



Gatwick Airport Northern Runway Project

Technical Note on Future Baseline

Book 10

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1 Gatwick's growth under the Baseline Forecasts

1.1 Purpose

1.1.1 The purpose of this note is to explain the basis for Gatwick Airport Limited's (GAL) assessment of the future baseline throughput that it forecasts would be achieved in the absence of the Northern Runway Project (NRP). Unlike other airports, Gatwick Airport does not have a planning condition that limits its passenger or ATM numbers, therefore, growth under the baseline does not require any specific planning approval or a planning application being made for additional infrastructure to support that growth. .

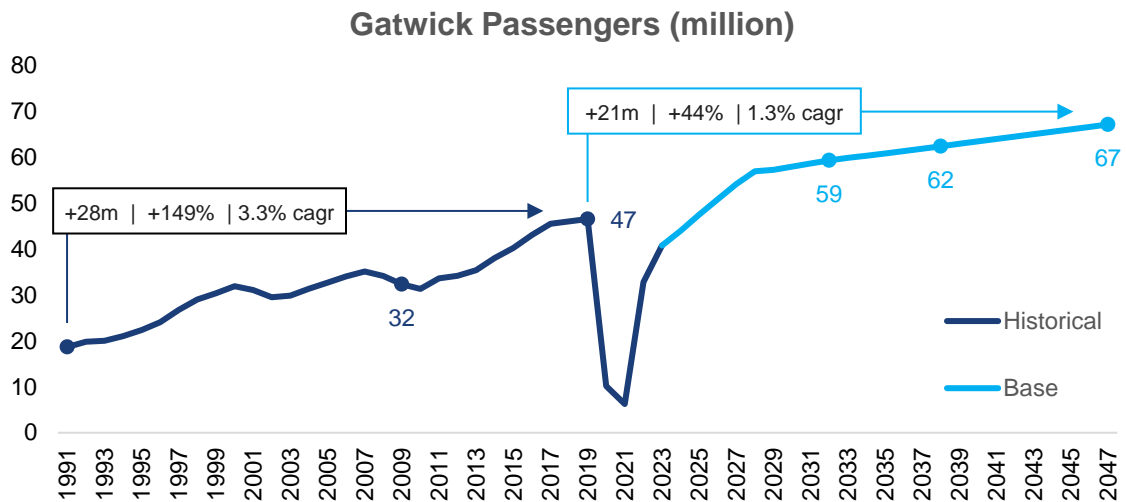
1.1.2 In addition to this document, further material is provided at Deadline One considering detailed information regarding future capacities (**Airfield Capacity Study** (Doc Ref. 10.7)) as well as demand growth under both the Baseline and Northern Runway scenarios (**Needs Case Technical Appendix** (Doc Ref. 10.6)).

1.2 Summary

1.2.1 Gatwick Airport is the UK's second largest airport and handled 46.6 million passengers and over 280,000 movements in 2019. These numbers would have been slightly higher if Thomas Cook had not ceased operations in Q3 of that year.

1.2.2 Under Gatwick Airport's baseline scenario, growth is forecast to continue. The airport is forecast to handle 59 million passengers in 2032, 62 million in 2038 and 67 million in 2047.

1.2.3 The following chart (Figure 1.1) highlights Gatwick Airport's historical growth as well as the growth trajectory forecast under the baseline scenario. In the 2019-2047 period Gatwick Airport is forecast to grow by a further 20.6 million passengers.

Figure 1.1 Gatwick Passengers (millions)


- 1.2.4 It is clear that the forecast is not out of kilter with that which Gatwick Airport has consistently achieved in recent years. For context, Gatwick Airport added over 14 million passengers in the decade leading up to 2019. This equates to an average of 1.4 million passengers per year, or a 3.7% CAGR (compound annual growth rate).
- 1.2.5 Under the baseline scenario, growth is forecast at under half this historical rate as an average of 700k passengers are forecast to be added each year at a CAGR of just 1.3%.
- 1.2.6 In order to achieve this growth, Gatwick Airport is forecast to continue to benefit from a range of demand and supply side factors. These important growth drivers are summarised in the following table (Table 1.1). It is clear that the future levels of growth (rate and absolute) recognise Gatwick Airport's current constraints and represent more modest growth than that which has been achieved under Gatwick Airport's recent growth trajectory.

Table 1.1 Gatwick Airport Specific Assumptions

	2009	2019	2047	2009-19	2019-47
LGW Specific Assumptions					
Peak day (ATMs)	852	924	954	+0.8%	+0.1%
August (Avg. daily ATMs)	807	900	945	+1.1%	+0.2%
Annual runway (Avg. daily ATMs)	672	774	892	+1.4%	+0.5%
Winter runway (Avg. daily ATMs)	575	667	842	+1.5%	+0.8%
Average aircraft size	168	192	224	+1.4%	+0.5%
Load Factor	79%	86%	92%	+0.8%	+0.2%

Passengers (m)	32.4	46.6	67.2	+3.7%	+1.3%
London Market context					
London Air Passengers (m)	130	181	261	+3.3%	+1.3%
London Terminal Capacity (no NR), (m)	175	191	231	+0.6%	+0.7%

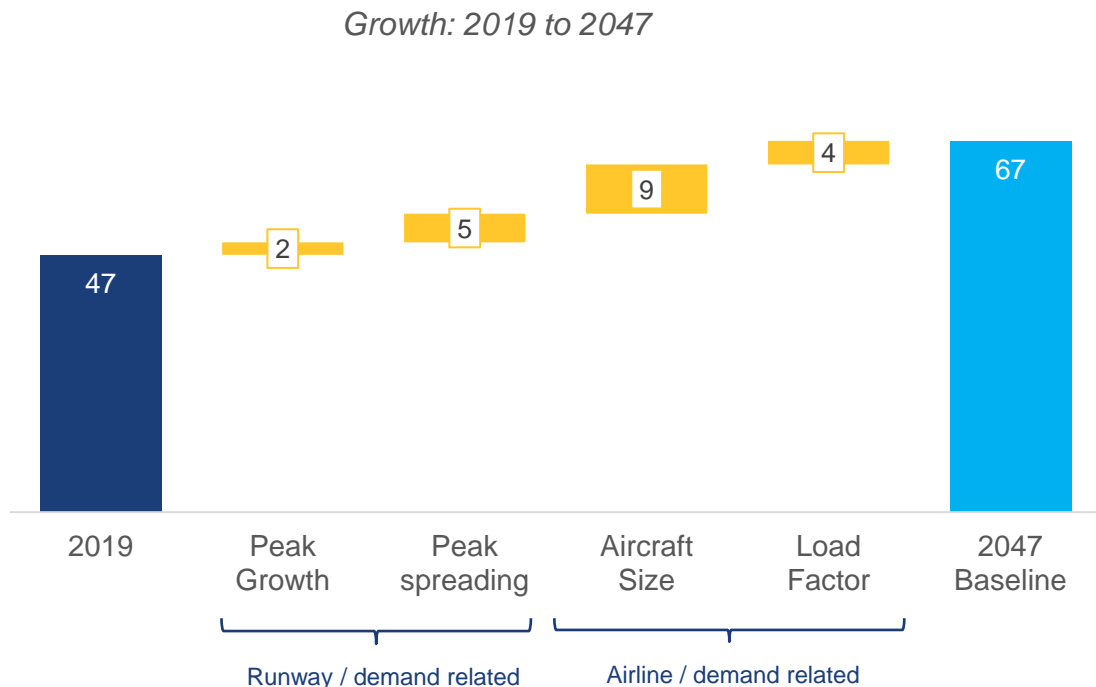
1.2.7 The following section provides an overview of how each of these factors will support Gatwick’s baseline growth.

1.3 Overview

1.3.1 With overall demand levels forecast to grow significantly, increasing the number of aircraft movements will become increasingly difficult. However, some capacity increase is possible, whilst passenger throughput is also forecast to grow through increasing aircraft size, load factors and continued peak spreading.

1.3.2 The following chart (Figure 1.3) provides a breakdown of the main drivers of growth forecast at Gatwick Airport in the 2019-2047 period.

Figure 1.2 Baseline, Passengers (m)

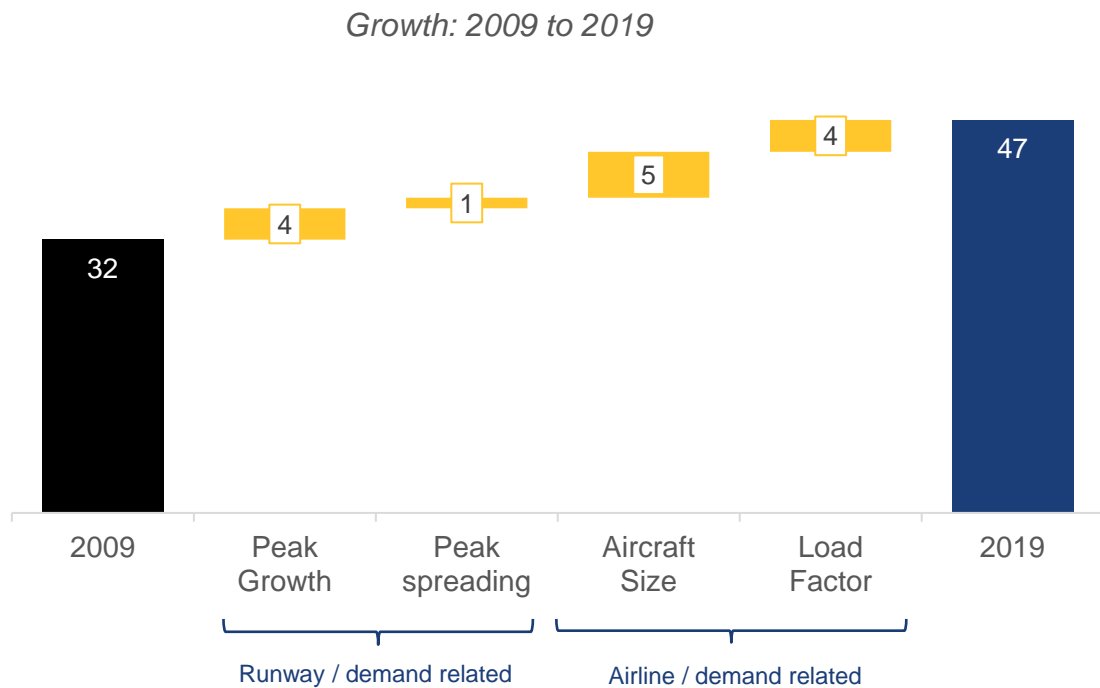


1.3.3 Growth related to the utilisation of the runway is forecast to account for 7 million of the overall 20.6 million passenger growth. This reflects the combined impact of peak spreading (5 million) and further growth supported in peak periods (2

million). A further 9 million is forecast through larger aircraft and a further 4 million will be accounted for through fuller aircraft.

1.3.4 Examining historical growth under the same categories we see the importance of each factor. In the 2009-2019 period when 14 million passengers were added, under 5 million was attributable to increased runway utilisation, over 5 million was due to larger aircraft, and just under 4 million came from fuller aircraft. This historic growth is shown in the following chart (Figure 1.4).

Figure 1.3 Historical, Passengers (m)



1.3.5 The following sections focus on each of the drivers of future growth.

1.4 Runway Related Growth – Peak Period Growth

1.4.1 Growth has historically been achieved in the peak months through a combination of incremental runway capacity. For example, in the 2009-2019 period Gatwick Airport increased its maximum hourly throughput from 53 to 55 movements per hour as well as operating at its maximum capacity in more hours of the busy month.

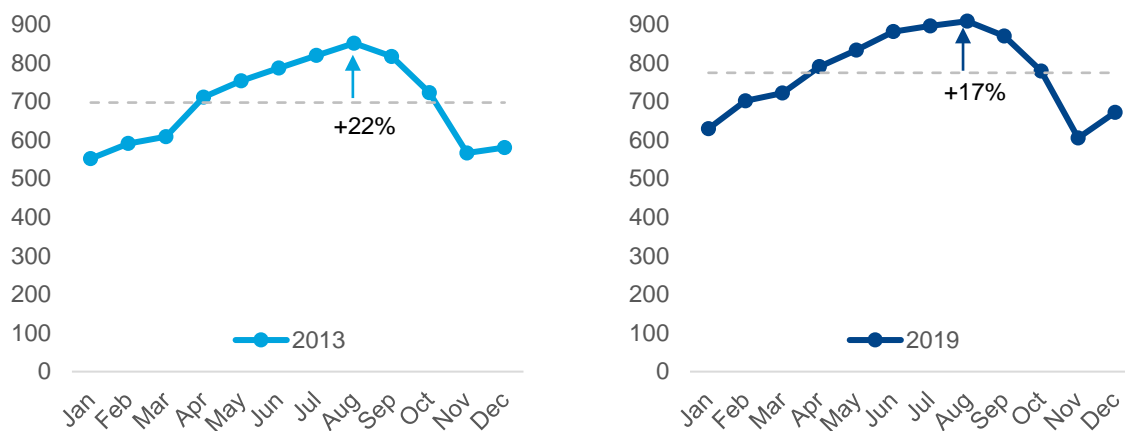
1.4.2 Under the baseline forecasts, Gatwick Airport is forecast to increase the number of hours declared at 55 movements per hour as well as continuing to increase the number of hours operating at its hourly capacity limits.

- 1.4.3 For example, Gatwick Airport’s busiest month is August and in 2019 on the busiest day of the year Gatwick Airport handled 924 commercial movements in this month. Through capacity release and continuing to grow in the off-peak hours, Gatwick Airport is forecast to handle over 950 movements on future peak days.
- 1.4.4 Within the busy months there is a range of runway utilisation performance. Whilst the busiest day in August 2019 was 924 commercial movements, the average daily movements in the month was just under 900. Over time, the quieter days are forecast to become proportionally busier. This is a well-established trend, in 2008 the busiest day of the peak month was 6% busier than average and by 2019 this ratio had already been halved to under 3%. Under the baseline this ratio is forecast to decline modestly to under 2%.
- 1.4.5 The growth forecast in these peak periods will also support capacity throughout the year since airlines typically operate year-round schedules. **The growth attributable to peak periods is forecast to support 13k annual movements or 2 million annual passengers.**

1.5 Runway Related Growth – Peak Spreading

- 1.5.1 Today, Gatwick Airport has a degree of seasonality as shown in the following chart, highlighting the average daily runway movements by month. In 2019, Gatwick Airport averaged 900 movements per day in August compared to a year-round average of 775, August was therefore 17% busier than the year-round average (see Figure 1.5).

Figure 1.4 Summary of Busy Day Slot Capacity and Utilisation, Gatwick Airport



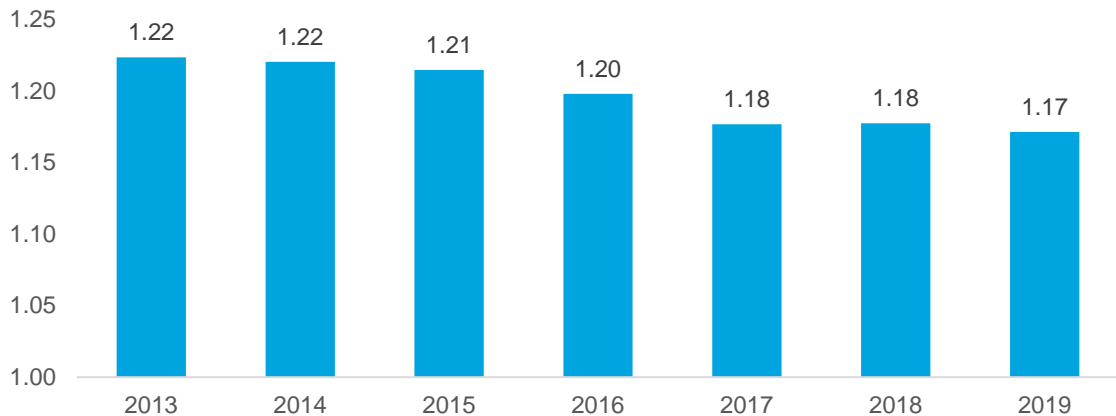
Source: CAA/Gatwick Schedules

1.5.2 In 2013 the peak month was 22% busier than the year-round average. In the 2013-2019 period, this ratio narrowed highlighting how Gatwick Airport’s airlines are incrementally ‘in-filling’ the off-peak periods of demand.

- In the peak periods (Jul-Sep) between 2013-2019, ATM demand grew 8% as airlines filled the additional capacity released by Gatwick Airport as well as increasing utilisation on quieter days.
- In the off-peak (Nov-Mar), between 2013-2019 demand grew at nearly twice the rate of summer as movements increased by 15% in the same period.

1.5.3 The development of Gatwick Airport’s busy month ratio is shown in the following chart (Figure 1.6), having continued to decline on an ongoing basis from 2013 to 2019.

Figure 1.5 Seasonality – Ratio of peak month ATMs: Annual average

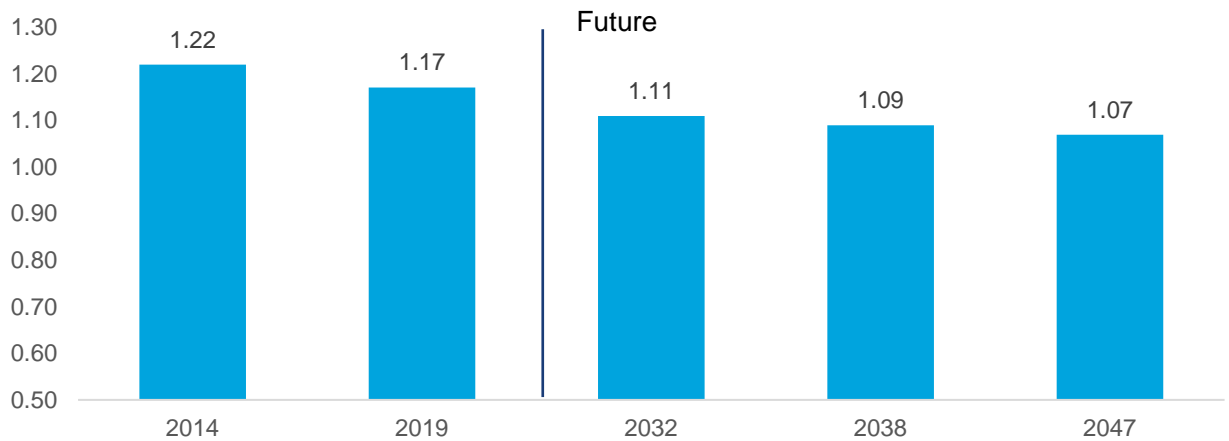


Source: CAA/Gatwick Statistics

Seasonality/Annual Profile – Base Forecasts

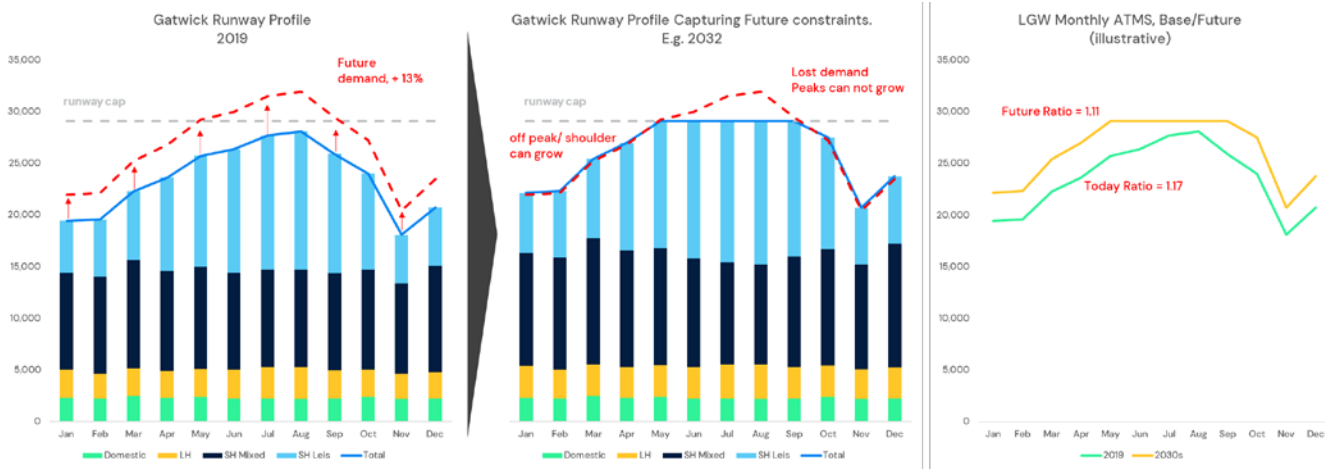
1.5.4 Under the core forecasts, assumptions were made regarding Gatwick Airport’s future levels of seasonality. It was forecast that further peak spreading would be achieved and that by 2032 the busy month would be 11% busier than average. Longer term assumptions were taken for the future years until 2047 (see Figure 1.7).

Figure 1.6 Seasonality – Ratio of peak month ATMS: Annual average



Source: CAA/Gatwick Statistics/Gatwick Forecasts

- 1.5.5 From a demand perspective it is clear why peak spreading is forecast to continue. With demand forecast to continue out-stripping supply in the peaks, the demand during the shoulder/off-peak periods will continue to grow.
- 1.5.6 With growth in the peak periods ‘capped’ by runway capacity, Gatwick Airport will continue to benefit from growth outside the peaks and this will lead to further de-peaking of the demand profile.
- 1.5.7 The following graphic (Figure 1.8) highlights these impacts:
- 1.5.7.1. In the first chart the 2019 demand profile is shown with an illustrative demand profile above it for a future year (red line).
 - 1.5.7.2. The second chart highlights the growth in demand able to be achieved at Gatwick Airport, demand growth will be accommodated in shoulders/off peak periods but will be spilt during the peak summer season. There is further potential for this demand to be spilt to the other months with spare capacity.
 - 1.5.7.3. The resulting impact on the demand profiles (third chart) highlights how de-peaking can be rapidly achieved with relatively modest demand growth.

Figure 1.7 Example: Illustrative Demand Growth Across Year at Gatwick Airport


1.5.8 In summary de-peaking is a well-established trend for Gatwick Airport driven primarily by a combination of constraints in the peak season as well as the evolving mix of Gatwick Airport’s airlines and markets. **Peak spreading is forecast to account for over 30k annual movements or 5 million passengers.**

1.5.9 A summary of the main peak-spreading drivers is shown below in Table 1.2.

Table 1.2 Summary of main peak-spreading drivers

Factor	Comment
Peak runway capacity	Small uplift in declared runway capacity. Slot oversubscriptions show that any peak capacity is already heavily over subscribed.
Peak runway utilisation	A higher rate of utilisation will be achieved as further off-peak capacity becomes utilised more regularly. This is a very well established trend at Gatwick as off-peak hours, days, months are all out growing the peak periods.
Market Mix	A higher share of long-haul traffic will support more year-round operations at Gatwick. Gatwick is already seeing the strength of the long haul demand at Gatwick, the airport will shortly serve 52 long haul destinations and has recently welcomed 10 new long haul carriers. Others are known to want to grow at Gatwick but without viable slots, they are unable to do so
Slot trades	Airlines that can effectively utilise Gatwick's slots will continue to acquire capacity. For example, seasonal charter traffic has historically been replaced by year-round operators. ACL (LGW's slot co-ordinator) has provided evidence demonstrating the levels of excess demand at Gatwick compared to other airports. Airlines are already forced to pay millions just for one slot pair.
Demand growth	Even with limited growth available in peak months, demand will continue to grow in the shoulders / off-peak periods. Gatwick will remain heavily constrained in the peak season. London growth forecasts highlight the lack of capacity, constraints are only going to become worse in the next decade and growth forecasts will not be accommodated. Airlines will profit through increased fares whilst the UK will lose out through lost connectivity, choice, competition and economic growth.
Current Trends	Recent entrants to Gatwick (e.g. Air India, Air Mauritius, Singapore Airlines, Lufthansa, JetBlue, Delta, etc.) are all using the runway on an efficient year-round basis.

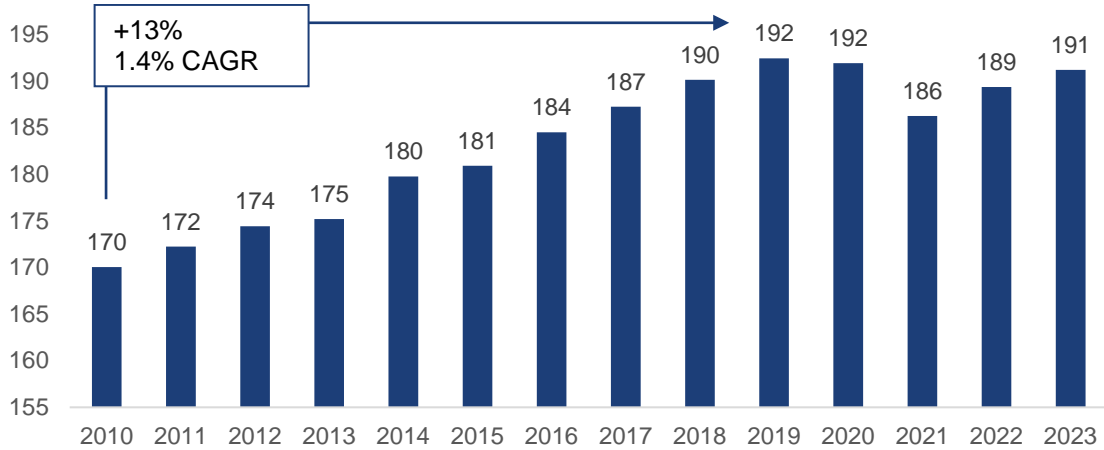
1.6 Increasing Aircraft Sizes

Historical trends

- 1.6.1 Average aircraft sizes have been growing across the industry and Gatwick Airport is no exception. In the 2010-2019 period the average aircraft size at Gatwick Airport increased from 170 to 192 seats, an increase of 13%, or +22 seats, in under 10 years (see Figure 1.9).
- 1.6.2 The growth is slightly ahead of the UK average which saw average seats per movement increase 11% in the same period. Whilst Gatwick Airport operated with 192 seats per movement in 2019, the UK average was 172, this difference is

reflected by Gatwick Airport’s higher share of long haul flying on larger aircraft and the limited smaller regional aircraft operating from the airport.

Figure 1.8 Aircraft Sizes, LGW – historical trends



2023 is YTD Aug'23
Source: CAA Statistic

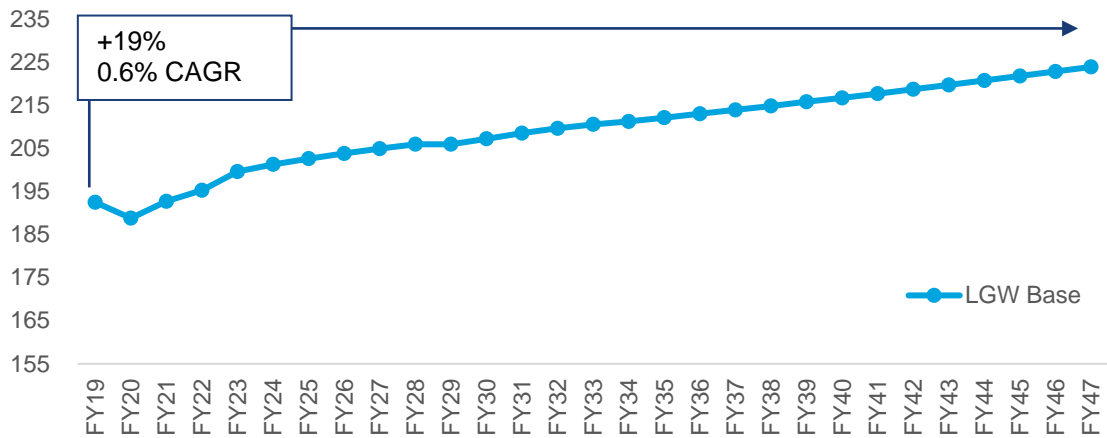
1.6.3 During Covid-19, alongside a reduction in long haul flying with larger aircraft, many airlines operated with smaller aircraft to minimise their operational costs¹. During this period Gatwick Airport like other airports saw a decline. Gatwick Airport’s average seats per movement is on track, however, to return to pre-Covid levels in the next 12 months.

Aircraft Sizes – Base

1.6.4 In the core scenarios, the growth in aircraft size was captured by a bottom-up airline analysis examining current and future fleet transition trends. This analysis captured airline fleet orders from 2019 as well as making assumptions around the transition to future aircraft types as their current fleets age.

1.6.5 This provided a future pathway for average aircraft sizes under the Base scenario (Figure 8.2-2 of the **Forecast Data Book** [[APP-075](#)]).

¹ For example: easyJet operated with a higher share of A319 sized aircraft

Figure 1.9 Average Aircraft Sizes – Baseline Scenario


2023 is YTD Aug'23

Source: CAA/Gatwick Statistics/Gatwick Forecasts

1.6.6 In the FY19-FY30 period the average aircraft size is assumed to increase by 9% or 17 seats to reach 210. Beyond FY30 further growth is assumed with the average seat count reaching 224 in FY47 (see Figure 1.10). For context, the growth achieved in the forecasts is at a rate less than half that of the historical trends at the airport (0.6% vs 1.4%).

Aircraft Sizes – Latest Outlook

1.6.7 We have revisited some of the fleet assumptions for the main airlines to compare the latest growth aspirations against those assumed in the forecasts. For this analysis, the latest fleet plans of the main airlines were considered. This is assumed to represent a reliable pathway to the early 2030s, reflecting committed fleet orders, with assumptions made beyond for further long-term insight.

1.6.8 The following charts provide the assumed future aircraft mix of easyJet (Gatwick Airport's largest carrier) and Wizz Air (a notable growth airline at LGW), combined they account for over half of all movements today. Recent fleet progression has seen both airlines switch focus towards larger gauge aircraft, namely the A321neo (which is the largest of the Airbus A320 family).

1.6.9 The A321 sized aircraft offers a 31% uplift in capacity compared to the smaller A320, or a 51% uplift compared to the smaller A319 which is typically being phased out of many airline fleets.

1.6.10 Recent industry trends have seen airlines significantly shift their focus to these larger gauge aircraft types as they offer improved seat economics as well as offering lower carbon emissions per seat. Prior to 2019, easyJet had only operated A319 and A320 sized aircraft, although a recent order for A321s saw

their arrival in 2019 to easyJet’s fleet. Their latest order, which accounts for deliveries into the early 2030s results in the A321neo accounting for over 30% of their fleet by 2030 and continuing to grow beyond (see Figure 1.11).

Figure 1.10 Fleet Mix – easyJet

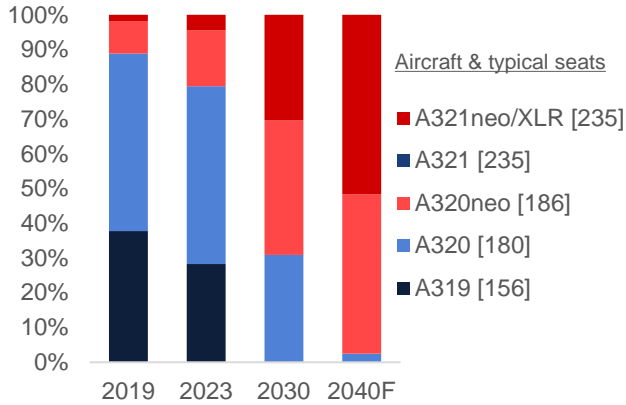
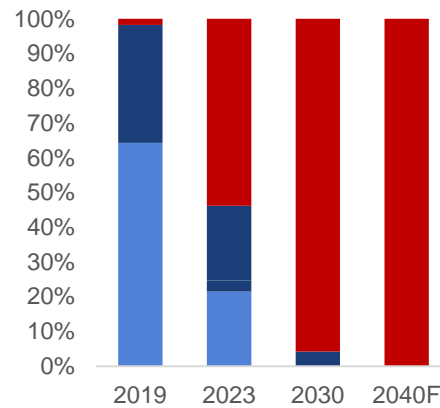
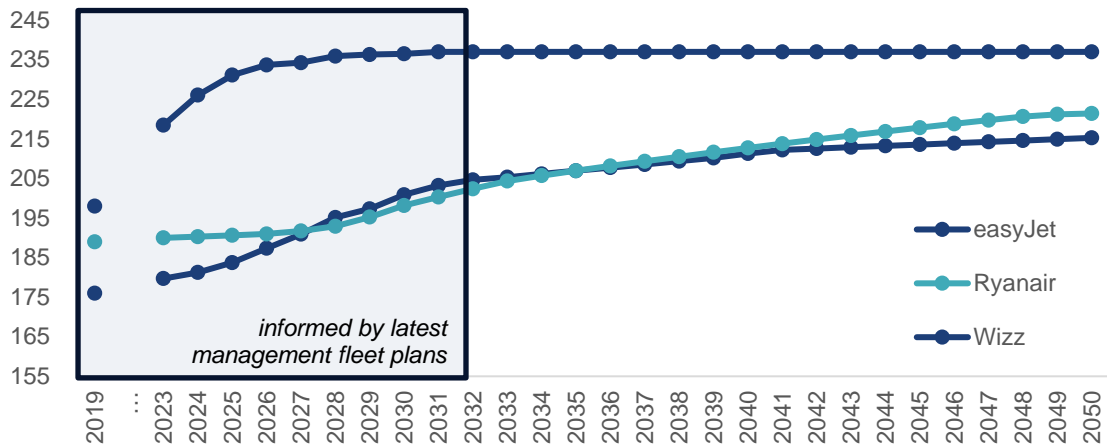


Figure 1.11 Fleet Mix – Wizz Air



Source: Airline reports

- 1.6.11 Wizz Air has been growing at Gatwick Airport and is expected to represent some of the incremental demand when the Northern Runway becomes operational. They are intending to convert virtually all of their fleet to A321neo aircraft by 2030 which will provide over 230 seats per movement (see Figure 1.12).
- 1.6.12 The resulting implications for average seats per movement are shown in the following chart (Figure 1.13). The major airlines are all planning for significant up-gauging in the next 10+ years. easyJet’s fleet is assumed to grow from an average of 176 seats per ATM in 2019, to over 200 by 2030 based on latest management fleet plans. Wizz’s fleet will have grown to over 230 seats per ATM by 2030, compared to under 200 in 2019, whilst Ryanair is forecast to pass 200 seats per movement in the early 2030s, up from 189 in 2019.

Figure 1.12 Average Aircraft Sizes


Source: Airline reports

Summary – Aircraft Sizes

- 1.6.13 In summary whilst Covid-19 has impacted the delivery dates for receipt of new aircraft, airlines continue to focus on ordering aircraft that have improved economics resulting from higher density configuration (more seats). All the major short haul operators at Gatwick Airport are likely to experience growth in average aircraft size at, or above the rates assumed in the original forecasts prepared in 2019. The latest analysis (Table 1.3) supports the original forecasts although further upside may exist for certain carriers.

Table 1.3 Summary Seats per ATM, LGW

	2019 (LGW)	2040 (original)	2040 (latest)	Difference 2040
easyJet	174	206	211	+3%
Ryanair	189	204	213	+4%
Wizz	n/a	210	237	+13%
BA	163	172	200	+16%

Note: BA assumes IAG's 737Max order operates at LGW.

Source: Airline investor reports / ICF analysis

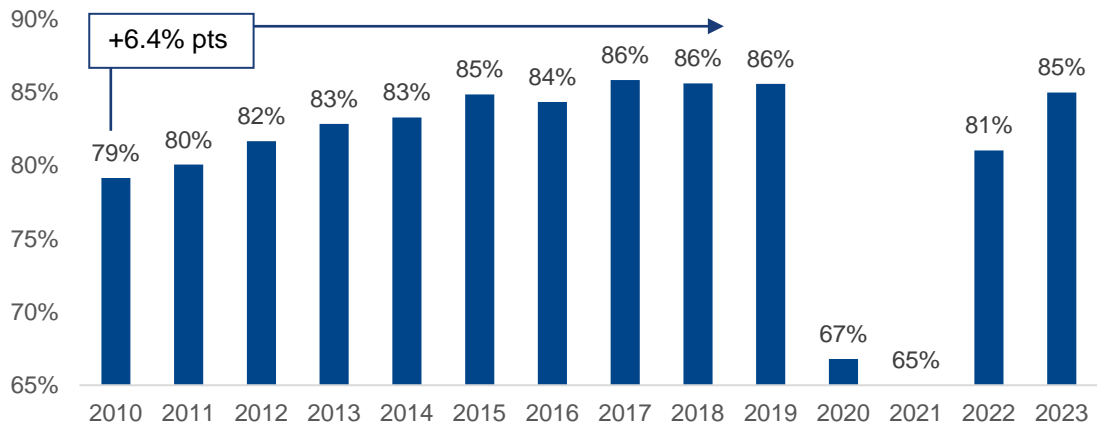
1.7 Seat Occupancy/Load Factor (#4)

Historical trends

- 1.7.1 Like aircraft sizes, average seat occupancy (load factor) rates have been growing across the industry and Gatwick Airport is no exception. In the 2010-2019 period the average load factor at Gatwick Airport increased from 79% to 86%, an increase of 6.4 percentage points in under 10 years (see Figure 1.14).

1.7.2 The growth is comparable to the UK average, which saw average seat load factor increase from 76% to 84% across the same period. Gatwick Airport operated with an 86% load factor in 2019, slightly ahead of the UK average of 84%.

Figure 1.13 Seat Occupancy / Load Factor – Gatwick historical trends



2023 is YTD Aug'23
Source: CAA Statistics

1.7.3 During Covid, industry load factors were severely impacted, Gatwick Airport's airlines operated with less than 70% seat occupancy during 2020 and 2021. This is reflective of the uncertain market conditions and challenges faced by airlines during periods of lock down and travel restrictions frequently changing, thereby heavily suppressing demand.

1.7.4 Gatwick Airport's load factors are on track to return to pre Covid-19 levels with the latest year to date (Jan-Aug) period already reporting 85% seat occupancy.

Seat Occupancy – Base Forecasts

1.7.5 In the core scenarios, the growth in load factors was assumed to continue, by 2030 load factors were forecast to be around 90% before growing a further percentage point to 91% by 2040 (paragraph 8.2.13 of the **Forecast Data Book [APP-075]**). Over the 2019-2049 period a growth of 6.5% points in load factor growth was assumed (see Figure 1.15). To put this into context, this is a comparable level of growth across a 30 year period, to that which was achieved across only 9 years, up to and including 2019.

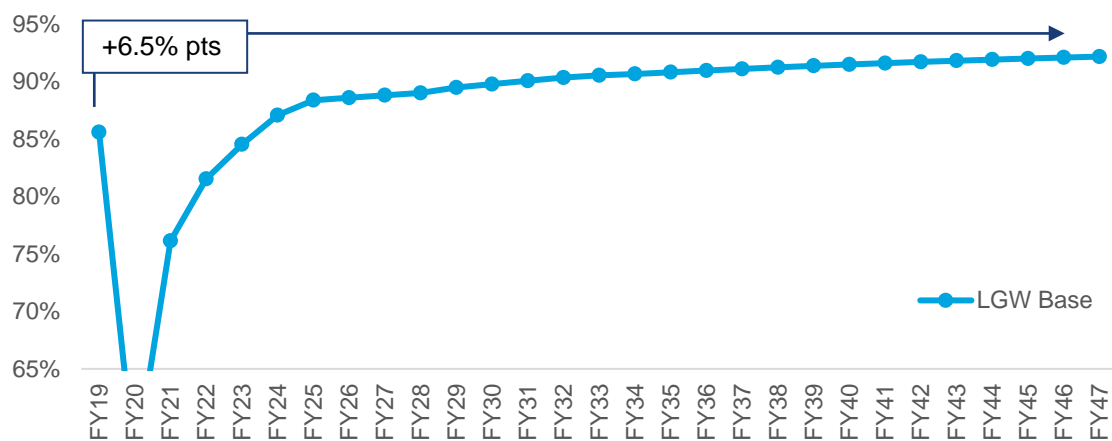
1.7.6 Growth was assumed to continue reflecting:

1. **Ongoing industry increases:** Airlines have been improving their management of flights to maximise load factors. For example, easyJet's reported load factor across their network increased from 87% to 93% in the

2010-19 period. Similarly, Ryanair’s reported load factors increased by 11% points in the same period.

2. **Airline mix:** Over time, low-cost carriers (LCCs) are assumed to continue growing their market share at Gatwick and across the European travel market. They operate with higher load factors than full service or regional carriers and will contribute to the assumed increases.
3. **Year-round growth:** Whilst less opportunity exists to grow load factors in the peak period, significant opportunity still exists for loading growth in the shoulder/off peak seasons.

Figure 1.14 Seat Occupancy – Baseline Scenario



Source: Top-down forecasts

Seat Occupancy – Latest Outlook

- 1.7.7 As Gatwick Airport’s carriers and the wider industry return towards pre-Covid traffic volumes their load factors have also returned strongly to pre-Covid levels.
- 1.7.8 At Gatwick Airport recent changes seen in the airline mix support further increases in average seat occupancy. For example, easyJet which has historically operated with year-round load factors above 90% have increased their share of capacity at the expense of other carriers.
- 1.7.9 Also, carriers including Wizz Air and other LCCs have increased their capacity at the airport, they both operate with above average load factors and will support further uplift across Gatwick Airport’s operation.

Summary – Seat Occupancy

- 1.7.10 Further incremental growth in seat load factors is expected reflecting pre-Covid trends as well as the longer-term potential for carriers to further optimise their

operations. Gatwick Airport's growth will also be supported by an increasing share of LCC traffic over the long-term. Also, the constrained nature of the London/Gatwick Airport market will support further growth outside the peak periods. Therefore, the latest analysis supports the original forecasts for higher seat occupancy rates in the long term.

1.8 Overall London Demand & Capacity

1.8.1 In addition to the supply side characteristics of Gatwick Airport's future demand we have considered the wider London demand forecasts as well as future capacity potential.

1.8.2 This modelling captures the Government's latest demand outlook and highlights that significant demand will be unmet by the current capacity provision of the London airports by the 2030s.

1.8.3 This modelling confirms ongoing significant pent up and excess for demand at Gatwick Airport and highlights the need to understand the nature of the future demand being forecast at the airport.

1.8.4 A detailed overview of our top-down modelling is provided in Section 7 of the **Needs Case Technical Appendix** (Doc Ref. 10.6).

1.9 Summary

1.9.1 A summary of the main forecast outputs is provided in the following table (Table 1.4). The future assumptions highlight how the growth rates of future demand and/or throughput potential reflecting ongoing growth but at much slower rates than that experienced by Gatwick during the decade prior to 2019.

Table 1.4 Summary of the main forecast outputs

	2009	2019	2047	2009-19	2019-47
LGW Specific Assumptions					
Peak day (ATMs)	852	924	954	+0.8%	+0.1%
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London Terminal Capacity (no NR)	175	191	231	+0.6%	+0.7%
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