

The Mayor of London's response to the Airports Commission consultation on shortlisted options

Operational Efficiency

Supplementary Note 14

February 2015

Key findings

- Insufficient analysis has been undertaken to validate airspace capacity limitations and the resultant environmental impacts.
- Further assessment is required to confirm airport configuration and boundaries are sufficient to accommodate full future capacity utilisation and understand the implications.
- Potential airspace conflicts are identified and the Commission assume that they are capable of being mitigated.
- The safety review highlights the particular challenges of the Heathrow extended northern runway (ENR) configuration and it is clear that the operational safety case is still to be made.

Key recommendations for further work

- Confirmed airspace corridors, airspace design, flight scheduling and aircraft movement modelling is required to accurately draw conclusions on the capacity of the options and the impacts of wider issues (e.g. noise generation, air quality and health impacts)
- The issue of scalability should be addressed by setting down master planning and development strategies for each of the options, if they were to grow beyond one additional new runway. This may involve development at more than one airport.
- Given the inter-dependence of runway capacity, taxiway configuration and flight routing design there is a requirement to undertake more detailed assessment before the conclusions drawn can be validated. In particular fast time simulation of aircraft movement both on the ground and in the air should be undertaken for both the Heathrow options.

- A full safety review of the Heathrow ENR should be completed to set down acceptable operational procedures and assess their impact on capacity and the environment.

A: Key observations

1. The Commission's analysis of airspace is insufficient to draw conclusions on wider issues (e.g. noise generation, air quality and health impacts)

1.1. The reports by NATS and the CAA are at a very high level. The previous stages of the Commission's work did go into detail with regards to airspace. The assessment of shortlisted options, however, is relatively tolerant with regard to risks in the surrounding airspace and the potential for mitigating any issues. This stands in marked contrast to the treatment of airspace conflicts claimed for Stansted and the Inner Estuary for which the commission took a risk averse approach. Treated on the same basis, it is likely any potential issues flagged for these alternative options could be equally addressed as part of wider airspace design changes.

2. The Commission's assessment of airport configuration, boundaries and airspace is insufficient with regard to accommodating full future capacity

2.1. The scalability requirements for long term expansion (2050+) have not been fully considered and the Commission must consider to what extent planned capacity will be achieved within planning and operational constraints. The assessment of scalability is extremely brief spanning only one or two paragraphs at most in the technical reports and totally excluded from the Commissions 'Business Case and Sustainability Assessment' reports

2.2. There is no evidence that the ground movement of aircraft has been modelled for either of the Heathrow proposals. This is needed to demonstrate that the claimed capacity can be delivered safely.

2.3. All three options include tightly drawn airport boundaries that will constrain potential development. The Commission pays insufficient attention to the assessment of scalability for longer term expansion (looking in the long term at 2050+), and does not cover it in its summary.

2.4. Additional space either at opening or in the short to medium term, for example, may be required for End Around Taxiways at Gatwick, a further Terminal 6 satellite at Heathrow northwest runway (NWR) and additional taxiway space at Heathrow ENR. Should boundaries change to maintain operational efficiency, the impact on land-take, including lost housing and amenities, will be greater and are as yet unquantified.

3. The Commission's assessment of potential airspace conflicts is insufficient to be confident about future capacity and environmental impact

3.1. Potential conflicts are identified and then dismissed as being capable of being

mitigated without sufficient evidence. This differs to the advice from NATSI which indicated that conflicts could only be fully understood following fast-time simulation modelling that is yet to be undertaken.

- 3.2. There is insufficient assessment of airspace in relation to conflicts with RAF Northolt and London City Airport. In the Operational Risk briefing note prepared by NATS they identify that additional investment and development of the airspace is necessary.
- 3.3. No evidence is provided by Eurocontrol.

4. The Commission's safety review does not attempt to resolve the particular operational challenges of the Heathrow ENR

- 4.1. The Commission in both the Operational Efficiency and Operational Risk reports seemingly take the operational and safety acceptance of extending the Heathrow northern runway as a given. The reports do not factor in any risks of delay or a lower level of capacity than proposed that might result in delivering such a novel and untested approach. In particular missed-approach procedures need to be developed and simulated. There are a number of concerns with the ENR runway configuration with respect to larger aircraft, 'deep' landings and limitations by only being a CAT I operation.
- 4.2. There are concerns that infringements to Obstacle Limitation Surfaces (OLS) at Heathrow and the siting of ILS equipment in relation to ILS critical areas have not been fully considered and additional analysis with regards to safety and operations is required.

5. The Commission does not consider the reliability and resilience issues with sufficient rigour.

- 5.1. An assessment has been made but it fails to consider that any initial improvement in resilience disappears as the airport fills up; with the situation returning to today's position within the medium term. No assessment of resilience for the period 2040 to 2050 when utilisation will be back in the 90 – 100%. It should be noted that IATA recommend utilisation of 70% for hub airports.

¹ NATS Support to the Airports Commission - Appraisal Module 14: Operational Efficiency: Airspace Efficiency Report – Paragraph 1.5

B: Does the Commission’s assessment constitute a robust approach?

To be robust, the option appraisal must entail a complete assessment. It must also be consistent across all the options, with the Commission’s previous analysis, with best practice in the appraisal of large infrastructure projects – including principles of HM Treasury Green Book – as well being aligned with the Commission’s own Appraisal Framework. The table below sets out a summary of the extent to which the Commission’s assessment meets these requirements.

Table 1: Does the Airports Commission’s assessment constitute a robust approach

Criteria	Met?	Comments/examples
Approach to Assessment		
Aligned with Airports Commission Appraisal Framework?	Partial	Some issues not evaluated, particularly consideration of accommodating full future capacity (2050+)
Consistent approach to assessment: <ul style="list-style-type: none"> • Between options? • With previously considered options? • With best practice/Green Book? 	Partial	The approach to airspace design is not consistent across all options
Assessment complete (evidence gaps addressed, suitable geographic/temporal scope)?	No	Long term needs and operational efficiency not considered
Assumptions		
When multiple scenario or assumption sets used, has the most appropriate been identified – or worst case scenario tested?	Partial	Inconsistent approaches between options not normalised by the Commission. This is reflected in varying environmental impacts.
Analysis: impacts and conclusions		
Risks fully stated and impact reflected in conclusions?	No	Not understood without further design development and simulation modelling
Understanding of net/cumulative impacts?	No	Scalability issues not reported