Introduction of RNP AR Procedures at London City Airport:

Passenger and ATM Forecasts

LONDON CITY AIRPORT

Updated 18 December 2025

York Aviation

Introduction

This report presents updated passenger and air traffic movement (ATM) forecasts prepared to support the Stage 3 Full Options Appraisal (FOA) for the proposed introduction of Required Navigation Performance Authorisation Required (RNP AR) procedures at London City Airport (LCY).

The purpose of the forecasts is to provide a robust and proportionate assessment of how air traffic demand, aircraft fleet mix and associated passenger throughput at LCY could evolve over the appraisal period, under two alternative scenarios:

- a without-change (baseline) scenario, reflecting the continuation of current airspace arrangements and aircraft operating constraints; and
- a with-change scenario, reflecting the operational opportunities enabled by the proposed airspace change, including the ability to accommodate a wider range of aircraft types with greater passenger capacity.

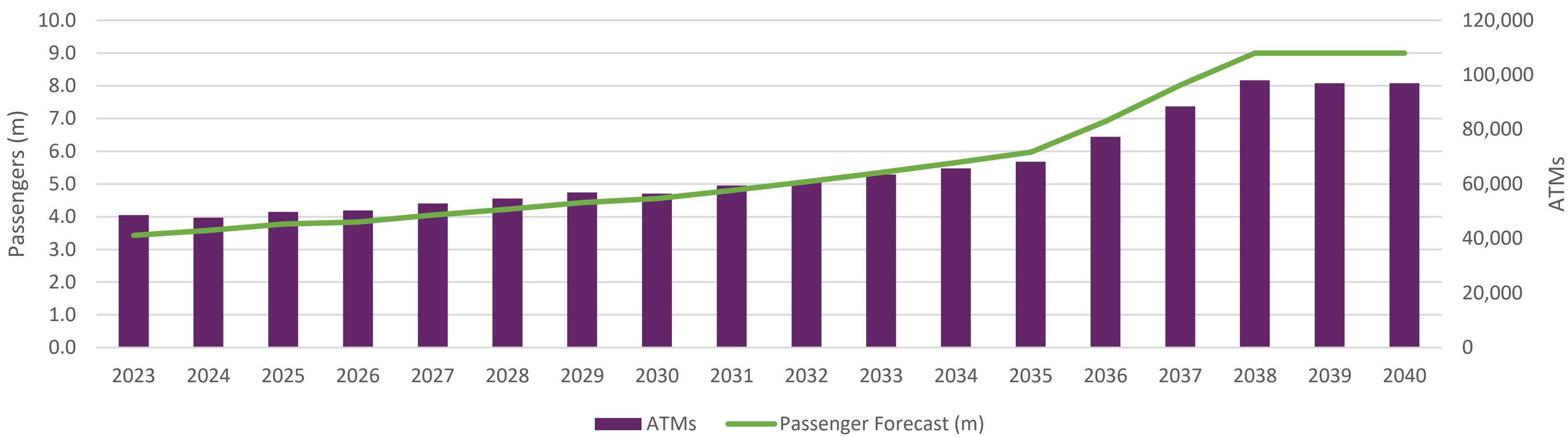
These forecasts are not intended to predict the precise behaviour of individual airlines, nor to imply commitments by any existing or potential operators. Instead, they represent scenario-based projections designed to illustrate the *likely order of magnitude, timing and direction* of change in passenger volumes and aircraft movements that could reasonably arise as a consequence of the airspace change, when compared with a credible future baseline.

The forecasts have been developed using York Aviation's established London system airport forecasting framework, which combines top-down econometric modelling of underlying demand with bottom-up allocation of that demand across competing airports based on relative accessibility, capacity constraints and service characteristics. This approach is consistent with Department for Transport (DfT) guidance and is widely used in planning, appraisal and regulatory contexts.

In developing the scenarios, particular attention has been given to ensuring that the baseline case is robust and conservative, recognising uncertainty around the pace of fleet transition, market entry and wider London airport system dynamics. The with-change scenario then represents a plausible evolution of traffic consistent with the additional operational flexibility enabled by the proposed airspace design, rather than a maximum or unconstrained growth case.

The outputs of this report are used as key inputs to the environmental, operational and socio-economic assessments presented in the Stage 3 FOA, including the cost-benefit analysis. As such, the emphasis is on internal consistency, transparency of assumptions and suitability for comparative appraisal, rather than on detailed commercial forecasting at the level of individual routes or operators.

Baseline Case – Overview and Key Assumptions



Overall, the Baseline Case represents a robust and credible without-change scenario, recognising that it is deliberately conservative relative to the upper end of potential future growth outcomes. The Baseline Case assumes:

- The early years of the forecast are achievable, reflecting engagement with existing and prospective operators and prevailing market conditions;
- No substantive real change in average fares over the forecast period;
- The overall nature of airline operations and passenger demand remains broadly similar to current patterns;
- The airport remains constrained to aircraft types that are currently certified to operate at LCY, with no change to airspace capability;
- Heathrow Airport remains below its movement limit ceiling for a further 3–4 years, such that significant spill demand into the wider London system is delayed;
- Limited near-term incentives for major fleet investment by incumbent operators, resulting in a gradual redistribution of market share towards levels broadly consistent with pre-pandemic conditions;
- The transition to newer-generation regional aircraft is assumed to be delayed, beginning in the early 2030s and proceeding at a relatively measured pace, with completion towards the end of the forecast period;
- Other operators transition their fleets in line with aircraft already in service or on firm order.

Under this Baseline Case, the airport's 9.0 million passengers per annum (mppa) planning cap is reached in 2038.

The Baseline Case is derived from York Aviation's London system airport forecasting model. Further detail on the modelling framework and assumptions is provided in the appendix to this report.

Approach to Airspace Change Forecasts

The ability to accommodate new-generation narrow-body aircraft, in addition to enabling existing operators to upgrade their fleets, represents a step change in London City Airport's ability to meet demand within its catchment area. This change affects both the scale and composition of traffic that could be served and is therefore not straightforward to model using standard incremental forecasting techniques.

Accordingly, a staged approach has been adopted to the forecasting exercise.

First, the analysis considers the potential uplift associated with the introduction of A320neo operations by the existing mix of operators, primarily those providing full-service and hybrid network services. This assessment reflects the extent to which such operators could reasonably deploy larger narrow-body aircraft at LCY, having regard to the size, characteristics and frequency requirements of individual destination markets over time. For the purposes of the scenario, incumbent operators are assumed to transition progressively over the forecast period, consistent with fleet renewal cycles and market development.

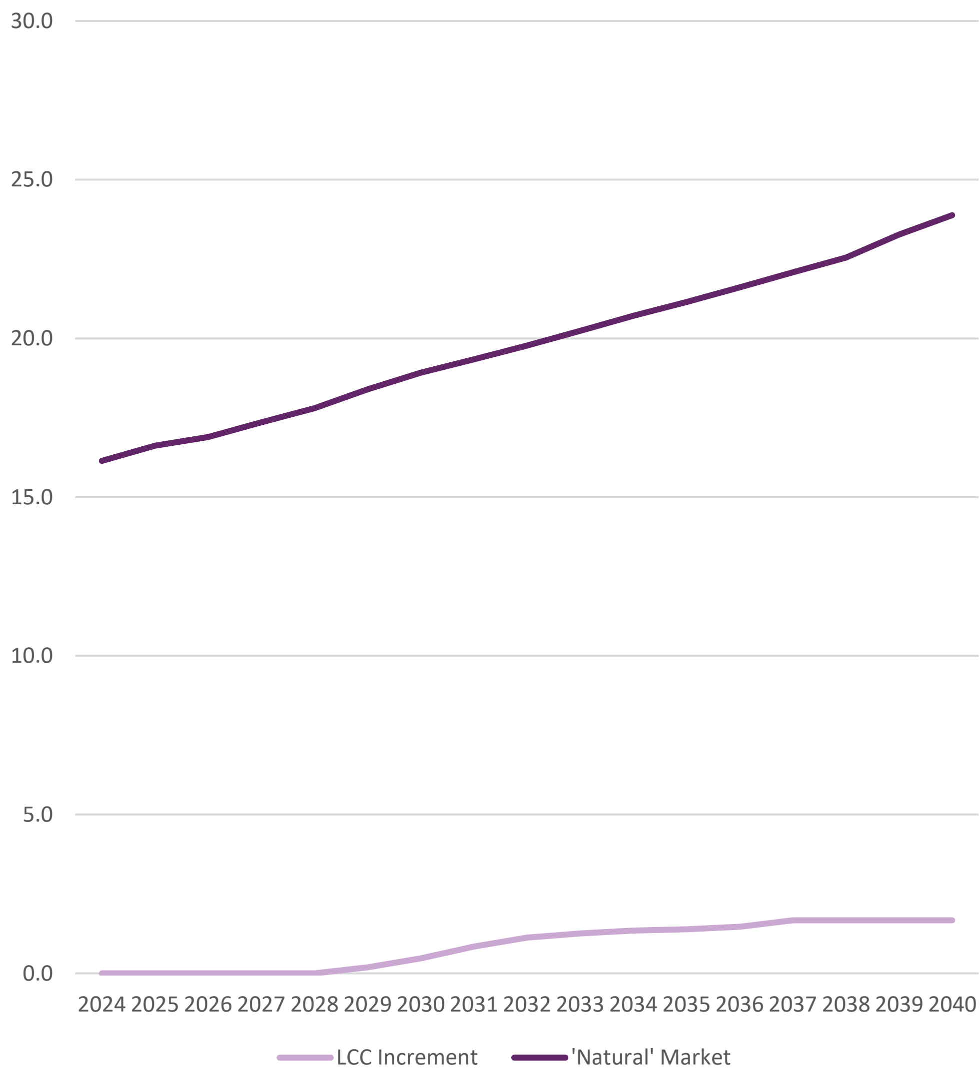
Second, an overlay representing potential low-cost carrier (LCC) demand has been applied. This overlay is inherently supply-led and bottom-up in nature, reflecting an assessment of the scale of activity that could be supported by the airport if the proposed airspace change were implemented. The level of uplift assumed is consistent with LCY's internal assessment of potential demand and does not rely on assumptions about the behaviour of any specific airline.

To provide additional assurance, the potential LCC market available to LCY has been independently sense-checked. This analysis considers the scale of LCC markets served from London airports in 2023, disaggregated by district across the wider South East. Market shares are then estimated for each London airport within each district based on relative surface access time and access cost, weighted to reflect observed modal share patterns. The results of this analysis are presented on the following slide.

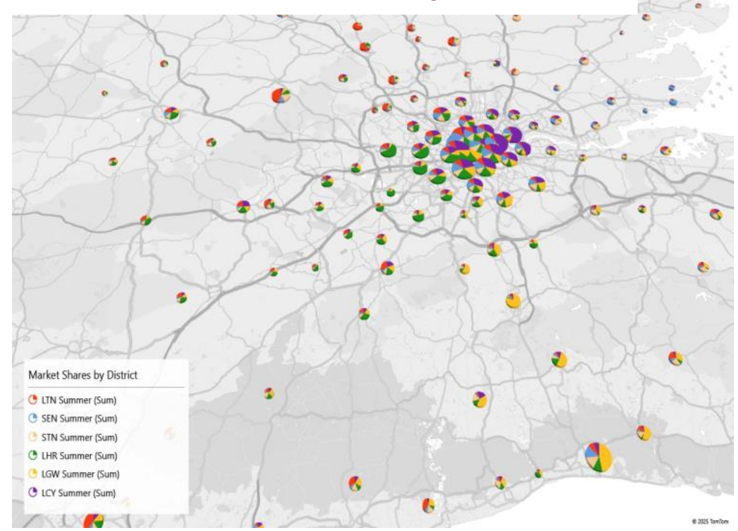
This benchmarking exercise indicates that, all other things being equal, the theoretical LCC market accessible to LCY is substantially larger than the level of traffic uplift assumed in the forecasts. On this basis, the supply-side LCC assumptions used are considered reasonable and, if anything, conservative. The primary driver of this 'natural' market is LCY's proximity to central London, with a particular strength in inbound travel markets.

‘Natural’ Market for LCC Services at LCY

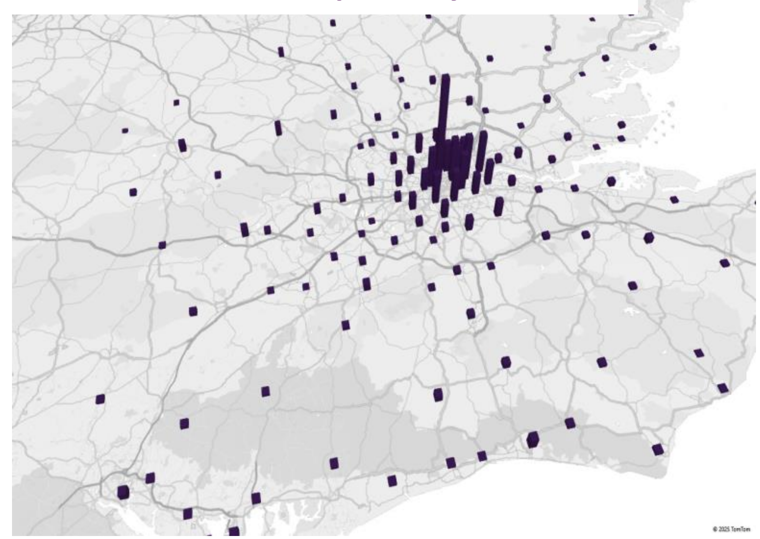
LCC Increment at LCY vs LCY 'Natural' LCC Market



‘Natural’ Market Shares by District



‘Natural’ Market Capture by District



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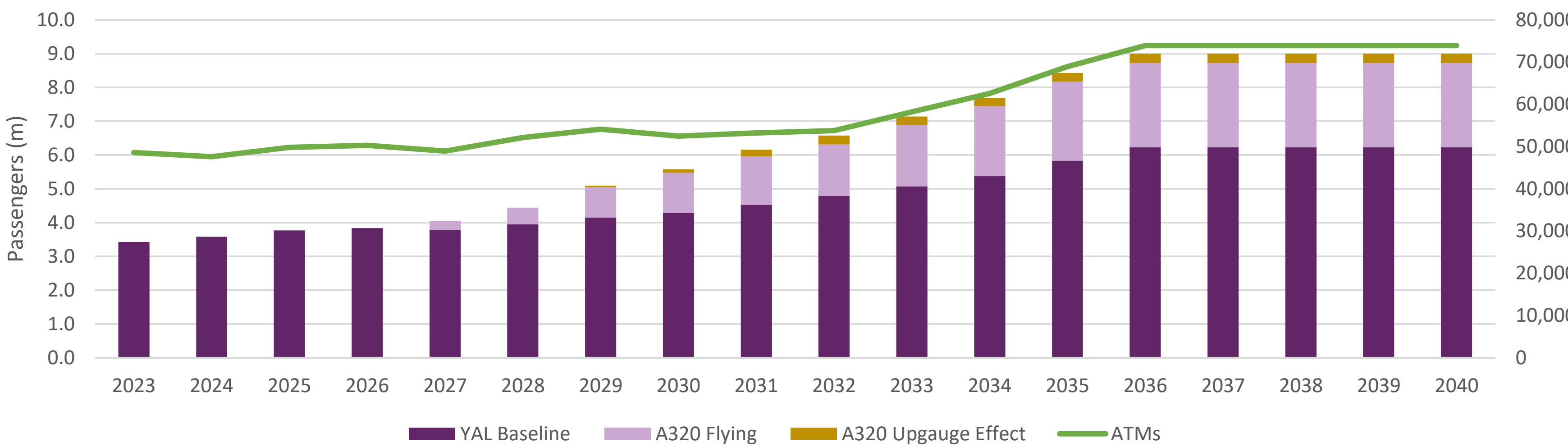
Airspace Change Forecast



The airspace change forecast is composed of three principal elements: the existing Baseline Case; an incremental volume uplift associated with the transition of incumbent operators to A320neo aircraft; and additional A320neo flying by low-cost and other new entrant operators, which initially results in market share redistribution before net incremental growth is realised. These elements are represented through three corresponding building blocks.

The incumbent operator upgauge effect reflects the additional demand that could be accessed if operators were to upgauge from new-generation regional aircraft to A320neo aircraft. The uplift arises primarily from a price effect, whereby lower seat costs associated with larger aircraft enable lower average fares and stimulate demand. For the purposes of the scenario, this transition is assumed to commence in the late 2020s, with fleet transition completed in the early 2030s.

Other existing operators are assumed to grow broadly in line with the Baseline Case. In markets that are not sufficiently large, or where service characteristics prioritise frequency (for example, hub-feeding routes), upgauging is assumed to be limited and fleet deployment remains consistent with baseline assumptions.

Low-cost and other new entrant activity represents incremental A320neo flying. In the early years, this is assumed to draw passengers from incumbent services, resulting in limited net growth. Over time, as demand expands and wider London system capacity constraints intensify, this activity contributes to incremental passenger growth. The scale of this component is anchored to the difference between the without-change baseline and the A320-enabled scenario and has been verified by reference to available market demand.

Under the with-change scenario, the airport's 9.0 million passengers per annum (mppa) planning cap is reached in 2036, with nearly 25% fewer annual air traffic movements (approximately 73,900) than under the Baseline Case.

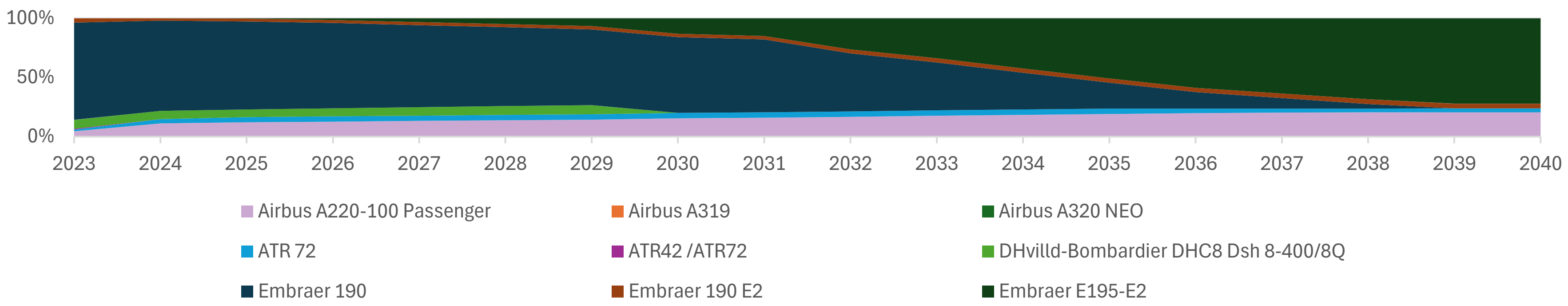
Scenario Fleet Mix

The charts illustrate the indicative aircraft fleet mix under the Baseline and With Airspace Change scenarios.

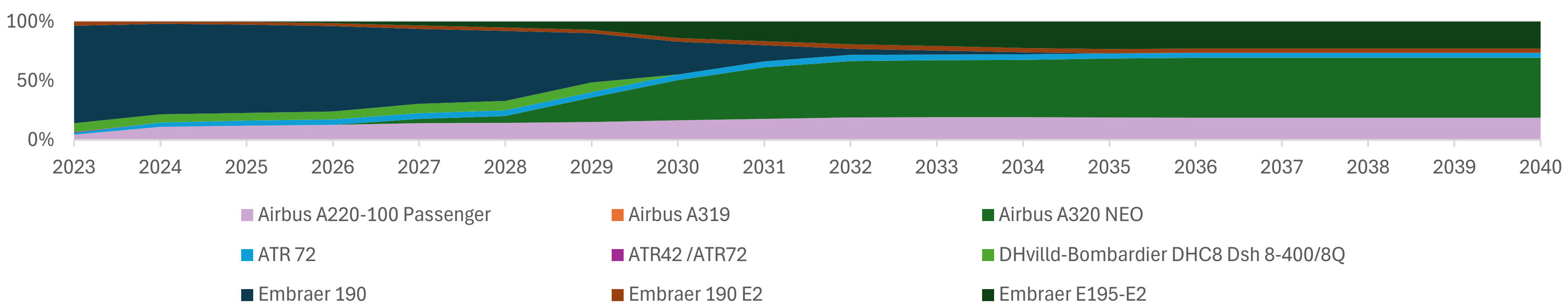
In the Baseline Case, the fleet evolves gradually within existing operational constraints, with increased use of new-generation regional aircraft over time. In the With Airspace Change scenario, the fleet shifts towards larger narrow-body aircraft, with A320neo types becoming dominant, reflecting the additional operational flexibility enabled by the proposed airspace change. Notwithstanding this shift, new-generation regional aircraft continue to operate throughout the forecast period.

The fleet mixes shown are scenario-based and intended for comparative appraisal only; they do not represent fleet plans or commitments by individual operators.

Without Airspace Change Fleet Mix



With Airspace Change Fleet Mix



Appendix: York Aviation Forecasting Model

York Aviation's Demand Forecasting Methodology (1)

Top-Down Econometric Modelling of Underlying Demand

At the heart of York Aviation's forecasting process is a top-down, long-term econometric model, which estimates the total demand for air travel originating within London City Airport's broad catchment area. This catchment includes Greater London and parts of the wider South East, encompassing areas where passengers may choose among multiple competing airports.

Key Steps and Features:

- **Demand Segmentation:**
  The model segments total travel demand by:
  - Passenger origin (based on local authority district)
  - Journey destination type (domestic, short haul international, long haul)
  - Purpose of travel (business vs. leisure)
  - Nationality (UK vs. foreign residents)
- **Economic Drivers:**
  The model uses Department for Transport (DfT) econometric elasticities to link growth in demand to:
  - GDP growth in origin and destination regions. Economic growth forecasts are sourced from the OBR and OECD
  - Real air fares, disaggregated by market segment and distance band
- **Elasticity Parameters:**

  These elasticities are derived from long-term time-series regression analyses and vary by travel type.

  For example, UK leisure travel to long haul markets is highly income elastic (>1.3), while UK business travel to nearby European destinations is much less responsive.
- **Fare Construction:**
  York develops 'benchmark' real air fares using a bottom-up cost modelling approach. Fare components include:
  - Base fare levels (from OAG schedules)
  - Fuel costs (based on future projections and aircraft fuel efficiency)
  - Sustainable Aviation Fuel (SAF) uptake and pricing
  - Carbon pricing, including Emissions Trading Schemes (ETS) and CORSIA
  - Air Passenger Duty (APD) and sector length weighting
- **Monte Carlo Simulation for Uncertainty:**
  Rather than relying on a single deterministic forecast, York uses Monte Carlo simulation to generate a probabilistic range of demand trajectories. This includes:
  - Thousands of simulations based on probabilistic variations in GDP growth, air fare components, carbon costs, and fuel prices
  - Results in an 'envelope' of potential market growth paths, from pessimistic to optimistic outcomes
- **Purpose and Output:**
- This stage produces a detailed picture of how total potential demand for air travel is expected to evolve in the South East over time, irrespective of which airport passengers ultimately use. It forms the foundation for subsequent market allocation modelling.

York Aviation's Demand Forecasting Methodology (2)

Allocation of Demand Across Airports via Logit Choice Modelling

Once total demand is established, the next step is to estimate how this demand is distributed across competing airports in the South East, including London City, Heathrow, Gatwick, Stansted, Luton, and others such as Birmingham.

York achieves this through an alternative-specific conditional logit model—a type of discrete choice model widely used in transport economics and endorsed by the DfT.

Key Concepts and Mechanics:

- **Passenger Choice Simulation:**
  The model simulates individual passenger decision-making about which airport to use. The likelihood of choosing a given airport is driven by its utility, which is a function of:
  - Surface access time and cost (e.g. distance, public transport connections)
  - Flight frequency and network breadth
  - Fare levels and airline types (LCC vs FSC)
  - Market segment preferences (e.g. business vs. leisure)
- **District-Level Resolution:**
  The model operates at local authority district level, allowing it to capture fine-grained geographical variation in airport accessibility and traveller behaviour.
- **Scenario Testing and Constraints:**
  The model is run iteratively to project airport-level market shares over time, reflecting how changes in demand or capacity affect relative attractiveness.
  - It incorporates capacity constraints at other major London airports, e.g.:
  - Heathrow capped at 90–135 mppa depending on runway assumptions
  - Gatwick limited to 55–75 mppa depending on whether the Northern Runway is developed

  If an airport is demand-constrained, the model dynamically reallocates displaced passengers to alternative airports, including London City, which may benefit from these shifts.
- **Historical Calibration:**
  The model is calibrated using CAA Passenger Survey data and airline schedule data from OAG, ensuring that it replicates observed passenger behaviour and travel patterns.
- **Output and Interpretation:**

  Produces airport-specific passenger forecasts for London City under various demand and capacity scenarios.

  Enables identification of market share shifts over time due to improvements in service, changes in competitive positioning, or infrastructure development (e.g., runway or terminal expansions).

York Aviation's Demand Forecasting Methodology (3)

Conclusion

Together, these two modelling components provide a comprehensive, policy-compliant, and defensible framework for forecasting future passenger demand at London City Airport. They offer:

- Robust estimates of regional travel demand growth potential
- Realistic modelling of passenger decision-making and competitive airport dynamics
- Flexibility to test multiple future scenarios, including different infrastructure, environmental, or economic conditions

This methodology has been successfully deployed in public inquiry contexts and accepted by planning authorities, underpinning York Aviation's reputation as a leader in aviation demand forecasting and strategic airport planning.

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