

UK Civil Aviation Growth: A Tour of the Terrain

Introduction: p2

The Bottom Line

London: The Expanding Capital City

Anchoring the debate

The Megahub Dilemma

Build it and they might not come

A: Safety: p6

Beware of the HILP

Lest we forget

It was just one of those things

The Precautionary Principle

Collateral Damage

B: Noise: p10

Claiming the Future while mired in the Past

Those were the days

The Farce of the Past

C: Market trends: p11

It's Holiday Time

The Great Rotation

Lunch tastes good, what's for dinner?

Unbundling and Convergence

The Intercontinental Crossroads

D: Competition: p15

Oligopoly anybody?

Jobs lost; More Jobs gained

What do the Regions want? Nimbys and Bananas

E: Where next? P16

A Cameo of our Past

A Glimpse of the Future

Society and Affluence

F: The Bottom Line P20

South East Aviation Expansion: An option summary

So what should be done? A précis of 5 scenarios

A précis of the précis

What further can be done? Helping Heathrow

Understanding Heathrow: The Question of the Slots

Addendum: Beware of the HILP: BA762; May 2013 P22

Heath Row Map source: 1820, 1897, 1920, present

Introduction

The Airports Commission has received many worthy submissions. They have subjected the Commission to great detail about present and projected scenarios for UK civil aviation.

This contribution is different in three ways.

1 It looks at issues and their inferences, rather than at practices and projections.

2 It seeks to escape from the reductionist approach, which has largely anchored the debate to the need for a single expanded UK Hub at Heathrow or a Megahub at Estuary, and latterly with an intervention by Gatwick.

3 To deal with 2, it faces the inevitable London orientation, predominantly Heathrow, for that is what has emitted most of the lobbying noise, then considers Estuary and Gatwick, and offers an overall picture of what may be the immediate choices for UK civil aviation.

But in case you prefer to know where this contribution leads, here is the summary.

The Bottom Line

- In 30 years' time, both Heathrow and City Airports will probably have closed, partly on grounds of safety, but also due to the need for living space for some 3 million more London residents
- Most UK civil aviation traffic will continue to be for holidaymakers, which supports the case for expansion of regional airports
- For London, the choice for aviation expansion depends crucially on the expected scale and shape of changes in demand
- The Gulf carriers and Eastern Europe/Middle East intercontinental crossroad Megahub airports may come to capture Europe-Asia business routes that cannot sustain non-stop services
- The business models of low-cost and legacy airlines are converging
- Improvements in ground transport to and from airports are vital to raise overall travel efficiency
- The present expansion plans of Luton, Gatwick and regional Airports should be welcomed.
- Detailed planning for the Estuary airport and its infrastructure should take place, though a need for an UK Megahub Airport could recede if direct short-haul services and longer-haul direct and feeder flights flourish further
- Heathrow should not be allowed its 3rd runway nor its runway extension plans, principally on safety grounds, which will be accentuated by London's further urban spread, and also because Heathrow expansion would intensify its continuing noise and adverse domestic competition effects.

London: The expanding capital city

In 30 years' time, both City Airport and Heathrow will probably have closed. This is not so much because of noise, but on grounds of safety, and health, both of which are significantly linked with the continuing expansion of London.

It is forecast that, in that time, London will have a further 3 million residents. That is roughly the present London annual growth rate of about 100,000. The extra citizens will need places to live. Some of that will come from in-fills and conversions of obsolete buildings; some will go up in the air in more high rises; an overall process known as "densification". But that won't be enough, and not all families will want to be up in the air. They will want to be on the ground, with gardens and green spaces for children to play without having to be supervised. This means more houses, schools, medical centres and other public facilities. London will keep on spreading out. (*Map source at the end*)

A suggestion has already been floated for a London Outer orbital ring road to be built, well outside the M25. This would create the startling prospect of the M25 becoming London's Inner orbital ring road. To the East, we are building more downstream beyond the Thames Barrier. Slough is already almost contiguous with London and also with Windsor. (The open distance between Slough and London is now little more than the distance across Hyde Park + Kensington Gardens. The Slough to Windsor distance is similar). Slough is, along with Windsor and Maidenhead, categorized as being in London's "Larger Urban Zone" by Eurostat. So both Heathrow and City airports will increasingly be enveloped in urban developments. This affects the decisions we should be making about UK Airport expansion to fit future needs, particularly in the London/South East area.

Anchoring the debate

We are supposed to be having a debate about the future of UK aviation policy, but until recently nearly all the noise has been coming from the assiduous Heathrow lobby, which has done an impressive job of shaping and all but monopolising the debate. It defines Britain's interests as largely those of international business travel; the location as the South East; the South East as London; London as the business interests of the City/West End, and those as being an expanded Heathrow. Ergo, it infers that Britain's interests and its future prosperity are the same as Heathrow's. The logic is plainly contestable. Recently Heathrow has switched some emphasis onto its strong position in commercial air freight and its role in connectivity for UK regions.

It has been an unremitting and successful policy of channeling attitudes into a narrow perspective. "Anchoring" (and what psychologists call "the focusing illusion") is a basic technique of influencing by endless repetition. Heathrow's story has mainly pictured our national aviation dilemmas as being little more than a dramatic and seemingly urgent issue of expanding Heathrow, or not. And if not, then building the Estuary Airport. Both of them being described as Britain's only hub. The debate about our overall national interests has been stifled by this narrow and increasingly obsolete focus, and the merits of Heathrow and Estuary are significantly different.

The remit of the Airports Commission is to “examine the need for additional UK airport capacity and recommend to government how this can be met in the short, medium and long term”. Understandably most of the attention has been on the short-term, but with long lead-time infrastructure projects, the short-term often defines the long-term.

Our national aviation dilemma rests on five scenarios – see p20. (The Airports Commission has a different set of five, but the sets overlap). If aviation cannot expand much because of global warming, then the cheapest, simplest, stopgap solution would fit the limited capacity need. Yet minimal expansion isn't the assumption in UK or global aviation. Major growth is forecast. If aviation can expand as predicted without frying the planet, having a dominant UK hub, be it Heathrow or Estuary, may become sub-optimal, just as would having only one major container port for our international shipping. (we have Felixstowe, London Gateway, Southampton, Liverpool, Portbury, etc)

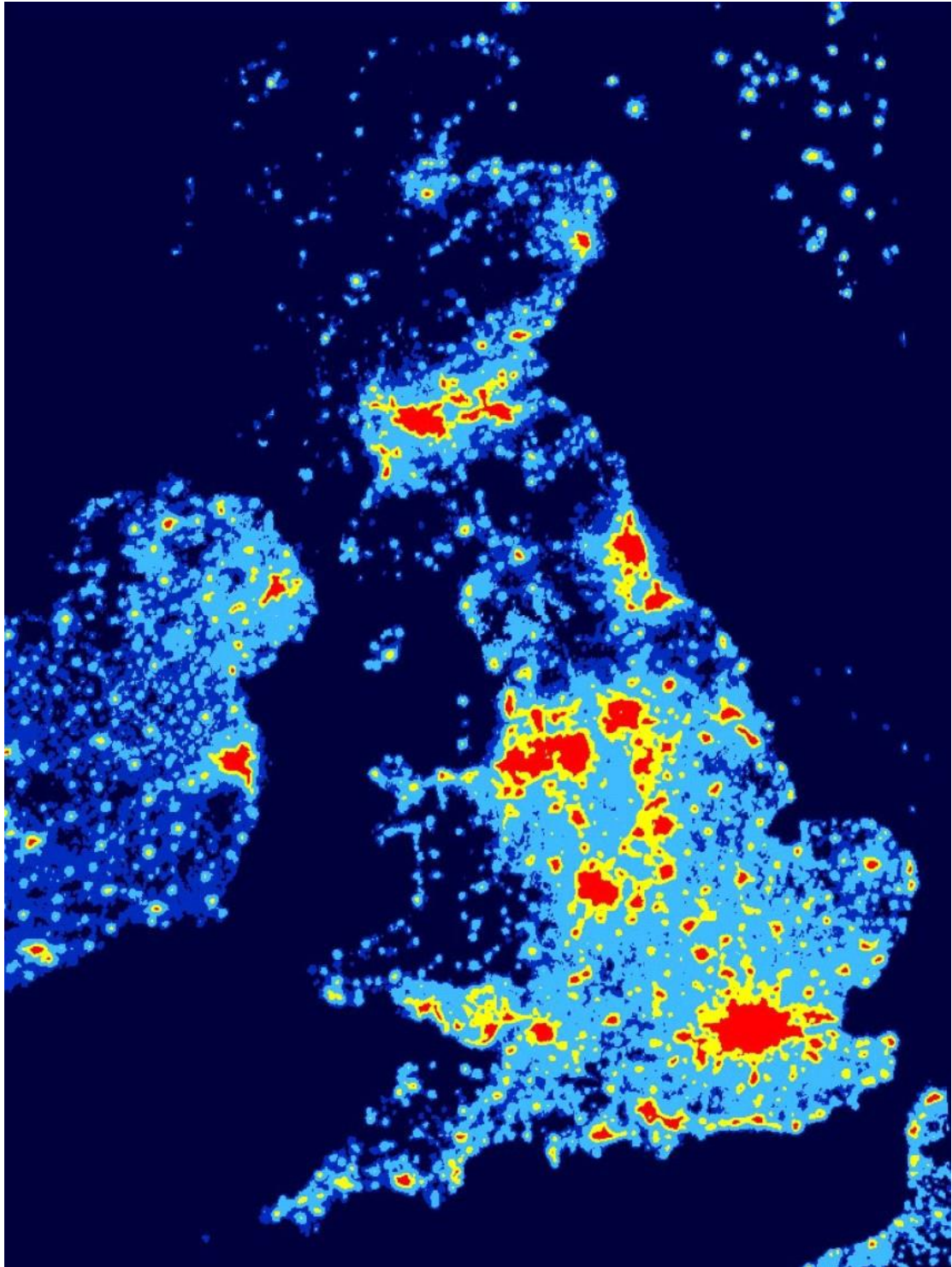
The Megahub Dilemma

The more that UK aviation expands its existing growth profile of predominantly direct flights from numerous UK Airports, the more uncertain becomes the UK Hub or Megahub focus. The Heathrow and Estuary business model becomes vulnerable, not to obvious decline, but to a lessened relative importance. Heathrow could still flourish and be more civilised, if its safety, noise, pollution and congestion effects are all greatly moderated. Unless Heathrow is to close (which might happen – see “Beware of the HILP” later), the full-size Estuary airport could become busy and important, but struggle to become prosperous.

Moreover, the shape and location of any solution to what are deemed to be Britain's aviation needs, depends hugely on the profile of any expansion. If the growth is primarily that of business travel, the solution is one far more likely to focus on metropolitan concentrations. If the growth, as now, is principally in the leisure market, then the solution will need to fit the locations where people live, not where they work. A night-time light map of Britain from space (**shown overleaf**) can be evocative in the case where leisure traffic dominates, since light concentrations are a decent proxy for citizens' locations and therefore from where they prefer to fly.

Build it and they might not come

Hence, as with Heathrow, Britain's interests do not obviously coincide with those of the Thames Estuary airport, where its lobby makes similar aviation assumptions, except that its solution isn't Heathrow. The Estuary airport's main attractions compared to Heathrow, would be size, greater safety, 24/7 operation, and less intrusive noise and pollution. Yet it endorses the idea of a Megahub for Britain, and it is not yet in a notably convenient location. If, as at all UK commercial airports, the volume of leisure traffic outstrips that of business flying, then without more Thames crossings both East and West of Dartford, the Estuary Airport has not a large hinterland from which to garner substantial numbers of holidaymaking customers, (though, given 24/7 working, it could do very well with freight).



A: Safety

Crossrail Safety Goal: “Target Zero: All harm is preventable”

(Please note: Much of this section on safety was already in the May 2013 draft of this document, including the issue/risk of terrorism.)

Beware of the HILP

As presently configured and operated, with aircraft arriving and departing over London, using Heathrow is not safe. Nor do any of its present proposals change that greatly. Indeed, they may intensify the problem.

This has nothing to do with any laxity on the part of the airport, the airlines, air traffic control or the regulators. The aviation industry's record of safety is imposing. It is because HILP incidents are an inherent and ineradicable element of risk.

HILP stands for High Impact, Low Probability. HILP events happen rarely, but when they do the consequences can be extreme. Most civilized cities keep planes away from the citizens underneath, to minimize the folly of flying low and slow over packed urban areas. Most civil aviation accidents occur near take-off or landing.

The chance of a catastrophe involving an aircraft crashing in London is very small. But it's not zero. In the last few years we have had two potential London HILP events, both involving Heathrow. The 2008 incident saw a plane which had been losing engine power and manoeuvrability after an unexpected design vulnerability had arisen, just managing to scrape past the Heathrow perimeter fence and flop onto ground before the runway. By the time the problem had manifested itself and attempted remedies had proved insufficient, it wasn't obvious that the pilots had much option but to fly on over London and struggle into Heathrow. 47 passengers were injured, but there were no fatalities. It was a triumph of decision-making and pilot skill at the edge of disaster. Had the fault become chronic two or three minutes earlier (some 5 to 12 miles), the outcome might have been very different.

(When this near disaster was mentioned in 2008 as demonstrating a safety problem for London, I seem to remember a DfT spokesperson describing the raising of the safety issue as “opportunistic”. Willful blindness is rarely a help to sensible decision-making.)

In 2013, we had what seems to be a bizarre and potentially damaging incident. But on this occasion there was an option. Which wasn't taken. The flight path in the reports of May 25th 2013 shows Flight BA762 over Essex to the East of the M25 and moderately near both Stansted and Luton as the problem unfolded nearly 10 minutes after take-off from Heathrow. What possessed whoever made the decision to turn the damaged plane round to struggle back over London to Heathrow? Fortunately, dislodged parts did not fall off on the way, nor did they flail into an engine or other part of the plane - as happened in August 2013 to an easyJet flight shortly after take-off when a

malfunctioning engine cover broke off and smashed along the fuselage leaving dents and damage to the tail. (*John Simpson, The Times, 24.8.13*)

The BA762 problems were reported to have compounded further as it flew back over London, but the plane did stay in the air with one engine on fire, which was only put out once the plane had landed. BA then opined that Heathrow was “the most suitable location” to deal with the problem identified. Most suitable for whom - the residents of London, over whom the damaged plane was flown? It seems to have been a serious misjudgment which undermines Heathrow’s expansion case, and raises a question about the present safety set-up. (*more details of this incident in the end Addendum*).

The issue of safety has long been the elephant in the Heathrow room. Raising the safety issue has been criticized as “scaremongering” by elements of the Heathrow lobby, but inconvenient truths need to be faced.

The problem is that the HILP vulnerability cannot be solved by seeking to ensure after such an incident, that “This won’t happen again”. “This” probably won’t. But something will. You cannot eliminate human error – including pilot error, pilot fatigue. Nor can all technical and fuel/power failures, autopilot malfunctions, errant circuits and software, maintenance omissions, age-related structural weaknesses, and design faults be entirely prevented. Extreme weather plays its part, though there is usually enough pre-warning for avoidance action to be taken.

Nevertheless, the Metropolitan Police Air Support Unit helicopters often make routine security checks “*the approach to Heathrow, for example, is regularly filmed, so that if there’s an incident the recent footage can be reviewed*” (“*Crime seen*”, *Tim Dowling, Guardian g2, 12.6.14*)

While this next does not relate to an experience at Heathrow, if you want a compelling example of what can happen if an aircraft engine catches fire on take-off, try Michael Skapinker’s “*Tiny error that risked lives and reputation*” (*FT 4.7.13. p10*) about an Airbus 380 engine fire which damaged a wing, penetrated a fuel tank and sheared wiring systems, which knocked out several of the aircraft’s safety fallbacks, including its ability to jettison fuel”.

Jettisoning is an important aspect of lightening a fuel-laden plane in order to lessen the problems and the risk of it having to make an early landing. Or as a NATS spokesman indicated about a similar incident close to take-off, “*time was spent in the air to make sure the aircraft was a safe weight for landing*” (*Matthew Beard, ES 6.8.13*)

If a laden, fuelled, long-haul plane turned round just after take-off from Heathrow and needed to land promptly and safely again, where could it go if the problem was urgent and chronic? Apart from Northolt, London does not have an obvious version of the Hudson river, nor do all pilots have the skills and experience of Chesley Sullenberger, the pilot hero of the January 2009 Hudson River Airbus 320 incident.

Lest we forget

These incidents are inadvertent and while every effort is made to avoid, negate or minimize them, terrorism attempts by definition are not inadvertent accidents, but the result of deliberation and intent. With terrorism, the battle of wits and wills persists. Have we forgotten that chilling IRA perspective following the Brighton hotel bombing in the early hours of October 12th 1984, which came close to assassinating our Prime Minister and several senior members of her administration? In the morning, the IRA spokesman pointed out to the UK government, "We were unlucky today. But we only have to be lucky once. You have to be lucky all the time".

In April 2014, the Director of the Office for Security and Counter Terrorism at the Home Office (Charles Farr), Britain's most senior counter-terrorism official, said that the security services were dealing with more threats from more groups in more countries than before. Police have already been spotted on the ground (*October 2014*) keeping an eye on people on the land West of Heathrow under the main flight paths.

It doesn't take much. In East Anglia, gangs have reportedly been buying cheap drones from the likes of Argos and Amazon; fitting them with heat-seeking infrared cameras to detect and then raid rival cannabis farms. (*Muran Ahmed, The Times, 18.4.14*)

Alongside potential bombings and hijackings, the UK authorities have disrupted several plots in recent months and had removed small numbers of people from aircraft during the past year. The Home office now scrutinizes advanced passenger information on at least 90% of passengers heading into the UK, under the programme that had caught individuals thought to pose a risk to inbound flights in 2013. (*Sam Jones, The Times, 10.4.14*)

It was just one of those things

So who will be held culpable if a HILP event occurs over London? Will anyone, perhaps jointly and severally, be held liable for a failure of operation, oversight and prevention? Could the Government and involved Agencies be deemed negligent and to have acted irresponsibly? Or in time-raddled fashion, would parties and personnel thought to be complicit, all be able to run successfully for cover?

Perhaps not, for in May 2014, the CBI urged the (main political) parties to commit themselves in advance to implementing the recommendations of the Airports Commission on airport capacity: (*Brian Groom and Emily Cadman, FT 12.5.14*). Would this commitment, if made, not lay the responsibility for the consequences of agreeing the expansion of Heathrow squarely on the members of the Airports Commission? Or the members of the House of Commons Transport Select Committee? Or even the members of the CBI? Or nobody?

Potent political calls for Heathrow to be closed would result from a HILP crash in London. But when such an event occurred at Schiphol, where a freight plane taking off, got into trouble, tried to turn back but crashed into an

occupied apartment block, Schiphol was not closed down. (39 people on the ground were killed, along with the 4 people on the plane). Nevertheless, it could lead to the curtailment of some Heathrow operations and it would be prudent to have contingent UK capacity elsewhere in case of that eventuality, while we shift the inherent and ineradicable danger to somewhere safer, less vulnerable, than urban London.

Whether moving part of Heathrow's runways 2+ miles West (one minute's flying time) would end the need for planes to fly over Greater London (which includes the London Borough of Hounslow by the way) seems very doubtful. Were a bar to flying over London to and from Heathrow (except in an emergency) be made a mandatory condition for its fresh runway development, this could close Heathrow to all but a small range of extremely nimble aircraft.

The Precautionary Principle

The judgement to be made is just how far should we take the precautionary principle. What level of risk is to be accepted as worth it? Are we to continue crossing our fingers, judging that the risk is so small that a disaster simply will not happen. Long ago, the citizens of Pompeii probably thought much the same.

Medical professions define such catastrophes as "never events" - things that should never happen – such as leaving a foreign body in a patient after surgery. There are published lists of what constitute medical "never events". But some medical "never events" do occur, though thankfully not many.

Collateral Damage

Perhaps the risks of "collateral damage" (aka "dead citizens") are deemed worth it and so there might be a Heathrow and City Airport-funded Insurance Bond to cover compensation for any loss of property and lives on the ground, rather than taxpayers or affected citizens having to pay the costs. If it is judged that the risk is infinitesimally small, then the cost of insurance would presumably also be small, though it could take a consortium of reinsurers for the insurance to be credible. Or the Heathrow airlines, along with Heathrow, could perhaps issue Catastrophe Bonds, with the Cat bond funds held and disbursed by independent adjudicators. The Pool Re insurance scheme could perhaps be adapted to cover compensation needs. The issue of risk also applies to City Airport.

Perhaps we will choose to continue accepting the risk. The DfT and the Health & Safety Executive calculate the "value of a prevented fatality" as being £1.8 million. Given property prices in affluent parts of London over which Heathrow and City planes fly, it may not be wholly reassuring to find that your home is apparently worth more than you are.

However, a new study at City University suggests that this UK figure underestimates the value of life and should be doubled, bringing the UK life valuation nearer to the \$7m/£4.6m used widely in the USA. (*"Safety science: Putting a price on life", FT Magazine, 17th January 2015*)

What is clear though, is that such has been the extensive clamour over the respective merits and demerits of the various aviation expansion options, that if there is an aviation tragedy over London, nobody, but nobody, involved in the aviation debate or decision will be able to claim that they were unaware of the possibility of a major London aviation catastrophe.

We need to reflect on the possible conditions that could trigger Heathrow's demise. And what alternative aviation facilities we might have already put in place if its replacement became necessary. The HILP risk is ineradicable if Heathrow and City Airport continue, let alone expand.

The only way to eradicate the HILP risk over London is not to take it.

B: Noise

Claiming the Future while mired in the Past

The Commission might have fruitfully undertaken more research on the public's changing tolerance of intrusive noise, stimulated by Sir Howard Davies recently reporting that while aircraft noise has gone down, complaints about it haven't.

This indicates that the public's tolerance for intrusive noise has lessened. This mirrors the widespread variety of noise reductions in recent decades. Aviation supporters, notably advocates of an expanded Heathrow, have sought to evade the implications of this by mainly focusing on the 57Db limit from 28 years ago (1986) and describing it as "widely accepted", despite its contentious design, widespread criticism and manifest obsolescence.

Those were the days

1986, almost a generation ago, had just seen the first UK mobile phone calls, the introduction of the Sinclair C5 (and its prompt demise); Ryanair was launched but easyJet's creation (1995) was almost 10 years away. Chernobyl was yet to come as was something called the Internet. The Berlin Wall was 3 years away from demolition. The Channel Tunnel's construction had not begun, Jessica Ennis was yet to be born, our Prime Minister was an undergraduate, and our Chancellor of the Exchequer was just 15.

It is worth remembering that in the near generation since 1986, road vehicles and road surfaces have been noticeably quietened; ghetto blasters have gone; music earphones no longer give those nearby the sensation of tinnitus; few people now bawl into mobile phones and local councils enforce domestic and commercial noise restrictions. (About 470,000 noise complaints to Councils each year). Life has become more civilized in terms of reduced ground-based intrusive noise, and so it should be no surprise that while aircraft noise has diminished, complaints haven't.

The Farce of the Past

The Heathrow lobby makes the valid point that many of the people who live and/or work under the 57Db area have chosen to move there since 1986 (prior residents and children didn't choose). But the continuance of complaints

indicates that their previous tolerance has drooped. People have moved on. The 57Db limit hasn't.

Using the 57Db measure seems remarkable when it doesn't even fit the present, let alone the future. Heathrow's 3rd Runway would add up to 220,000 flights a year to the existing 480,000. Heathrow is already Europe's noisiest airport. The Airports Commission has said the noise impact of the new runway would be "roughly neutral" ("Aviation: London Heathrow Airport, DfT standard note SN1136, 14.1.14). This seems to be seriously optimistic.

The debate over the HS2 rail project has been similarly dogged by out of date planning. A report on HS2 by the Public Accounts Committee was summed up by its chairwoman as based on "*out-of-date data and assumptions which do not reflect real life*" (Philip Pank, *The Times*, 9.9.13) Rather like the 57Db aviation noise claims.

Furthermore, there is a well-known feature of noise in which sudden, short-lived noises create more distaste when the steady ambient background noise is low. This may help partly to explain why night flight noise, when ambient noise is at its lowest, is particularly disliked. In the face of lessened ground-based ambient noise at night, the adverse noise effect of planes is felt more strongly. While aircraft have become quieter, the disdain for aviation noise has continued. Focusing on reductions in aircraft noise without taking the reductions in ambient noise into account, patently misses the point.

Furthermore, the quietening trend in Britain will not halt and antipathy to intrusive noise will likely persist or even grow. If graphene batteries fulfill their energy storage potential, quiet (perhaps too quiet) electric vehicles will flourish. It has already been forecast that half Britain's cars will be hybrid or electric within 10 years (*Times*, 29.9.14). Local councils are reducing vehicle noise further by introducing 20mph speed limits in urban areas. Urban vehicle use is becoming more constrained in favour of pedestrians and cyclists. So the aviation industry's intentions for further noise reduction may not create any noticeable alteration in public distaste for aviation noise, but will be required simply to enable it to reflect continuing changes in the rest of society. Aviation has been merely keeping up. If ground-based noise continues to diminish, the yet quieter aircraft will be needed just to hold station.

C: Market trends

It's Holiday Time

Given the incessant Heathrow emphasis on the importance of long-haul business travel, it tends to be overlooked that, like all UK commercial airports, Heathrow is principally a holidaymaker's airport.

Some 45m of its 73m travellers are classed as leisure, slightly more making international than domestic journeys. British holidaymakers typically travel as couples, families and groups, and want to travel through airports convenient to their homes. Consequently, budget/low-cost airlines have already won over one-third of Europe's short-haul traffic as flyers have rotated away from

diverting through centralized hubs, in favour of flying direct to and from their local airports. (*See page 5 for the UK nighttime light map*).

Hence not much of aviation's recent growth has accrued to the hub-oriented carriers. Indeed, the Airports Commission has pointed out that over 100% of recent UK aviation growth has been to the low-cost sector, much of which does not use Heathrow. This transfer of leisure clientele should release some hub capacity that could then be used to add services to destinations that the hub-based carriers wish to introduce and which are not yet served directly by them or the budget airlines.

Like private post deliverers cherry-picking Royal Mail's traditional postal trade, the low-cost carriers will continue to be grateful for the hub airlines developing new routes. Then once enough traffic to the new destinations is established through a hub, the low-cost airlines will cream off some of the hub traffic by adding direct services of their own – as has happened with London-Moscow.

The Great Rotation

This process of rotation will continue in and out of Heathrow. Growing leisure traffic will keep migrating to direct flights through more convenient airports, potentially creating hub space for new spoke and hub services to destinations that are only economic when consolidated via feeder services. It is not a question of whether this rotation from hub to direct flights will occur. It is already well embedded and there is no obvious reason for it to abate, let alone cease. Autumn 2014 has shown strong continuing growth by Luton, Stansted and Ryanair. The question as aviation expands, is which airlines and airports will gain the most, and which will do it best. Overall growth at Heathrow could be modest, and the commercial value of a multi-runway Mega-hub Estuary Airport perhaps rendered uncertain before it is built.

Lunch tastes good; what's for dinner?

Having thus eaten much of the legacy carriers' shorter-haul lunch, the budget/low-cost airlines (not always cheaper than the full-service airlines, but for their customers, often more convenient) are now eyeing up their longer-haul dinner.

easyJet keeps raising quality and extending its range and destinations as it increasingly pursues business travellers as well as holidaymakers, with Ryanair following suit. In Spring 2014, Ryanair shifted some flights from minor to major airports as it chased easyJet further into the business flight market. In June 2014 it announced that it would soon offer a "tailored business product" (*Robert Lee, The Times, 30.6.14*) By end-2014, Ryanair had captured substantial business revenue and the airline continued to grow.

Ryanair is mulling over a low-cost wide-body transatlantic service once efficient, long-range aircraft become available at an attractive price, having been thwarted in its attempt to gain control of Aer Lingus on competition grounds. Norwegian Air Shuttle is dipping a toe in the water of long-haul budget flights, by starting a 787 Dreamliner service from Gatwick to New

York, Los Angeles and Fort Lauderdale in July 2014. Both low-cost and legacy airlines are eyeing up purchases of fuel-efficient, longer range planes.

Civil aviation sectors are often categorized as being either “short haul” or “long haul”. But there is also “medium haul” to describe the ever-lengthening reach of these latest versions of aircraft. This would mean that while Heathrow (or Estuary, should it come to exist) would still have a mix of short, medium and long haul, Gatwick may add medium and more long-haul services to its mainly short-haul traffic. The simple distinction between long haul and short haul is of decreasing validity. Both low-cost and legacy airlines are buying similar new planes with longer ranges and lower fuel costs, with refreshed versions of Boeing 737 and Airbus 320 as well as the larger Boeing 787 Dreamliner and Airbus 350 models and this will inevitably blur some of the operating differences between low-cost and legacy providers.

Unbundling and Convergence

Some full-service airlines are charging for items which have previously been included, thus copying the low-cost airlines and further blurring the distinctions between them. This convergence towards the low-cost business model is intensifying as some legacy carriers come the other way by moving from a fixed inclusive offer for flyers towards an *a la carte* menu, so that customers pay more directly for what they get, and don't pay for what they don't value. At the same time, easyJet has recently said that it could use an expanded Heathrow, thus taking its increasingly up-market and longer-distance orientation right into the legacy airlines' domain.

The Intercontinental Crossroads

The UAE aviation sector has a notable advantage for serving developing intercontinental destinations – particularly China and other parts of Asia - a central feature of Heathrow's own case for its expansion.

The underlying logic is brutally simple. If you are going to change flights at all - as do many long-haul passengers - it can give you a more straightforward journey and more choice of end-destinations if you can change midway or so towards your destination, rather than change near your departure.

As evidence of seeking to exploit this feature, BA has been reported (*Times* 4.10.14, p52) as seeking partnerships with China Airways, China Southern and China Eastern that would connect with BA services to major Chinese cities. The Chinese carriers would distribute BA passengers to other Chinese destinations and provide passengers coming from them to be consolidated onto BA's flights to London.

Like Istanbul, Dubai is located at a favourable juncture, as is the mid-continental Atlanta airport - the busiest in the USA, despite it not being the government centre (Washington DC), nor the business centre (New York), the cultural centre (Los Angeles) or the tech centre (San Francisco).

Dubai's aviation activities keep growing because the City State is at a key intercontinental crossroads of global air travel. In May 2014, Paul Griffiths,

Chief Executive of Dubai Airports and previously head of Gatwick, explained that *“One-third of the world’s population lives within four hours flying time..... we can link Asia to Africa and Latin America, Europe to Asia and Australia, and the Middle East to the whole world. Of those who fly to Dubai, 60% are transit passengers. That’s why Emirates can sustain 20 flights a day from Britain alone to Dubai while BA has just two”* (Paul Griffiths, interviewed by John Arlidge, *Sunday Times* 25.5.14). His point is a succinct expression of the growing challenge for Western Europe’s hubs and airlines.

London First has mourned the loss of Heathrow’s top slot as the world’s busiest international passenger hub as it is being overtaken by Dubai. Even building a UK Mega-hub may not halt this Eastwards shift of focus, particularly if Turkey’s plan for an imposing new Istanbul Megahub is carried through.

Dubai’s Emirates Airline also has the advantage of sustained backing from its sovereign wealth funds. Add that to unquenched ambition and its favourable interchange location, and the rise of Dubai and Emirates (built up so ably by the legendary Sir Maurice Flanagan and his successors) represents a large and growing challenge to any European hub seeking to fill its long-haul services with transfer passengers. Qatar Airways adds to the regional mix, as does Abu Dhabi’s Etihad Airways, which has a somewhat different strategy to Emirates; one that involves buying stakes in other airlines - most recently Alitalia - to feed passengers to and from its own fleet.

An increasing amount of both outbound and inbound long-haul travel is already being routed through the Gulf carriers and their ever-expanding bases in the Gulf. Both Emirates and Etihad Airways have recently announced expansions of their Eastbound services from Dublin, whose airport handles nearly 20m passengers annually, even though Ireland has only 6.4m citizens.

Manchester Airport handles 21m passengers annually and 8.9m people live within one hour’s travel time of Manchester Airport, according to Manchester Airport Group, (*June 2014*). It claims that 24m people are in its overall catchment area.

A 2013 report for Birmingham Airport estimated Manchester Airport’s one hour travel time population to be 10.3m, compared to Heathrow’s 11.2m, with Birmingham Airport and Gatwick each at 9.7m. (*Report by Steer Davies Gleave and Capital Economics, May 2013*)

Scotland’s population (5.3m) is almost as big as Ireland’s, with its two main airports (Edinburgh & Glasgow) having a combined 17m annual passengers.

Thus the Gulf challenge is not just to Heathrow (or Estuary, if it is built), but also to Schiphol, Charles de Gaulle and Frankfurt. The departing head of Lufthansa, Christoph Franz, has warned of the threat posed by Gulf airlines as they enhance services which bypass European Hub airports – as with the now-daily Emirates service between Lisbon and Dubai. (*Departing Lufthansa chief warns of threat posed by Gulf airlines: Europe’s legacy carriers risk being overtaken”, Chris Bryant, FT 26.3.14*)

It can be expected that the main Gulf airlines, as well as the low-cost carriers, will utilise their upcoming longer-range versions of the A320neo/Boeing737 and other fuel-efficient and longer-range planes such as the Airbus 330 neo, the Airbus 350 and Boeing Dreamliner 787, all of which can reach Dubai from the UK, and which would be able to intensify the use of intercontinental Mega-hubs feeding to and from a wide range of, mainly Asian, destinations.

D: Competition

Oligopoly anybody?

The main full-service airlines of the world have been consolidating into just three major “alliances” with an emphasis on “code-sharing”, and sometimes “revenue sharing” – i.e. trading amalgamation. These features can sound innocuous, rather like the price and territory negotiation gatherings of the old cement cartel, which described its price-fixing conclaves as “technical meetings”, or as in the earlier lucrative cargo shipping “conference lines” scheme. The scope for coordinated behaviour in civil aviation has increased and continues to do so.

(In June 2014, China was reported as scuppering a proposed alliance (the P3 Network) by three large container shipping groups, which would have pooled 250 ships on the World's three biggest trade routes. The alliance would have controlled 47% of container traffic on Asia-Pacific routes “greatly increasing market concentration”, claimed China's Commerce Ministry in its objection. (FT 18.6.14)

One reason for the enforced sale of some airports out of the BAA/Heathrow Airport Holdings domain relatively recently was to encourage competition. It could be counterproductive to enhance Heathrow's hold, particularly on international business-oriented routes. Transatlantic flights to and from Heathrow are often described as “lucrative”, or “highly profitable”.

An agreement to expand Heathrow would damage the competitive situation of Gatwick, for long-haul services there would likely decamp to the bigger Heathrow and Gatwick might then cancel its own second runway plan as having become uneconomic, thus conferring even more dominance to Heathrow. It would also shrivel the nascent long-haul expansion prospects at regional UK airports, such as an upcoming Newcastle/New York service.

Recent announcements concerning IAG, Qatar, Aer Lingus, easyJet, Ryanair, Heathrow ownership, etc., indicate that the process of airline consolidations and alliances is, if anything, accelerating. There may come a point where the UK civil aviation industry will be referred to the Competition and Markets Authority (CMA) or the EU Competition Authorities, though that might not happen if the growth of independent low-cost point-to-point services persists.

Jobs lost; more jobs gained

During construction of the Estuary airport, Heathrow would remain, not only open, but as busy as before. Given the added Estuary construction staffing, employment would go up, not down, throughout the construction years.

If Heathrow is allowed to expand, both its human and its capital productivities should rise to about the levels of a new Estuary Airport. So after the construction phase, whichever is chosen, hub airport employment could be similar. With 24/7 working at Estuary, its employment might outstrip that of an expanded Heathrow. A claim that the Estuary Airport would destroy the overall number of jobs compared to expanding Heathrow doesn't stand up. Some employees living near Heathrow could choose not to continue and could lose, while Kent-based citizens would gain.

Not only that, there would be a further net overall gain of jobs. Heathrow's vacated space would allow a fresh plethora of housing, offices, businesses, shopping and leisure services to spring up, compared to the modest present equivalent activities and jobs that would be displaced in Kent by the arrival of the Estuary Airport.

What do the Regions want? NIMBYS and BANANAS (Build Absolutely Nothing Anywhere Near Anyone)

While competition between UK airports is growing, few regional airports in Europe yet have many business-oriented long-haul flights. But as aviation expands they are coming – as at Ireland's Dublin Airport - alongside the continuing growth and reach of leisure traffic. But how much does any ambitious region want that? Is it that the locals throughout Britain view an expanding and prosperous regional airport as having all the appeal of a giant waste incinerator? This seems strange when every part of the UK has an active, if not frenetic, economic development lobby, eager to bite the hand off any credible offer of investment, stimulus and jobs. However, there may be citizens who would prefer regional airports not to expand – at least not theirs. Yet aviation growth will likely come in the regions whether it is by increases in direct long-haul flights or intensified indirect flights to and from a hub.

E: Where next?

A Cameo of the past

Even when visiting North America in the 1970s, it was tedious to need to fly from Manchester or Glasgow to Heathrow, only to fly back past North West England and Western Scotland several hours later.

But this two-flight, sometimes three-flight, hub mode is slipping away. Increased passenger volumes make long-haul flights from the UK's regions worthwhile. Diverting passengers through London (or Schiphol, etc) via indirect flights becomes less appealing and relatively less necessary by the year.

A Glimpse of the Future

The most developed aviation industry is that of the USA, with its several thousand public-use airports. It doesn't have a single hub, or even just a few. Only its central crossroads airport, Atlanta, is bigger than Heathrow (before Atlanta, Chicago was biggest). Of the World's top 30 airports by passenger numbers, 12 are in the USA (*Airports Council International, 2014 year to date, circa July 2014*) though this is changing as global aviation expands. Comparing its East Coast region with the UK, the eleven States from Maine through Virginia, have 72+ million citizens compared to the UK's 63+ million. Boston's Logan airport is about 400 miles from Washington's Dulles airport. In between are JFK and Newark in the New York area, Philadelphia and Baltimore.

Map these onto Britain with Washington DC at London, and Boston is at Glasgow/Edinburgh; JFK and Newark are at Manchester/Liverpool; Philadelphia is just North of Birmingham and Baltimore is at Milton Keynes. If we believe in aviation expansion, why do we stay so fixated on a single UK hub or Mega-hub, with everything focused on London? There is spare aviation capacity in the UK, including in the South East. It just isn't in West London.

Society and Affluence

If City and Heathrow airports close within 30 years, it will be another predictable phase in the long-run evolution of urban areas, as features that were once tolerated, even necessary, become outmoded and are replaced by more appropriate activities.

In London, Ropemaker Street, Archery Fields, the Hay Market, Milk Street, Whitechapel's Cow Yard, remain only as names on thoroughfares. The abattoirs and the noxious factories for making casings (sausage skins) and fat and bone rendering plants have gone, along with smelly tanneries, metal smelters and the flour mills which used to be on the Albert Embankment even in the 1960s. Inner area power stations, such as Lots Road, (which first exuded soot and pollution from coal-burning, then converted to less-polluting oil and later to cleaner gas) have closed and become sites for residences. Bankside Power Station replaced the old Phoenix Gas Works and then itself has become Tate Modern. Battersea's power station will live on only as chimneys atop a more productive mix of modern facilities.

In a small area of NW London in just the last generation, the car showrooms and repair garages opposite Lords have been replaced by apartment blocks; Marylebone Rail Station goods yard now houses a modern bank building; the Express Dairy depot in Rossmore Road has been filled with flats. Paddington Basin and the original site of the Station are busy with high-rise apartments and corporate offices. The Iron Works builder's yard, etc. on North Bank have been replaced by apartments, and the builder's merchant still near Paddington will doubtless soon go, to be replaced by an imposing tower. The Paddington Great Western Rail freight depot (called "Mint" after the name of the even earlier alehouse which it replaced) once housed the GWR carting operation that delivered parcels, milk, eggs and vegetables - probably including some from the market gardens where Heathrow Airport now

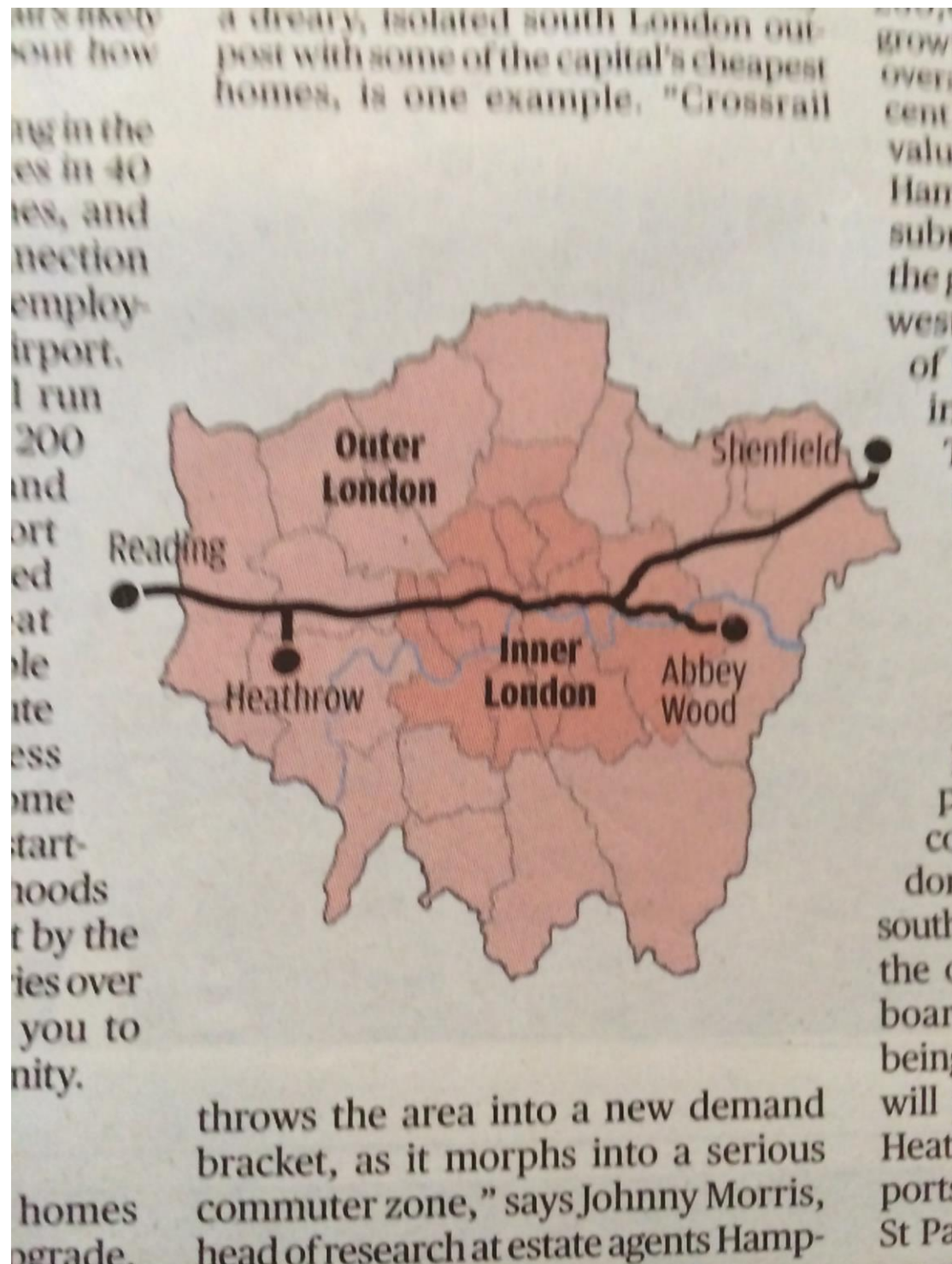
operates. The Mint depot housed many of GWR's fleet of carts and their 2,000 horses. It is now part of St Mary's Hospital.

These remarks are not a diversion. They illuminate the problem of airports in urban areas. Spreading cities replace activities which are no longer suitable for tightly-packed residential areas, such as airports, speedway tracks, sewage processing, scrapyards and waste disposal plants. Virtually no city which has a choice when developing its civil aviation, then relies on developing an urban airport. Wherever you go in the World, they have been moved out of town - be it Atlanta, Toronto, Hong Kong, Oslo, Glasgow, Edinburgh. Other cities do the same, yet permit the earlier airport to continue for now, such as Ronald Reagan National at Washington DC, Orly at Paris, Love Field at Dallas, Ciampino at Rome - particularly if the older airport does not use flight paths over the city centre. Other large airports protect their city by flying mostly over water, such as at Boston, Vancouver, San Francisco, Sydney, Singapore and Seoul.

A 2014 report by New Economics Foundation has suggested that it would benefit London if City Airport was closed and the 48.5 hectares of its land re-developed. The airport, it claimed, inhibits plans for the growth of the surrounding area. Critics have responded that the airport helps the surrounding economy, *(Kate Allen, Financial Times, 10.4.14)* City plans to double its passenger numbers to 6m over the next 10 years.

It is no wonder that planners are eyeing up the land of Heathrow and City Airport as potential candidates for transformation. Growth and affluence drive changes in the ways we choose to live. This is why we need to decide the profile of our airport policy soon, since it is not usually sensible to put more money and reliance into urban activities that are on the way to obsolescence.

Continues next.....



(Homes & Property: New Series: Get there first. Here comes Crossrail, London Evening Standard p8/9, 18.10.14)

Some of London's expected expansion will be in what statisticians call the Outer Metropolitan Area, or London's Larger Urban Zone (LAZ). According to Eurostat, the LAZ population is presently 11.9 million, making it the largest in the European Union. There is a proposal for London's mayor to take control of "Outer" London's commuter rail and other transport services throughout the broader reach of what could become "Thames City".

F: The Bottom Line

- In 30 years' time, both Heathrow and City Airports will probably have closed, partly on grounds of safety, but also due to the need for living space for some 3 million more London residents
- Most UK civil aviation traffic will continue to be for holidaymakers, which supports the case for expansion of regional airports
- For London, the choice for aviation expansion depends crucially on the expected scale and shape of changes in demand
- The Gulf carriers and Eastern Europe/Middle East intercontinental crossroad Megahub airports may come to capture Europe-Asia business routes that cannot sustain non-stop services
- The business models of low-cost and legacy airlines are converging
- Improvements in ground transport to and from airports are vital to raise overall travel efficiency
- The present expansion plans of Luton, Gatwick and regional Airports should be welcomed.
- Detailed planning for the Estuary airport and its infrastructure should take place, though a need for an UK Megahub Airport could recede if direct short-haul services and longer-haul direct and feeder flights flourish further
- Heathrow should not be allowed its 3rd runway nor its runway extension plans, principally on safety grounds, which will be accentuated by London's further urban spread, and also because Heathrow expansion would intensify its continuing noise and adverse UK competition effects.

South East Aviation Expansion: An option summary

	Safety	Noise	Pollution	Access	Cost	Timescale
Best	Estuary	Estuary	Estuary	Heathrow	Gatwick	Gatwick
	Gatwick	Gatwick	Gatwick	Gatwick	Heathrow	Heathrow
Worst	Heathrow	Heathrow	Heathrow	Estuary	Estuary	Estuary

So what should be done? A précis of 5 Scenarios (The Airports Commission's 5 Scenarios are different, though there is considerable overlap)

Your view will depend on your assumptions and your priorities.

Scenario 1: Climate change cut back

Climate change will require dramatic reductions in aviation fuel consumption, and action must be taken now.

Answer. Promptly curtail civil aviation by means of increased taxes and prevent further expansion of UK airport capacity. Build only efficiency improvements, not extra capacity

Comment

For this to be practicable, global agreement would be necessary, including overcoming any relevant elements of the international protocols which cover

aviation fuel taxation, etc. In the absence of international, if not global, agreement, it is unclear why Britain should undertake dramatic action unilaterally, nor why civil aviation should be singled out.

Decision. A near certain non-starter (though “No South East UK runway expansion” is current Lib Dem policy)

Scenario 2: Wait and see

The UK aviation industry is evolving rapidly and there is no urgent need for further action

Answer. Continue with present expansion plans (Luton). These, with existing spare capacity at Stansted and regional airports, are enough to meet overall expansion needs while the aviation situation evolves.

Comment

The easy way of avoiding contentious choices, while permitting some overall growth.

Decision. Appealing to nervous political groupings that do not want to fight over a dilemma if it can be parked for now. Basically short-sighted, given construction lead-times.

Scenario 3: Onward and upwards

The UK must invest in European leadership for major expansion of business, leisure and freight aviation traffic

Answer

Build a World-class Megahub airport which operates 24/7

Comment

Some version of the Estuary airport is required to not only catch up with other Western European hubs, but to out-compete them all and to compete against Middle Eastern Megahubs (and Istanbul if it is built),

Safe, quiet, little urban pollution, expensive, needs much infrastructure

Decision. Probably too bold and doesn't fit with current trends towards direct flights at the expense of centralised hubs

Scenario 4: The trends continue

Low-cost airlines keep on introducing more, and longer haul, direct services that take more traffic from the indirect services currently going via hubs.

Answer

Encourage growth in regional airport services, along with the expansion of Luton and Gatwick airports, plus enhanced ground transport links.

Comment

This is the “support careful development” strategy.

Decision. The likely middle of the road choice. Helps to reduce noise and safety risks. Fosters UK competition. Keeps further options open and provides contingency capacity for short, medium and long haul.

Scenario 5: Reversion to the past

Low-cost aviation growth falters or falls and hub airports retrieve their dominant position.

Answer

Expand Heathrow with conditions that moderate its adverse effects, particularly night flights and noise.

Comment

The favoured choice of business interests, depending on the scope of any conditions.

Decision. Likely if commerce trumps unhappy London citizens. Intensifies safety, noise and UK competition problems. Doesn't help London population growth/urban expansion issues.

A précis of the précis

If you want an even more succinct distillation of the five scenarios:

1 Climate change cut back	Radical	No more runways
2 Wait and see	Cautious	Only current expansions
3 Onward and upwards	Bold	Build Estuary
4 The trends continue	Prudent	Expand Gatwick
5 Reversion to the past	Unlikely	Expand Heathrow

What further can be done? Helping Heathrow

Even if the chosen path for UK civil aviation is Scenario1 (Cutting back), Heathrow will remain very important. It will continue operating for well over a decade or two, even if Estuary is chosen as the way forward. The key question is what can be done to enhance Heathrow's future, short of permitting the expansion it seeks? Heathrow endlessly claims that it is full. But just what is filling it?

Understanding Heathrow: The question of the slots

Note: This slot section simply poses a question. It is what has been gleaned from limited information, so needs an informative response and correction for any inaccuracies and misunderstandings.

Heathrow has made much of the inability of its airline users to introduce more services to Asia because the airport is full. Other airlines also want to come into Heathrow but have to be turned away because the airport has no spare slots, and that is why it asserts its need to expand.

But there seems to be a puzzle. The long-standing Heathrow airlines, particularly BA as the holder of the most slots, in effect, "own" their slots

through what are called “grandfather” rights. These are rights that have accrued to the airline which took on those slots and built up services using them. This grandfather mechanism also operates at other airports as a practical way of providing security to the airline businesses which have invested in creating and developing services.

Thus these slot rights are “owned” by the respective airlines on a “use it or lose it” basis. But, with some restraints, slots at Heathrow are also bought and sold, where there is a “use it or sell it” slot-trading option. Regulators may have a role in this. Heathrow slots are described as being worth as much as £30m per slot pair.

Slots unwanted by the holding airline can apparently also be leased out, again with restrictions, so there is a “use it or lease it” alternative. Yet further, some unwanted slots are returned to the Slot Coordinator (ACL) for each operating season, with the returning airline retaining its rights to those slots, to be re-allocated by ACL to other airlines in a “slot-lending” basis, with the lent slots either re-allocated annually or the slots retrieved for renewed use by the slot owner. A Heathrow slot-owning airline may choose not to utilize up to 20% of its slots there, without losing its grandfather rights to them. It is thought that the 80:20 rule at Heathrow does not apply on a “per slot/service” basis, but to 20% of an airline’s overall slots there. So it seems that slots can be owned, leased, lent or sold, though there are conditions and restrictions.

Slot trading is also present at Gatwick where, in May 2013, easyJet bought 25 pairs of daily slots from Flybe, reportedly for £20 million. There is no known open slot trading market at either Gatwick or Heathrow whereby an outside party can buy, hold or trade slots as a commercial investment.

So several questions arise. Which airlines hand slots back to the Slot Controller? What is to prevent those airlines instead using these slots to set up fresh services to Asia, or indeed to wherever else they can get landing rights? Or is the problem at the Asian end, notably with China? Are the Chinese authorities unwilling to let more UK flights in unless their airlines, in turn, can gain reciprocal access into Heathrow. (Note: It seems that Chinese carriers could probably obtain Gatwick slots should they wish). In which case, why does not, or can not, the Heathrow Slot Controllers allocate the surplus slots to Chinese Airlines? Is this some kind of restrictive practice going back to the public sector days, and still used to protect Heathrow’s incumbent airlines? In other words, how serious and immovable are Heathrow’s capacity limitations? Are the slot availability problems at Heathrow a consequence of legal, regulatory, commercial or administrative protocols, procedures and habits, and so, in some sense, self-inflicted?

Addendum

Flight BA762; May 2013

This incident was later to be revisited and described as “when maintenance crews failed to secure engine covers on a British Airways jet after routine maintenance” (Philip Pank, The Times, 1.6.13)

The covers came loose on take-off, severed a fuel pipe and a hydraulic system, and a fire broke out.

“At least one of the cowls struck the plane, causing damage to the fuselage, landing gear and a fuel pipe” (Gwyn Topham, The Guardian, 1.6.13, reporting an Air Accident investigation Board bulletin of 31.5.13)

“On-board extinguishers failed to put out the flames” (Philip Pank, The Times, 5.6.13) “as it was on approach over central London” (Mark Odell, 1.6.13)

The jet had to make an emergency landing on one engine” (Philip Pank, The Times, 8.6.14)

The other engine was still on fire when it landed. (Dominic Geddes & Farina Karim, The Times, 25.5.13)

“The wing flaps and the air frame were also damaged” (Philip Pank, The Times, 1.6.13)

The Transport Secretary, Patrick McLoughlin, was reported as being “incredibly concerned about the incident” (Nicholas Cecil & Simon Calder, ES, 31.5.13)

Some passengers were subsequently reported as suing the (US) engine makers in the USA. The claimants were also reported as saying that the aircraft systems were designed to override the manual cut-off of fuel to the engine and to continue pumping fuel to them. The claim also mentioned that the engine fire was accompanied by a lack of engine thrust” (Philip Pank, The Times, 12.7.13)

The Daily Mail reported that passengers on a previous flight “had reported vibrations and whistling in the cabin – over the wing area where the engines were located” (“Should stricken plane even have taken off?” (Daily Mail on-line, 25.5.13)

Heath Row Map source

The Cassini/Ordnance Survey “Past and Present 4 in 1 map” (1816, 1897, 1920 and Present day) for Windsor, Slough and Uxbridge is illuminating about London’s growth. The only other one for London in the series at present is the adjacent one for Richmond and Ealing, which covers as far East as Regent’s Park. The 4 in 1 series does include maps for a selection of other UK areas, such as “Maidenhead, Marlow and Bourne End”, “Reading and Henley”.

There are none currently in the series that cover Luton, Stansted, City or Gatwick.

[REDACTED]

[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]