Factors Affecting Departure Heights

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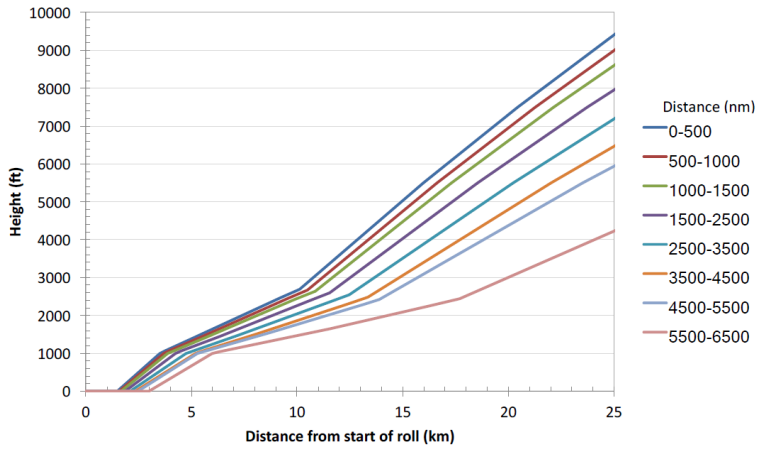
Main Factors Affecting Departure Climbs

- Aircraft type
- Load
- Atmosphere
- Route interactions

Aircraft Type and Load

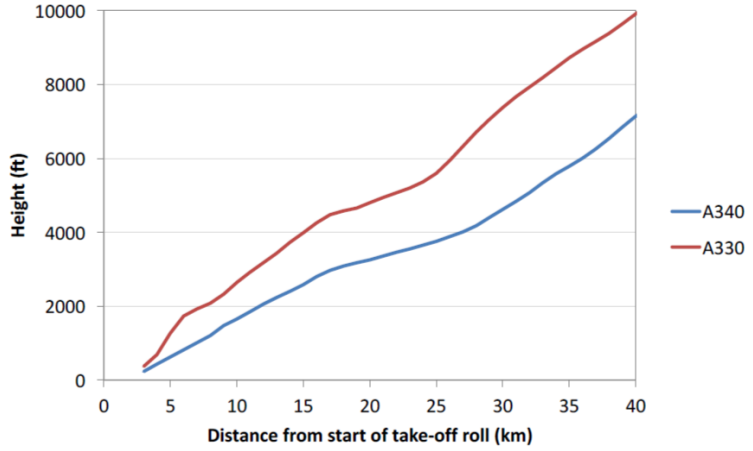
- Initial climb performance, up to 1000 feet, strongly influenced by aircraft type. Particularly number of engines.
- Acceleration phase, typically post 1000 feet.
- Destination, long or short haul, with resulting fuel load.

Effect of mass on aircraft height



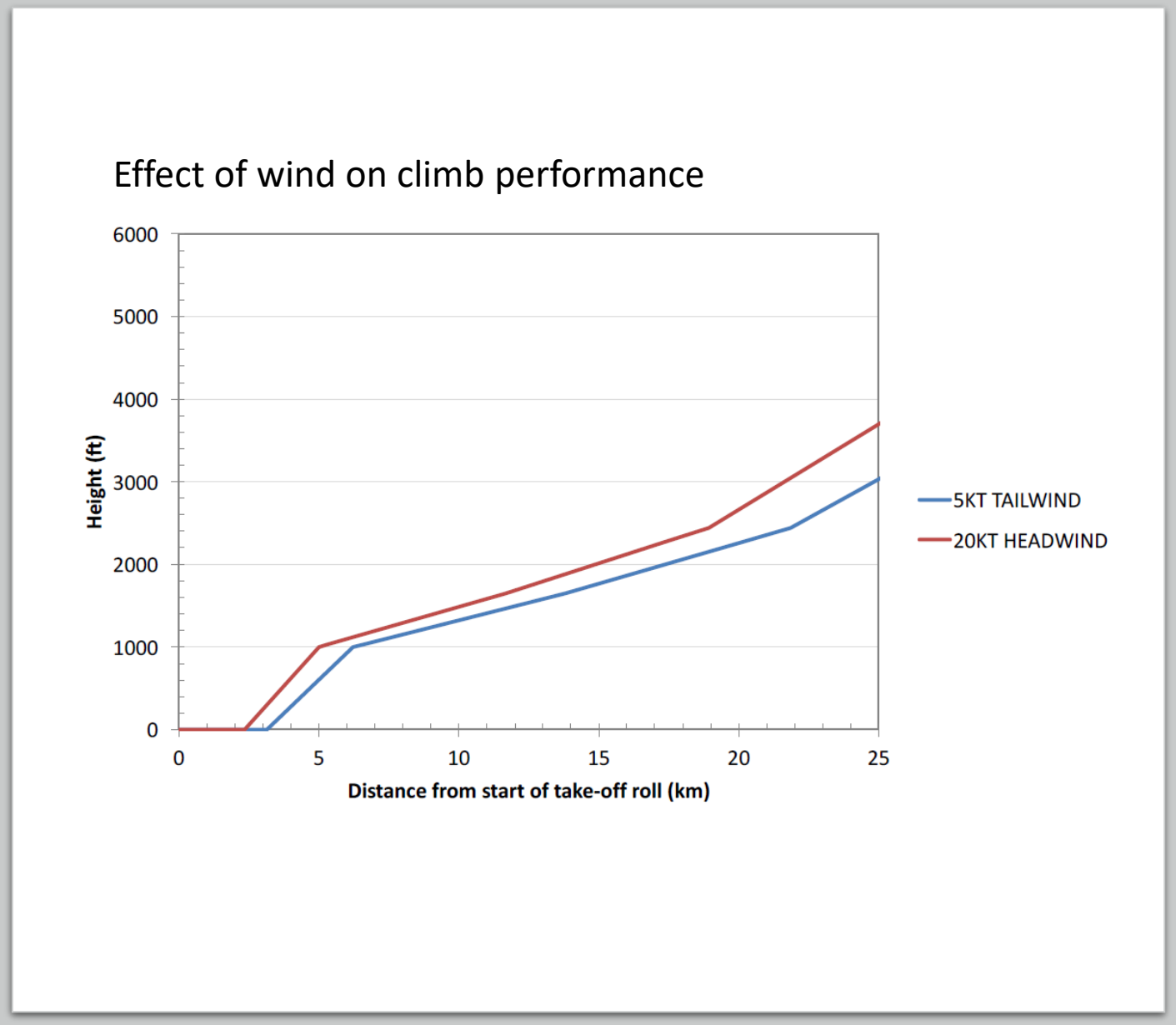
Aircraft performance: 2 and 4 Engines

- South African Airlines to Johannesburg: A330 vs A340



Atmosphere

- Temperature, related to air density
- Wind strength
- Westerly preference, potential small tailwind



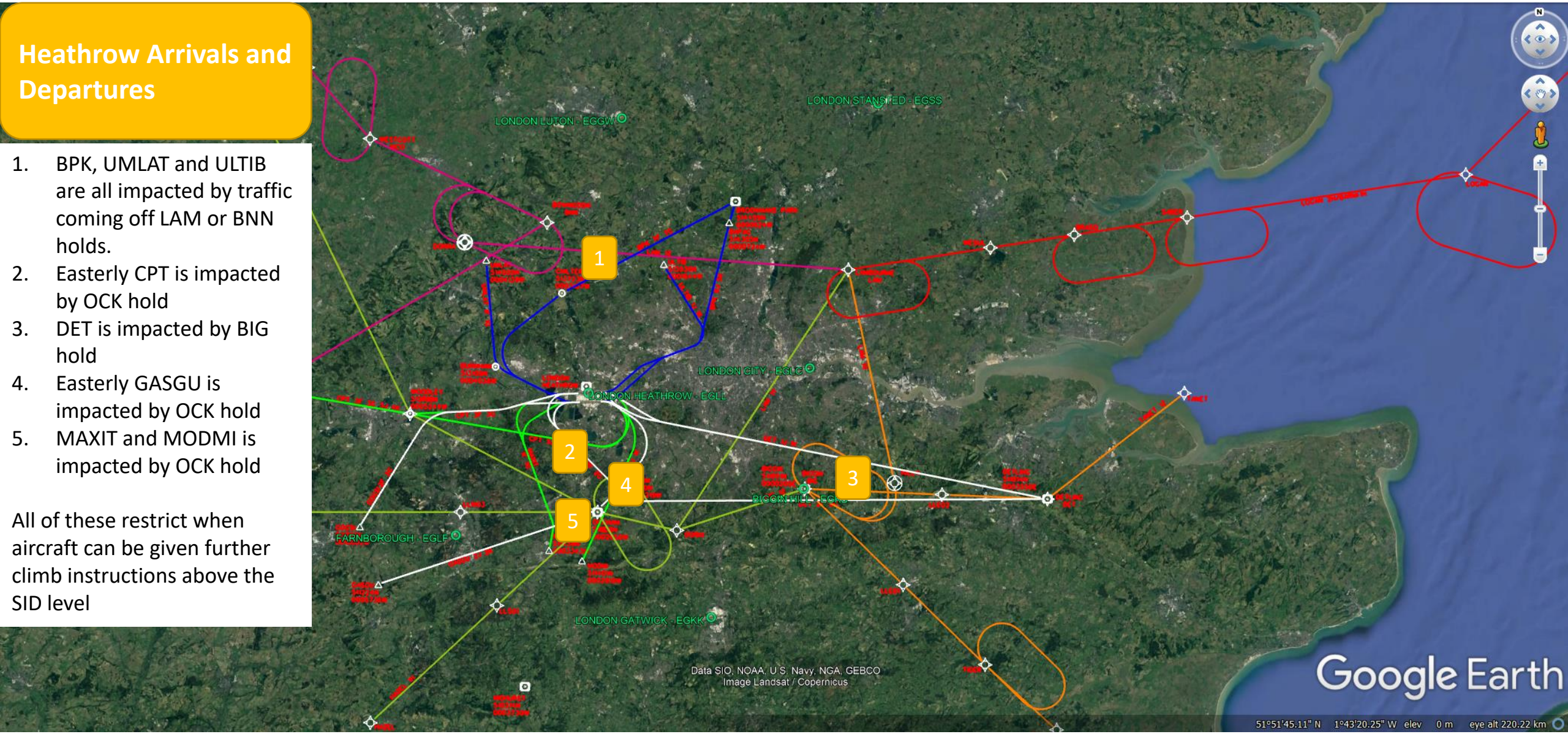
Route Interactions

- Unrelated to previous factors, and outside of initial climb considerations
- Current Airspace design in the TMA, SIDs can be held at 6000 due to interactions with Heathrow STARS.
- Controllers are unable to clear aircraft for further climb until clear of these routes.
- One of the outcomes of the AMS could be to look to deconflict routes, enabling continuous climb to more departures.

Heathrow Arrivals and Departures

1. BPK, UMLAT and ULTIB are all impacted by traffic coming off LAM or BNN holds.
2. Easterly CPT is impacted by OCK hold
3. DET is impacted by BIG hold
4. Easterly GASGU is impacted by OCK hold
5. MAXIT and MODMI is impacted by OCK hold

All of these restrict when aircraft can be given further climb instructions above the SID level



London TMA

The same principle impacts lots of routes in the TMA, that have evolved in a piecemeal basis over time.

The AMS will enable a holistic approach to route redevelopment, and an opportunity to reduce interactions, enabling earlier climbs to higher altitudes