

Gatwick Airport Limited Airspace Office 2022 Quarter 4 Report

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



Executive Summary

During this quarter, Gatwick Airport facilitated over double the number of movements recorded in the same period of 2021. However, this was the first quarter in over a year of consecutive quarterly movements increases to operate fewer movements than the previous quarter, indicating a gradual return to the normal tempo of seasonal traffic before the start of the COVID-19 pandemic. By the end of 2022, 217,524 movements had been operated at Gatwick Airport, this was ~76% of the annual total for 2019. From the 1st October to 31st December 2022, there were 55,146 aircraft movements, which represented ~86% of the movements recorded through the same period in 2019. This dramatic increase in activity comes in less than a year since the re-opening of the South Terminal and is a testament to the hard work of all the teams in the Gatwick family across the airport this year.

The Airspace Office continued their programme of engagement with airlines this quarter, both new and existing operators to the airport. This included Corendon Airlines, Bamboo Airways and Westjet, with future meetings already planned in early 2023 with SunExpress. The

engagement meetings with our regular operators are scheduled based on the results of last quarter's Airline Noise Performance Table. This engagement has already delivered tangible results, including JetBlue's CDO (Continuous Descent Operations) performance in Q1 2022, which was 21%, increased in Q4 2022 to 79%. Furthermore, meetings occurred with Vueling and Norse Atlantic which encouraged CDO performance to improve in Q4 2022 to 88% and 95% respectively. The Airspace Office expects to continue and increase this programme of engagement into 2023.

Averaged across all the Gatwick airlines, the use of CDO has increased slightly in Q4 versus Q3 to approximately 90%, while track keeping reduced slightly on the previous quarter to just under 97%. However, it is important to note that only 10% of the track keeping violations occurred on routes other than D26LAM / Route 4, and almost all of these were due to crews deviating from the route to avoid adverse weather conditions. Over half of the remaining non-Route 4 track keeping violations occurred during a period of frequent thunderstorm activity at the end of October 2022.



Executive Summary

The number of submitted complaints and complainants have both decreased this quarter versus last quarter to 2,014 and 110 respectively. GAL is acutely aware of the impact of increased sensitivity this year to aircraft noise catalysed by the long periods of empty skies during the pandemic. Through the ongoing work plan of the Noise Management Board, Gatwick Airport is committed to bringing actionable change to mitigate the impact of operations on local communities. Furthermore we will continue to do our utmost to keep our communities informed of operations at the airport, including providing detailed responses to any complaints in line with our complaints handling policy.

If you would like to know more about aircraft operations and noise, make a complaint about aircraft noise, or learn about the airspace around Gatwick, I would invite you to visit our website. I would also encourage you to visit our upgraded “Insightful” pages which now provide more precise overflight information tailored to your location. We have also added more material explaining aircraft noise, how we measure it and how it has changed in the past. As before, you can find these pages under “Noise Explained”.

Kimberley Heather

Airspace & Noise Programme Manager

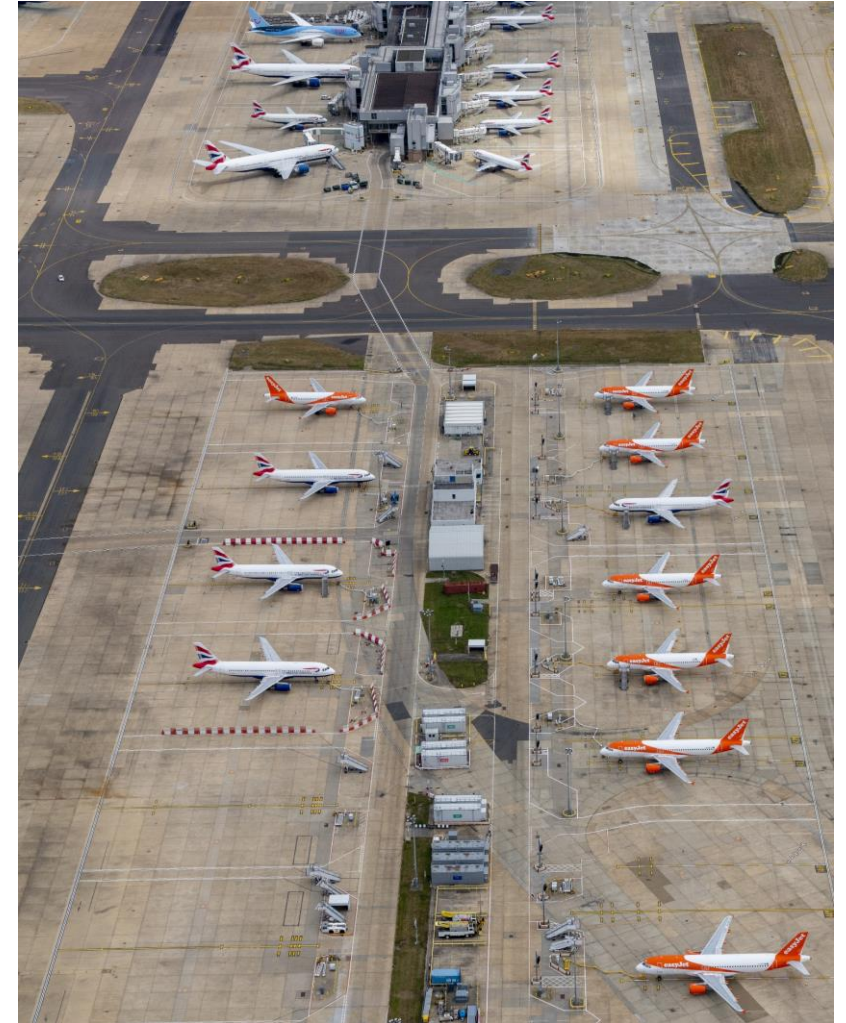


About This Report

This report is produced by the Gatwick Airport Airspace Office. This team is responsible for recording, investigating and responding to aircraft noise enquiries as well as monitoring airline conformance 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 airport's 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, an airline noise performance table, a report on night flying during the period, and an analysis of noise complaints received during the period.

Footnotes which provide an insight into the regulatory basis of the reported figures are explained in Annex B.



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Performance Summary

Key Performance Indicators

This section details how the airport is performing in conjunction with its 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). The “chapters” refer to the [noise standards](#) set out by the International Civil Aviation Organisation (ICAO).

A 15-year KPI table can be found in [Annex E](#) where comparisons to previous years can be made.

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



Airline Noise Performance Table

Rank by ATMs	Airline name	Total movements	QC/Seat	Rank (QC)	CDO performance	Rank (CDO)	TK performance	Rank (TK)
1	easyJet	27,107	0.00171	4	93.99%	4	99.54%	18
2	British Airways	6,188	0.00273	21	90.14%	8	99.63%	15
3	Vueling	3,594	0.00181	7	88.31%	10	99.32%	20
4	Norwegian	2,677	0.00372	23	91.48%	7	99.17%	22
5	TUI Airways	2,391	0.00234	17	92.12%	6	99.67%	14
6	Ryanair	1,866	0.00260	20	98.18%	1	99.49%	19
7	WizzAir Hungary	1,706	0.00172	5	63.31%	24	99.28%	21
8	WizzAir UK	1,527	0.00170	3	85.70%	12	98.74%	23
9	Aer Lingus	1,090	0.00216	11	85.32%	13	99.81%	13
10	Aurigny	1,016	0.00226	16	95.87%	2	99.61%	16
11	TAP Portugal	578	0.00224	14	73.36%	20	100.00%	1
12	JetBlue	490	0.00154	2	78.78%	16	99.54%	17
13	Turkish Airlines	488	0.00192	8	86.48%	11	98.39%	24
14	Emirates	460	0.00226	15	72.61%	21	100.00%	1
15	Eastern Airways	382	0.00176	6	76.72%	17	100.00%	1
16	Air Europa	370	0.00378	24	70.27%	22	100.00%	1
17	Norse Atlantic Airways	368	0.00196	9	94.57%	3	100.00%	1
18	Air Baltic	344	0.00143	1	83.72%	15	100.00%	1
19	Iberia Airlines	342	0.00221	13	76.61%	18	100.00%	1
20	Air Transat	292	0.00208	10	84.25%	14	100.00%	1
21	Jet 2	207	0.00402	25	88.46%	9	100.00%	1
22	Qatar	184	0.00252	19	68.48%	23	100.00%	1
23	Icelandair	178	0.00216	12	93.26%	5	96.67%	25
24	Royal Air Maroc	176	0.00330	22	76.14%	19	100.00%	1
25	Sun Express	144	0.00247	18	51.39%	25	100.00%	1

Airlines are ranked by the number of movements in Q4 2022. The ranking within each metric is presented.

This table includes 98.2% of all movements operated at Gatwick Airport throughout Q4 2022.

Figure 2: Q4 2022 Airline Noise Performance Table

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

In order to drive continuous improvement and to help showcase airline performance in relation to noise, an Airline Noise Performance Table has been developed. In collaboration with airlines, Gatwick Airport Limited identified strategic and operational metrics which are being monitored and reported against.

QC/seat is the strategic metric in the performance table, whilst both Continuous Descent Operations (CDO) and Track-Keeping (TK) are operational metrics. Airlines with more than ten movements per week during Q4 2022 are included in the ranking. Carriers with a base at Gatwick are highlighted in **bold**.

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.

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 dependent on noise performance of the aircraft. The QC value 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 $= (0.25 + 0.5) / (180 * 2) = \mathbf{0.00208}$, 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 $= (0.125 + 0.125) / (180 * 2) = \mathbf{0.00069}$.

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** $\geq 85\%$ **70% \leq 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 the 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 a higher proportion of Route 4 departures. Track keeping performance at airport level is also presented separately in this report.

RAG definition: **Green** $\geq 95\%$ **90% \leq Amber $< 95\%$** **Red $< 90\%$**



Airport and Runway Statistics

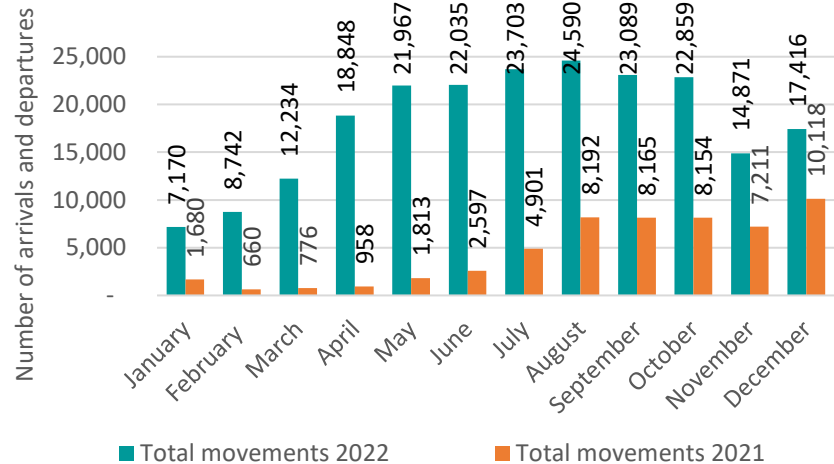


Figure 3: Number of arrivals and departures for this year and last

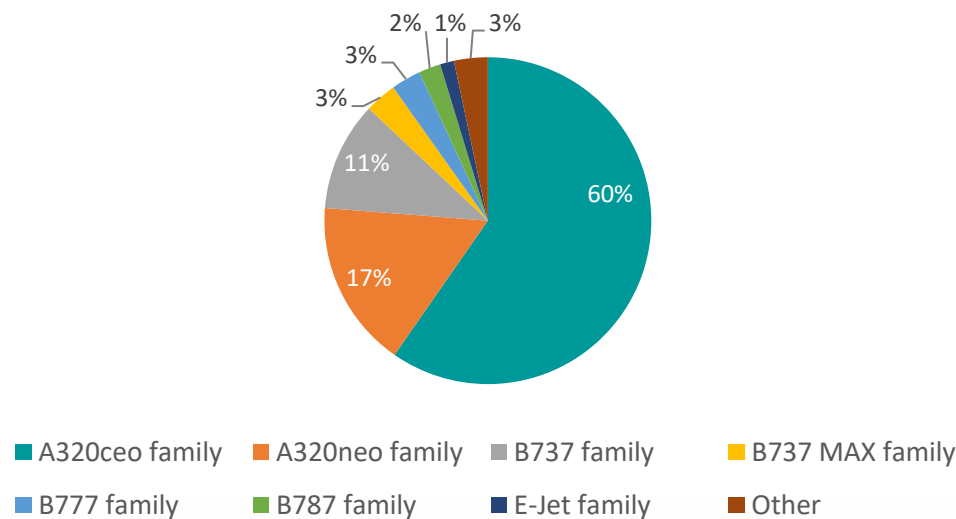


Figure 5: Aircraft fleet mix in 2022

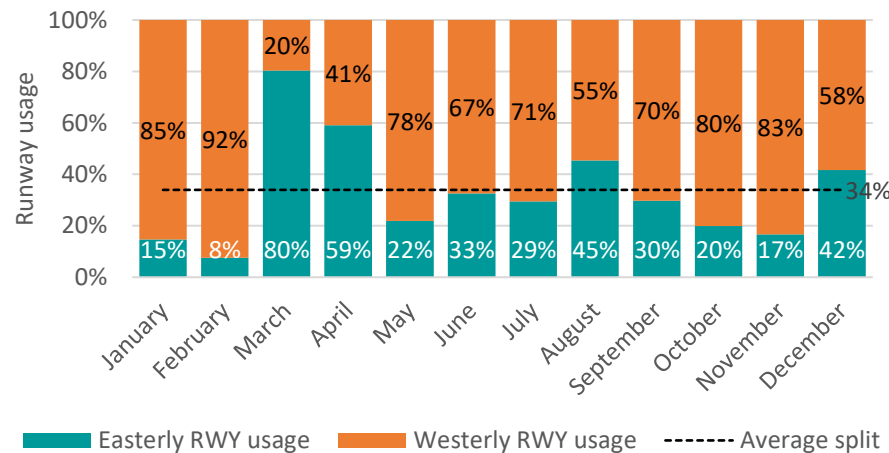


Figure 4: Comparison of easterly and westerly runway usage

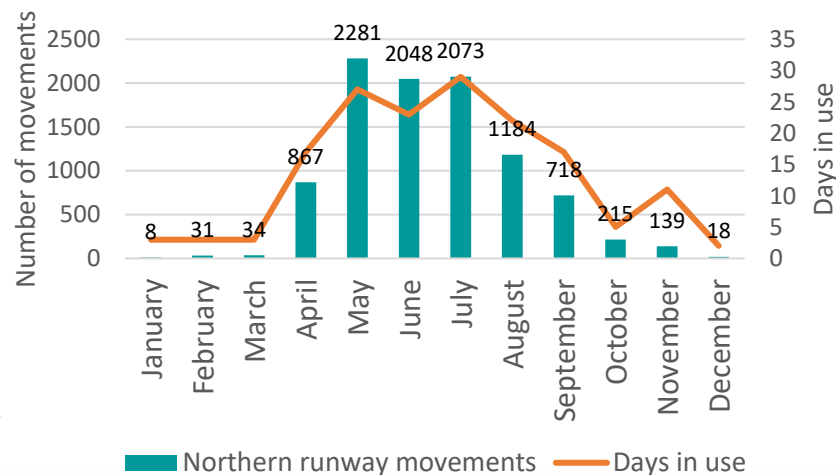


Figure 6: Northern runway usage

Following the trend of 2022, the number of movements in Q4 2022 was a significant increase on the same period in 2021. Movements reduced in November for the beginning of the winter season, however this slightly increased again in December due to increased holiday traffic (Figure 3).

Figure 5 separates A320s and B737 into the older and newer variants. The A320ceo family accounts for nearly two thirds of the total movements in 2022 which broadly aligns with the fleet mixes of our home carriers.

Use of the northern runway continued to decrease in Q4 from Q3, with a slight increase in November due to the main runway being closed overnight during the weekends for planned maintenance.



Arrivals Statistics – Continuous Descent Operations¹

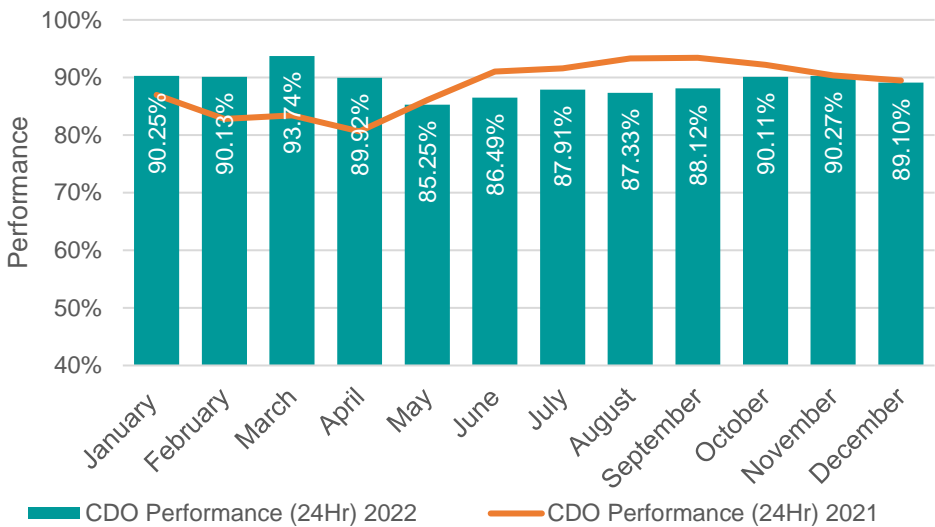


Figure 7: CDO performance (24 hours)

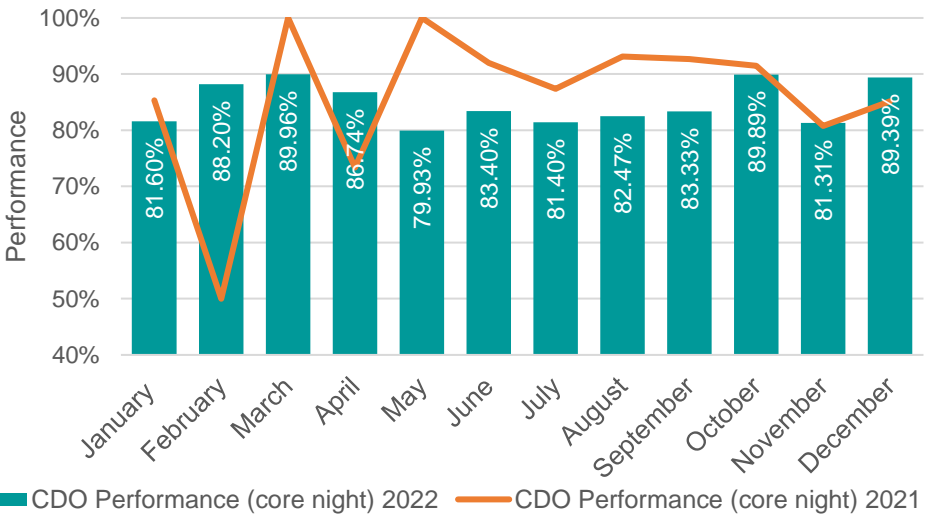


Figure 9: CDO performance (Core Night Period)

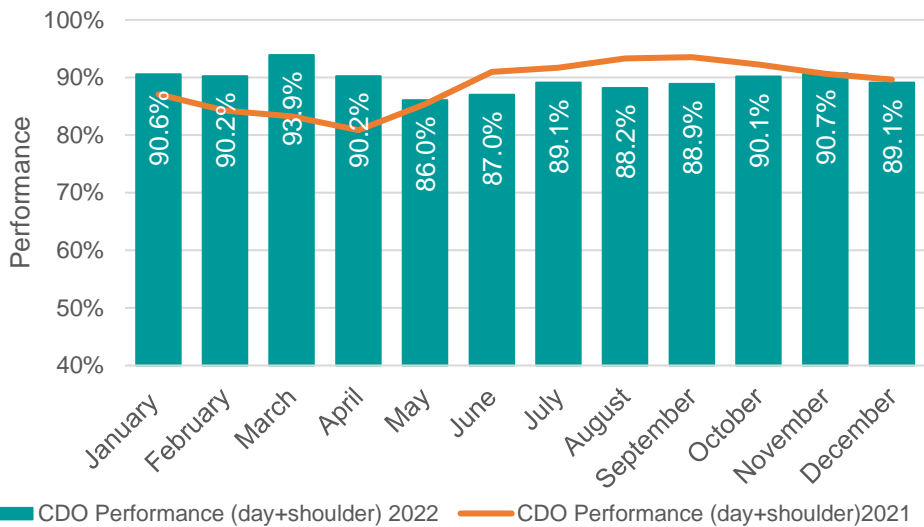


Figure 8: CDO performance (Day & Shoulder periods)

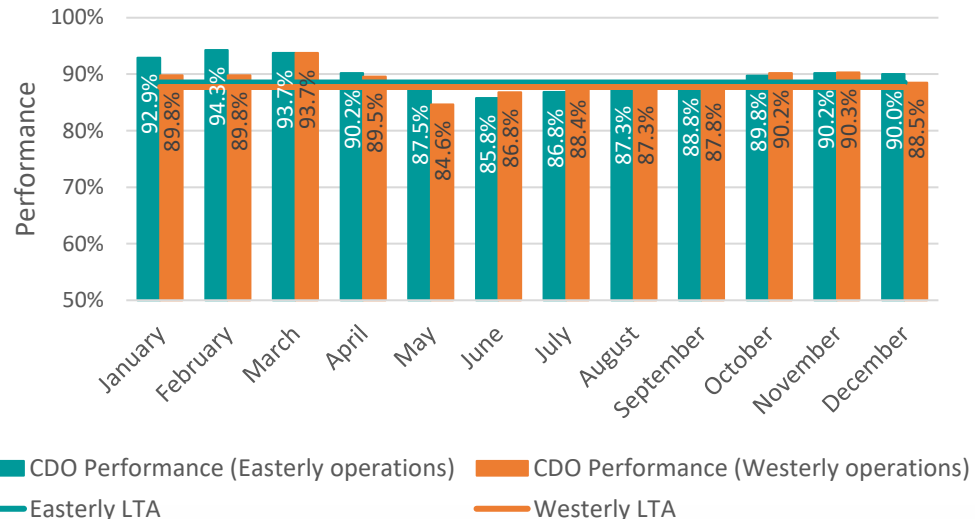


Figure 10: CDO performance per runway

CDO performance in Q4 2022 slightly increased versus the previous quarter, as shown in Figure 7. CDO performance in November and December 2022 were at the same levels as 2021 with an increase in movements of 86% over the two months.

The Airspace Office engaged with a number of airlines over the quarter, specifically highlighting the importance of CDO. These included new airlines operating to the airport for the first time and those who would benefit from improved performance based upon last quarter's Airline Noise Performance Table.

CDO performance levels are affected by adverse weather conditions such as localised thunderstorms and strong winds. This can account for seasonal variations when there is a higher occurrence of these weather events.

Figure 10 shows that the long term average CDO performance by runway direction was broadly similar over the year.



Arrivals Statistics – Go-Arounds

A go-around is a safety procedure performed when an arriving aircraft on final approach aborts landing and climbs away from the airport by applying take-off power. It is a standard 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 pilots can anticipate where the aircraft will fly following the decision to go around.

The standard missed approach procedure at Gatwick Airport requires a climb straight ahead to 3,000ft. On passing 2,000ft or 1 DME (Distance Measuring Equipment), whichever is later, aircraft will turn heading 180 to the runway direction. 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, as they are performed to avoid potentially unsafe situations and maintain a safe separation between aircraft.

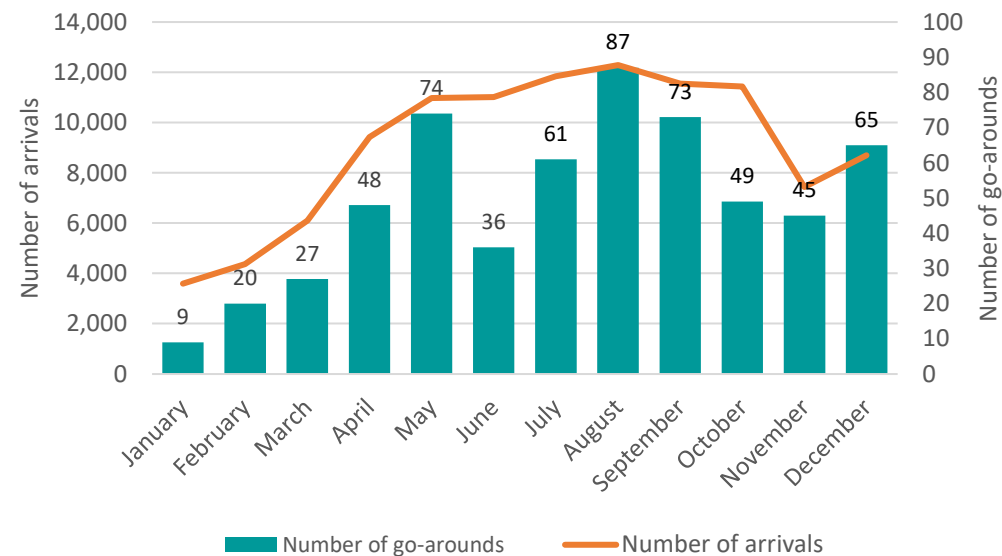


Figure 11: Number of arrivals and go-arounds

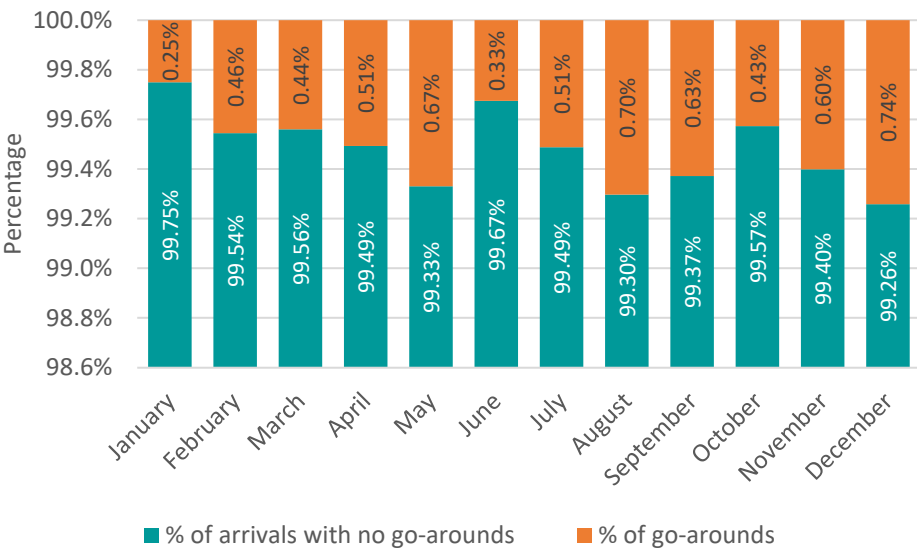


Figure 12: Ratio of go-arounds



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 13 (left) are runway occupancy, unstable approaches and airport operational reasons. As an occupied runway may be caused by a range of conditions, the root causes are further broken down in Figure 13 (right).

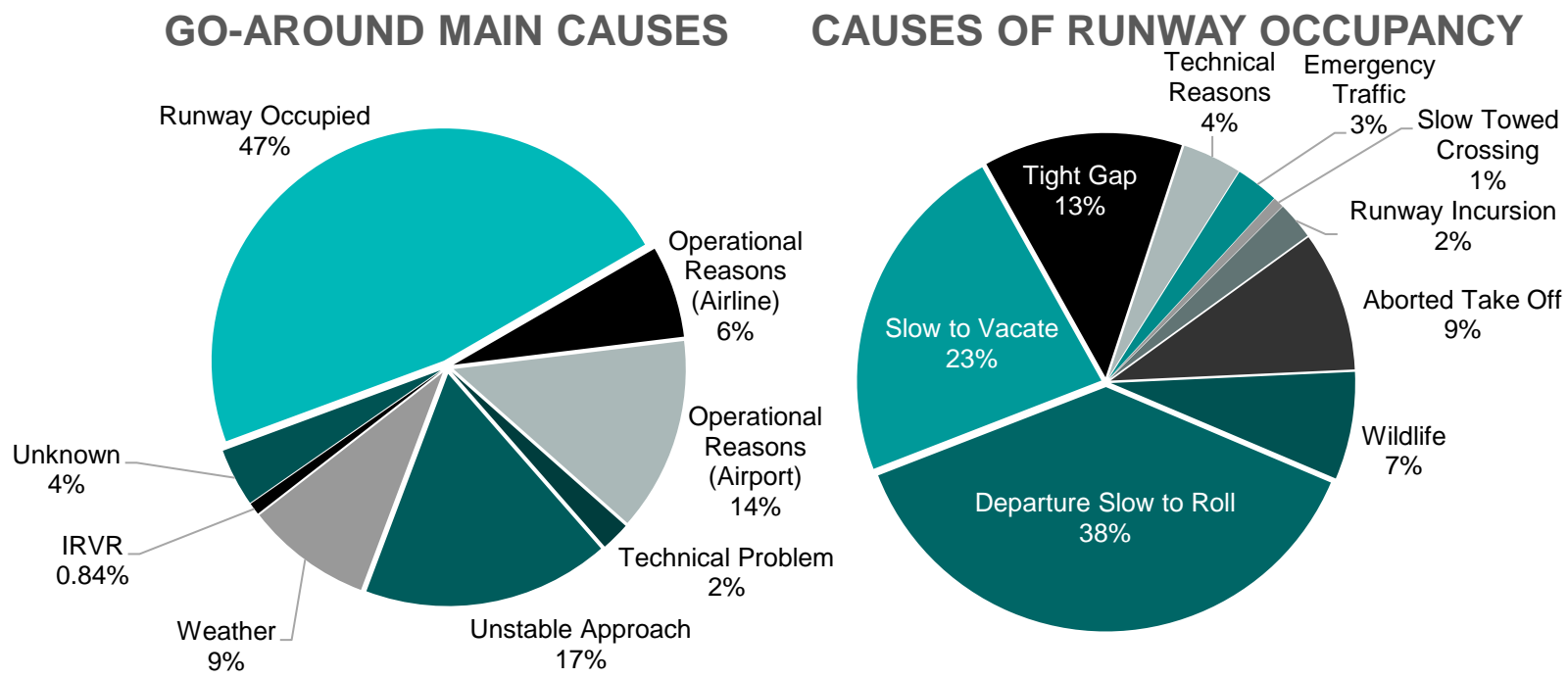


Figure 13: Reasons for go-arounds in 2022

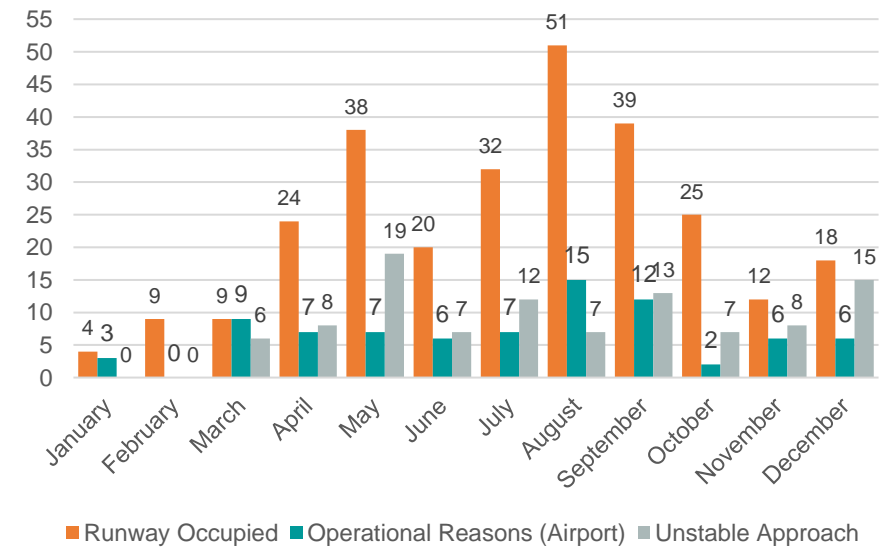


Figure 14: Ratio of main reasons for go-arounds per month



Arrivals Statistics – Joining Point

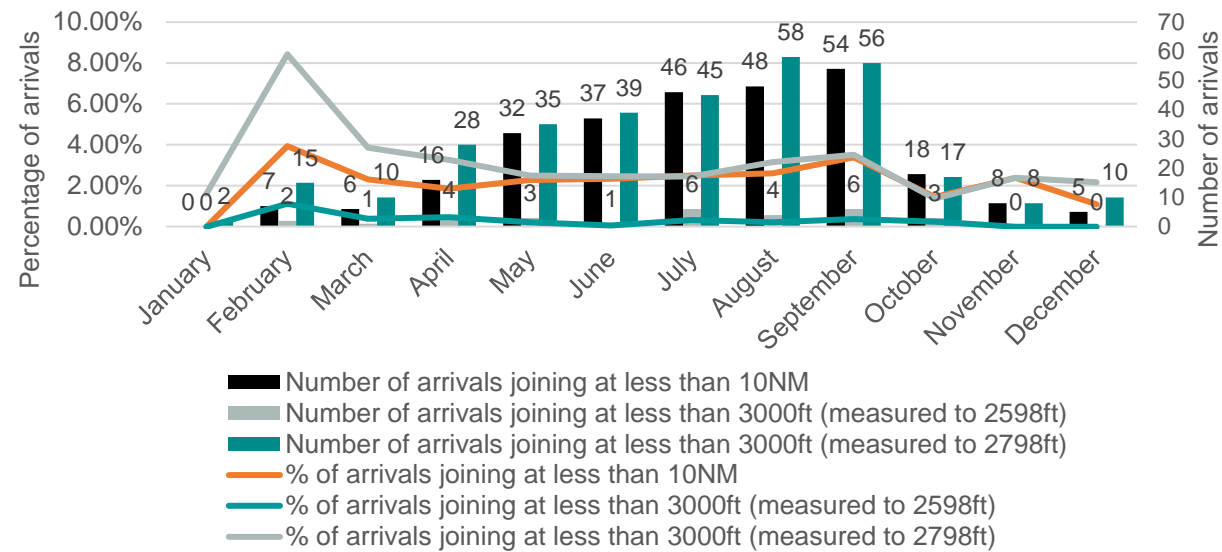


Figure 15: Night time joining point violations?

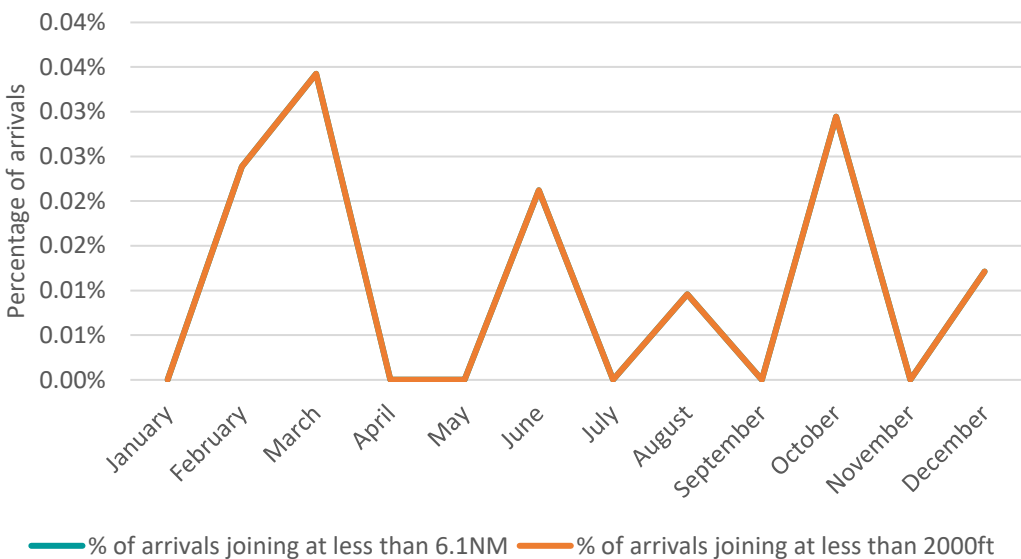


Figure 16: Day time joining point violations

As per the [AIP](#), aircraft shall not join the ILS at less than 10NM from touchdown or below 3,000ft at night. Figure 15 shows the percentage of arrivals violating these rules. The number of these violations has decreased in Q4 versus the previous quarter, most likely as a result of the reduction in use of the northern runway.

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 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 – Overflight³

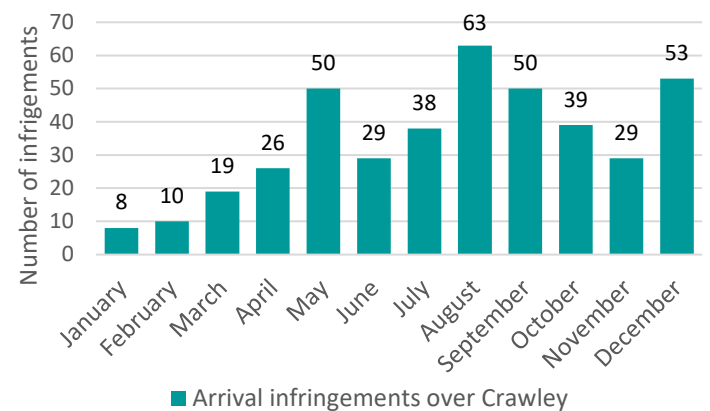


Figure 17: Arrival infringements over Crawley

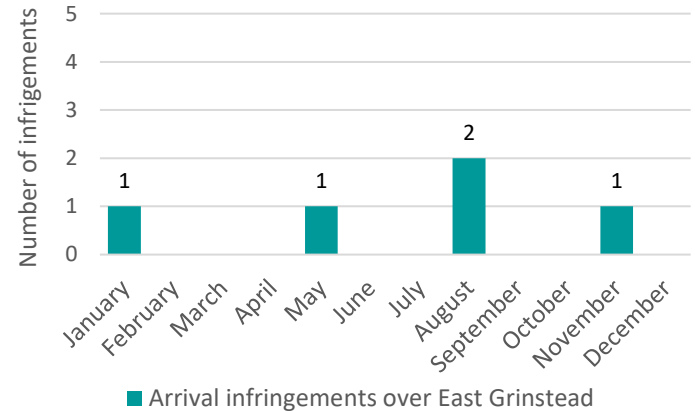


Figure 18: Arrival infringements over East Grinstead

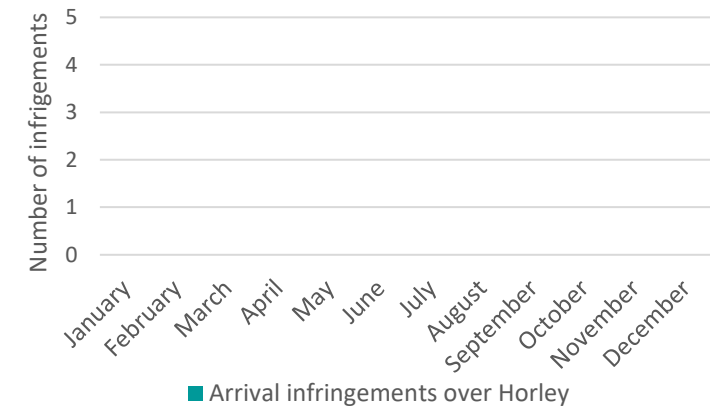


Figure 19: Arrival infringements over Horley

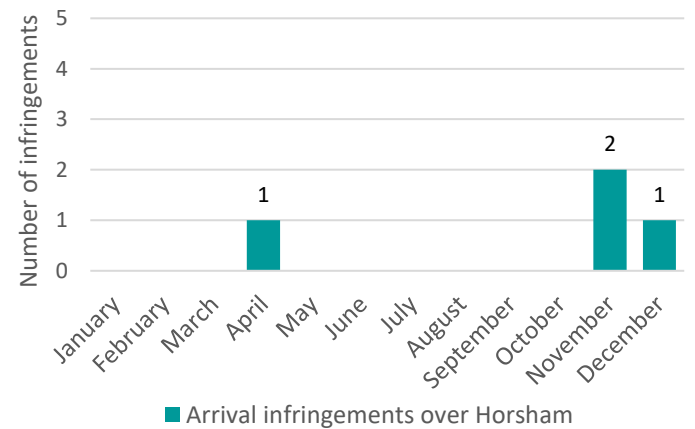


Figure 20: Arrival infringements over Horsham

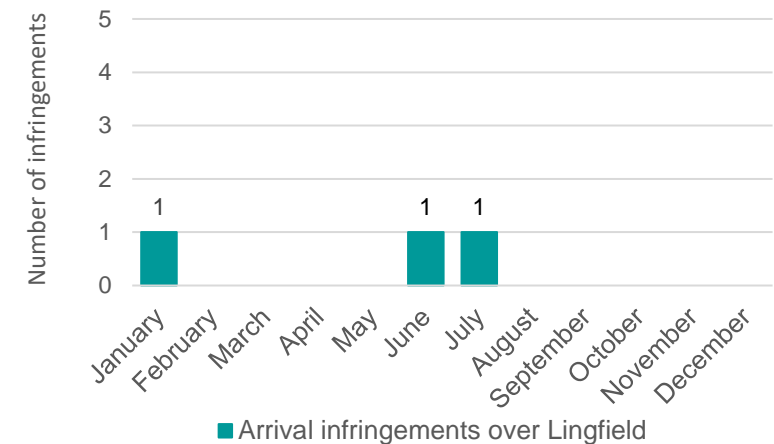


Figure 21: Arrival infringements over Lingfield

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 Q4 infringements shown in Figure 17,18 & 20 occurred as a result of go-arounds and missed approaches.



Departure Statistics – Track Keeping

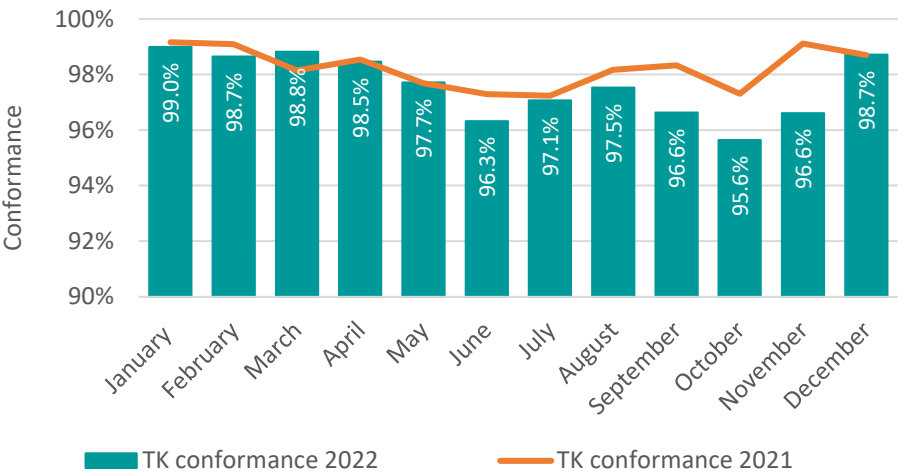


Figure 22: TK conformance (24 hours)

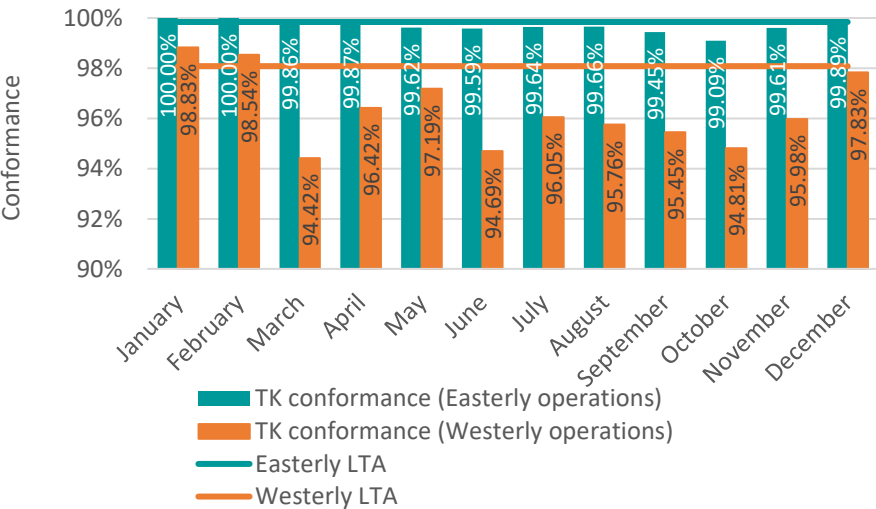


Figure 23: TK conformance per runway

Figure 22 shows the overall departure track keeping conformance to the end of Q4 2022. Track keeping conformance remained in excess of 95% in each month, with the conformance increasing over the three months. October and November experienced several days of exceptionally poor weather with local thunderstorms disrupting operations in the London TMA; these accounted for a large proportion of track keeping deviations in Figure 22.

Figure 23 shows again that track keeping conformance is better maintained on easterly operations than westerly to the end of Q4 2022. This is due to a known issue with Route 4 track keeping which significantly affects the percentage of westerly track keeping.



Departure Statistics – Track Keeping in 2022

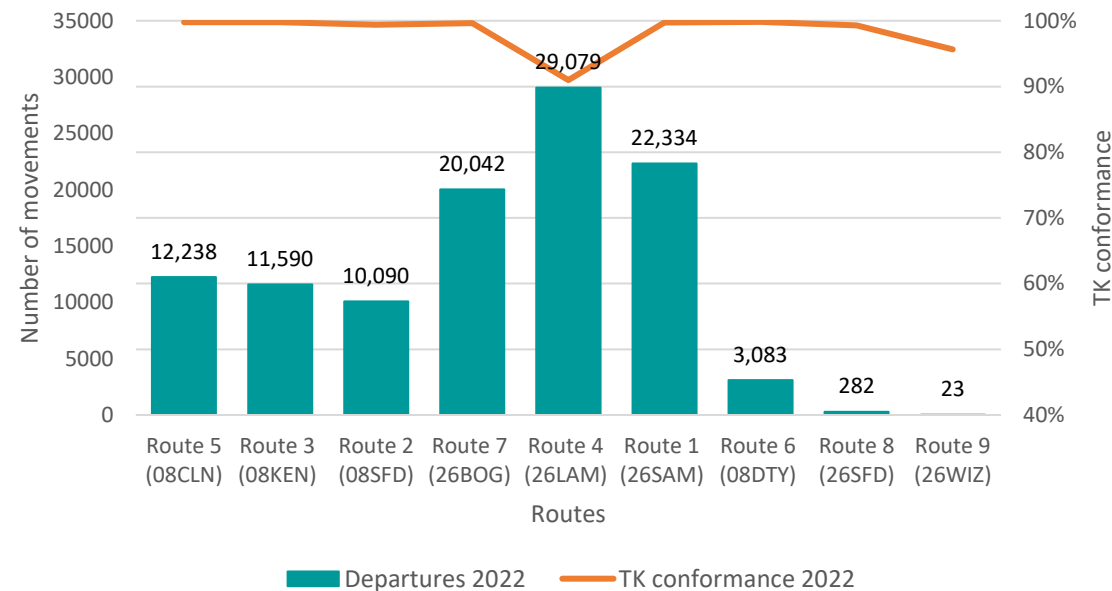


Figure 24: Track keeping and route usage

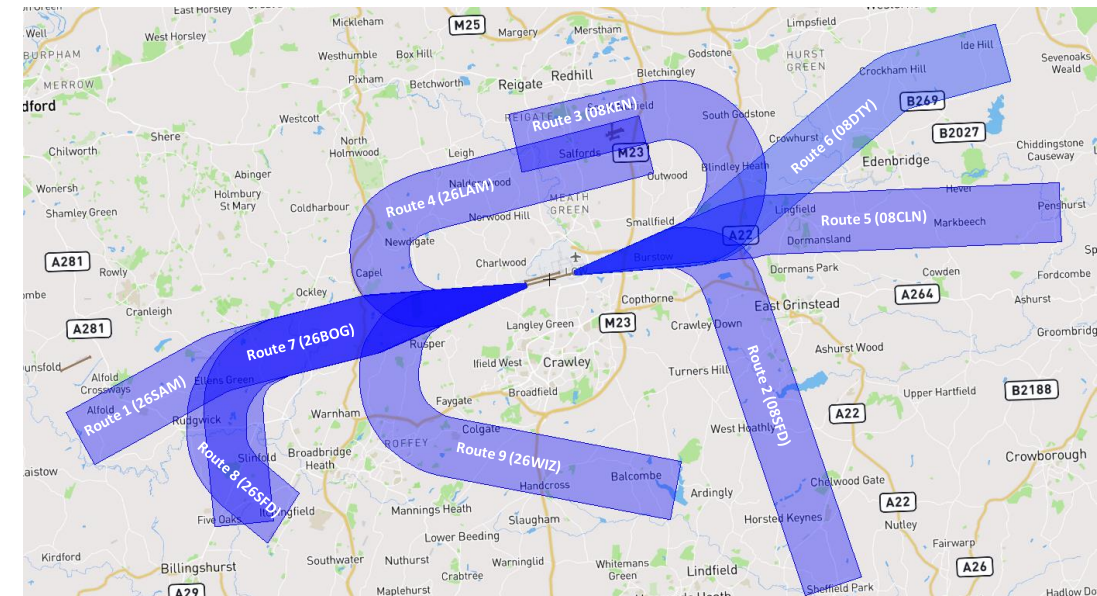


Figure 25: Noise Preferential Routes for departures

Figure 24 shows the routes most utilised in 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 25 shows a map of all nine noise preferential routes for departures in use at Gatwick Airport. The table to the right lists the altitudes up to which aircraft are required to stay within the conformance monitoring swathe of the respective noise preferential route. Once above the minimum vectoring altitude, air traffic control may provide pilots with vectors to facilitate a more direct path towards their destination.

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

Although Figure 24 shows relatively low usage of 26WIZ / Route 9, especially compared to other departure routes at Gatwick Airport, 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.



Departure Statistics – Noise, Climb and Overflight

There were no departure noise infringements during 2022.

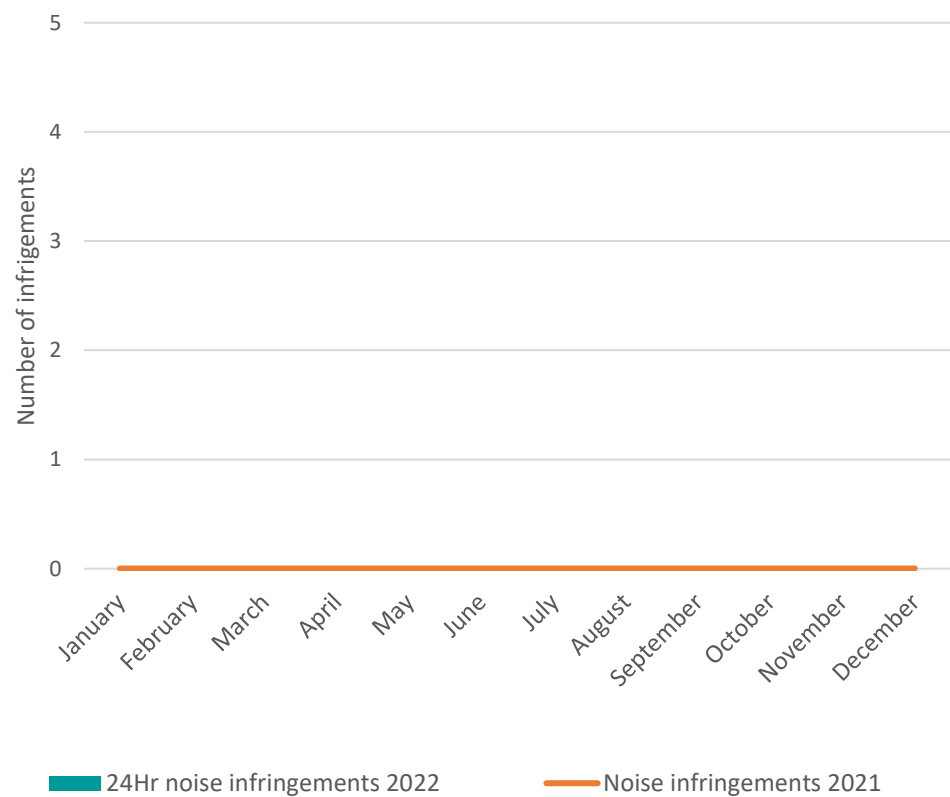


Figure 26: H24 noise infringements⁶



Departure Statistics – Noise, Climb and Overflight

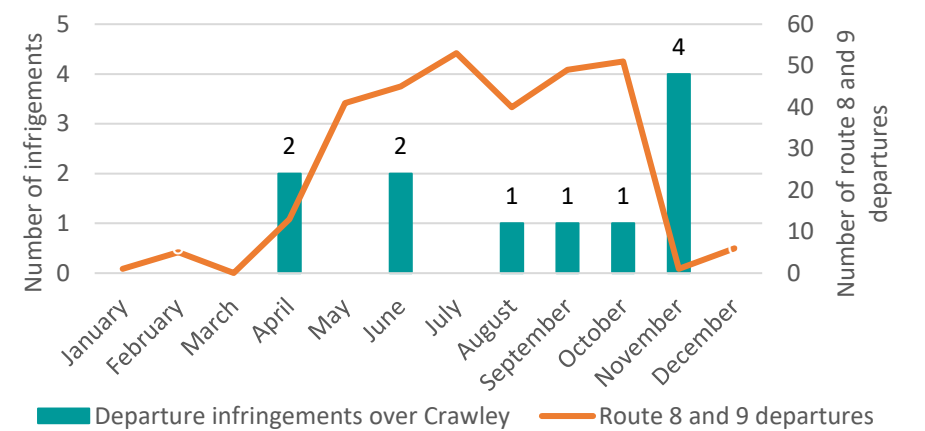


Figure 27: Departure overflight infringements over Crawley⁴

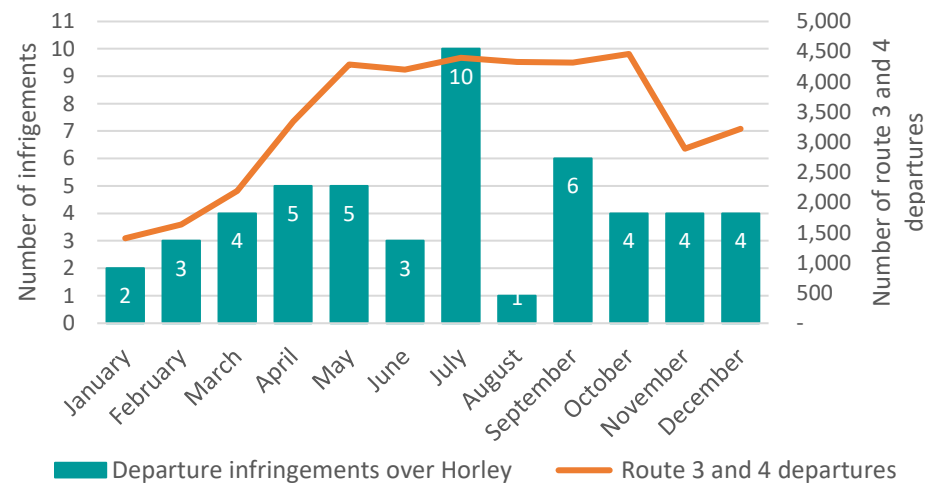


Figure 28: Departure overflight infringement over Horley⁴

Figure 27 shows that during Q4 2022, 5 departures overflowed Crawley. These were all due to weather avoidance with 3 occurrences within 1 hour on the same day in November.

The number of overflights over Horley has reduced since Q3 as shown in Figure 28. The Airspace Office continues to work closely with NATS to highlight, address and prevent the number of overflights over the town.

Figure 29 shows that there was no 1,000ft departure noise infringements in 2022.

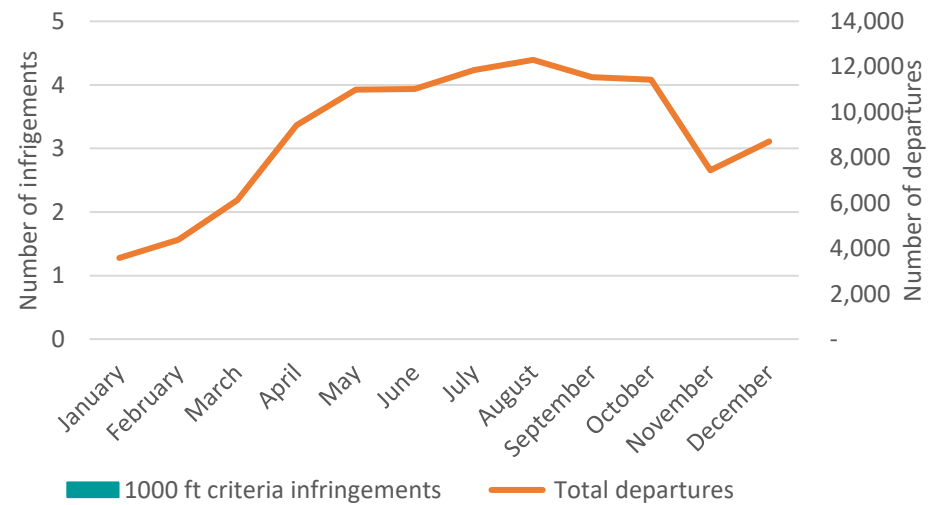


Figure 29: Number of aircraft not meeting the required climb performance⁵



Night Operations – Summer Season

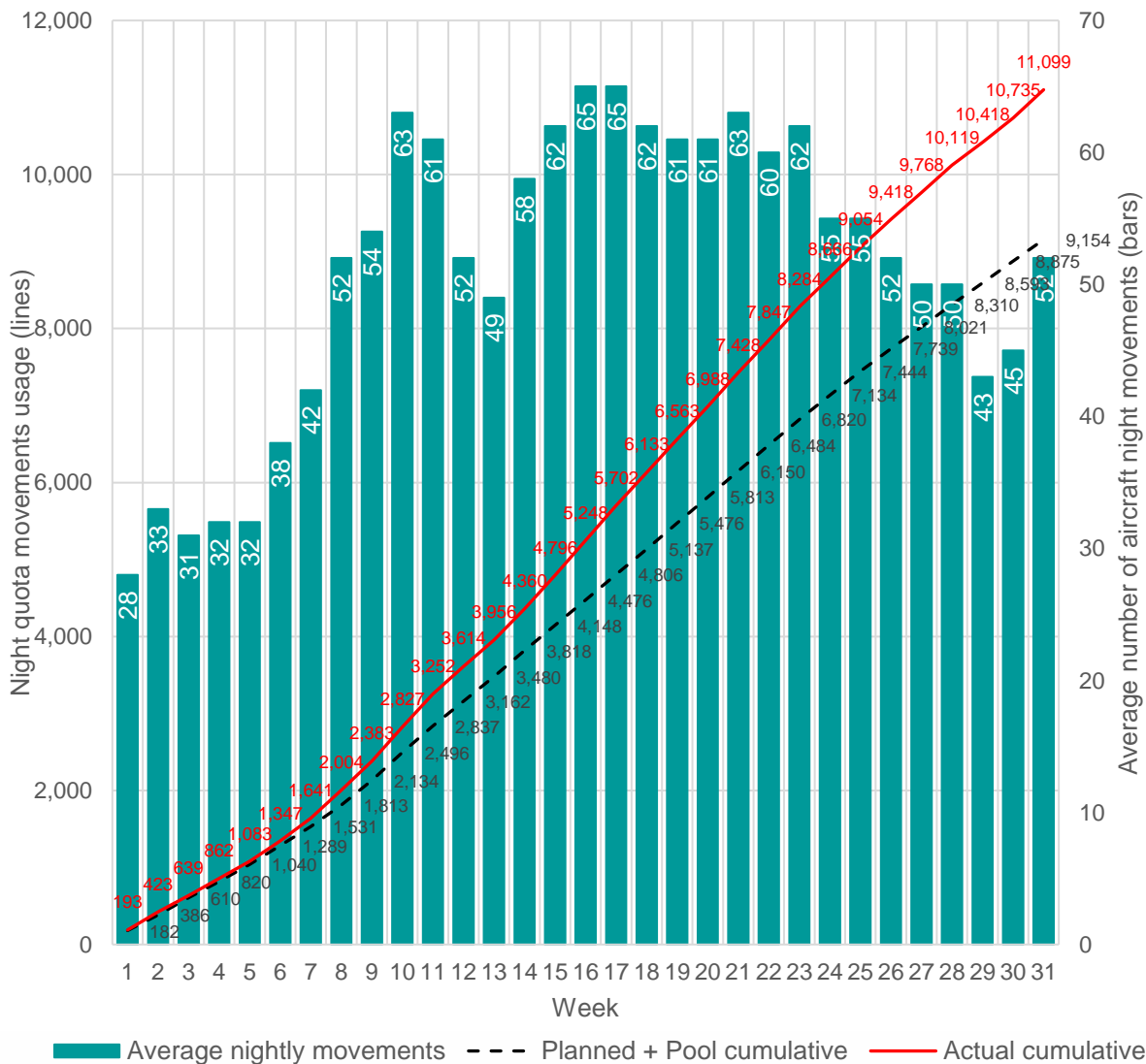


Figure 30: Night flight movements in summer

The Summer 2022 season began on 27th March 2022 (0100hrs local) and finished on 30th October 2022 (0159hrs local). Figure 30 depicts the planned and actual usage for the summer season; finalising with 11,099 night movements.

Figure 31 provides a breakdown of the number of flights either avoiding the night quota period (avoided) or using unplanned quota usage (non-dispensed). GAL have applied 576 dispensations for unscheduled night movements, mainly due to delays caused by unforeseen ATC staffing disruption and thunderstorm activity, however some were also applied for lateness due to crews dealing with medical emergencies.

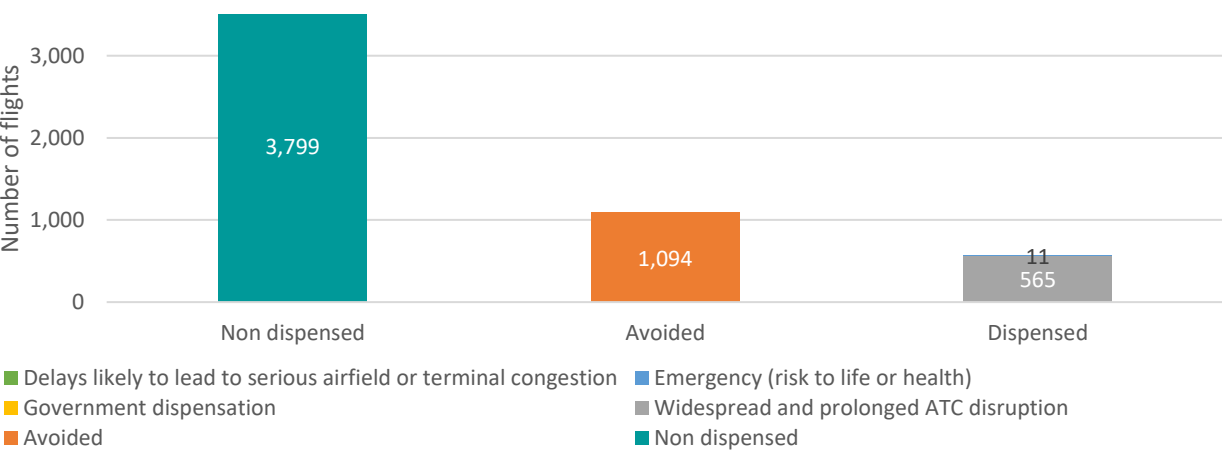


Figure 31: Number of non-dispensed, avoided and dispensed flights



Night Operations – Winter Season

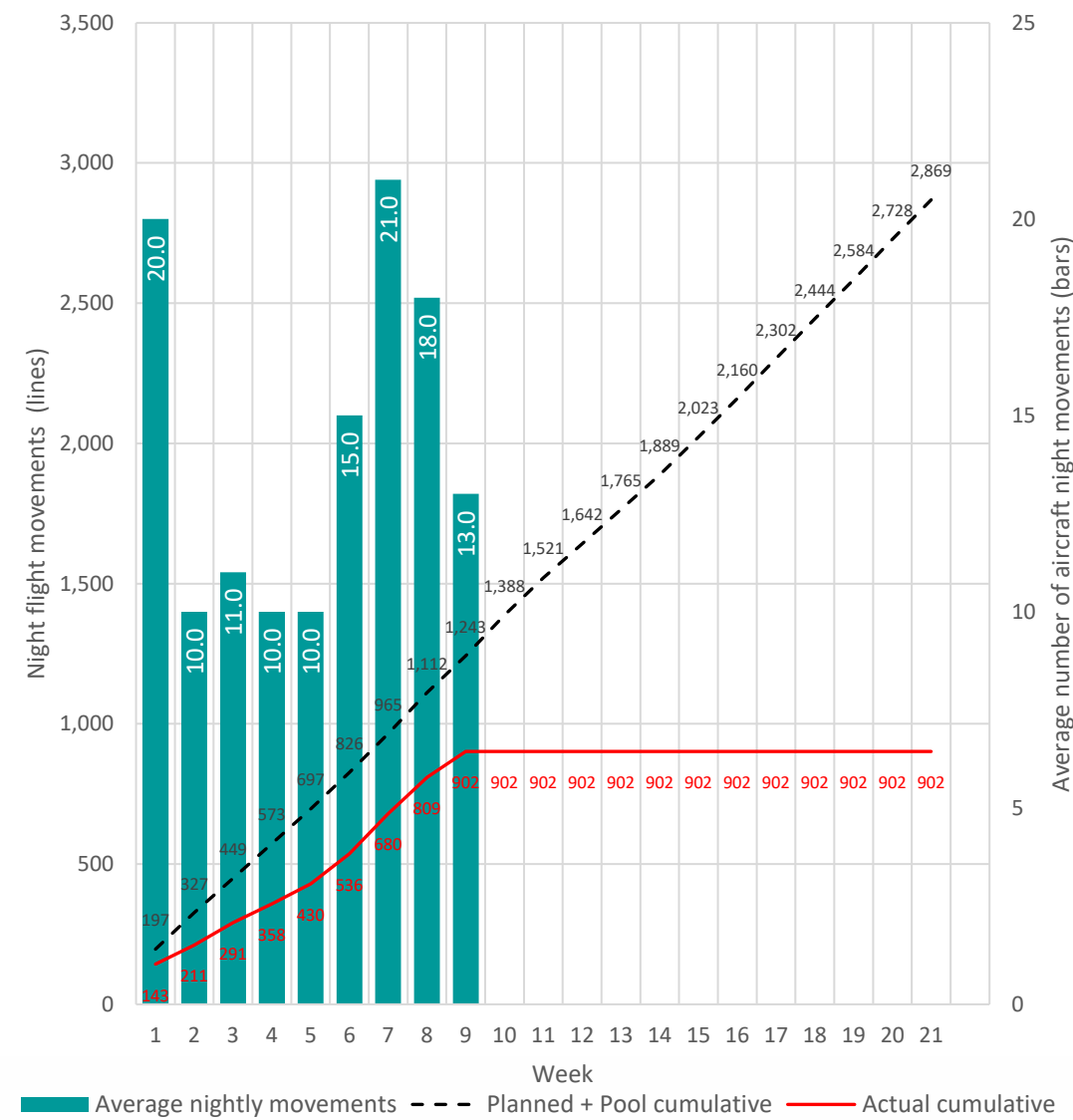


Figure 32: Night flight movements in winter

The Winter 2022/2023 season began on 30th October 2022 (0200hrs local) and will end on 26th March 2023 (0059hrs local). Figure 32 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 33 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 unforecast snow.

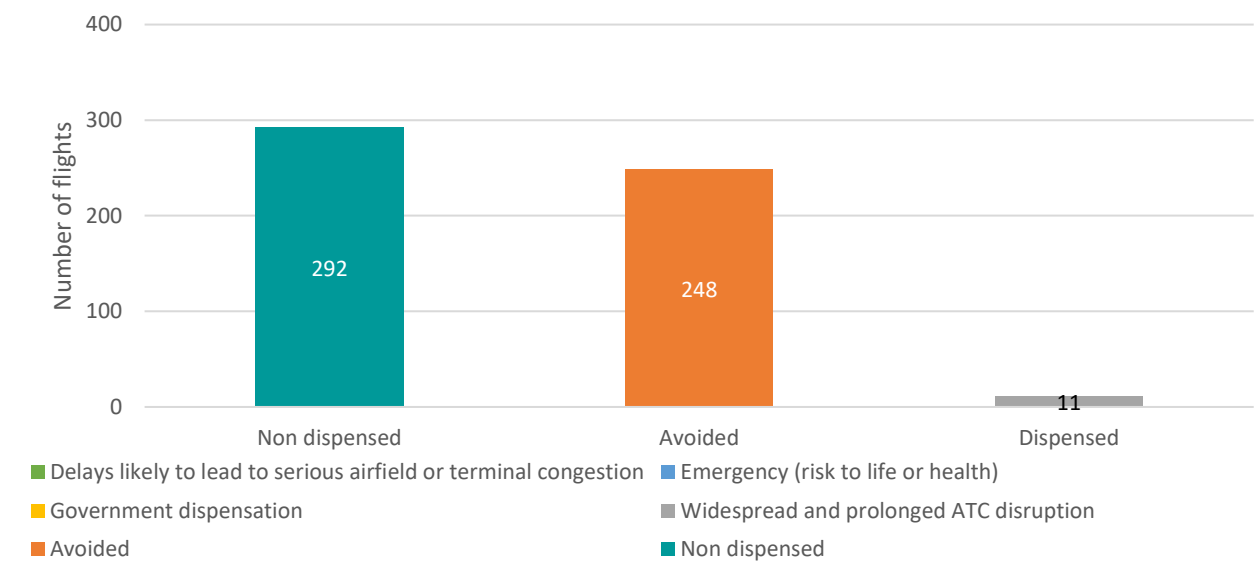


Figure 33: Number of non-dispensed, avoided and dispensed flights



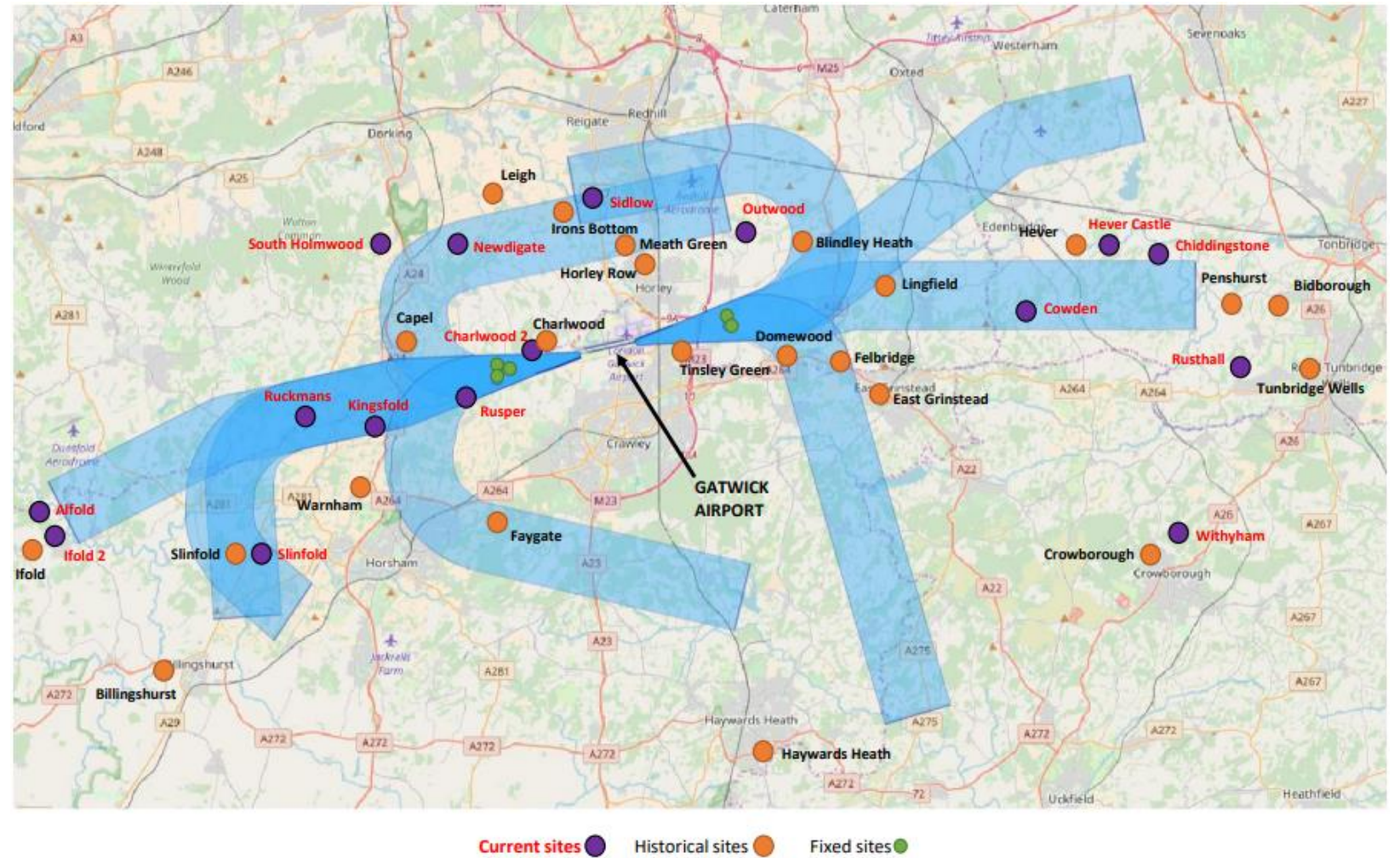
Noise Monitoring

Gatwick has a local noise monitoring system that consists of a number of 'monitoring stations'. Each station includes a microphone, recording device and transmitter to relay the data remotely.

The monitor records noise events from both aircraft and background sources, which could include road traffic or even the wind in the trees. The active monitoring of noise allows us to track aircraft noise levels, evaluate trends and make comparisons between 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 proposing the location of noise monitors and follows established processes.



Complaints

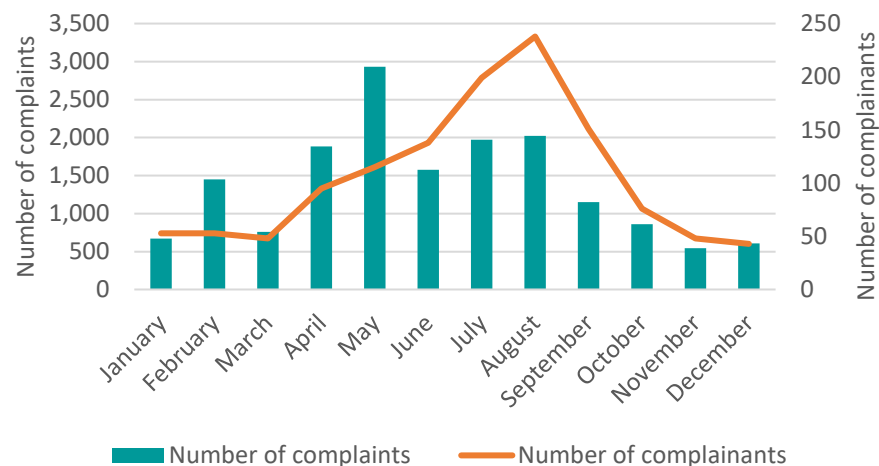


Figure 35: Number of complaints and complainants

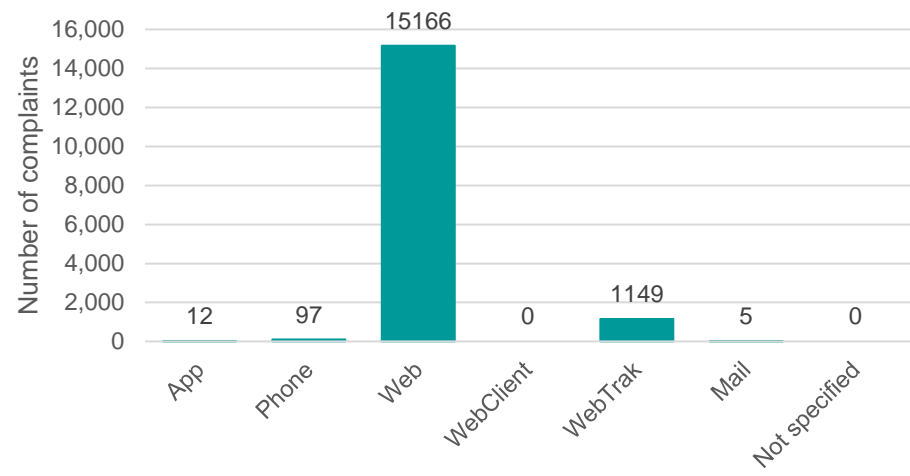


Figure 36: Complaints submission methods (whole year)

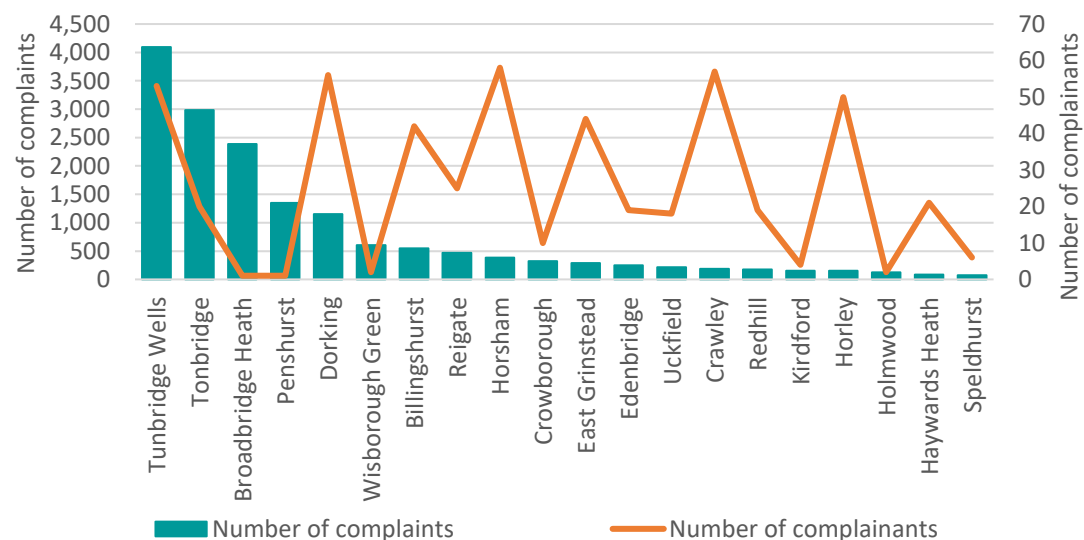


Figure 37: Areas with most complaints (whole year)

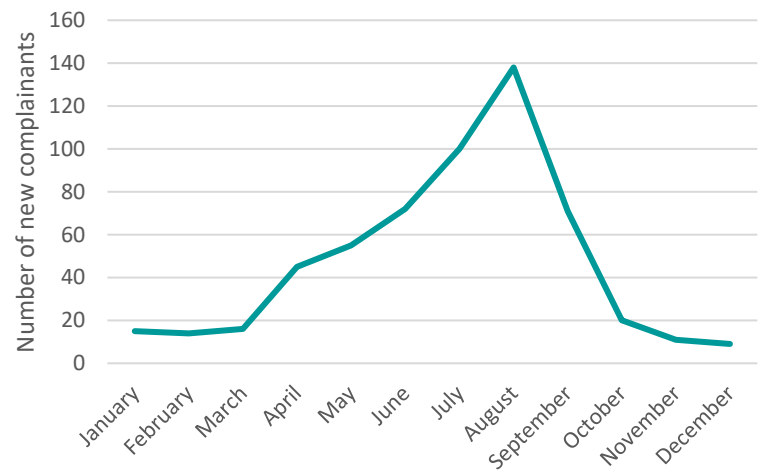


Figure 38: New complainants

Figure 35 shows that both the number of complaints and complainants has decreased in Q4 2022 significantly from the peak of the summer season; the monthly figures are broadly similar to the start of the year in Q1 2022. Figure 38 shows the same trend for the number of new complainants in Q4 compared to Q1.

The number of individual complainants peaked in August at 238, while the highest number of complaints was recorded in May.

Figure 36 shows that almost all complaints (>99%) are received via the online web form and WebTrak.



Complaints

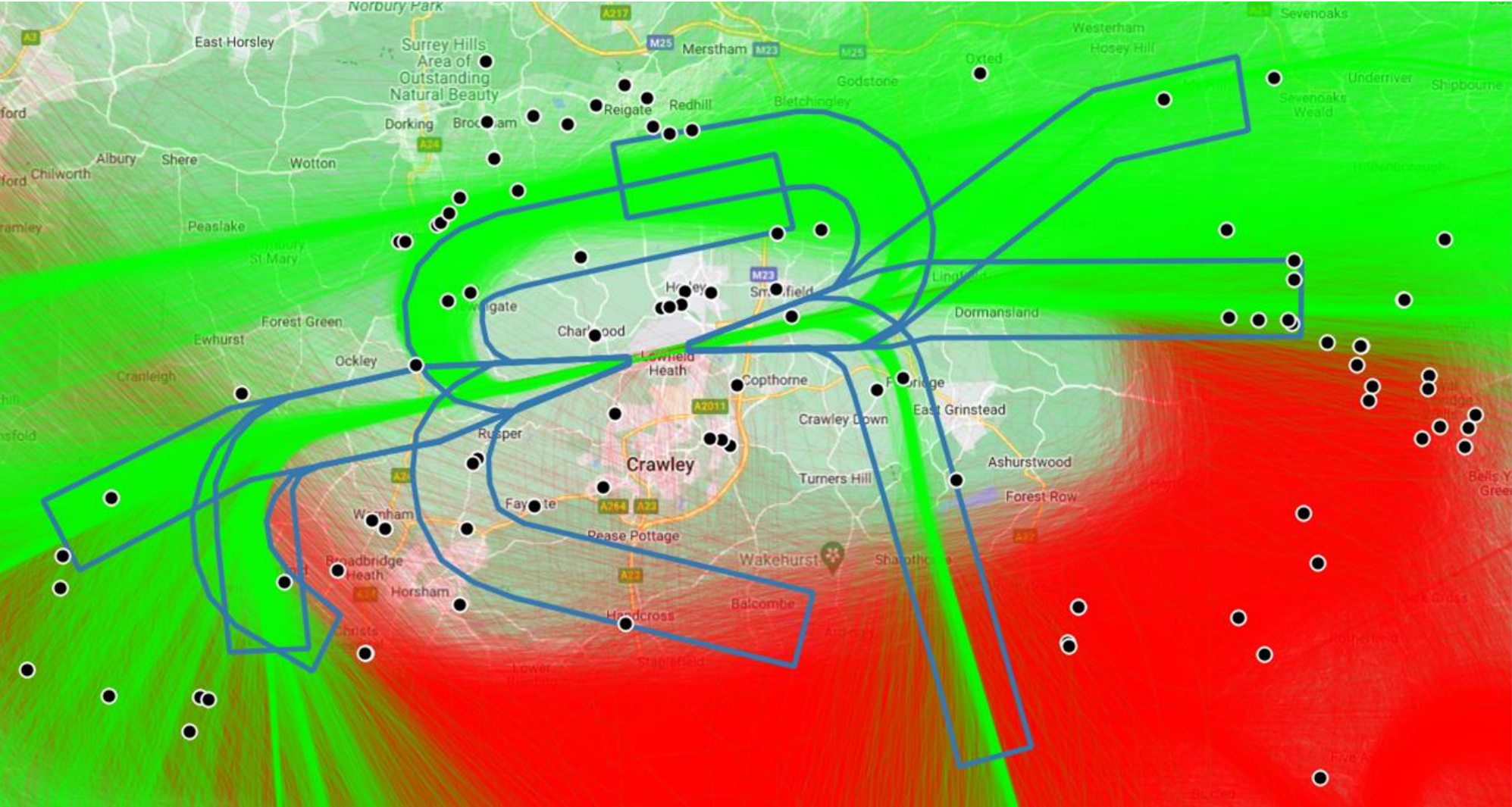


Figure 39: Q4 2022 individual complainants with arrivals (red) and departure (green) tracks, and NPRs

Figure 37 (previous) showed the areas with the greatest number of complaints received, so far in 2022, were Tunbridge Wells, Tonbridge and Broadbridge Heath.

Figure 39 shows the distribution of individual complainants, as well as the tracks of all movements in Q4 2022.



Ground Noise

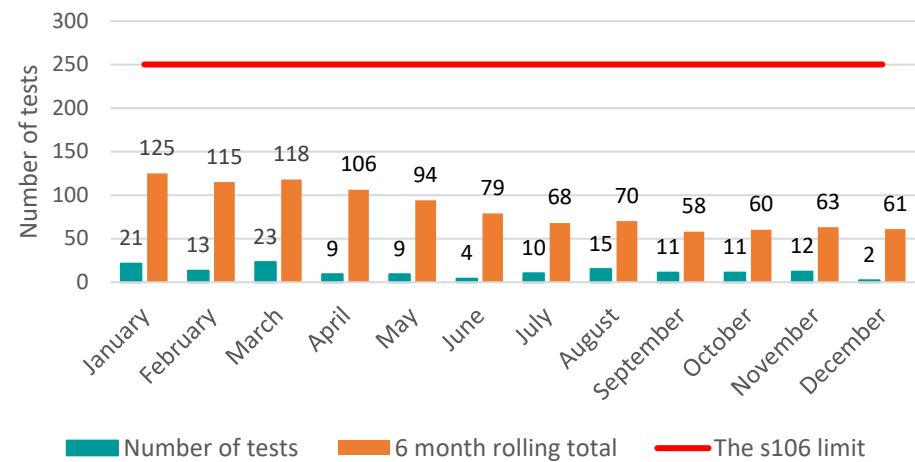


Figure 40: Engine runs⁷

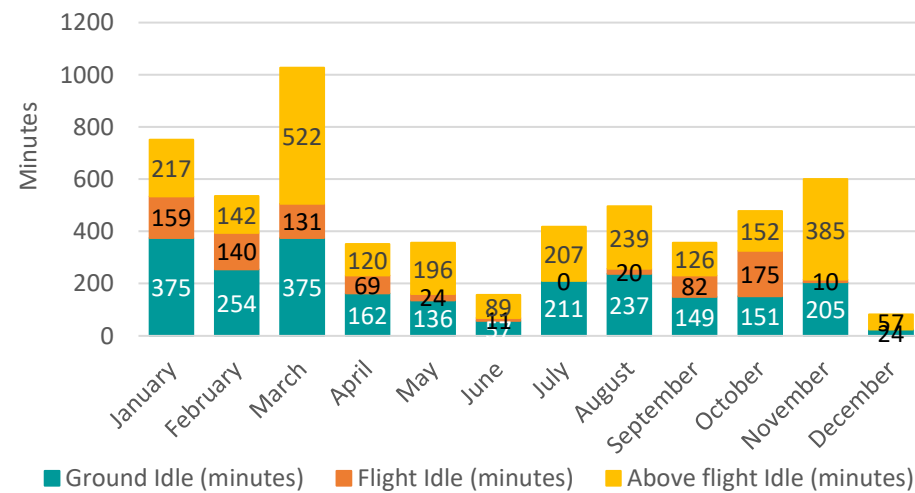


Figure 42: Cumulative minutes of engine tests

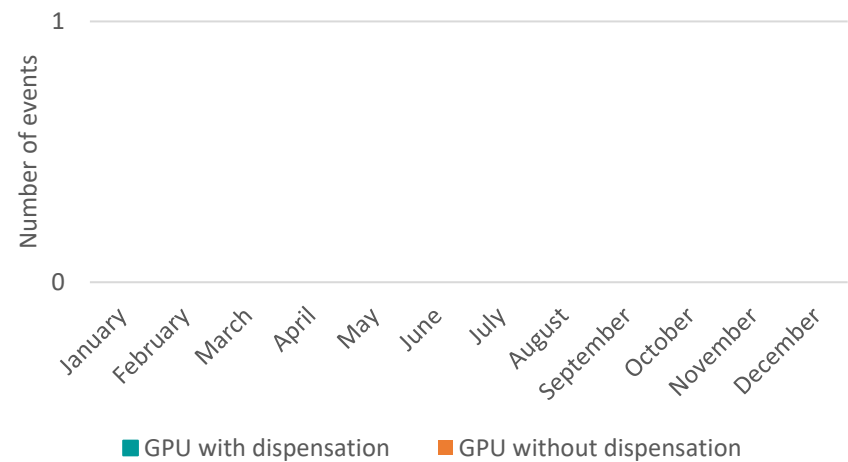


Figure 41: GPU usage⁸

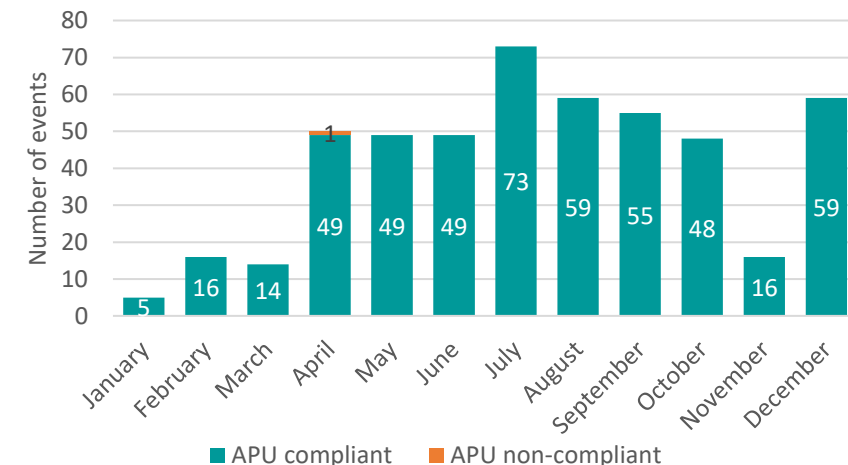


Figure 43: APU usage⁸

Figure 40 shows that the number of engine tests completed over the quarter remained fewer than the Section 106 limit of 250 in a six-month period.

Figure 41 shows that there were no Ground Power Units used in Q4 2022.

Figure 43 shows that in Q4 2022, there were no APU non-compliant incidents. The APU non-compliance from April 2022 was noted at an aircraft while no turnaround activity was taking place.

Further details on ground noise can be found in [Annex F](#).



Annex A – Additional Statistics

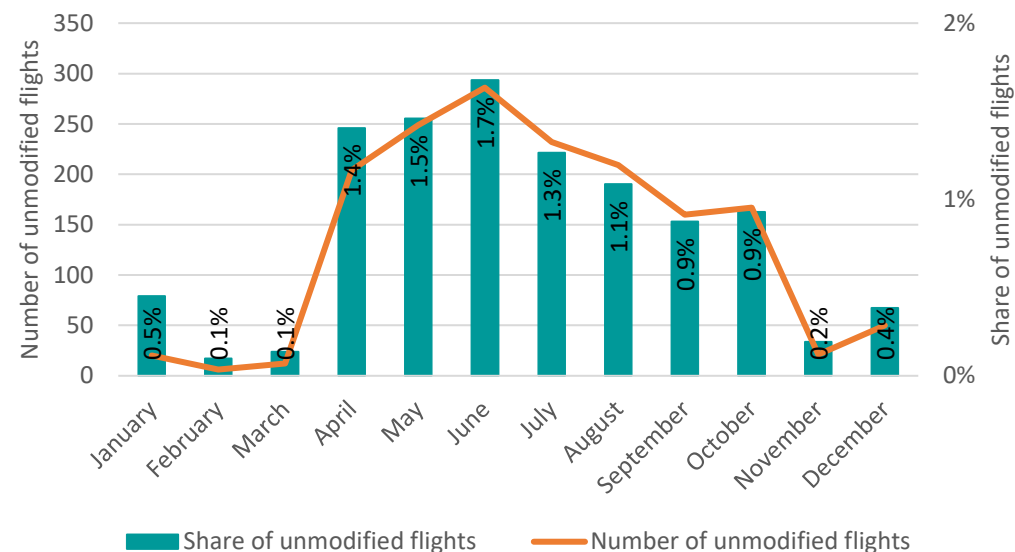


Figure A-1: Number and share of flights by unmodified A320 family aircraft

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.

Gatwick Airport 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

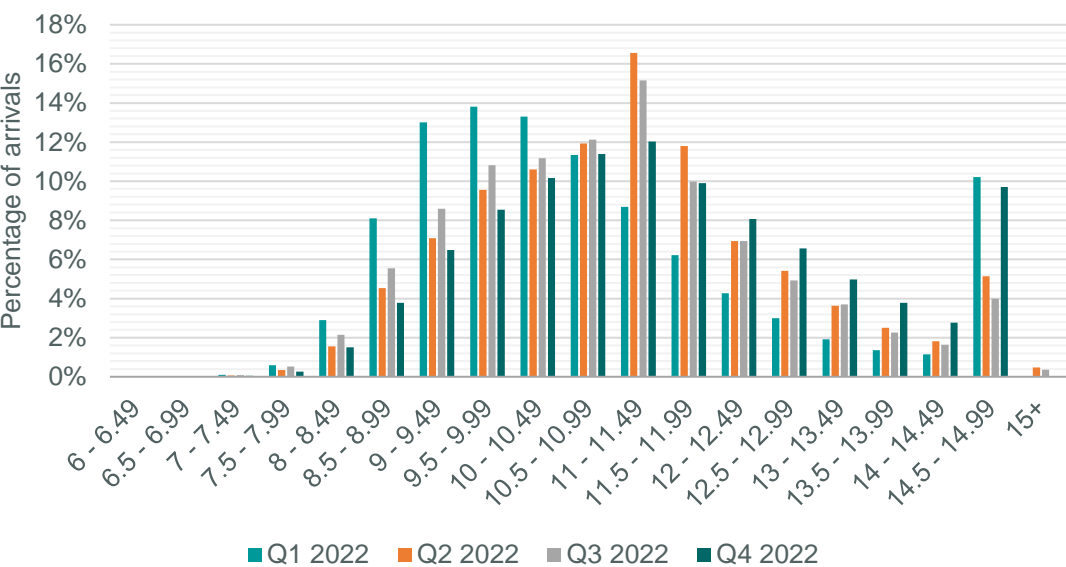


Figure A-2: Traffic Joining ILS per quarter – Runway 26 Only

Figure A-2 shows a high percentage of arrivals joining greater than 14NM which accounts for aircraft that arrive directly from the east.

In Q4, only 0.31% of aircraft joined the westerly ILS inside 8 NM, down from 0.61% in Q3 2022. 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.

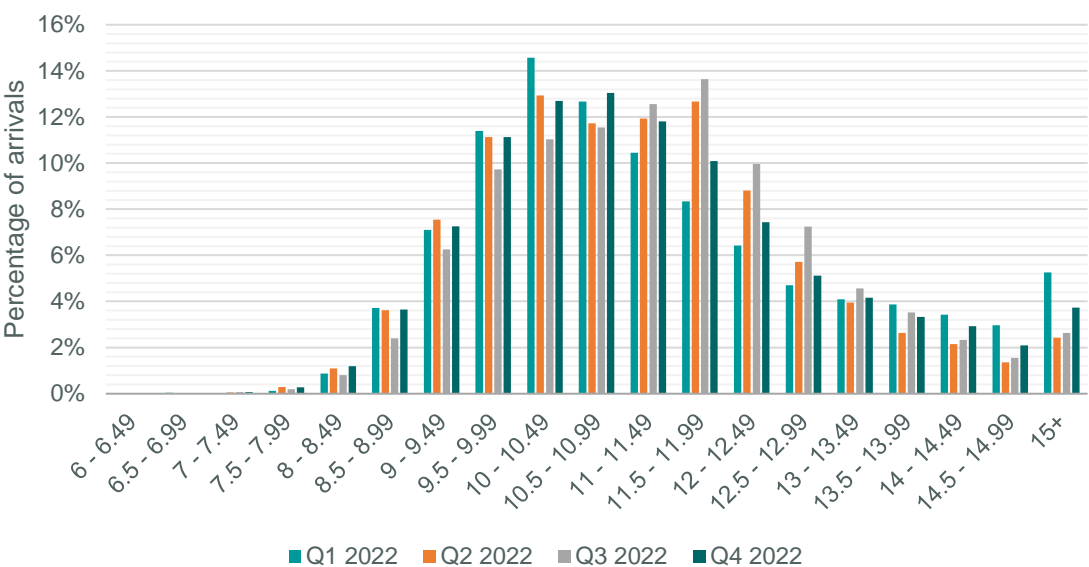


Figure A-3: Traffic Joining ILS per quarter – Runway 08 Only

Figure A-3 shows a slightly more even distribution of arrivals during easterly operations. In Q4, 0.33% of aircraft joined ILS inside 8NM, up from 0.24% in Q3 2022.



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:

3,000ft (Gatwick QNH) – 202ft (airfield elevation) = 2,798ft

2,798 ft – 200ft ATC radar tolerance = 2,598ft

These values are used to assess conformance within the Airport's 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 L_{max} 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 L_{max} by night (from 2300 (2200) to 0700 (0600) hours) and that it will not cause more than 87 dBA L_{max} 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:

https://www.gatwickairport.com/globalassets/publicationfiles/business_and_community/all_public_publications/sustainability/s106/completed-s.106-agreement-30.04.19.pdf

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

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.

The Airspace Office

The Airspace Office is responsible for recording, investigating and responding to aircraft noise enquiries as well as to monitor and report airline conformance 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 air traffic control is operated by NATS, who oversee the runway and ground operations.

NATS

NATS is 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. NATS also manages 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

15-year KPI table

	12 Month Performance														
Parameter	2022	2021	2020	2019	2018	2017	2016	2015	2014	2013	2012	2011	2010	2009	2008
Track keeping performance (% on track)	97.36%	98.20%	98.49%	98.42%	98.08%	98.06%	98.56%	99.71%	99.28%	98.04%	97.63%	97.42%	96.98%	96.82%	98.45%
24hr CDO (% achievement)	88.61%	90.89%	89.59%	89.58%	90.74%	90.48%	88.58%	89.75%	92.61%	91.36%	88.56%	90.49%	89.73%	87.92%	83.53%
Day/Shoulder CDO (% achievement)	89.19%	90.94%	89.79%	89.70%	90.80%	90.56%	88.18%	89.21%	92.43%	91.13%	88.72%	90.19%	89.31%	87.69%	82.98%
Core night CDO (% achievement)	83.83%	90.07%	85.74%	88.27%	90.03%	89.60%	92.90%	95.32%	95.25%	94.04%	85.27%	93.96%	93.94%	91.75%	89.65%
1000ft Infringements (No.)	0	0	0	0	0	0	0	0	0	0	2	3	6	22	11
1000ft Infringements (No. below 900ft)	0	0	0	0	0	0	0	0	0	0	2	1	0	3	4
Departure Noise Infringements (Day)	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2
Departure Noise Infringements (Night/Shoulder)	0	0	0	0	0	2	1	0	0	0	0	4	0	1	2
Individual Complainants	664	254	313	698	836	997	2,324	1,746	3,366	533	414	343	411	473	432
Total Noise Complaints Received	16,431	5,068	6,628	25,593	24,447	24,658	17,715	15,189	21,712	2,296	1,952	2,673	5,033	2,254	6,281
Enquiry Response Performance Target is 95% Within 8 Days	99.10%	99.98%	99.49%	77.63%	99.98%	99.89%	46.55%	93.89%	73.39%	99.24%	98.42%	95.65%	99.25%	84.10%	97.50%
Ground Noise Complaints received	5	3	10	0	0	0	0	2	0	5	3	4	2	1	8
Number of Fixed and Mobile Noise Monitors	22	22	23	23	12	11	11	12	12	12	10	10	11	11	11
Northern/Standby Runway Movements	9,616	532	1,042	2,842	3,534	3,722	2,567	2,498	1,496	4,473	14,836	2,444	1,012	904	1,008
West/East Runway Split (%)	66/34	68/32	83/17	68/32	62/38	78/22	67/33	70/30	67/33	63/37	71/29	67/33	64/36	70/30	70/30
% of Arrivals performing go-arounds	0.55%	0.30%	0.49%	0.58%	0.49%	0.43%	0.46%	0.39%	0.39%	0.38%	0.42%	0.31%	0.30%	0.36%	0.27%
Percentage of Chapter 4 (or equivalent) aircraft %	99%	99%	99%	98%	99%	99%	99%	99.70%	99%	99%	99%	96%	98%		
Percentage of Chapter 14 aircraft %	62%	58%	66%	62%	56%	55%									
Unmodified A320 Family Aircraft (% total ATM's)	0.74%	0.32%	0.61%	0.73%	1.5%	0.4%									
Total Aircraft Movements	217,524	55,225	79,310	284,736	283,926	286,271	280,089	267,777	259,974	250,527	246,792	251,019	240,462	251,714	263,716
Total Passengers	32,838,015	6,254,549	10,166,916	46,573,796	46,075,410	45,561,700	43,130,800	40,267,938	38,127,700	35,447,009	34,222,461	33,660,146	31,353,547	32,370,000	34,100,000



Annex F

Ground Noise Tables

	Engine Tests						FEGP ¹ Availability ³	
	Number of Engine Tests	6 month rolling average	6 month totals	Ground Idle	Flight Idle	Above Flight Idle	NT	ST ²
Jan-22	21	21	125	375	159	217	99.80%	100.00%
Feb-22	13	19	115	254	140	142	99.93%	100.00%
Mar-22	23	20	118	375	131	522	99.98%	100.00%
Apr-22	9	18	106	162	69	120	99.91%	100.00%
May-22	9	16	94	136	24	196	99.95%	99.98%
Jun-22	4	13	79	57	11	89	99.93%	99.96%
Jul-22	10	11	68	211	0	207	99.97%	99.96%
Aug-22	15	12	70	237	20	239	99.94%	99.96%
Sep-22	11	10	58	149	82	126	99.90%	99.98%
Oct-22	11	10	60	151	175	152	99.92%	99.94%
Nov-22	12	11	63	205	10	385	99.82%	99.97%
Dec-22	2	10	61	24	0	57	99.84%	99.88%

¹ FEGP – Fixed Electrical Ground Power (power supplied to aircraft from the electrical grid).

² FEGP Availability 100% for Q1 2022, due to the closure of the South Terminal during the COVID-19 pandemic. The South Terminal reopened on 27 March 2022.

³ Remote Stand usage from October 21 reported in appropriate terminal figure.



Annex F

Ground Noise Tables

	APU's								GPU's	
	Number of aircraft running APU's which were compliant	Non-compliances ¹ Number of aircraft running APU's which were not compliant	Number of aircraft parked but not running APU's	Total number of aircraft on the airfield	Number of dispensations due to Covid 19	Number of APU checks undertaken (Target 3)	Operations Duty Team audits ²	Operations Duty Team non-compliances	Used With Dispensation ³	Used Without Dispensation
Jan-22	5	0	241	246	0	3	28	0	0	0
Feb-22	16	0	199	215	0	3	24	0	0	0
Mar-22	14	0	125	139	0	3	29	0	0	0
Apr-22	49	1	94	144	0	3	28	0	0	0
May-22	49	0	86	135	0	3	43	0	0	0
Jun-22	49	0	89	138	0	3	38	0	0	0
Jul-22	73	0	90	163	0	3	44	0	0	0
Aug-22	59	0	77	136	0	3	50	0	0	0
Sep-22	55	0	92	147	0	3	49	1 ⁴	0	0
Oct-22	48	0	81	129	0	3	50	0	0	0
Nov-22	16	0	145	161	0	3	48	0	0	0
Dec-22	59	0	138	197	0	3	47	1 ⁵	0	0

¹ The operation of aircraft Auxiliary Power Units (APU) is restricted and their operation permitted only in certain circumstances.

² This includes monitoring of aircraft auxiliary power unit usage.

³ The operation of Ground Power Units (GPU) is only permitted in certain circumstances.

⁴ Due to the lack of a ground handler meeting the arrival and attaching the FEGP, the aircraft continued to use its APU

⁵ The FEGP was attached on arrival, however the APU was not shut down.



Glossary of Terms (1)

AAL	Above Aerodrome Level	The height of an aircraft above the elevation of the referenced aerodrome, usually the one from which they departed or which they are approaching.
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.
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 from 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	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 measured as a slant range.
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. It is relevant for the quota count classification can be calculated from the certified noise levels.
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. It evaluates and discusses the data from all 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. More information can be found on our website .
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.
IRVR	Instrumented Runway Visual Range	An IRVR system automatically measures the approximate distance over which an aircraft pilot can see the runway surface markings and lights.

Glossary of Terms (3)

KPI	Key Performance Indicator	A set of metrics or values by which performance is measured and monitored.
LTA	Long Term Average	Values of a metric averaged over a relatively long period – typically one year.
MTOW	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, 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.
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.
PAPI	Precision Approach Path Indicator	PAPI lights provide a visual indication of the aircraft's position in relation to the glide path. The system consists of four lights placed next to the runway abeam the touch down zone.
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 its barometric pressure is 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 conformance monitoring swathe before reaching the applicable minimum altitude.

Glossary of Terms – Night Flight Restrictions

For the purposes of the night flight restrictions, the hours of the day have been categorised into four periods. These are also used for some noise abatement procedures such as CDO (see page 10).

The periods are called Day, Shoulder 1, Night and Shoulder 2. However, the night flight restrictions differentiate between the night period (Night + Shoulder 1 + Shoulder 2) and the night quota period (Night only). The latter is referred to as Core Night in the context of CDO.

The graphic below depicts the different periods and their boundaries.
The Day period runs from 07:00:00 to 22:59:59. All times are local times.

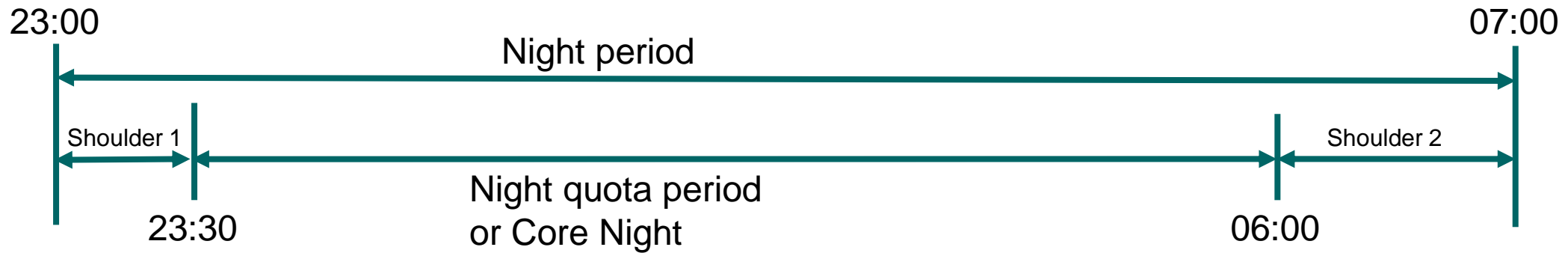


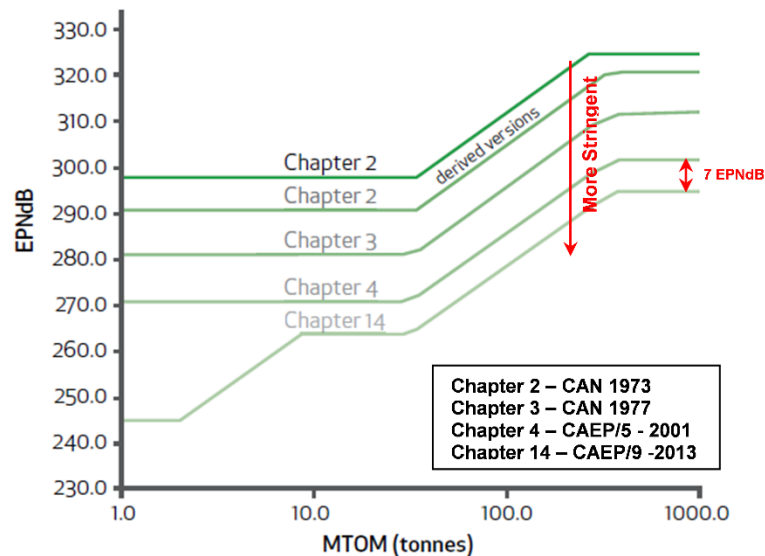
Figure G-1: Definition of time periods referred to in this report



Glossary of Terms – Chapter Noise Standards

Aircraft noise (“noise at source”) has been controlled since the 1970s by the setting of noise limits for aircraft in the form of Standards and Recommended Practices contained in Annex 16 to the Convention on International Civil Aviation.

The latest amendment to Annex 16, Volume 1 adopted the Chapter 14 noise standard for aeroplanes in 2014, which involved an increased threshold of 7 EPNdB (cumulative) on the then latest standard, Chapter 4.



A list of typical aircraft types commonly certified under each chapter standard is included below:

Chapter 14 Minus: A320neo family, B737MAX, A350, B787

Chapter 14 Base: A319ceo, B777

Chapter 14 High: A320ceo, A330

Chapter 4: B737-800

Chapter 3 and below: A321ceo, FOPP-unmodified A320ceo

Figure G-2: The progression of the ICAO Noise Standards for aeroplanes (Source: ICAO)



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