Heathrow – a retirement plan

Tony Hall and Sir Peter Hall argue that time has come to replace Heathrow with a better-located hub for UK's airborne public transport.

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In 2006 Heathrow airport celebrated its 60th birthday. It opened for business on 31 May 1946, somewhat inauspiciously, in an army surplus tent. Heathrow had become a civilian airport almost by accident. In 1943 the wartime government had urgently needed a fighter airfield that could be converted to peacetime use. This resulted in a pattern of nine runways, of which only three remain and only two are in regular use: a severe constraint.

To compound this, the two runways are oriented precisely east-west and the field is due west of the capital, ensuring maximum possible noise nuisance over the maximum possible area either on approach or take-off. The first permanent building, now Terminal 2, had to wait until 1955, together with the tunnel under the north runway. That was soon seen as a planning mistake, creating permanent congestion into and out of the central terminal area as the Oceanic Terminal, now Terminal 3, was followed by Terminal 1.

Yet since 1946 Heathrow has remained London's, and the UK's, principal airport. Air travel has changed hugely, both in technology and scale, but the principal airport has remained on the same site. Compared with other major world airports, it is not especially close to the city centre – Paris Charles de Gaulle is almost the same distance (14 miles, 23 kilometres), while Amsterdam, Copenhagen, Frankfurt, Madrid and Zürich are much closer – but the greater spread of the conurbation results in a burden of noise pollution and traffic congestion to a large part of the Greater London area.

The policy of successive governments has been to relieve pressure on this site by building subsidiary airports around London, first at Gatwick from 1956, and then at Stansted from the 1970s. An additional, and similar, idea to that of the 'relief airport' approach has been that of promotion of provincial airports within the UK, especially in the major conurbations, in order to relieve the pressure on Heathrow. None of these policies has been successful. No other airport in the country has approached it in scale of operations, particularly long-haul. In response to overwhelming demand, Heathrow has continued to expand on its original site. It remains overwhelmingly the busiest international airport in the world in terms of traffic volume.

The contrast with other countries could not be greater. Mercifully for the rest of the world, the British style of short-term muddling through is not widely copied. A few fortunate cities, like Amsterdam and Frankfurt, Copenhagen and Singapore, managed to plan their airports so well in the first place that they could expand logically and rationally: Amsterdam's Schiphol and Singapore's Changi, two airports that regularly win awards from business travellers, are outstanding examples.

But, although few people in Britain seem aware of the fact, elsewhere in the world the standard

Major Airport Relocations and Distances from City Centre

City	Airport 1	Distance, kilometres	Airport 2	Distance, kilometres	Date of opening
Paris	Orly+	14	Roissy-CDG	23	1974
Athens	Ellenikon*	9	Venizelos	33	2001
Stockholm	Bromma+	7	Arlanda	43	1960
Munich	Riem*	7	Franz-Josef Strauss	28	1992
Milan	Linate+	7	Malpensa	45	1998
Berlin	Templehof (to 2007)*	6	Berlin Brandenburg	20	2011
	Tegel (to 2011)*	8	International (Schönefeld)		
Oslo	Fornebu*	7	Gardermoen	50	1998
São Paulo	Congonhas+	7	Guarulhos	25	1985
Rio de Janeiro	Santos Dumont+	2	Galeão	20	1952
New York	La Guardia+	13	JFK	24	1948
Washington	National (Reagan)+	7	Dulles	42	1962
Houston	Hobby+	11	Intercontinental (George Bush)	37	1969
Denver	Stapleton*	8	Denver International	37	1995
Tokyo	Haneda+	16	Narita	65	1978
Hong Kong	Kai Tak*	5	Chep Lap Kok	34	1998
Kuala Lumpur	Subang+	17	KLIA	47	1998

+ Remained as secondary (usually domestic) airport * Closed after opening of new airport
Note: Distances are crow's-flight. Actual ground distances are typically 20-25 per cent longer

overwhelmingly strong:

- All aircraft noise could be over water.
- Because there would be no noise shadow, 24-hour operation would be possible.
- No existing settlements would be displaced.
- There is extensive space available for staged expansion from one runway, through two and three to four runways.
- Direct sea-air interchange would be available for freight.
- Proximity to the Channel Tunnel Rail Link would enable high-speed trains from London to mainland Europe to pass through the airport station, by means of a diversionary loop
- The same link would provide high-speed transit (less than 30 minutes) to Central London.
- The airport could play a key role in the regeneration of Thames Gateway, generating jobs in an area needing more employment.

Acceptance of the case for a Thames Estuary location is not dependent on the case for and against a particular site. There have been several sites that have been seriously considered over the last forty years and there are more that would merit investigation. The leading contenders have been*:

- Maplin, which the government was taking forward in the 1960s unit it was abandoned because of a shortage of public funds;
- Cliffe, floated by government in its 2003 consultation exercise but not accepted by them;
- The Marinair proposal, drawn up by a private consortium. This is well away from land, on reclaimed sandbanks, 80 kilometres from Central London; and:
- The Bluebase proposal (see adjacent article), for an airport on an island in the estuary north of the Cliffe marshes, served by a new road-rail tunnel under the Thames.

The disadvantages alleged for these sites are their long distance from central London and environment obstacles, especially potential bird strikes. Against this it must be pointed out that airports such as Tokyo Narita operate successfully at considerable distance out through the use of fast rail links and that new marine airports, such as Copenhagen Kastrup, Vancouver, Chep Lap Kok, and Osaka International, appear to handle bird migrations without problems.

What To Do?

This paper is not a plea for the immediate closure of Heathrow – or even for phasing it out in five or ten years' time. That would be logistically impossible and economically ruinous. It is a plea for long-term planning that would result in Heathrow's replacement, and eventual closure, over a long period of time: between now and the mid-century.

Such an approach may seem extraordinarily blue-sky and unworldly. If so, it only demonstrates the degree to which, in the UK, we are wedded to a style of planning that is short-term, incremental and fundamentally sub-optimal in its outcomes. But it does not have to be that way. It merely requires that we think long and think big.

**Your editor's Cambridge thesis titled The London Airport System mooted a ground link between Heathrow and an estuarial airport using floating runways north of Sheppey. Terminals along the line transported passengers (and goods) directly to the aircraft at either airport. It was published in OAP, December 1969 (reproduced in PiL issue 41, April 2002) and by CPC in the 1970s as London's Flight East.*

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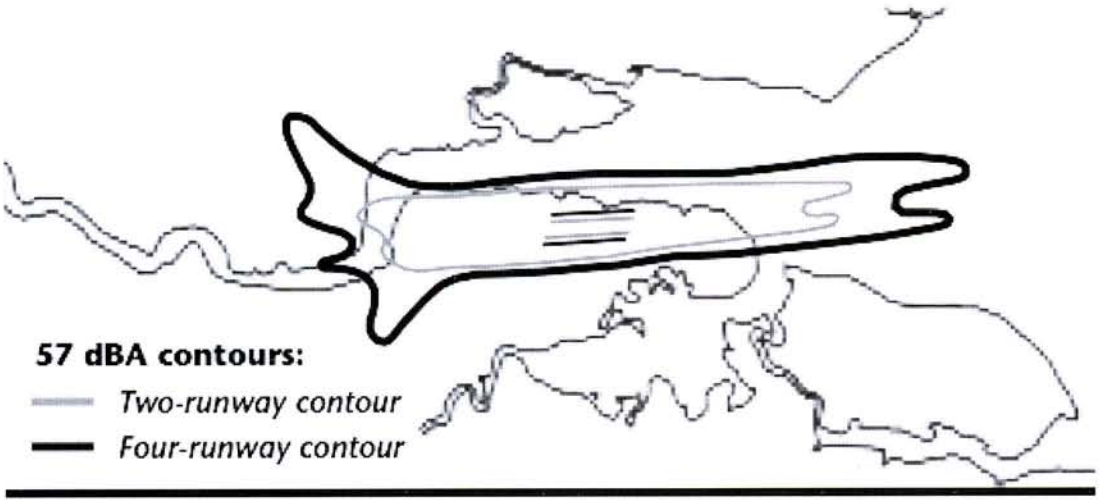


Noise contours for the Cliffe Marshes site. Being largely over water, the approach and take-off paths minimise noise impacts on people

solution to the growth of air travel has been to build a new and larger airport further out from the city. This becomes the principal airport while the original airport is either shut or takes on a subsidiary role. City after city has done this as shown by the table. Sometimes, at first, there were complaints that the new airport was too far out. These complaints were seldom heard for long; urban growth and traffic growth caught up.

Why has the British approach not worked?

To understand why the British approach has not worked, it is necessary to appreciate a critical distinction: between long-haul and short-haul operations. Most short-haul traffic, both business and tourist, is point-to-point. It is most efficiently managed by flights between local airports near to the origins and destinations of the trips, without change of plane or intermediate stops.

But much long-haul business involves passengers changing aircraft at principal international airports, on the 'hub and spoke' principle: passengers changing between a long-haul flight and local feeder services or medium-haul services (e.g. Pittsburgh-JFK-LHR-Newcastle or Dubai-LHR-Copenhagen).

This interchange traffic is essential for the success of the long-haul business. This is why, for nearly all the world's major airlines, concentration on one principal long-haul airport in the UK is the only option. They have mounted the strongest resistance to moving to Gatwick, let alone Stansted. There are some scheduled long-haul services from Glasgow, Manchester and Birmingham, predominately to North America, but they are few compared with Heathrow – not because of lack of capacity but because of lack of demand.

The only realistic alternative to Heathrow, therefore, is to do what has been done in so many other leading cities: to plan long-term to build a replacement national long-haul hub serving London, with Heathrow relegated to a secondary role or eventually closed entirely.

Why is Heathrow a problem?

The environmental problems of Heathrow airport arise simply from its location. Residential areas adjoin its boundary on the eastern and southern sides. Although the land to the west is not so heavily built up, the centres of the substantial towns of Slough, Staines and Windsor are only 8 kilometres away.

Noise pollution is acute. In 'normal' weather conditions with westerly winds, experienced 70 per cent of the time, the flight path into the airport passes right across the centre of London; aircraft fly low over Barnes, Richmond and Hounslow on their final approach. The 63 decibels noise footprint is 19 kilometres long and approximately 3.5 kilometres wide. Its eastern 6 kilometres cover the residential area of Hounslow. Although improvements in technology have resulted in quieter aircraft, and a smaller noise footprint than in the past, the number and size of aircraft have increased enormously.

During the other 30 per cent of the time, when winds come from the east – corresponding to fine sunny weather, especially in summer – aircraft take off towards London, splaying out immediately after take-off into two big noise corridors: a northerly one over Ealing and Brent, a southerly one over Richmond and Kingston, equally blighting much of west London suburbia.

The size and role of the airport also make it a focus for road journeys, particularly those by private car. This adds significantly to traffic on the heavily-loaded M4 and M25. Other traffic feeds through urban areas around the airport, creating noise and fume pollution and adding to general traffic congestion.

But Heathrow does not merely impose a huge environmental burden: it is operationally inefficient. Amazingly, the landing field is essentially the same as in the 1950s, when it carried less than one tenth of today's traffic. The central terminal buildings, designed for a very different age, have been adapted and extended incrementally.

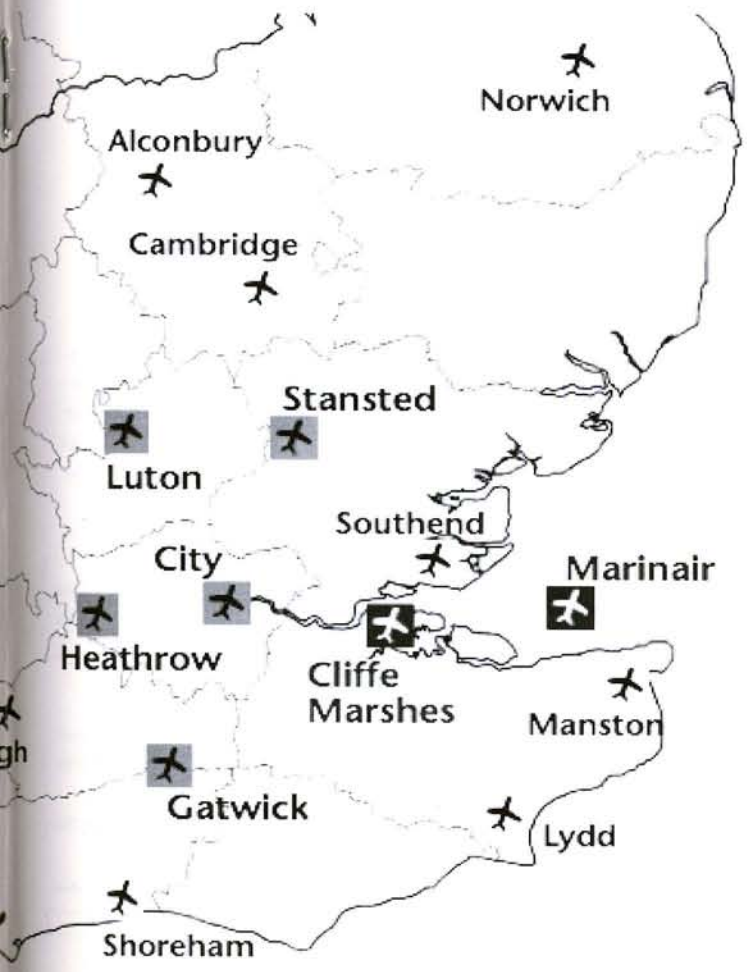
Terminal 4, built in 1986 as a state-of-the-art facility for BA, is against the southern boundary of the airport, necessitating all aircraft taking off or landing on the distant north runway to cross the live southern runway, with a 10-20 minute time penalty. Terminal 5, under construction after a five-year planning inquiry, is at the far west end, away from all four other terminals and necessitating a difficult and expensive extension of the Underground and Heathrow Express and new road links.

Moreover, the runway capacity has remained unchanged: Heathrow depends on only two parallel runways, a ridiculously inadequate number for an airport carrying 67 million passengers a year (the 2004 figure), let alone the 97 million projected for 2015 with Terminal 5 in full operation.

The plain fact is that any airport of Heathrow's size and importance would nowadays be expected to have not two, not three, but four full-standard runways. This is the case with its comparators (and, in the European cases, competitors): Paris Charles de Gaulle, Frankfurt, New York or Hong Kong.

These constraints are now biting. Heathrow is steadily slipping down the ranks of Europe's leading airports in terms of the number of destinations it offers; it now stands at fifth place, with 178 routes, compared with 233 at Frankfurt, 220 at Paris Charles de Gaulle, 203 at Amsterdam Schiphol and 179 at Munich, Germany's number two airport.1

Airports in London and the



the Greater South East

Advantages of a new-build airport

We are paying the price for our failure to build a completely new airport, purpose-designed for the 21st century, replacing Heathrow and relegating it to a secondary role. But it is increasingly clear that this is the only viable option. London would have a state-of-the-art four-runway airport like the new Chep Lap Kok airport at Hong Kong. Not only would it offer extra capacity to meet current long-haul needs, but also spare capacity to meet future growth. The design would make it possible to make extensions to the facilities over time.

Moreover, the layout could be designed to facilitate aircraft and passenger handling in the most effective and efficient manner, reducing operating costs over the present situation. The road and public transport infrastructure could also be designed-in, rather than being added afterwards.

Huge environmental benefits would also follow.

Replacing Heathrow by a new Thames Gateway airport would also open up the possibility of its eventual closure. A vast area, well over 1000 hectares, of developable land would be released, predominantly for housing: in effect, a new town in-town, of well in excess of 30,000 new dwellings, a substantial contribution to London's need unlikely to be equalled elsewhere.

With high-quality transport links already in place, as well as all basic services. It could be planned comprehensively to high standards of design. The incoming population would create a demand for services that would go a long way towards compensating for the loss of airport employment. It would provide a very substantial financial contribution towards the cost of a new airport.

In terms of regional economic policy, relocation to the east should be seen as an advantage rather than a disadvantage. The west's loss would be the east's gain. West London and the area to the west of London represent the most prosperous single sub-areas in the whole UK, with a plethora of advanced service and high-technology jobs which would remain; there should be no problem in generating new local jobs to replace those lost by relocation.

By putting the airport east of London, the additional jobs would be an important boost to the comparatively less prosperous sub-region of the Thames Gateway. The Government's Thames Gateway regeneration strategy and the Mayor's London Plan both seek to encourage growth on this east side, along the new Channel Tunnel Rail Link – but current airport policy fails to reflect the new shift.

Another significant advantage of relocation to the east would be to build in access to a main-line high-speed railway to the rest of Britain and to mainland Europe. Paris Charles de Gaulle, Amsterdam Schiphol, Frankfurt International, Cologne-Bonn, Stockholm, Copenhagen and soon Brussels have such direct connections; Zürich and Geneva airports each have their own main-line station which could potentially be reached by the high-speed trains from France and Germany that currently serve their city centres.

As other airports develop high-speed train services as short-haul airport feeders, Heathrow will steadily lag farther behind these competitor airports and their competitor cities.

Where to put it?

The key step therefore is for government to accept the overwhelming case for development of a new state-of-the-art hub airport for the 21st Century, located on the east side of London. The question of the best site is the next step.

Stansted could be a location for the new airport. But its expansion presents environmental problems, evident in Uttlesford Council's recent rejection of the BAA's planning application for expansion. And it could not be easily connected to the Channel Tunnel Rail Link.

The optimal location lies in the Thames Estuary. The general planning case for a site here is