

For the attention of:

Airports Commission
Sanctuary Buildings
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Evidence submitted by:

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1. Runways

- 1.1 The maximum number of aircraft movements which may be achieved in one year using a single runway is approximately a quarter of a million. In 2012, Heathrow achieved 471,000 with two runways, while Gatwick's single runway handled 240,000*. Fewer annual movements per runway are desirable, in order that there may be some 'slack' in the airport movement schedule.
- 1.2 The average number of seats per flight is an important measure of the extent to which an airport is used by a mix of traffic. At most major European hub airports, significant numbers of smaller regional airliners are present, resulting in a reduced average number of seats per flight. At Heathrow, the average number of seats per flight in 2012 was 201** (compared with 174 at Paris-CDG, 167 at Frankfurt and 158 at Amsterdam). This reflects the extent to which 'feeder' airlines have been 'squeezed out' of Heathrow, thereby denying travellers in smaller UK towns and cities direct air access to Heathrow's connections.
- 1.3 Many European hub airports have a major railway station on site, offering rail connections beyond the airport. It is worth noting that the presence of a rail hub at the airport does not automatically lead to the disappearance of feeder airliners – Paris-CDG, Frankfurt and Amsterdam all have an on-airport railway station, yet all three continue to handle appreciable numbers of smaller airliners. The presence of a rail hub at the airport does not therefore automatically lead to a reduced average number of seats per flight.
- 1.4 A four-runway airport which aims to achieve 200,000 movements per runway per year will achieve 800,000 movements in total, while still maintaining a degree of flexibility not currently seen at Heathrow. If the target average number of seats per flight is 160, a passenger throughput of 128m should be achievable.

*Source:

http://www.caa.co.uk/docs/80/airport_data/2012Annual/Table_06_Air_Transport_Movements_vs_Previous_Year_2012.pdf

**Source: *Airline Business*, May 2013

2. Layout

- 2.1 Airports such as Hong Kong-Chek Lap Kok, Munich, Oslo-Gardemoen, Palma and Singapore share many common design features. This popular design pattern employs two widely-spaced parallel runways. Ideally, spacing between runways should be sufficient to permit simultaneous independent approaches under Instrument Flight Rules (IFR) conditions. All passenger terminals, cargo centres and maintenance areas should be located between the two runways, so that crossing of active runways is unnecessary. This has the added benefit of minimising taxi times for arriving and departing aircraft.
- 2.2 A disadvantage of this layout is that the airport can become constrained by the small number of runways. A recent development proposal at Munich featured a third runway north-east of the existing northern runway. This would have reintroduced a requirement for aircraft to cross an active runway. It would also have resulted in greatly increased taxi times, and reduced utilisation of the existing northern runway in order that aircraft may be permitted to cross.
- 2.3 In any new airport development where the number of runways is likely to exceed two, consideration should be given to dividing the site into sub-sections. Each sub-section should feature two parallel runways, each pair serving its own complex of passenger terminals. The overall site would be very large, requiring a dedicated mass transit system. This would permit the simplification of the passenger handling process, by requiring all passengers to enter the airport (whether by public transport or private car) via the 'Surface Connection Centre' ('SCC'). The mass transit system would allow passengers would complete the journey from SCC to terminal building. This journey would be similar to that undertaken today by passengers who arrive at Gatwick by train, and depart from that airport's North Terminal.
- 2.4 An additional benefit of this design concept is the 'modular' nature of the airport. Each module features a pair of self-contained runways serving their own terminal(s). Modules would be connected with each other through the SCC. Modules could be added over time as required without disturbing activities at those already in operation.

3. Location

- 3.1 A project of the type described above would require a decision to abandon plans to develop Heathrow, Gatwick or Stansted in the medium- or long-term.
- 3.2 It has been suggested that a suitable site might be created by reclaiming land from the sea. This would allow creation of a site in an optimal position, but would be extremely expensive.
- 3.3 The area known as Walland Marsh between Rye and Dungeness is a reclaimed site. Reclaimed in numerous stages over a period of many centuries, it is flat and sparsely-populated. The primary land use is agriculture. It is nevertheless within approximately ten miles of the M20 motorway and the Channel Tunnel Rail Link. The towns of Ashford, Folkestone and Hastings are also approximately ten miles away.