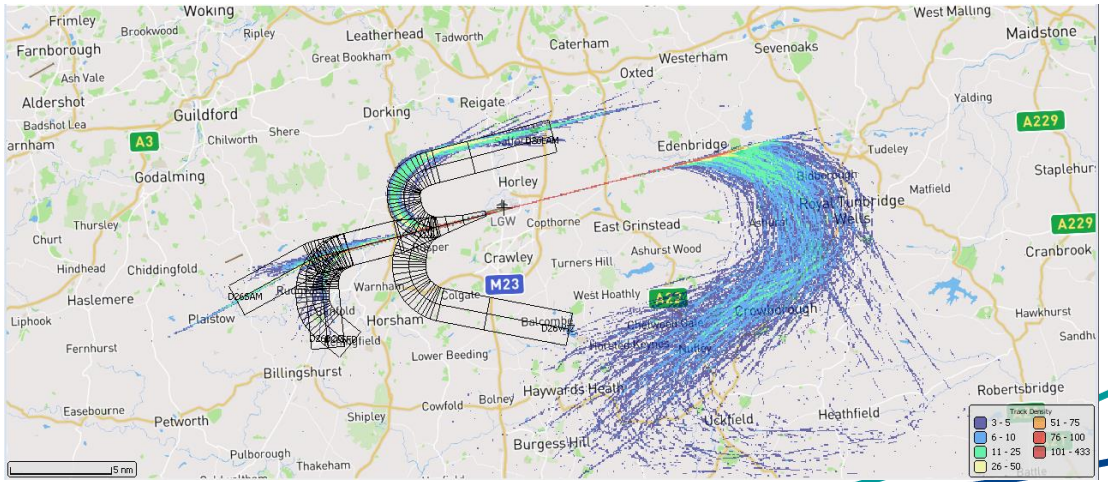


Figure 12: Westerly Operations Track Density

Easterly Operations

These charts depict aircraft tracks (Figure 13) and track density (Figure 14) on the busiest day of easterly operations in 2022. Easterly operations means that aircraft will depart towards the east and arrive from the west (see Annex F for more information on easterly operations).

The frequency and altitude of overflight over different locations depends on the weather, the destination/origin of the flights and the traffic volumes at the airport and the surrounding airspace. Flights to and from London Gatwick need to be integrated with traffic to and from other airports in the London Terminal Manoeuvring Area.

During easterly operations, aircraft will arrive over East and West Sussex, Surrey and West Kent and depart over areas in Surrey, East Sussex and West Kent meaning that certain settlements in these areas will be overflown by Gatwick traffic.

Aircraft arriving from the north-west or south may be directed straight onto the final approach, leading to a less concentrated arrival swathe.

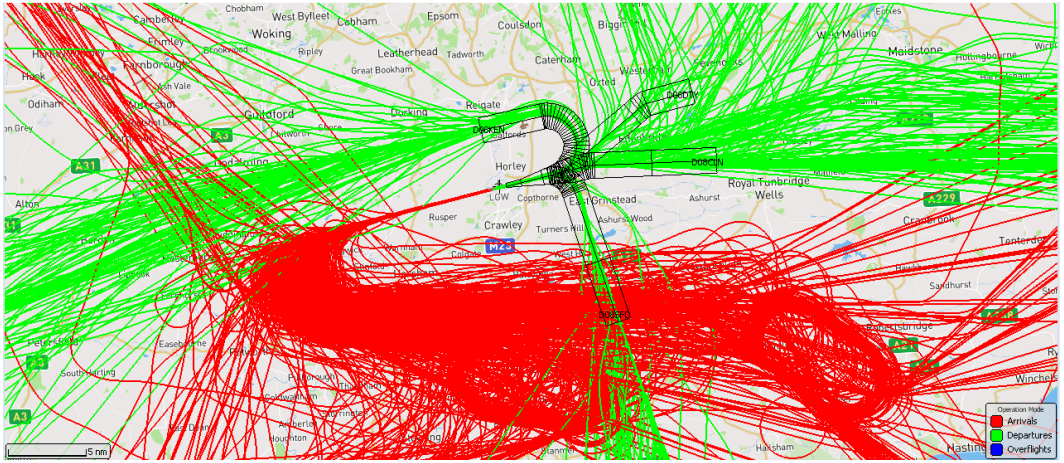


Figure 13: Easterly Operations Arrival and Departure Tracks

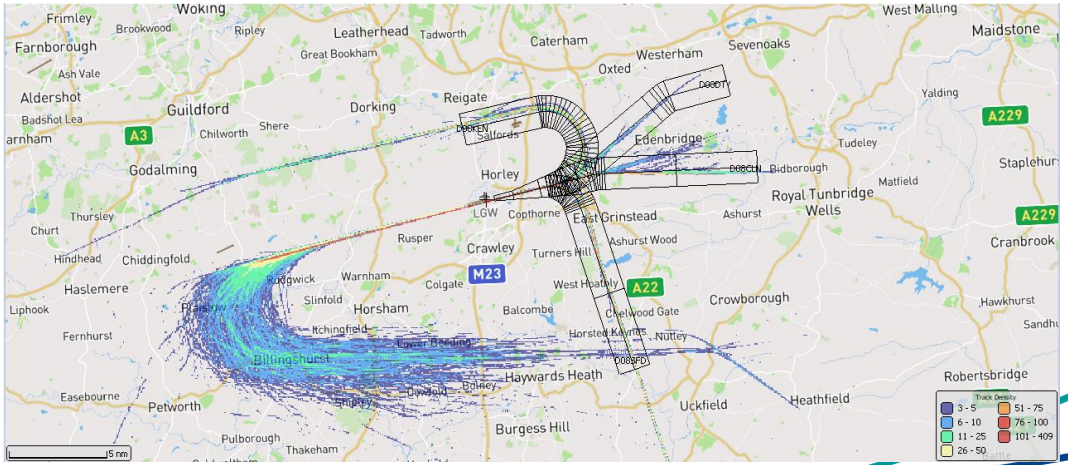


Figure 14: Easterly Operations Track Density

Arrivals Statistics – Continuous Descent Operations[1]

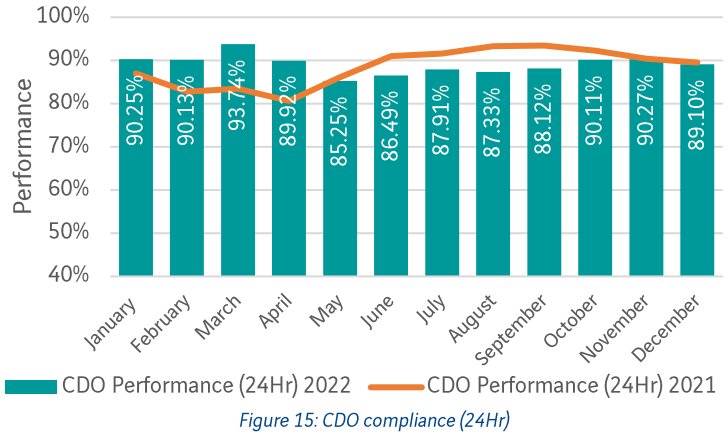


Figure 15: CDO compliance (24Hr)

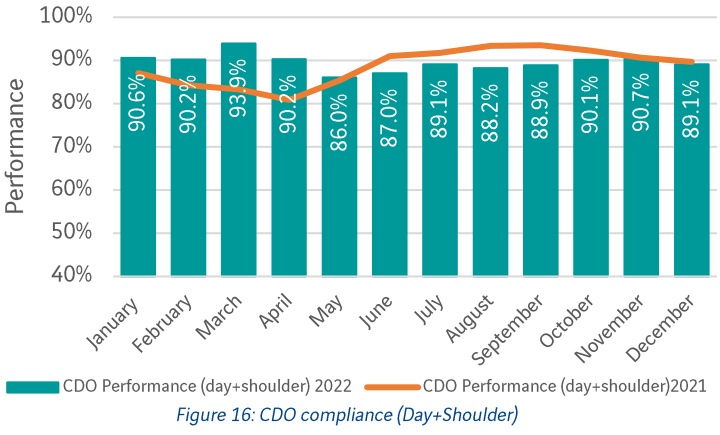


Figure 16: CDO compliance (Day+Shoulder)

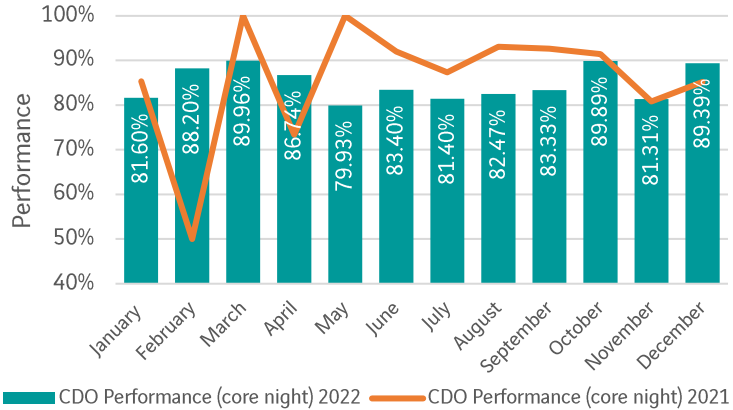


Figure 17: CDO compliance (Core Night)

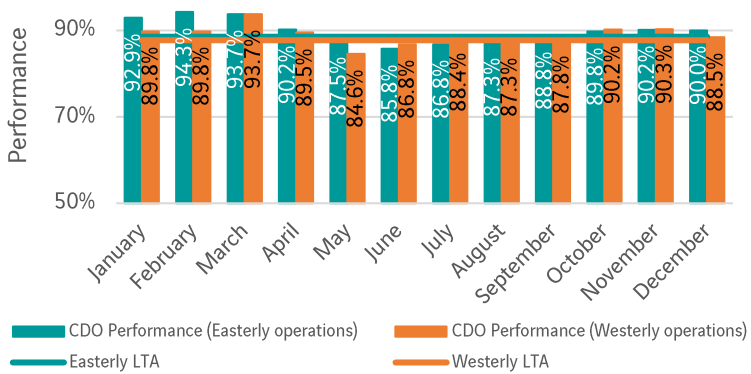


Figure 18: CDO compliance per runway

CDO performance in January – April 2022 was better maintained in 2022 than 2021 across the 24hr hour period (Figure 15) despite this being affected by adverse weather conditions.

During the core night period, CDO performance (Figure 17) fell below 2021 which continued during the summer season. This would be expected with the busier night-time operations and new airlines starting /returning to the airport during this period, taking time to adjust to airports topography and arrival procedures.

Westerly operation CDO performance remained in line or above with the westerly long-term average (LTA) apart from in May 2022 (Figure 18). Both easterly and westerly operations returned to above their respective LTAs in Q4 2022.

Arrivals Statistics – Go-Arounds

A go-around is a safety procedure adopted when an arriving aircraft on final approach aborts landing by applying take off power and climbing away from the airport. It is a set procedure to be followed by the flight crew in the event of an aircraft being unable to land. The procedure is published so that ATC and the pilots can anticipate where the aircraft will go following the decision to go-around.
The standard missed approach procedure applicable to London Gatwick requires a go-around aircraft to climb straight ahead to 3,000ft, 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.

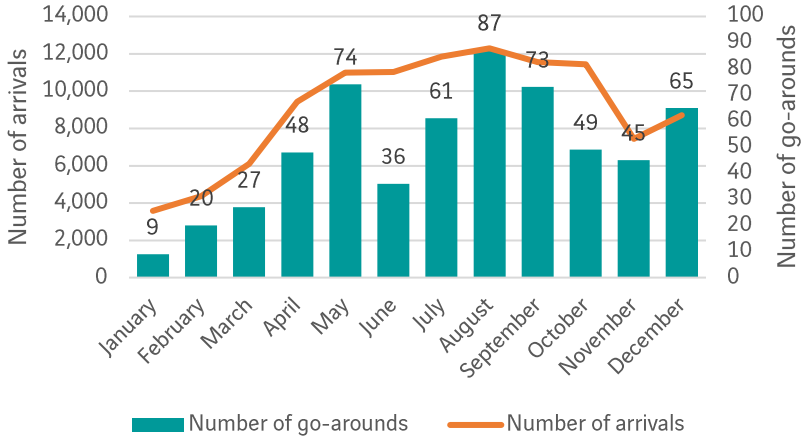


Figure 19: Number of arrivals and go-arounds

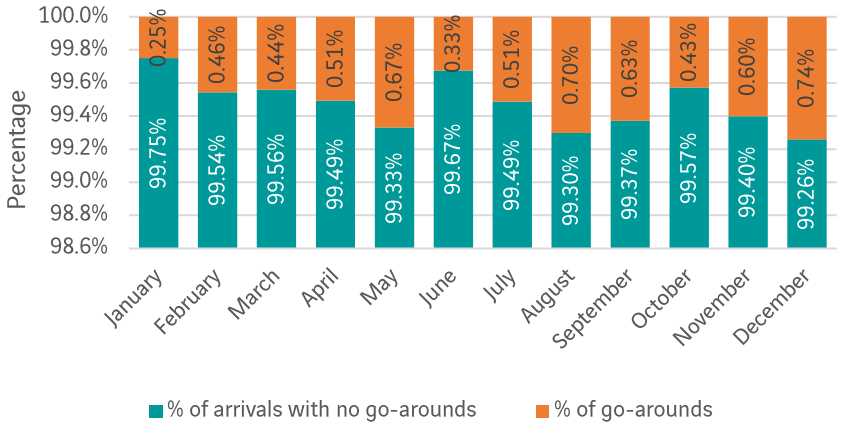


Figure 20: Ratio of go-arounds

Arrivals Statistics – Go-Arounds

The causes for go-arounds are recorded by controllers in the ATC Tower and provide an insight into the operational situations causing them to happen. The top three reasons in Figure 21 (left) are Operation reasons (airport), unstable approach and an occupied runway. The latter may be caused by a range of reasons as broken down in Figure 21 (right).
The number of go arounds general increased with the increase of traffic movements per month into the summer season, with the most occurring in August 2022.

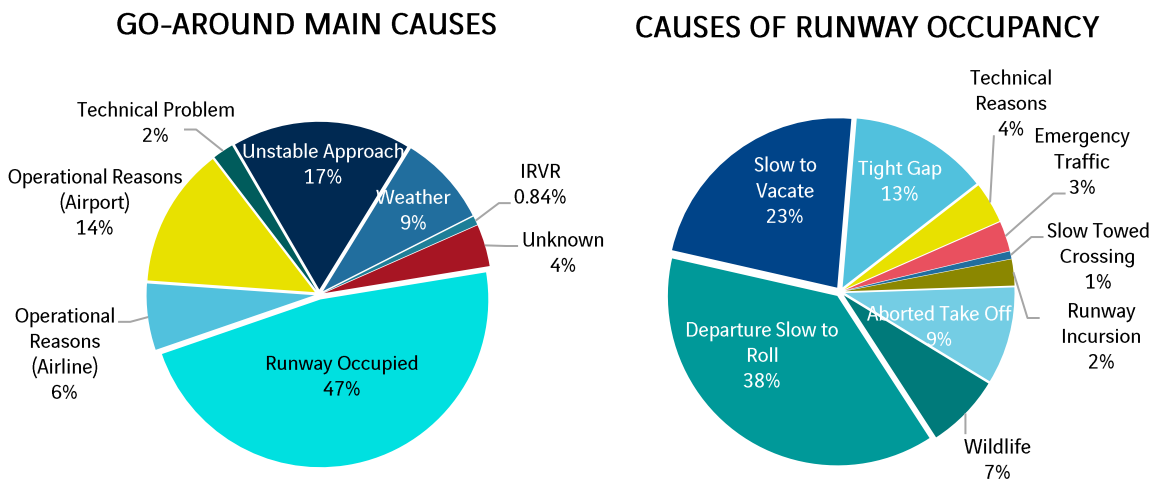


Figure 21: Reasons for go-arounds in 2022

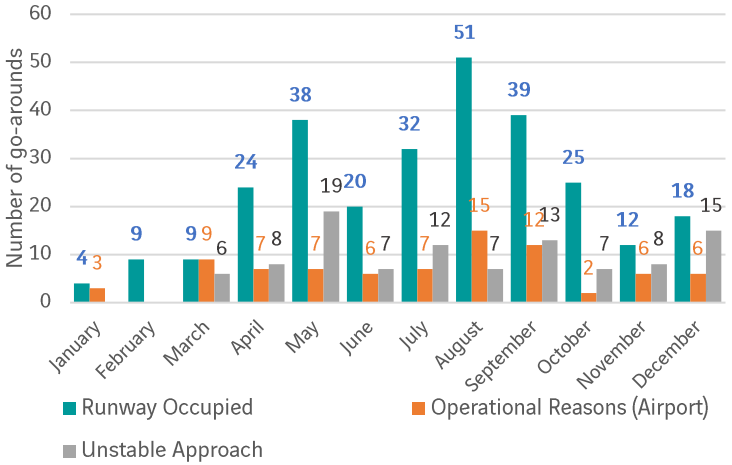


Figure 22: Number of main reasons for go-arounds per month

Arrivals Statistics – Joining Point[2]

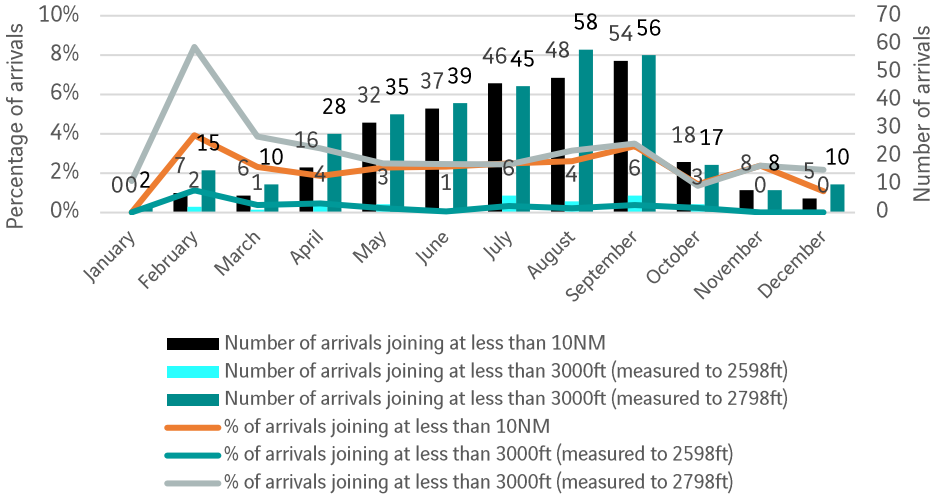


Figure 23: Night time joining point violations[2]

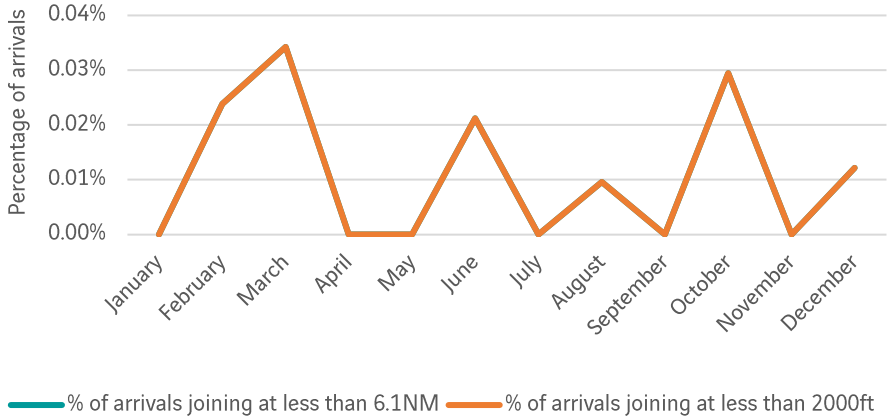


Figure 24: Day time joining point violations

As per the AIP rule, aircraft shall not join the ILS at less than 10NM from touchdown or below 3,000ft at night. Figure 23 shows the percentage of arrivals violating this rule.

During the day, the DfT noise abatement procedures stipulate that arrivals shall not descend below 2,000ft before intercepting the ILS glidepath; this equates to 6.1NM from touchdown. We continually monitor this for conformance, as shown in Figure 24, and infringements are followed up with the airline and NATS for feedback on the event to prevent future infringements. Helicopters and calibration flights are excluded from this requirement. For detail on the monitoring of the arrivals swathe see Annex C.

Joining point distance is measured from the approximate touchdown point abeam the Precision Approach Path Indicator (PAPI) lights.

Joining point altitude is assessed through the Noise & Track Keeping system, see Annex B Note 2.

Arrivals Statistics – Joining Point

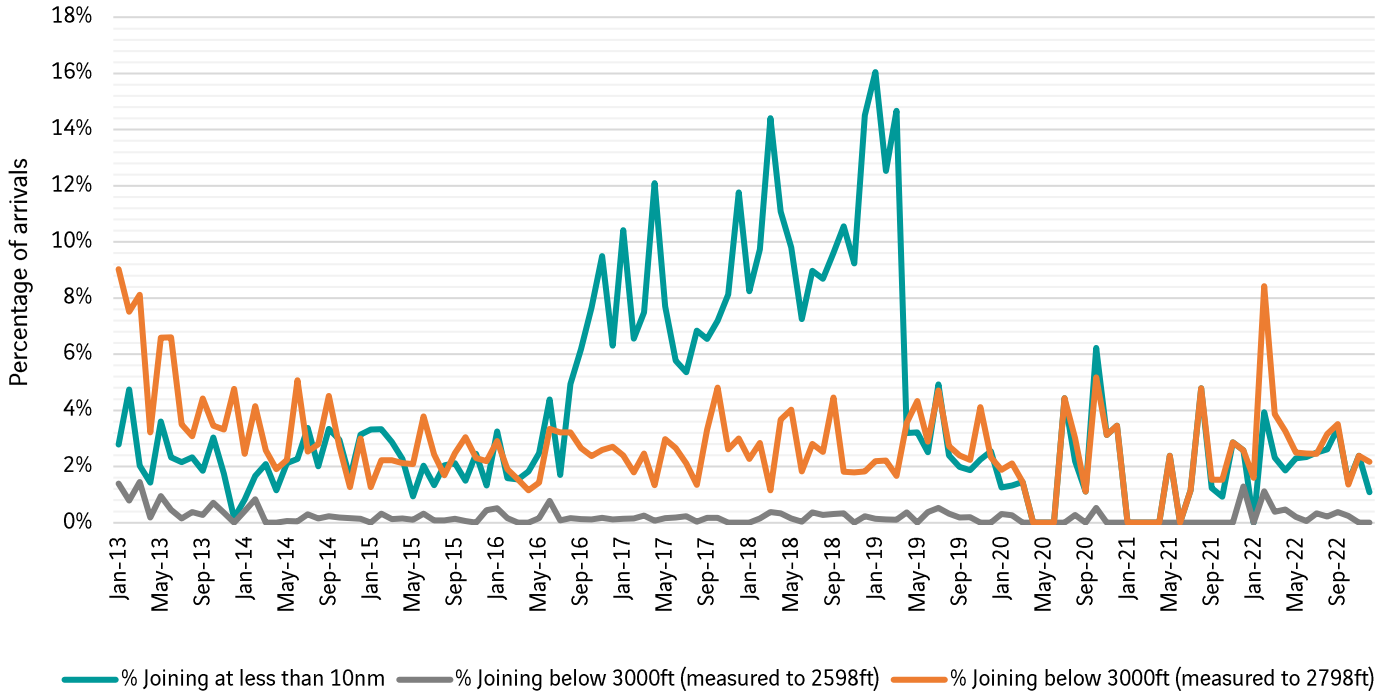


Figure 25: Night-time joining point violations (past 10 years)

Figure 25 shows the last 10 years of ILS joining point data for night arrivals.

The daytime joining point was altered in August 2016 which meant that aircraft could join between 8NM and 14NM, allowing for a wider distribution of arrivals. As a knock-on effect, more arrivals at night joined at just below 10NM.

Upon upgrading the NTK system in April 2019, the analytic process was updated and independently verified, leading to the observed decline in Figure 25.

The Airspace Office continues to monitor this data and are in regular contact with NATS to identify reasons for infringements.

Arrivals Statistics – Overflight[3]

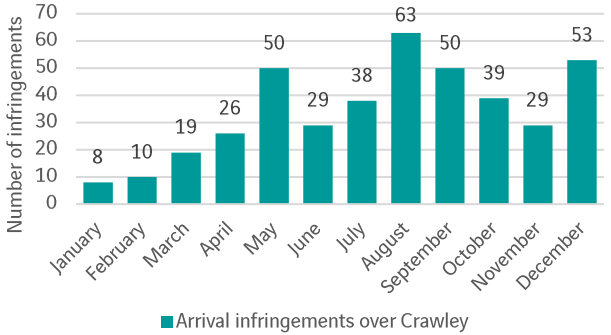


Figure 26: Arrival infringements over Crawley

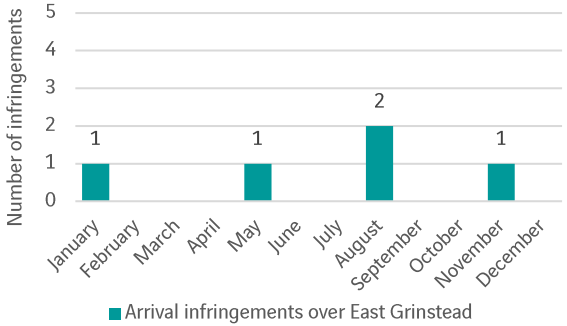


Figure 27: Arrival infringements over East Grinstead

The Gatwick AIP does not allow arriving aircraft to pass over the congested areas of Crawley, East Grinstead, Horley or Horsham below the altitude of 3,000ft or Lingfield below 2,000ft.

The infringements shown in Figure 26, 27 & 29 were all caused by go-arounds.

The Lingfield infringements in Figure 30 were due to one incident during pilot instrument training, one incident due to SRA approach (controller training) and one occurrence due to pilot error.

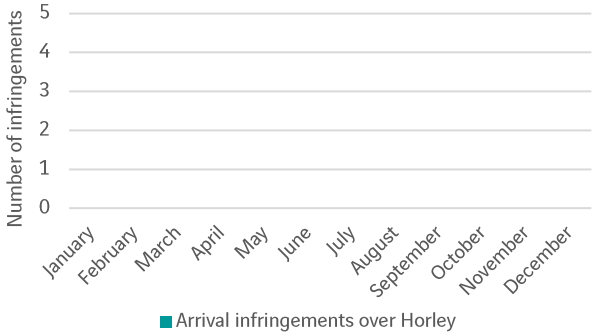


Figure 28: Arrival infringements over Horley

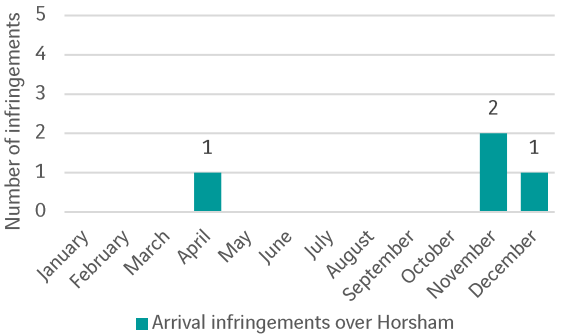


Figure 29: Arrival infringements over Horsham

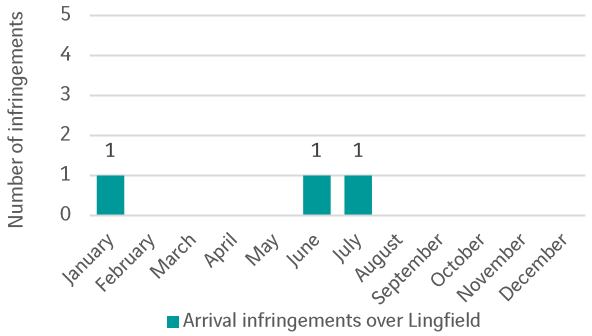


Figure 30: Arrival infringements over Lingfield

Departures

Noise Preferential Routes (NPRs)

Aircraft departing London Gatwick are required to follow specific departure flight paths for the initial stages of flight called Noise Preferential Routes (NPRs). The nine NPRs at Gatwick were designed and set by the DfT to avoid overflight of built-up areas where possible. NPRs provide volumes of pre-defined airspace within which Standard Instrument Departure (SID) routes are established where aircraft must follow on departure from an aerodrome and so provide certainty as to which areas will be exposed to aircraft activity.

An NPR consists of a 'centreline', where SIDs follow, and an associated compliance monitoring swathe, which is 3km wide, i.e. 1.5km either side of the NPR centreline. These NPRs are mapped in Figure 34, together with minimum vectoring altitudes. As long as aircraft remain within the corridor boundaries up to the minimum vectoring altitude, they are deemed to be on-track. A map illustrating the Noise Preferential Routes is also available from www.gatwickairport.com/noise.

Air Traffic Control (ATC) is responsible for the routeing of aircraft once they are airborne and each departure will be assigned a route to follow, however once aircraft reach a minimum vectoring altitude of 4,000ft (or 3,000ft dependent on departure route and time) at any point along an NPR, they may be vectored off the route by ATC onto more direct headings to their destinations.

There are also occasions when ATC direct aircraft off from NPRs for safety reasons, such as to avoid adverse weather conditions along the intended route or to maintain safe separation from other traffic.

Aircraft that leave the NPR below the required minimum altitude are classified as track deviations. Track keeping performance at London Gatwick is generally very good, however the westerly wrap around route designated as 26LAM / Route 4 consistently presents a challenge for modern aircraft to fly; this tight turn was designed in 1968 when very different types of aircraft types were in operation. Flights off-track below the required height are automatically flagged to the Airspace Office and details are sent to the airline for investigation. Our Flight Operations Performance & Safety Committee (FLOPSC) regularly reviews track keeping performance. Our track keeping performance is detailed on the following pages.

Departure Statistics – Track Keeping

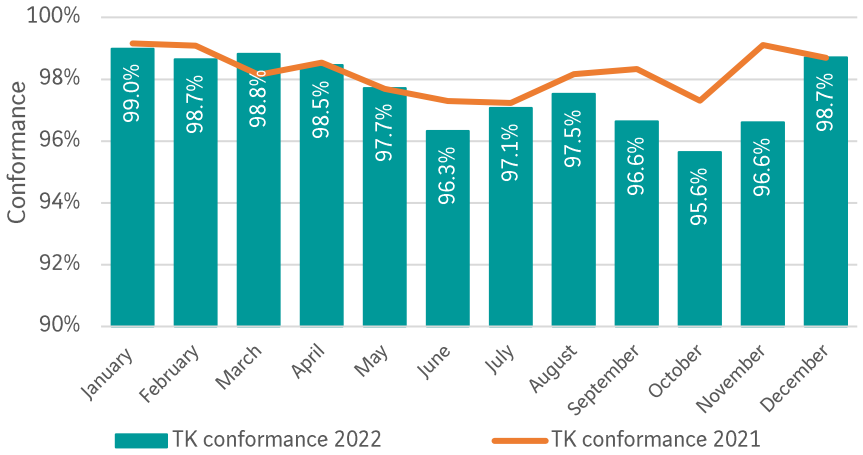


Figure 31: TK conformance (24Hr)

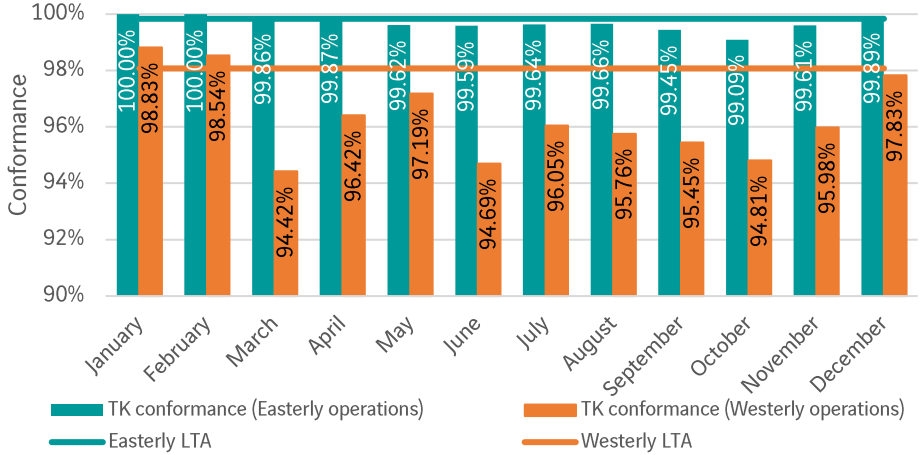


Figure 32: TK conformance per runway

Track Keeping conformance in 2022 followed a similar trend to that seen in 2021 with the conformance slightly decreasing in May – July due to new airlines starting / returning to the airport in the summer period. The decrease in conformance in October and November was due to weather avoidance. Overall, the track keeping conformance across the year remained high at above 95% as shown in Figure 31.

In 2022, easterly operations track keeping conformance remained 99% and above. Westerly operations are affected by the flyability issues with Route 4 monitoring swathe; however, the track conformance was still at 94% and above in 2022. There is an ongoing Airspace Change Process which will improve the conformance on Route 4 once implemented.

Departure Statistics – Track Keeping in 2022

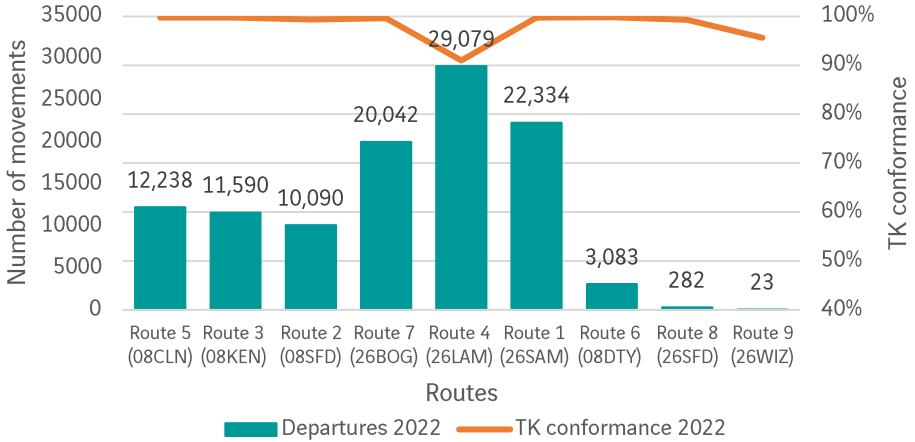


Figure 33: Track keeping and route usage

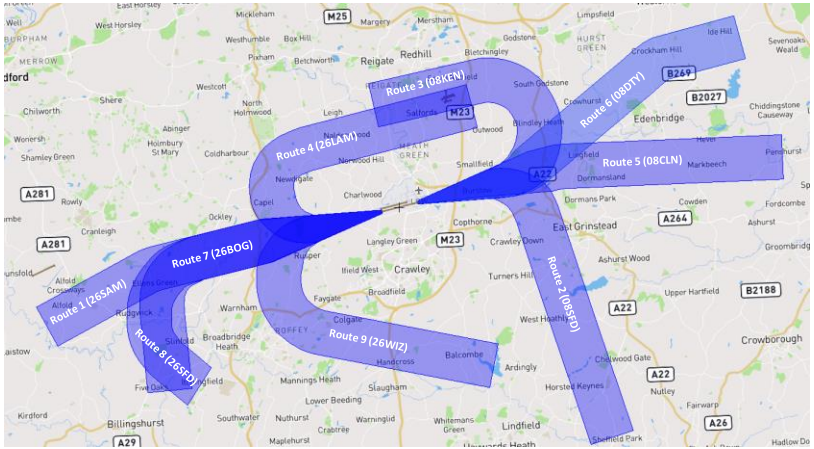


Figure 34: Noise Preferential Routes for departures

Figure 33 shows that the most frequently utilised routes during 2022 were 26LAM / Route 4, 26SAM / Route 1 and 26BOG / Route 7. Track keeping was above 99% for all routes, except Route 4 (94.2%) and Route 9 (93.3%), although only 23 departures have used Route 9 (mostly due to weather avoidance).

Figure 34 shows a map of all nine noise preferential routes for departures in use at London Gatwick. The table to the right lists the altitudes up to which aircraft are required to remain within the conformance monitoring swathe of the respective Noise Preferential Route. Once above the minimum vectoring altitude, Air Traffic Control may give them vectors to direct them onto a more direct path towards their destination.

Although Figure 33 shows relatively low usage of 26WIZ / Route 9, especially compared to other departure routes at London Gatwick, it is important to note this route option still exists as a tactical offload route and increased future usage of this route would not be atypical or a change to the airport's existing operation.

Route	Minimum vectoring altitude
Route 1 (26SAM)	3,000 ft
Route 2 (08SFD)	4,000 ft
Route 3 (08KEN)	3,000 ft
Route 4 (26LAM)	4,000 ft
Route 5 (08CLN)	3,000 ft
Route 6 (08DTY)	3,000 ft
Route 7 (26BOG)	4,000 ft
Route 8 (26SFD)	3,000 ft
Route 9 (26WIZ)	4,000 ft

Departure Statistics – Noise, Climb and Overflight

There were no departure noise infringements in 2022.

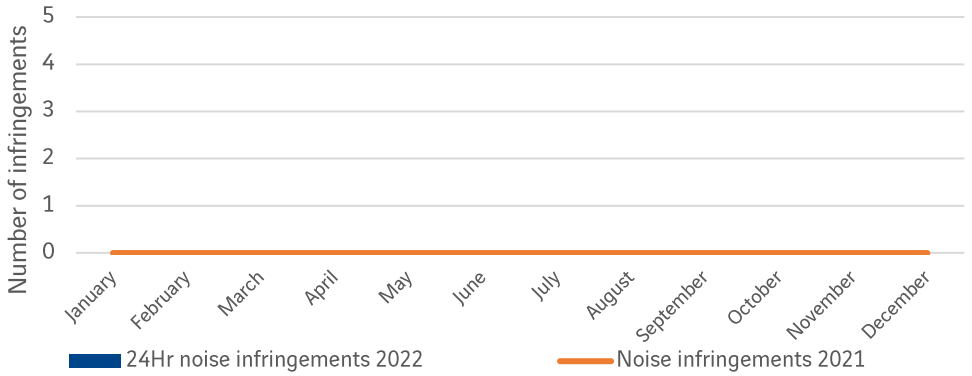


Figure 35: 24H Noise Infringements[5]

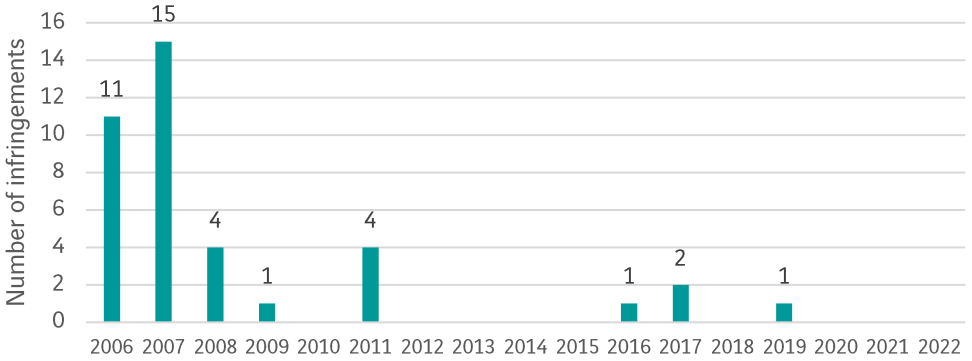


Figure 36: Historic Noise Infringements[5]

Departure Statistics – Noise, Climb and Overflight

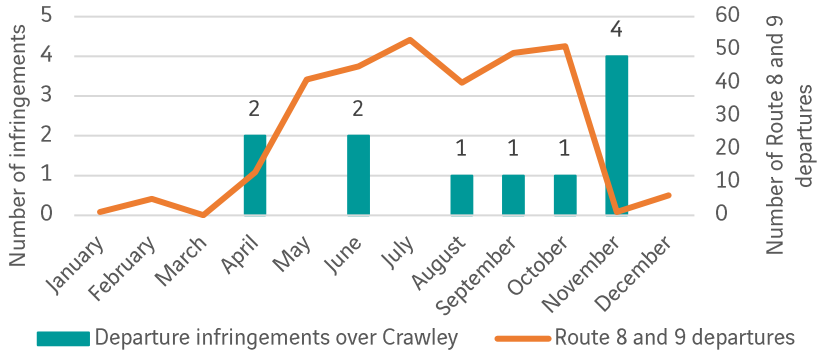


Figure 37: Departure overflight infringements over Crawley[4]

The departure infringements over Crawley in 2022 (Figure 37) are all related to weather avoidance which is a safety procedure. This graph does not include go-arounds which are exempt from this rule.

Figure 38 shows the number of departures overflying Horley in 2022, with the relative spike in July due to ATC misjudgements when vectoring aircraft. Although the number of these occurrences are relatively low compared to the number of departures using Routes 3 and 4, the Airspace Office continues to work closely with NATS to further reduce the number of these infringements over the town.

Figure 39 shows that there have been no 1,000ft departure noise infringements during the year.

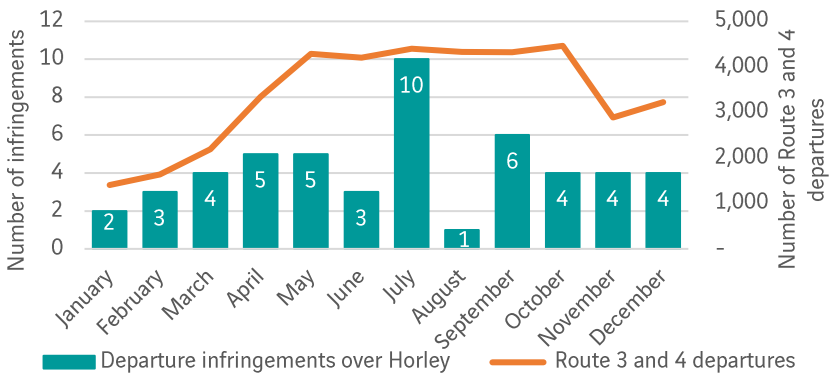


Figure 38: Departure overflight infringement over Horley[4]

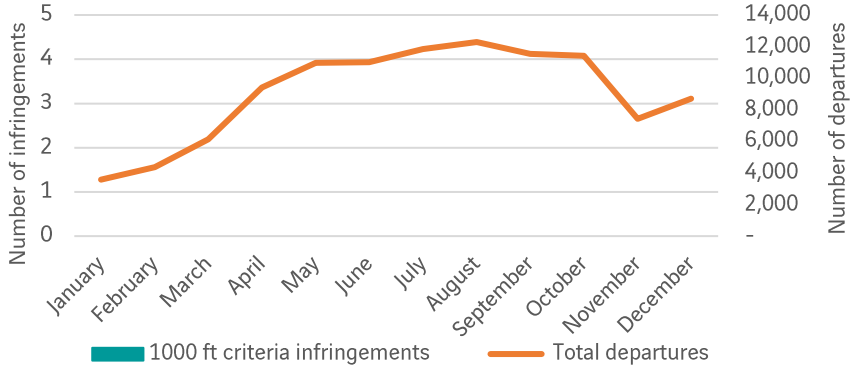


Figure 39: Number of aircraft not meeting the required climb performance[5]

Night Operations – Summer Season

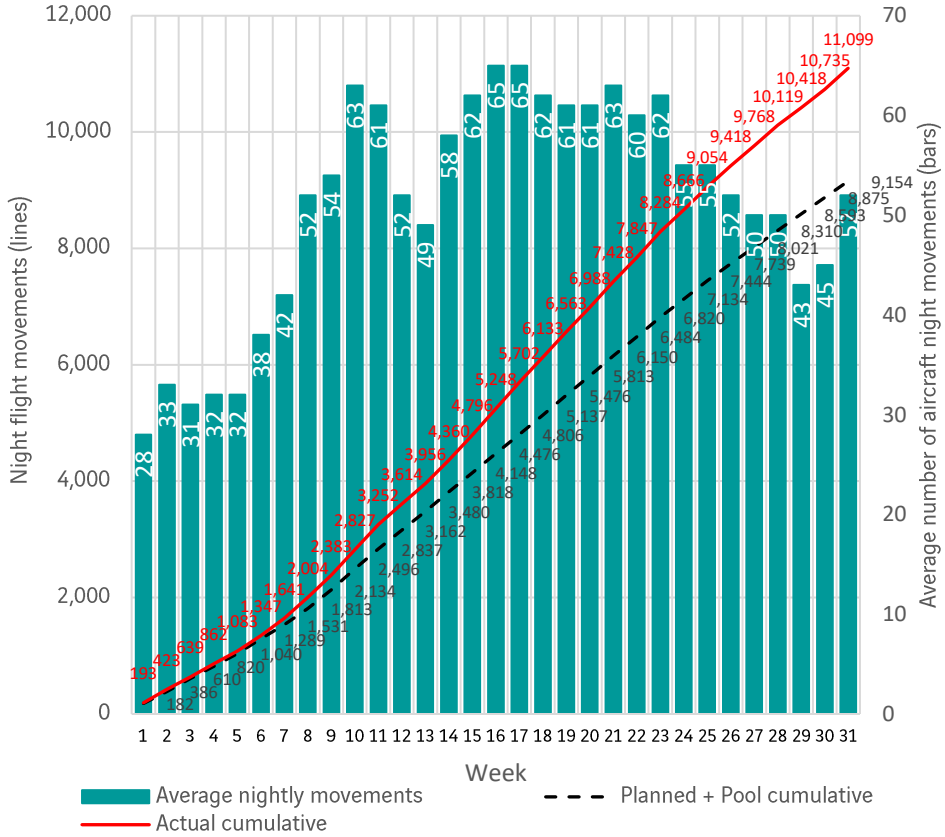


Figure 40: Night flight movements in summer

The Summer 2022 season began on 27th March 2022 (0100hrs local) and finished on 30th October 2022 (0159hrs local). Figure 40 depicts the planned and actual usage for the summer season; finalising with 11,099 night movements.
Figure 41 provides a breakdown of the number of flights either avoiding the night quota period (avoided) or using unplanned quota usage (non-dispensed). GAL been granted 576 dispensations for unscheduled night movements, mainly due to delays caused by unforeseen ATC staffing disruption and thunderstorm activity, however 11 were granted for lateness due to crews dealing with medical emergencies.

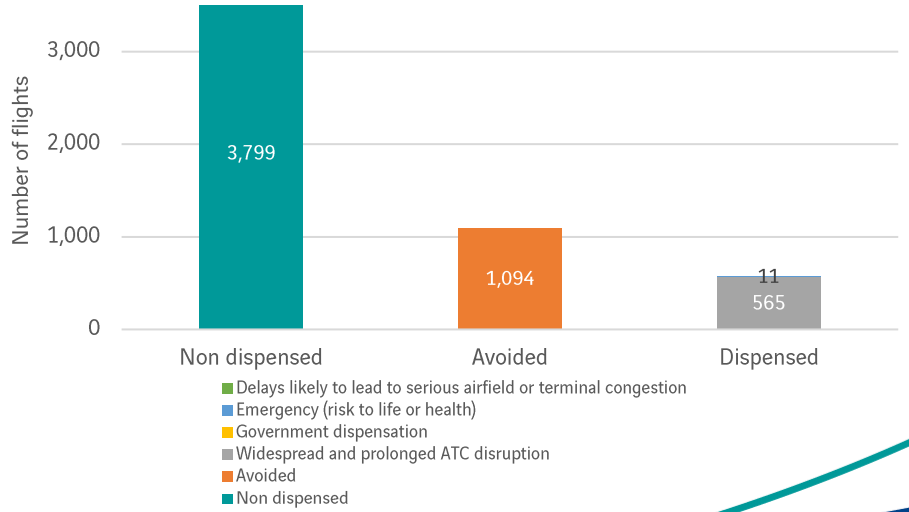


Figure 41: Number of non-dispensed, avoided and dispensed flights

Night Operations – Winter Season

The Winter 2022/2023 season began on 30th October 2022 (0200hrs local) and will end on 26th March 2023 (0059hrs local). Figure 42 depicts the planned and actual usage of the night flight movement and quota limits for the winter season so far, showing that the current cumulative is ~300 movements under the planned cumulative total.

Figure 43 provides a breakdown of the flights either avoiding the night quota period (avoided) or using unplanned quota usage (dispensed or non-dispensed). Dispensations for unscheduled night movements were applied for 11 flights in December due to disruption caused by unforecasted snow.

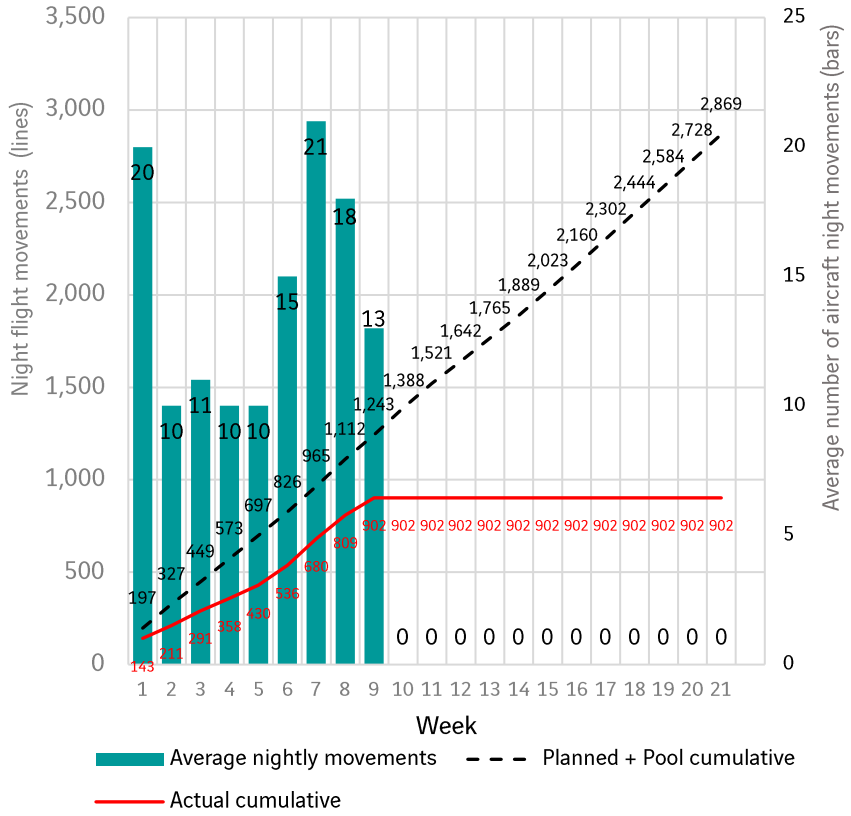


Figure 42: Night flight movements in winter

Figure 43: Number of non-dispensed, avoided and dispensed flights

Night Operations – Historic Usage in Summer

London Gatwick operates as a Public Licensed Aerodrome for 24 hours each day, offering great flexibility for passengers and airlines. However, in order to try to balance the interests of local communities and those of airport users, there are stringent restrictions and rules in place governing how the airport manages flights at night.

The Department for Transport (DfT) is responsible for defining these restrictions. The current rules apply between 23:30 to 06:00 with a set movement and quota count (QC) limit. QC is based on how noisy a particular aircraft is, with the noisier the aircraft type, the higher the points allocated. This is designed to encourage the use of the quietest aircraft types within a limited number of movements.

Figure 44 depicts the usage of the night quota period since 2000. While the movement limit has remained at 11,200 movements, the QC limit has been repeatedly lowered and is now at 5,150 as show by the black trend line. The limits in winter are lower at 3,250 movements and 1,785 QC points, and are generally not utilised fully.

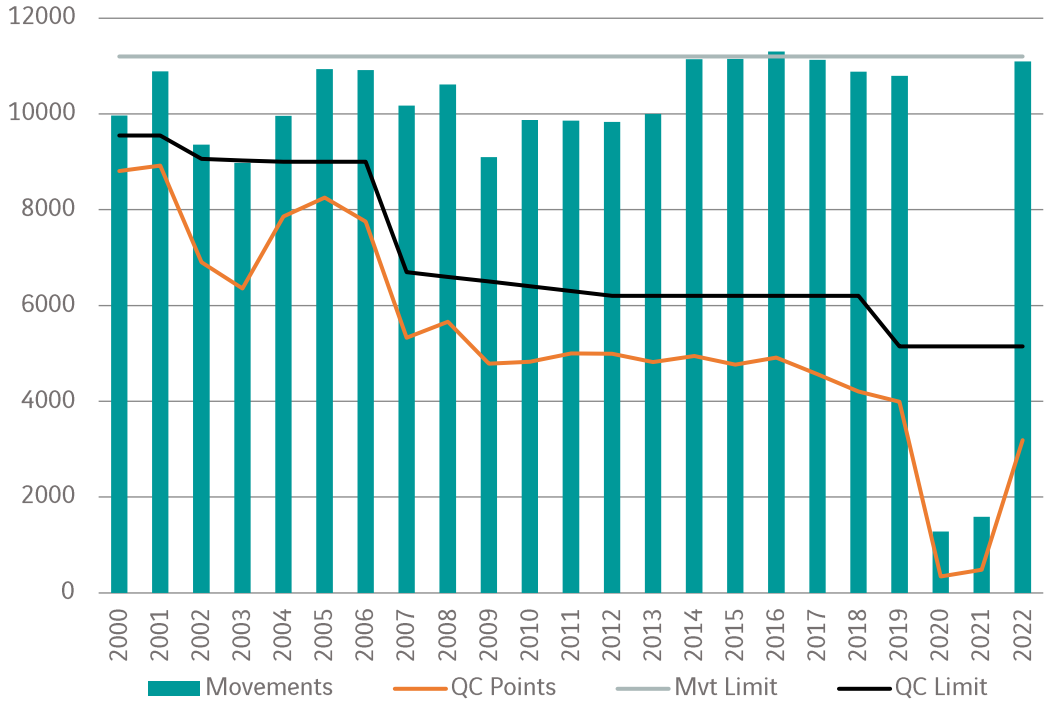


Figure 44: Night flight usage in Summer since 2000

Noise Monitoring

Gatwick has a local noise monitoring system this consists of a number of 'monitoring stations'. Each station includes a microphone, recording device and transmitter to send the data back to our servers.

The monitor records noise from both aircraft and background sources such as road traffic or the wind in the trees. The active monitoring of noise allows us to track aircraft noise levels, evaluate trends and make comparisons between the noise environments.

Noise monitoring is useful as it gives a better understanding of the levels of aircraft noise and how it may affect communities surrounding Gatwick Airport. It is especially important during trial periods where new routes or procedures may be under review.

The Gatwick Noise Monitoring Group (GNMG) is responsible for suggesting the location of noise monitors and has an established process to follow.

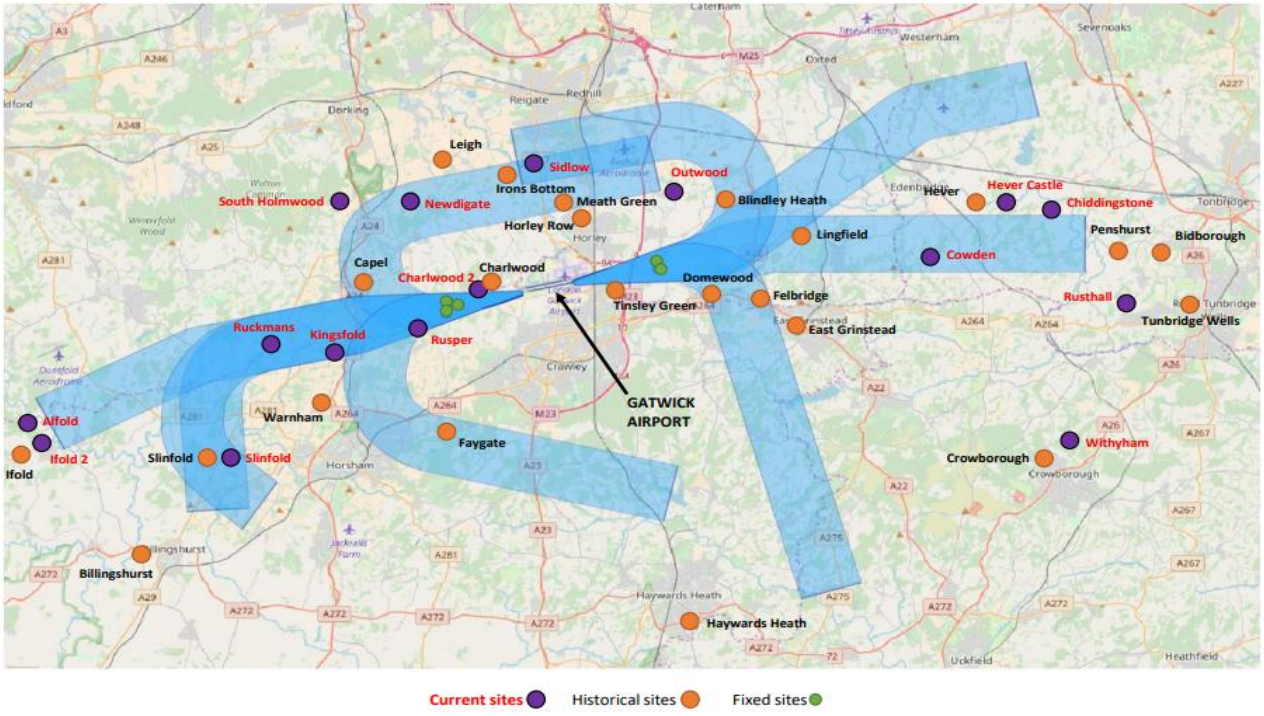


Figure 45: Location of current and historical noise monitors and NPRs

Noise Contours 2022

In the UK, Government research originally indicated that annoyance from aircraft noise typically develops at 57dB averaged over 16 hours (57 dB LAeq). There has since been a Survey of Noise Attitudes (SONA 2014) that has found the degree of annoyance now occurs at 54 dB LAeq.

To show where the different average noise levels are located around the Airport, the Government has developed maps showing noise contours. Figure 47 on the next page shows the noise contour map for the area around London Gatwick.

The contours are an irregular shape because typically people experience a greater amount noise at the ends of the runway (where aircraft take off and land) than along the sides of the runway.

The 57 dBA Leq day contour area for 2022 based on the day standard runway modal split was calculated to be 27km^2, which as expected is 173% higher than in 2021 due to traffic levels increasing with the opening of the south terminal and increase in summer movements . Similarly, the population enclosed within the actual 57 dBA Leq day contour increased by 433%.

LAeq,16h (dB)	2021 area (km^2)	2022 area (km^2)	Area change	2021 population	2022 population	Population change
>54	18.3	47.3	158%	1,000	4,700	327%
>57	9.7	27	178%	400	1600	433%
>60	5.2	15.3	194%	100	600	500%
>63	2.7	8.1	200%	<100	300	(-)
>66	1.6	4.1	150%	0	100	(-)
>69	1	2.1	110%	0	0	(-)
>72	0.6	1.3	117%	0	0	(-)

Figure 46: Gatwick 2021 and 2022 summer day standard LAeq,16h contours – area and population estimates
Note: The 2021 and 2022 summer day standard runway modal splits were both 74% W / 26% E.

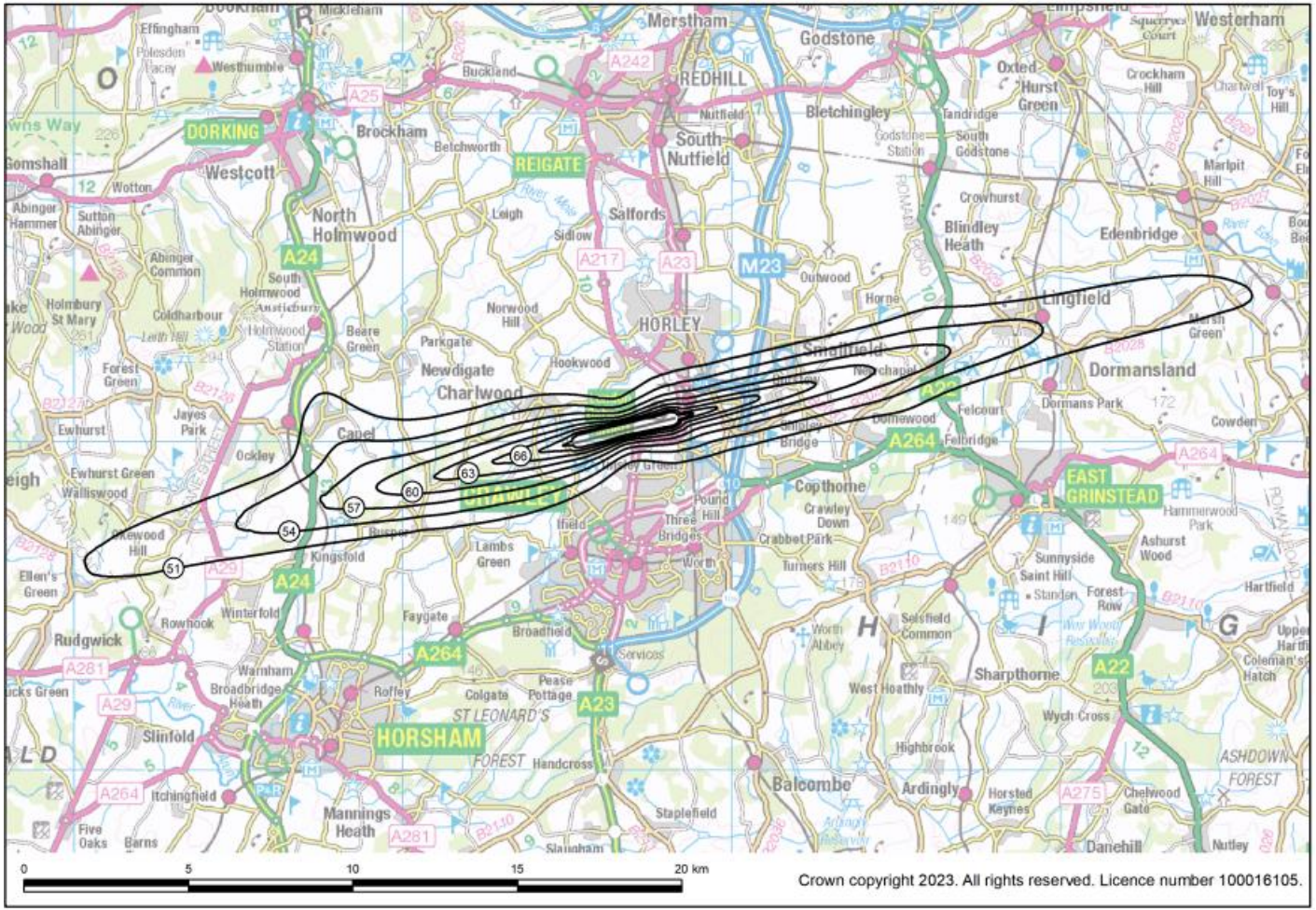


Figure 47: The Gatwick day standard noise exposure contours 2022

Complaints

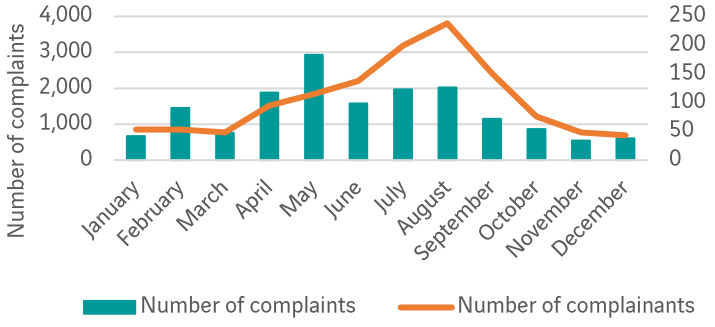


Figure 48: Number of complaints and complainants

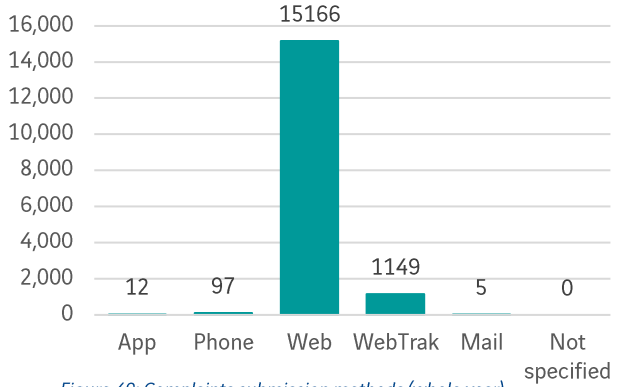


Figure 49: Complaints submission methods (whole year)

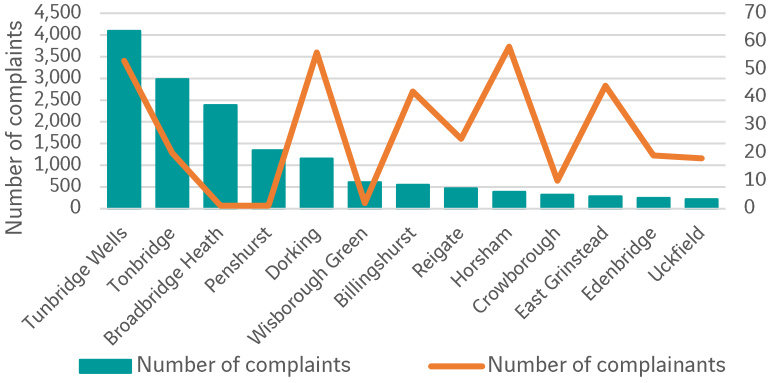


Figure 50: Areas with most complaints (whole year)

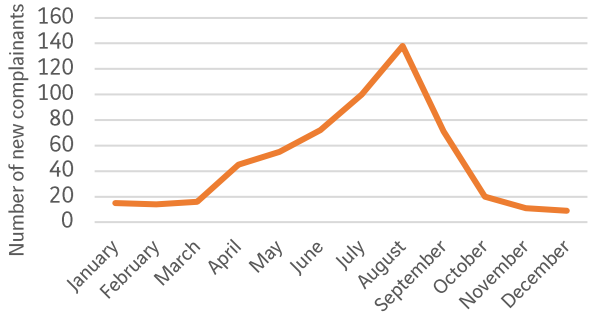


Figure 51: New complainants

The number of complaints peaked in May 2022 following the increase of traffic at the start of the summer season (Figure 48). This then levelled out for the rest of the summer. Both the number of complainants and new complainants (Figure 51) were highest in August 2022, with local residents spending more time outdoors and having their windows open due to the warm weather.

Figure 49 shows that 99% of complaints are submitted via the online web form and WebTrak.

Figure 50 showed the areas in 2022 with the greatest number of complaints received were Tunbridge Wells, Tonbridge and Broadbridge Heath, with one complainant submitting these for the latter area.

Complaints

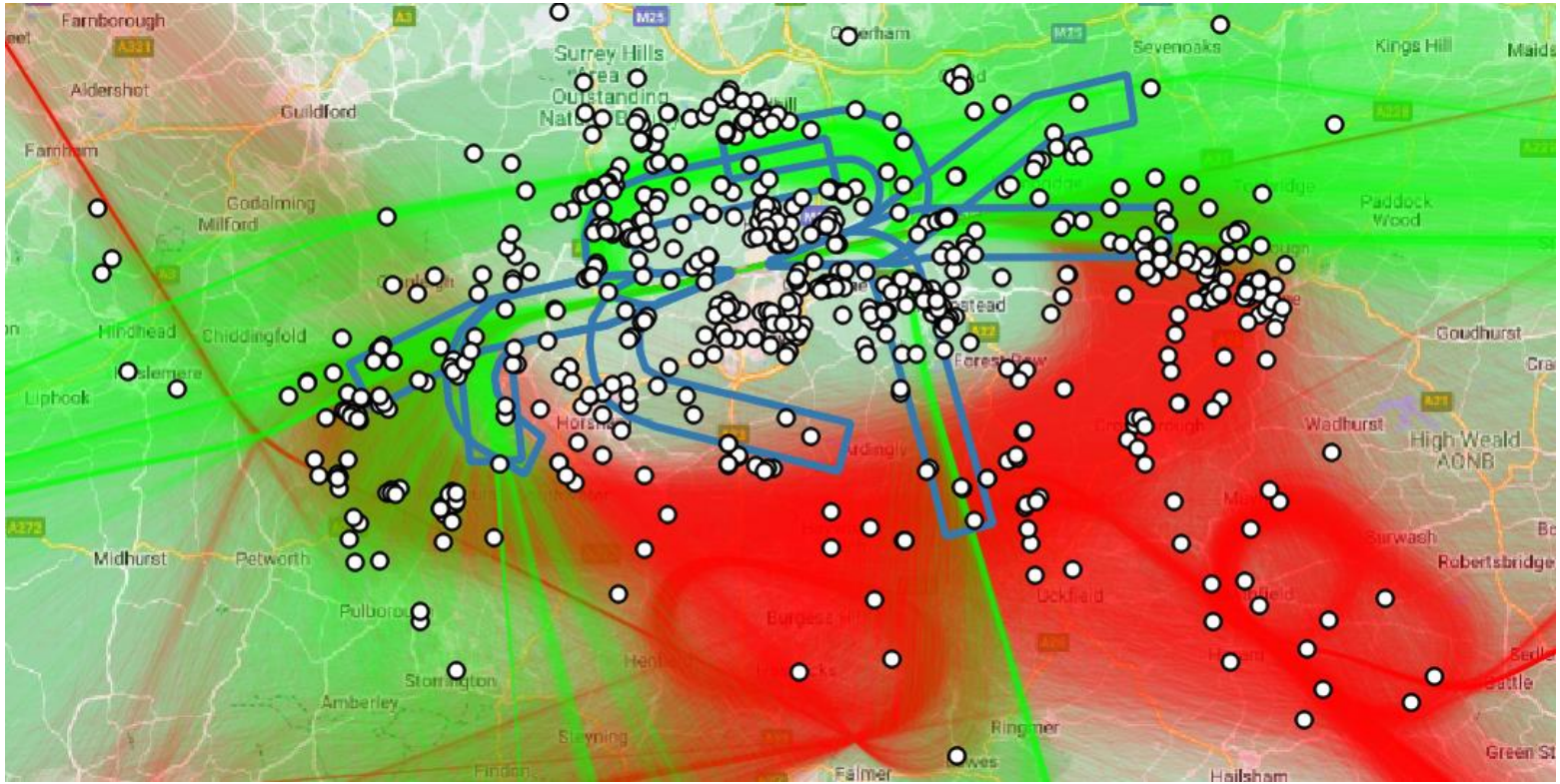


Figure 52 shows the distribution of individual complainants throughout 2022, as well as the tracks of all movements in Q4 for representative purposes.

Figure 52: A graphical representation of 2022's individual complainants, with an overlay of Q4 arrivals & departure tracks and NPRs

Complaints

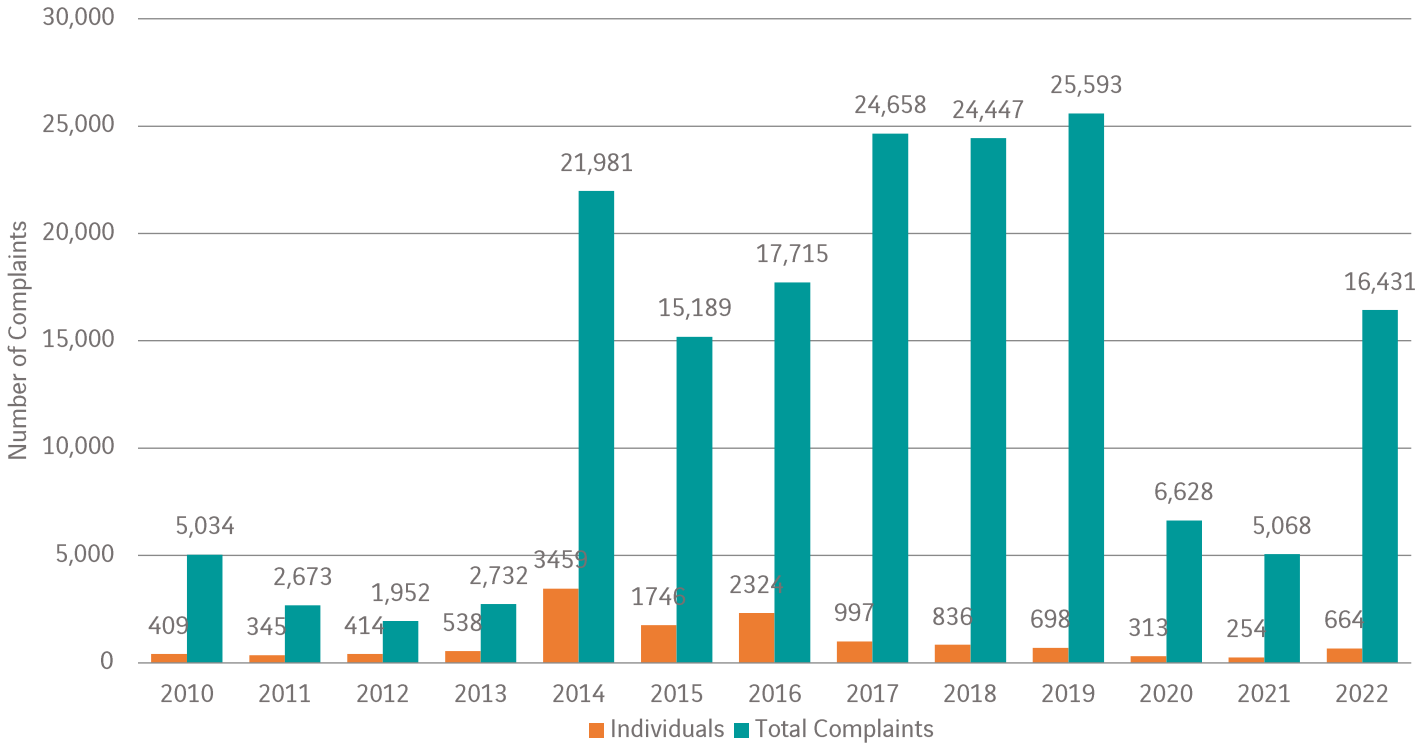


Figure 53: Number of individual complainants and complaints 2010-2022

Figure 53 shows how the total number of complaints and the number of individual complainants have varied since 2010.

Individual complainants and total complaints have increased in 2022 compared to 2021 due to the increase in traffic movements following the airports recovery from the COVID-19 pandemic.

The number of total complaints in 2022 was 64.2% of those received in 2019. The reduction of individual complainants has continued the downward trend seen from 2016 – 2019.

Ground Noise[8]

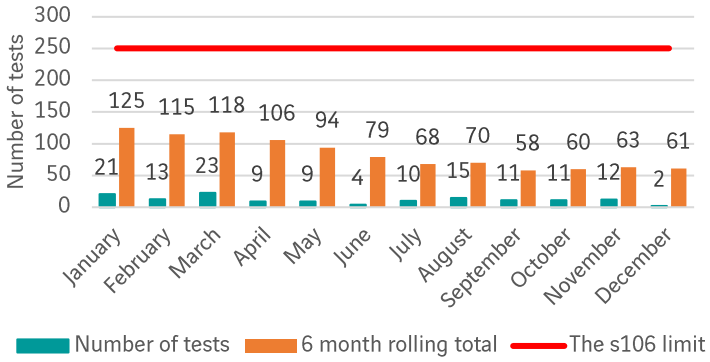


Figure 54: Engine runs[7]

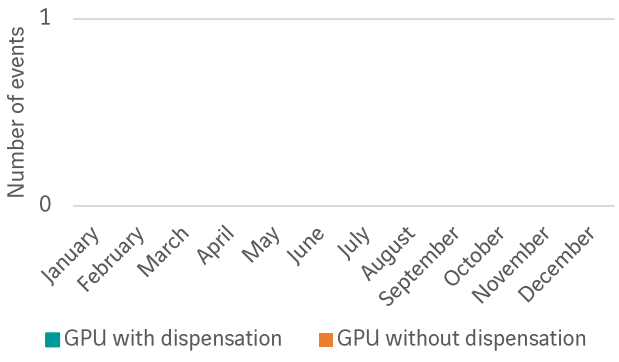


Figure 55: GPU usage[8]

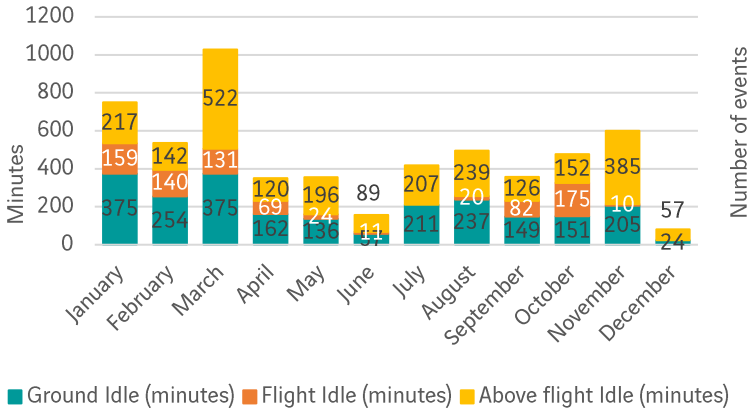


Figure 56: Cumulative minutes of engine tests

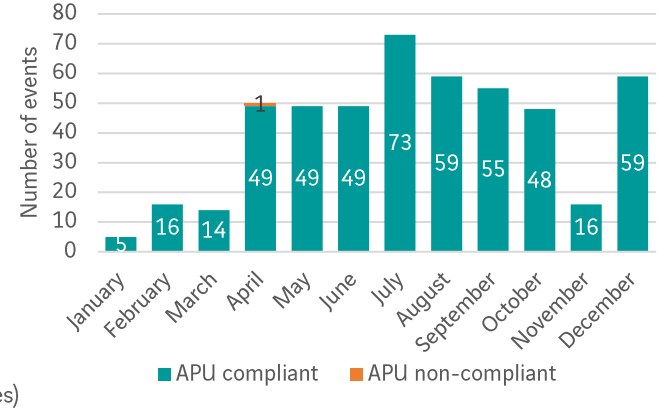


Figure 57: APU usage[8]

Figure 54 shows that the number of engine tests remains well below the Section 106 limit of 250 in a six-month period in 2022.

There was no GPU recorded usage in 2022 (Figure 55).

Q1 2022 saw the most minutes of engine testing logged at the airport (Figure 56). Airlines can carry out aircraft maintenance during this time as there is a less demanding flight schedule.

Figure 57 shows there was one instant of a non-complaint APU usage in April 2022, which was used when no turnaround activity was taking place.

Further details on ground noise can be found in Annex F.

Annex A
Additional Statistics

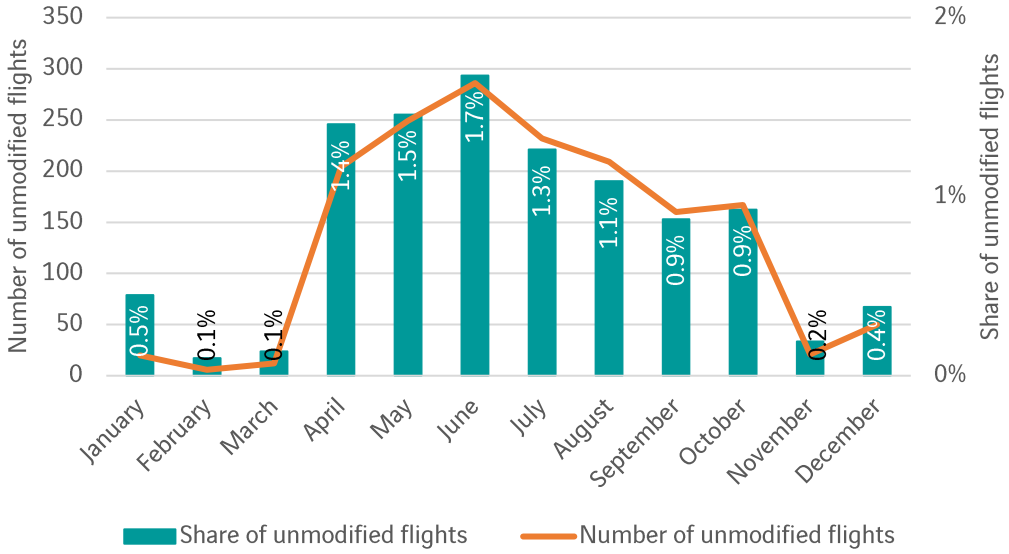


Figure A-1: Number and share of flights by unmodified A320 family aircraft

The number of flights operated by unmodified A320 family aircraft, which have not had fuel over-pressure protector modification installed, has been very low. Since the commencement of the winter season at the end of October, there has been a decrease in the number of these aircraft being operated, as airlines reduce the number of leased aircraft they utilise.

London Gatwick has been applying an additional noise charge to unmodified A320 aircraft since the 1st January 2018. The number of these flights has been reduced by -62% since then and represented 0.74% of all A320 traffic in 2022.

Annex A
Additional Statistics

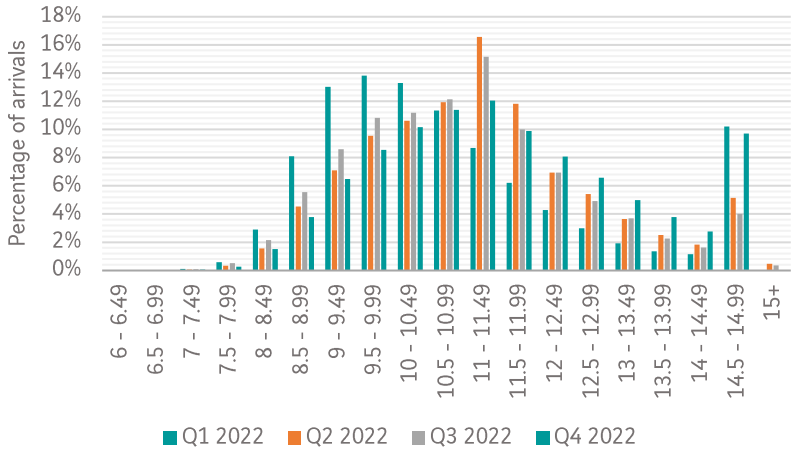


Figure A-2: Traffic Joining ILS per quarter – Runway 26 Only

Figure A-2 shows a high percentage of arrivals were able to join the ILS in Q1 between 8 – 11 NM, however, as the levels of traffic increased in Q2 and Q3 the joining point of majority of arrivals was extended to 9.5 – 12 NM, to allow spacing for more demand on the single runway of departing aircraft.

In Q4, only 0.31% of aircraft joined ILS inside 8 NM. This is monitored as a result of Recommendation Imm-10 of the 2016 Independent Arrivals Review (IAR). Please refer to Annex C for the full background and rationale for continuous monitoring.

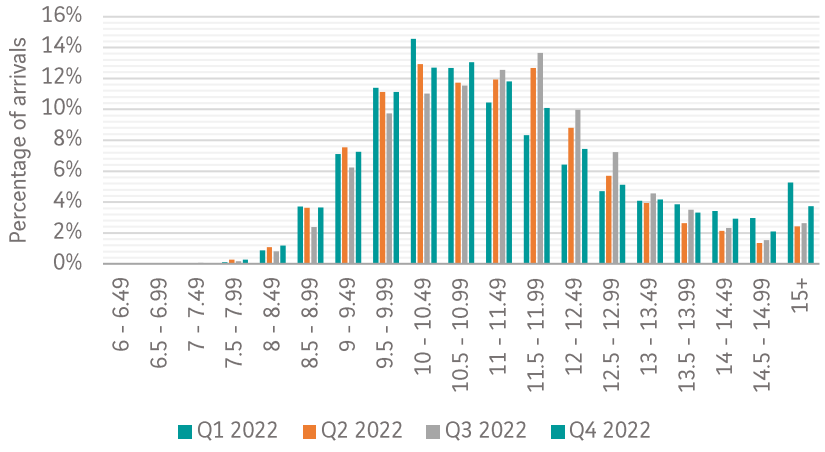


Figure A-3: Traffic Joining ILS per quarter – Runway 08 Only

Figure A-3 shows a rather even distribution of arrivals during easterly operations. During Q1 and Q4 there are more aircraft joining at 15NM+ due the less congested airspace in the winter season allowing aircraft to have a straight-in approach.

In Q4, only 0.33% of aircraft joined ILS inside 8NM.

Annex B
Noise Abatement Procedures referred to by figures in this report

1 AIP, EGKK AD 2.21 NOISE ABATEMENT PROCEDURES, Sub-paragraph 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.

2 AIP, EGKK AD 2.21 NOISE ABATEMENT PROCEDURES, Sub-paragraph 14

Aircraft which land at Gatwick Airport - London between the hours of 2330 (2230) and 0600 (0500), whether or not making use of the ILS localiser and irrespective of weight or type of approach, shall not join the centre-line: below 3,000 FT or closer than 10 NM from touchdown.

Note on altitude tolerances:
3,000 ft (Gatwick QNH) – 202 ft (airfield elevation) = 2,798 ft
2,798 ft – 200ft ATC radar tolerance = 2,598 ft
These values are used to assess compliance within the Airport Noise & Track-Keeping System.

3 AIP, EGKK AD 2.21 NOISE ABATEMENT PROCEDURES, Sub-paragraph 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 3000 FT (Gatwick QNH) nor over the congested area of Lingfield at an altitude of less than 2000 FT (Gatwick QNH).

4 AIP, EGKK AD 2.21 NOISE ABATEMENT PROCEDURES, Sub-paragraph 9

After taking off the aircraft shall avoid flying over the congested areas of Horley and Crawley.

5 AIP, EGKK AD 2.21 NOISE ABATEMENT PROCEDURES, Sub-paragraph 1

After take-off the aircraft shall be operated in such a way that it is at a height of not less than 1,000 FT AAL at 6.5 KM from start of roll as measured along the departure track of that aircraft.

6 AIP, EGKK AD 2.21 NOISE ABATEMENT PROCEDURES, Section 3 and section 4

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 (0600) to 2300 (2200) hours) as measured at any noise monitoring terminal at any of the sites referred to in sub-paragraph (2).

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 (2200) to 0700 (0600) hours) and that it will not cause more than 87 dBA Lmax during the night quota period (from 2330 (2230) to 0600 (0500) hours) as measured at any noise monitoring terminal at any of the sites referred to in sub-paragraph (2).

7 Agreement in relation to Gatwick Airport Under Section 106 of the Town and Country Planning Act 1990 and other powers

Full version:
www.gatwickairport.com/globalassets/company/sustainability/s106/s106-legal-agreement.pdf

8 AIP, EGKK AD 2.20 LOCAL AERODROME REGULATIONS, 1 AIRPORT REGULATIONS, Sub-paragraph l

Fixed Electrical Ground Power must be used when available and serviceable. Use of aircraft Auxiliary Power Units (APUs) and Ground Power Units (GPUs) are strictly controlled to minimise environmental impact. APUs must be shut down after arrival and only restarted before departure according to the timescales described in detail in published Gatwick Airport Instructions and Directives. Regular audits take place to ensure compliance with the regulations.

Annex C
ILS Joining Point – Background and Rationale for Monitoring

Background

Joining point data is monitored as a result of Recommendation Imm-10 of the 2016 Independent Arrivals Review (IAR). The recommendation proposed to alter a safety feature - the ILS minimum joining point - applied by air traffic controllers to help pilots ensure a fully stabilised final approach to the runway. The objective was to safely increase geographical dispersal of arrivals to more closely emulate the operations prior to a change in 2013 when the ILS minimum joining point had been increased from 7NM to 10NM. Specifically, the recommendation proposed extending the arrival swathe by reducing the ILS minimum joining point from 10NM to 8NM from touchdown. Hence the arrival swathe would extend from a minimum of 8NM to 14NM, with aircraft joining on a straight in approach when traffic permits.

Following the publication of the Action Plan, GAL working closely with NATS, progressed the implementation of the recommendation into an operational evaluation supported by detailed analysis. The evaluation commenced on the 15 August 2016. GAL & NATS have closely monitored use of the ILS since the implementation of the evaluation. In early January 2017, in anticipation of the need to conduct a thorough assessment of the results from the evaluation period and in order to avoid a temporary reversion to the pre-August 2016 minimum joining point, GAL made a request to CAA for a 3-month extension of the use of the reduced ILS minimum joining point.

Over the entire evaluation period the joining points between 8NM to 10NM was used by, on average, almost 20% of arrivals. As the evaluation progressed, the number of aircraft making use of joining points between 8NM and 10NM increased, reaching a peak of 31% in January 2017. The increased use of these joining points closer to touch down had increased the geographical dispersal of the arrivals swathe. With the agreement of the CAA and NATS at Noise Management Board (NMB) 5 it was decided that the 8NM minimum ILS joining point would be transitioned to a permanent procedure on the 15 May 2017.

Rationale for continuous monitoring

Following the adoption of the change as a permanent procedure, reporting continued to the NMB on a regular basis to provide transparency of the traffic dispersal achieved. The reporting and monitoring function was subsequently transferred to NaTMAG, as reporting became part of routine operational monitoring. In Q4 2020, ILS joining point distance statistics were absorbed into the new Airspace Office Quarterly and Annual reporting.

Communities continue to express concerns regarding flights that join the ILS inside 8NM during the day due to their noise impact. When the proportion of such flights becomes noticeably higher than the long-term average, the Airspace Office informs NATS (providing supporting data) and refers this to Gatwick's Flight Operations Performance and Safety Committee (FLOPSC) for further investigation. Whilst it is understood that vectoring practice by air traffic controllers has noise impacts, the rationale for taking action through FLOPSC - instead of NaTMAG - is that the 8NM ILS minimum joining point is a safety procedure, rather than a noise abatement procedure, relating to the stabilised approach of aircraft to the runway. FLOPSC is the competent safety body.

Annex D
Roles and Responsibilities

Gatwick Airport Limited

GAL is the licensed operator of Gatwick Airport. It is not directly responsible for aircraft operations but is responsible for the control of ground noise at the airport and the implementation and monitoring of DfT policy.

Airspace Office

The Airspace Office is responsible for recording, investigating and responding to aircraft noise enquiries as well as to monitor and report airline compliance to noise mitigation measures as detailed in the UK AIP. The Airspace Office can also, if requested, provide information regarding flight paths and arrival routes, for example to prospective homebuyers. The Airspace Office also manages the airport Noise and Track Keeping system 'ANOMS' and a number of fixed and mobile noise monitors within the local area. They are regularly relocated, the data analysed, and the findings reported.

Air Traffic Control

NATS is the main Air Navigation Service Provider in the United Kingdom and provide guidance to flights in the vicinity of Gatwick Airport. NATS' en-route business is regulated and operated under licence from the Civil Aviation Authority (CAA). The terms of the licence require NATS to be capable of meeting on a continuous basis any reasonable level of overall demand. They are charged with permitting access to airspace on the part of all users, whilst making the most efficient overall use of airspace.

The Gatwick Airport Tower was operated by ANS until 9 October when runway and ground operations transitioned to NATS.

Air Navigation Solutions

ANS was responsible for aerodrome Air Traffic Control at Gatwick Airport from when the aircraft leaves its stand to when it reaches 4,000ft in the air. ANS also managed air traffic engineering services, emergency and alerting services, and meteorological services.

Department for Transport

The DfT is responsible for the formulation of noise abatement policy, the location of Noise Preferential Routes (NPRs) for departing aircraft and night flight regulations.

Civil Aviation Authority

As the UK's independent specialist aviation regulator, the CAA has responsibility for regulating airspace over the UK. This includes the new and established air traffic routes and areas which commercial aircraft use to fly into and out of airports, and the airspace used by military and General Aviation flights.

An organisation proposing a change to the design of UK airspace must follow the CAA's airspace change process. The CAA has a duty to consider a range of factors set out by government in deciding whether or not to approve the change. One set of factors is the environmental objectives set for the CAA by the Secretary of State – including consideration of noise impacts.

Annex E
Gatwick's Framework for Noise Management

Noise and Track Keeping system (NTK)

The NTK system combines radar input from ATC with data from our fleet of fixed and mobile monitors placed around the airport. The system monitors all aircraft traffic within a 50 miles radius of the airport, up to 40,000 feet, and automatically records any infringements of the departure noise limits, deviations from the departure flightpaths, as well as other noise mitigation measures. Since April 2019, Gatwick Airport uses ANOMS provided by Envirosuite, which is linked to our webservices WebTrak and InsightFull. The airport invests over £300,000 a year in noise monitoring.

Flight Operations Performance and Safety Committee (FLOPSC)

FLOPSC is made up of representatives from the airport's operations team, the Airspace Office, our airlines, the DfT, CAA, ANS and NATS. It meets on a bi-monthly basis throughout the year to review operational performance, adherence to noise and track keeping rules and to share best practice.

Noise Management Board (NMB)

The role of the NMB is to develop, agree, oversee and maintain a co-ordinated noise management vision and subsequent strategies for Gatwick, on behalf of all stakeholders, with an aim to reduce the impact of noise on the local community.

Now in its second term, the NMB comprises of three groups: the NMB Community Forum (NCF); the NMB Executive Board (NEX); and the NMB Delivery Group (NDG). The governance structure includes a number of community action groups and local elected representatives.

Noise and Track Monitoring Advisory Group (NaTMAG)

This committee includes representatives from the Airport's Consultative Committee, local councils, the DfT, NATS, ANS, airlines and the airport. It meets every quarter to discuss the airport's performance against the range of rules and regulations pertaining to aircraft operations. It gives an opportunity for representatives of local communities to scrutinise the airport's reports and to discuss issues that may be a cause of concern.

Sustainable Aviation

Gatwick Airport Limited is a member of Sustainable Aviation, whose long-term strategy sets out the collective approach of UK aviation to tackling the challenge of ensuring a sustainable future for our industry. Sustainable Aviation brings together the main players from UK airlines, airports, manufacturers and air navigation service providers. The group produced a Noise Road-Map, which outlines the future aspirations of the industry. For more information visit: www.sustainableaviation.co.uk.

Gatwick Noise Monitoring Group (GNMG)

Gatwick Airport funds and co-ordinates a community noise monitoring programme in conjunction with local Environmental Health Officers and the airport's Consultative Committee. Noise monitors are located throughout local communities in Sussex, Surrey and Kent in order to develop an understanding of the noise environment and assess the impact of aircraft noise on those areas. The group's activities have been paused since the onset of the COVID-19 pandemic.

Annex F
Wind and Runway Direction

It is important for the safe operation of aircraft that they both land and take-off into wind. On take-off, this will increase airspeed and the amount of lift produced and, on landing, it will again assist with the creation of lift (required until touchdown) and also help to control airspeed. It is important that aircraft are travelling at the appropriate speeds specified during these critical stages of flight necessary for safety. A tailwind could increase the airspeed and may make an approach too fast and unsafe, therefore direction of operation is something which is considered carefully by ATC.

The wind direction and speed on the ground at the aerodrome can vary from what you may experience locally. In addition to wind on the ground, wind direction and speed are also assessed at 1,000ft and 2,000ft. Generally speaking, the wind speed increases considerably with altitude and may also have a significantly different direction. It is important to take these conditions into account, as they will affect flight during the initial stages of flight directly after take-off and during the final stages of the approach just before landing.

In recent years the annual average has approximately been a third of aircraft operations taking place in an easterly direction and two thirds in a westerly direction. The direction in which the runway is operated is determined purely by the prevailing wind direction, during the summer this typically results in a long period of time operating in an easterly direction. However, this split will vary from year to year and month to month and there is no correlation between the same months in different years.

Figure F-1: Easterly Runway Directions

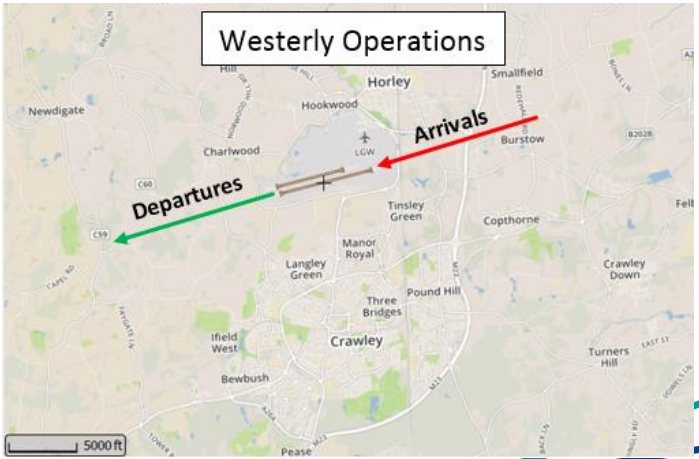


Figure F-2: Westerly Runway Directions

Annex G
Ground Noise – Background

London Gatwick is committed to mitigating and reducing noise disturbance caused by aircraft operating on the ground. Gatwick is a signatory to the Departure Code of Practice published in association with Sustainable Aviation. There are four key elements to this code:

1. **Reducing noise on the ground**
2. **Reducing noise and fuel emissions in the taxi stage**
3. **Airport Collaborative Decision Making (A-CDM)**
4. **Continuous Climb Operations**

There are a number of procedures aimed at mitigating ground noise.

Firstly, usage of Auxiliary Power Units (APU), small jet engines which generate electrical power for the aircraft on the ground, is restricted to a minimum to avoid unnecessary noise. Instead, electrical power is being supplied through Fixed Electrical Ground Power (FEGP) or – in case this cannot be utilised or is unavailable – by using a Ground Power Unit (GPU), which is a small diesel generator. The usage of GPUs is strictly controlled.

Secondly, there are limits in place concerning the maximum number of engine tests that can be conducted at the airport and there are strict regulations regarding when and where testing can be conducted in accordance with the S106 legal agreement. All testing must be authorised in advance by the Airfield Operations Team and there is a ban on testing during the night-time. Engine runs are an essential activity for maintenance and servicing work conducted at Gatwick.

Lastly, A-CDM in conjunction with reduced engine taxiing ensures that aircraft only use the minimum amount of thrust whilst on the ground, and only start their engines shortly before their departure. It also helps reduce the queueing time near the runway.

Annex H
Night Flights – Definition & Quota Count

The night period at Gatwick Airport spans from 23:00 to 07:00 and during this time the loudest aircraft (QC8 & QC16) are not allowed to operate. Stricter restrictions apply during the night quota period (or core night: 23:30 - 06:00) when there is a limit on the number of movements and the sum of quota count (QC). Furthermore, QC4-rated movements are not allowed to be scheduled during this period.

The noise quota of an individual aircraft is based on its official noise certification data, with separate classifications for take-off and landing in the form of QC values. As shown below, the smaller or newer the aircraft, the lower its QC value will be. As the QC is summed up over all movements, this incentivises the use of quieter aircraft in order to avoid being constrained by the QC limit.

Certificated noise level (EPNdB)	Quota count	Example aircraft (arrival)	Example aircraft (departure)
Less than 81	0	Bombardier Global Express	Bombardier Learjet 45
81 to 83.9	0.125	Airbus A320neo	Airbus A320neo
84 to 86.9	0.25	Airbus A319	Airbus A220-300
87 to 89.9	0.5	Airbus A330-200	Boeing 737-300
90 to 92.9	1	Boeing 737-300	Boeing 737-900
93 to 95.9	2	Boeing 747-400	Airbus A330-200
96 to 98.9	4	Douglas DC-10	Boeing 747-400
99 to 101.9	8	Ilyushin IL-76T	Douglas DC-10
Greater than 101.9	16	-	Antonov An-225

Figure H-1: Aircraft Noise Certifications

Annex I
Night Flights – Limits & Dispensations

The latest restrictions set by the DfT for all the London airports on night flying came into force in October 2017 and will remain in place until 2022. These allow 11,200 movements in the Summer season (quota limit 5,150) and 3,250 movements in Winter (quota limit 1,785). Any unused allowance (up to 10% of the total limit) from a preceding season can be carried over to next to allow some additional usage.

Every scheduled night flight movement that operates during the night quota period counts towards the allowance. Unscheduled night flight movements will generally count towards the allowance as well, but may be granted a dispensation based on DfT guidelines. Examples of the extraordinary circumstances justifying a dispensation are:

- Medical emergencies
- Humanitarian flights
- Aircraft carrying heads of state or royal families
- Non-scheduled movements as a result of major Air Traffic disruption
- To alleviate serious hardship and congestion at the airfield or terminal
- Government requested dispensations

The number of potential dispensations per night is calculated as the difference between the number of unscheduled night flight movements and the number of flights that avoided the night quota period, i.e. those that were scheduled to operate at night but did not. The number of dispensations may only be as high as the “surplus” of unplanned movements.

Annex J
Departure Noise Limits

Departure noise limits are based on the assumption that the noise monitors are exactly 6.5km from the start of roll point on the runway and at the same elevation as the airfield. To judge the recorded noise levels in practice, adjustments are made to the limits to account for any variances in the monitor position.

There is also a margin of error taken into account for the microphone of +0.7dB. Details of the limits that apply to departing aircraft are shown below. In light of the more noise sensitive period, lower noise limits apply during the night and shoulder periods.

Site	Adjustments specific to monitoring sites			Adjusted Limit values at monitoring sites		
	Positional	Equipment	Total	Day	Shoulder	Night
101 Russ Hill	+5.0	+0.7	+5.7	99.7	94.7	92.7
103 Orltons	+1.9	+0.7	+2.6	96.6	91.6	89.6
105 Oaklands Farm	+1.9	+0.7	+2.6	96.6	91.6	89.6
104 Moat House	0.0	+0.7	+0.7	94.7	89.7	87.7
106 Bellwood	-0.2	+0.7	+0.5	94.5	89.5	87.5

Figure J-1: Departure noise limit adjustments

Financial penalties are applied to aircraft that exceed the noise monitor levels on departure (monitored at 6.5km from the start of roll). A minimum penalty of £500 will be applied for any departing flight that exceeds the above noise limits.

For any departure that exceeds the limit by 3 decibels or more, a fine of £1,000 is applied. All proceeds from noise fines are passed to the independently run Gatwick Airport Community Trust (GACT). Details of the work carried out by the GACT are available at www.gact.org.uk.

Glossary of Terms (1)

AAL	Above Aerodrome Level	The height of an aircraft above the elevation of the referenced aerodrome.
AIP	Aeronautical Information Publication	Essential air navigation information published by NATS on behalf of the CAA, detailing regulations applicable to the operation of aircraft, e.g. at specific aerodromes.
ANPT	Airline Noise Performance Table	A programme that ranks airlines flying into and from Gatwick Airport in relation to their overall noise performance.
ANS	Air Navigation Solutions Ltd	The air navigation service provider operating the control tower at Gatwick until 8th October 2022.
APU	Auxiliary Power Unit	A small combustion engine on an aircraft that provides energy for functions like lighting or heating/cooling when the main engines are switched off.
ATC	Air Traffic Control	An entity responsible for a safe and expedite air traffic flow. To this end they monitor aircraft and issue instructions to the flight crew, either from the airport control tower or a radar centre.
ATM	Air Traffic Movement	An aircraft operation on the airport's runway, i.e. either a departure or an arrival.
CAA	Civil Aviation Authority	The UK independent civil aviation regulator
CDO	Continuous Descent Operations	An optimised descent profile utilised to reduce noise impact and fuel consumption by avoiding prolonged periods of level flight below 7,000ft. '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.'
DfT	Department for Transport	The government department providing policy & guidance for air traffic through their work with airlines, airports, the Civil Aviation Authority and NATS.

Glossary of Terms (2)

DME	Distance Measuring Equipment	DME is a fixed radio beacon which provides information to aircraft about their distance from its position. “1 DME” denotes 1 nautical mile from the selected ground station. The distance is measured as a slant range, not as distance over ground.
EGKK	(ICAO-code for Gatwick airport)	These four-letter airport codes are used in the AIP and other aeronautical documents. This code is unique to Gatwick airport.
EPNdB	Effective Perceived Noise in decibels	A noise metric aimed to measure the relative noisiness of an individual aircraft flying by and can be calculated from the certified noise levels. It is used for the quota count classification.
FEGP	Fixed Electrical Ground Power	FEGP provides aircraft with the necessary power to operate its electrical and air conditioning systems.
FLOPSC	Flight Operations Performance & Safety Committee	An engagement committee at Gatwick Airport ensuring the development of best practice by airline operators using Gatwick. It is made up of representatives of Gatwick Airport, the DfT, ATC service providers and airlines operating at the airport.
GACT	Gatwick Airport Community Trust	An independent charity which awards grants annually to local community schemes which benefit parts of East and West Sussex, Surrey and Kent.
GAL	Gatwick Airport Limited	-
GNMG	Gatwick Noise Monitoring Group	The GNMG consists of Environmental Health Officers and associated noise professionals from the local authorities surrounding Gatwick Airport. The GNMG evaluates and discusses the data collected from the fixed and mobile noise monitors surrounding Gatwick Airport.
GPU	Ground Power Unit	An either fixed or mobile unit (usually a diesel powered generator) which can supply electrical power to the electrical system of an aircraft while on the ground.
IAR	Independent Arrivals Review	Gatwick commissioned an independent review of air traffic around the airport in. The final report has been published in 2016. Click here for more information.

Glossary of Terms (3)

ILS	Instrument Landing System	Is a precision runway approach aid based on two radio beams which together provide pilots with both vertical and horizontal guidance during an approach to land.
KPI	Key Performance Indicator	A set of metrics or values by which performance is measured and monitored.
MOTW	Maximum Take-Off Weight	The certified maximum total weight of an aircraft during take-off.
NaTMAG	Noise and Track Monitoring Advisory Group	NaTMAG brings together representatives from the DfT, ANS, NATS, airlines, Gatwick Airport and local authorities. The group discusses a wide range of noise and track-keeping issues.
NATS	National Air Traffic Service	NATS is the main Air Navigation Service Provider in the United Kingdom and the service provider operating the control tower at Gatwick from 09th October 2022.
NMB	Noise Management Board	The Noise Management Board (NMB) is a unique body, bringing together representatives from all stakeholders in the management and mitigation of aircraft noise.
NPR	Noise Preferential Route	Departure flight paths that avoid densely populated areas and therefore reduce the noise.
NTK	Noise & Track-Keeping (System)	System used to assess flight performance and noise data, constituted by radar surveillance, noise monitoring terminals and software to process data.
QC	Quota Count	The QC is the noise quota assigned to an aircraft and is calculated on the basis of the EPNdB of that aircraft on take-off or landing. The QC is used for night flight restrictions at Gatwick, for which there is a set quota limit each season in addition to the movement limit.
QNH	(no acronym)	When set to QNH, an altimeter reads the altitude above mean sea level.
RAG	Red-Amber-Green	A tier system used to rate and categorise performance.
S106	Section 106	Refers to Section 106 the Town and Country Planning Act 1990.
TK	Track Keeping	A departure is defined as on-track if it does not deviate from the used NPR corridor before reaching the applicable minimum altitude.

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