

Submission of Evidence

The Airports Commission

Discussion Paper 04: Airport Operational Models

The signatories of this paper support, in principle, the comments and suggestions made and the questions raised in response to Discussion Paper 04. They endorse the view that there is a crucial and urgent need for the Airports Commission, and the Department for Transport, to adopt an enlightened interpretation of the Commission's Terms of Reference – by developing an airports strategy that sits within the context of an integrated road-rail-air-water transportation network. The paper is apolitical and does not offer support for any specific airport solutions currently under consideration.

signatories:

[Redacted signature block]

Developing a long term solution for air transport in the UK is a once in a lifetime opportunity. It is the means by which the nation can demonstrate its capacity to lead the world.

To achieve a future fit for purpose solution, the Airports Commission must consider the juxtaposition of today's society and tomorrow's world. It must consider whether the austerity programmes and environmental constraints of today will become the intractable problems of tomorrow: constrained passenger growth, 'flat lining' of Air Transport Movements, no growth economies, environmentally impeded commerce. It must consider and anticipate an irreversible shift from international competition to international collaboration.

And, how will new technologies affect our society and our enterprise? Will our insatiable demand for energy be satisfied by new sources and new solutions; delivering abundant, clean, cheap energy?

And, will the Commission consider and anticipate an integrated rail-road-air-water transport solution that encompasses high speed rail links and high connectivity regional networks?

Will the Airports Commission conceive and recommend an inspired, future fit for purpose solution that delivers an economy for success?

Executive Summary

based on comments made by [REDACTED]

To what extent do the Terms of Reference for the Airports Commission prompt a predetermined outcome? An emphasis on the capacity planning of airports in the South East appears to limit the scope of the Commission's work. Is there a risk that the nature of the air transport problem will be masked and the opportunity to recommend a holistic transportation solution compromised? Do the Terms of Reference encourage a 'more of the same' solution, which fails to recognise or anticipate the importance of new thinking when designing a solution for the UK, as a whole, and for 2040 and beyond?

Dramatic advances in technology have shaped our society in ways that were unimaginable 30 years or 40 years ago. What will be the impact of new, and not yet conceived, technologies over the next 30 years to 40 years? Are there sufficient degrees of freedom in the Terms of Reference to allow the Airports Commission to anticipate and consider radical shifts in the way we live and the way we do business? For example, will the excesses of today's society, with its profligate use of fossil fuels, be transformed by new thinking and accommodated by new technologies? Will air transport continue to be dependent on fossil fuels, with its operational activities increasingly constrained by the environmental impact of its carbon footprint? Or will advances in technology provide solutions to today's problems, prompting a further era of boundless opportunities? For example, will the gasification of coal provide a limitless energy source? Will a hydrogen/oxygen powered Skylon remain a dream or will it become a practical long haul, high speed, travel option?

And, how can the Terms of Reference be interpreted in a way that allows the Airport's Commission to address the need for an integrated road-rail-air-water solution – a highly efficient, high speed networked solution that connects industry and commerce across the North, Midlands, Scotland, Northern Ireland and the South East?

The signatories of this paper assert that there is an overwhelming need for the Airports Commission to consider, as part of their brief: the transportation needs of the UK as a whole, placing emphasis on regional connectivity; the possibilities of advances in technology; international collaborative commerce; planetary boundaries. And, there is a need to develop a strategy plan that encompasses a 'People Industry Nature' Architecture that will enable the Airports Commission to design and develop an inspired transport solution for the future.

Context

There are many organisations involved in the tactical and strategic development of air transport in the UK. It is, however, the development of strategies and policies for air transport in the South East of England that appear to be central to Government thinking.

The Airports Commission has a responsibility for encouraging enlightened and well-reasoned thinking about the future of air transport and for formulating recommendations to support the UK's ongoing economic development (reference: Terms of Reference for the Airports Commission¹). Also, of relevance to this submission is the 'what we do' statement of the Airports Commission and the 'what we're doing' statement of the Department for Transport:

The Airports Commission: *what we do*

"The Airports Commission examines the need for additional UK airport capacity and recommends to government how this can be met in the short, medium and long term."

The Department for Transport: *what we're doing*

"Safe and dependable transport is essential to UK society and the economy. The government is working to make rail, road, air and water transport more efficient and effective, keep them safe and secure, and reduce greenhouse gas and other emissions."

Air transport and the environment

The Airports Commission will need to consider the crucial connections and interdependencies between air transport and our society's most troublesome and enduring issue: the breaching of 'Planetary Boundaries'² and the consequential impact on our quality of life and the survival of the planet in its present form. Stepping beyond the emotive 'economic versus environmental' debate will be a crucial feature of the overall assessment process and the determination of what to do – now and over the planning period to 2040 and beyond.

Vision

The UK will become a leader in the prudent and sustainable use of air transport, recognising how the socio-economics of transport systems will be affected, irreversibly, by environmental imperatives and a possible reduction in the affordability of travel. New thinking will anticipate and accommodate likely changes in national and world priorities, taking account of bio-diversity, food security and other issues. A redefinition of what is meant by quality of life will influence the way people think and the way they behave.

Critical Assumptions

There was a reduction in annual total number of Air Transport Movements (ATM) at UK airports between 2001 and 2012 (2.095 million ATMs at reporting airports in 2001, 2.089 million ATMs at reporting airports in 2012). When compared to passenger ATMs the number of passengers increased by 22% over the same period³. Addendum 1 (page 12) and Air Transport Movements over the past 10 years³, provide a revealing insight into ATM for key airports in the South East since 2001.

Proposals for the development of air transport in the South East of England appear to be predicated on the basis of growth in the number of passengers and not the number of ATMs.

How should we define growth?

There is a need to re-consider the basis for assumptions about growth in air transport movements in a planning period that extends beyond 2040.

Reference: Airports Operating Model discussion paper 04: the assertion in paragraph 2.22 *“Changing consumer preferences may be affecting aviation demand”* may require further qualification: *“In the future, this trend [European tourists have begun taking regular flights abroad for shorter visits to second homes or for last-minute weekend city breaks or short holidays] may either continue as people become more affluent or may reverse as more travellers and businesses start being more conscious of their carbon footprint and higher costs of air travel.”*

Propositions

1. Architecture for Transport

The development of air transport should be considered alongside other forms of transport (reference: Department for Transport 'What we're doing' statement). In an era when the prudent use of energy and the need to contain and reduce carbon emissions are crucial aspects of our survival, it is imperative that the Government and its representatives anticipate:

- the consequences of an inexorable rise in the cost of food, water, fuel and land on air travel and on its affordability [over a planning period which stretches to 2040 and beyond].
- the impact of disruptive technologies and biotechnologies and the relevance of HS2 to air transport policy, the advent of driverless cars on HS2 and on air transport etc.

Develop a People Industry Nature Architecture for Transport and for managing the accompanying critical assumption and planning models. Use the models to ensure that disparate, but interested, third parties involved in air transport gain new insights and a more complete understanding of the juxtaposition of resource-use prudence and sustainability.

2. Planetary Boundaries

There is much evidence to support the assertion that we are, or will be, breaching the world's planetary boundaries; climate change, chemical pollution, atmospheric aerosol loading, biodiversity loss, change in land use, global fresh water use, phosphorus cycle, nitrogen cycle, stratospheric ozone depletion, ocean acidification. The natural world is in a parlous state. And still, we have no meaningful way of valuing 'natural capital'⁴ – as individuals or as commercial or governmental organisations.

2. Planetary Boundaries
/contd.

We are going to have to think more seriously about the environmental cost of air travel – in terms of ‘food miles’, ‘tourist miles’, land use, water usage (London Gatwick airport’s water usage increased from 942,000 cubic metres p.a. in 2005 to 1,058,000 cubic metres p.a. in 2008).

Cheap flights do not reflect the environmental cost of air travel and paragraph 2.16 Discussion Paper 04: “*Travel by air becomes more attractive as journey distance increases*” may need to be rephrased. And, the macro economics of international manufacturing (e.g. making hybrid cars in Japan with batteries made in Canada⁵) may force supply chains to be re-engineered.

Understand the macro-economics of international manufacturing and food production supply chains. Identify those supply chains activities that involve unbridled use of natural capital. Develop an airports solution that recognises the value of natural capital by establishing a prudent and sustainable means of managing within the planetary boundaries. Anticipate developments in biotechnology and other innovations such as the potential for carbon capture⁶. And identify and manage, more carefully, those boundaries for which there are unlikely to be man-made solutions e.g. animal and plant biodiversity.

3. Collaborative Advantage of Nations – a step change in our thinking

We need to redefine what we mean by competitiveness – and the way we trade with each other, internationally. We must learn to accept that the world’s economies cannot grow at the expense of the environment⁷ (and reference: e-mail conversation addendum 2, page 13). We must supplant the ‘competitive advantage of nations’ mantra with a new era of collaboration – by learning to share resources in a way that comes naturally to families and is out of place in commercial organisations bound by their fiduciary duties to shareholders. We must now consider the prudent use of resources over convenience, the priorities of conservation over humankind’s excesses and the value of natural capital over the desire to manufacture goods at any cost⁷. And, we must avoid creating an untenable legacy for our children and our children’s children.

3. Collaborative Advantage of Nations – a step change in our thinking
/contd.

Work with EU governments, (as part of the Trans European Network - Transport, TEN-T), airlines and others to consider, develop and implement a step change in international collaboration. Consider the concept of a collaborative network of international hub airports (e.g. based in say Amsterdam, Paris, Frankfurt, London/UK and Madrid (and Dubai and Istanbul?). Assess how each of these international (focal) hubs could be developed, over time, to establish complementary centres for international travel (for example, London/UK to become the North American hub for Europe, Paris to become the international hub for Africa etc.). Achieve massive economies of scale through highly efficient scheduling and high aircraft utilisation. Establish integrated road-rail-air-water transport networks to support both international and local travel needs.

Recognising the opportunities of international collaboration within the context of the statement *“At one extreme, the UK could focus on developing a single large airport to act as the sole focal point for long-haul connectivity, acting as a hub for the widest possible range of connections to support a comprehensive route network.”* Reference: Airport Operational Models discussion paper 04: Introduction paragraph 1.2.

And collaborating and not competing with Middle Eastern and Far Eastern airports to avoid a situation where *“Focal airports in Europe become increasingly by-passed as Gulf/Turkish/Chinese airlines connect their hubs directly to other regional airports.”* Reference: Discussion Paper 04 Introduction paragraph 1.7, Future 2.

It is also important to recognise the fragmented structure of the airline industry, arguably a result of government policies discouraging cross-border consolidation. There are additional opportunities for new thinking⁸.

4. Land Use in the South East of England

Over 12 million people live in the South East of England. In Kent, over 17% of the land is classified as ‘developed’ – which compares to an average of about 9% of land classified as developed in other counties of England. In common with other counties, Kent does not have a land use strategy – and, as a consequence, the percentage of the County’s developed land will increase as a result of new house building and new infrastructure projects. The development of an Estuary Airport would further exacerbate Kent’s land use issue.

4. Land Use in the South East of England
/contd.

There are numerous airports serving the South East – and, with the notable exceptions of London Heathrow and London Gatwick and London City⁹, all other airports are underutilised (e.g. Stansted, Manston, Lydd).

Re-assess and rationalise airports in the South East. Progressively establish an air transport network that can be justified in economic and land use terms – and can be regarded as an integral and complementary part of a UK wide road-rail-air-water transport system. Develop a land use strategy and establish policies that return underutilised air transport infrastructure and other developed land to more productive use e.g. for growing food.

5. Air Transport Network – incremental development and transformational change

Can we imagine what the world will be like in 2040 or 2050? Will the gap between rich and poor people be far greater than it is today? And, will the difference between the rich and poor people within and between nations create unimaginable tensions in the way we live and the way we bring up our children? Will the quality of life be affected, adversely, by ‘population stress’ and food shortages, water scarcity, greater extremes in weather patterns and escalating costs? To what extent will advances in biotechnologies address the carried forward problems of today?

Re-assess long term Air Transport Movement projections for international and national air transport. Use the Architecture for Transport and its accompanying models to establish more robust scenarios for 2040 - 2050 ATM projections.

5. Air Transport Network – incremental development and transformational change /contd.

Take account of the impact of (1) an escalation in the cost of fossil fuels and the likelihood of the application of VAT and other tax levies (2) internationally imposed environmental restrictions on air travel – for example, a ‘personal’ carbon tax on fossil fuels, charges for air pollution, natural capital conservation policies (3) likely societal changes – attitudes, structures, wealth etc. (4) the advancement of technology – larger, more efficient aircraft; technology for virtual meetings; 3D printing (5) more closely integrated road-rail-air-water transport systems, internationally and nationally – the adoption of a collaborative focal hubs (6) new thinking about food security and food ‘miles’ (7) other factors.

Within the context of the Air Transport Architecture and the new models, assess the short term and long term appropriateness and viability of each UK airport – focus initially on airports in the South East and their connections to the Midlands, North, Scotland and Northern Ireland. Design and develop a progressive and cost effective strategy for an integrated “rail, road, air, water transport” network (reference: page 4: The Department for Transport: what we’re doing). Reassess the need for airport expansion plans – for example, the third runway at London Heathrow and the second runway at London Gatwick. Consider the development of an Estuary Airport within the context of a rationalisation of all major airports in the South East and a land use strategy and opportunity. Give greater priority to health issues, especially preventative health, through lower pollution, noise levels and other factors.

World Air Transport Standards – *the magic of thinking big*

Humankind is facing the most intractable problems in its history. The veneer of the Western World’s respectability has been irreversibly damaged; through its inability to manage its economies; its societal excesses (e.g. food, water, land use); its inability to manage, in a prudent and sustainable way nature’s resources (e.g. bio-diversity, minerals, fossil fuels); its inability to manage population growth; the manifest evidence of corporate greed.

For the pessimist, there is an inexorable degradation of the world in which we live – fractured communities divided by the ever increasing segregation of rich and poor people, threatened communities divided by religious ruptures and terrorism, unsustainable population growth accompanied by mass starvation and a dying planet which is starved of the life force of its flora and fauna (with ever more examples of the impact of humankind’s excesses manifest in places such as Madagascar, Largo Agrio¹⁰, Niger Delta¹⁰).

World Air Transport Standards – *the magic of thinking big*
/contd.

For the optimist, there is the forlorn hope of a better tomorrow – accompanied by a realisation that we can do more to save the planet and ourselves. By thinking big, we can place what we do in a relevant context – abandoning the micro management and silo structured thinking so prevalent in today’s world. We can think about the co-dependencies of the world in which we live and the way in which we can reshape tomorrow’s world. We can start by looking at the ubiquitous nature of air travel. Imagine what it should and could look like in 30 years or 40 years from now.

Future fit for purpose?

We can design a better future by accepting and acquiring new planet-relevant responsibilities. We have the opportunity to design a new air transport solution that is future-fit for purpose – to imagine and implement a better and a more considered approach to travel. The UK can begin to put in place actions that lead to inspired solutions – it can influence others and establish new standards for the international air transport industry and work closely with its trading partners to establish better solutions. Bold strategies that will begin the process of recalibrating the way we measure success in the world – and secure the future for the planet and humankind.

“The government has a huge opportunity with the new consensus on the importance of infrastructure spending. The UK could lead the world by installing at speed the infrastructure for an economy of better, not more; one that can flourish without being addicted to relentless economic expansion.”⁷



ATM statistics

1. Selected ATM for London Heathrow, London Gatwick, Stansted and London City are shown in CAA data ref: http://www.caa.co.uk/default.aspx?catid=80&pagetype=88&sglid=3&fld=2011Annual_Table_04_2 which is summarised, for the South East, in the table below:

Air Transport Movements in the UK over the past 10 years

| Airport | 2001 | 2007 | 2010 | 2011 | % change | | | |
|-------------|---------|---------|---------|---------|--------------------|--------------------|--------------------|--------------------|
| | | | | | 2001 to 2007 | 2007 to 2011 | 2001 to 2011 | 2010 to 2011 |
| HEATHROW | 457,639 | 475,789 | 449,271 | 476,295 | 3.97 | 0.11 | 4.08 | 6.02 |
| GATWICK | 243,981 | 258,921 | 233,553 | 244,571 | 6.12 | -5.54 | 0.24 | 4.72 |
| STANSTED | 150,565 | 191,522 | 142,993 | 136,899 | 27.20 | -28.52 | -9.08 | -4.26 |
| Total | 852,185 | 926,232 | 825,817 | 857,765 | 8.69 | -7.39 | 0.65 | 3.87 |
| LONDON CITY | 53,763 | 77,274 | 59,919 | 61,064 | 43.73 | -20.98 | 13.58 | 1.91 |

2. Currently, the UK has the runway capacity to handle 5.7 million ATMs per annum (without any runway expansion). This runway capacity could be increased to circa 6.7 million ATMs per annum. The UK has more commercial runways than Germany, France, Spain or Italy. And. the UK has more runway capacity than Japan (which is also an island trading nation) even though Japan has twice the population of the UK and twice the GDP of the UK.
3. The Department for Transport has estimated that there would be a need for 2.67 million ATMs in 2030 in order to handle 312 million passengers per annum.

e-mail conversation between [REDACTED]

[REDACTED] *initial response (2nd July 2013 12:00) shown in blue*

[REDACTED] *further comments (2nd July 2013 13:06) shown in red*

[REDACTED] *rejoinder (2nd July 2013 13:57) shown in green*

From: [REDACTED]

Sent: 02 July 2013 13:57

To: [REDACTED]

Subject: RE: Submission to the Airports Commission

Minor rejoinders in green – hope they are visible. I am happy for you to use the email if you find it useful; there is a need for open debate.

From: [REDACTED]

Sent: 02 July 2013 12:00

To: [REDACTED]

Subject: RE: Submission to the Airports Commission

Dear [REDACTED]

[REDACTED] Thanks for sharing the paper with me. Although I have some sympathy with parts of the paper, especially the importance of a proper planning framework for the whole of transport infrastructure and the need for international collaboration, there is also much I do not find convincing. I think the main disagreement is over whether the changes to the economy and individuals' travel patterns will result in the sort of changes you assume. The evidence of international collaboration in the form of trade agreements has increased the amount of freight not reduced it. The advent of more alternative forms of communication has generally increased travel not reduced it – they are complements not substitutes as some very powerful evidence from a research group in California testifies. The changing social structure of societies has increased the need for travel to maintain family ties (e.g. the invasion of Poland by Ryanair) and in my own family I have one son who now lives in Glasgow and the other works for an international bank which is looking to move him to either New York or Hong Kong! Similarly HSR has become a complement to aviation not a substitute. Replacement over short distances adds to the case for major hubs.

[REDACTED] *Your point represents the accepted model i.e. a continuation of the current trends – which may well prove to be correct. By contrast, my point is that future commercial trade and the leisure industry may be constrained by economic and environmental factors e.g. will air travel for holiday makers become much more expensive (and less affordable) and for commercial users be less necessary as a result of advances in communications technology, 3D printing etc. I suspect that both scenarios/contrasting arguments should be considered – and would obviously require more research.*

[REDACTED] e-mail conversation

/contd.

■ This is not acceptance of the standard model uncritically, I accept that there will be huge changes in economic and social relationships, but I don't accept they will have the outcome you suggest and failure to provide the appropriate capacity will damage both economic growth and our consequent ability to deal with the social and environmental implications.

On hubs. I don't buy the directional hub argument. It means essentially that you assume that we are only open for business to (and more critically from) North America as any other direction becomes too difficult.

■ *The collaborative hub scenario attempts to anticipate how environmental pressures will impact on commercial and manufacturing activities over the next 40 or 50 years – with competitive considerations being replaced by much more collaborative working. Schiphol and London Heathrow competing head on for the North American market cannot be good for the planet and in planetary terms duplicates effort and is therefore inefficient.*

■ I think there are two points here. One is the effect of competition between airports for the same traffic which can be wasteful but may also lead to a reduction in costs. I don't think though that simply identifying that two airports serve the same market necessarily implies waste. The second is the effect the absence of an all-world hub has on a country's economy. Again that may make it less able to meet the challenges of long-term sustainability. Similarly simply adding up runway space around the country mainly reflects past mistakes in aviation policy which should not dictate future policy. ■ *Agreed.* I am afraid I am sold on the single hub model. ■ *Accepted* and whilst I started with an open mind as to where I have become increasingly convinced that only a fundamentally remodelled Heathrow will really work. ■ *I have tried to remain neutral re LHR versus the Estuary Airport debate!*

So I'm afraid I am not convinced by the underlying arguments in your paper. It is right that this view should be put and debated, but I would not feel comfortable supporting it.

■ *I do believe that the Airports Commission should have a wider remit and attempt to anticipate the likely shifts in commercial, industry, leisure and environmental thinking over the planning and implementation timescales – perhaps I should reposition the suggestions as questions offering an alternative scenario that should be considered as part of the long term thinking that needs to take place.*

Your comments are most helpful and test the robustness of the paper and its thinking. The airports strategy is a fascinating and important topic which has many dimensions, fundamental to tomorrow's world. Will the Airports Commission and The Department for Transport develop an inspired solution for us?

Best wishes

[REDACTED]

[REDACTED]

references:

- 1 <https://www.gov.uk/government/organisations/airports-commission/about/terms-of-reference>
- 2 Planetary Boundaries is the central concept in an Earth system framework proposed by a group of [Earth system](#) and [environmental scientists](#) led by [Johan Rockström](#) from the [Stockholm Resilience Centre](#) and [Will Steffen](#) from the [Australian National University](#) ref: <http://www.stockholmresilience.org/research/researchnews/tippingtowardstheunknown.5.7cf9c5aa121e17bab42800021543.html>
- 3 CAA data ref: CAA Table 2.2
http://www.caa.co.uk/docs/80/airport_data/201201/Table_02_2_Summary_Of_Activity_at_UK_Airports.pdf and Table 4.2
http://www.caa.co.uk/docs/80/airport_data/2012Annual/Table_04_2_Air_Transport_Movements_2002_2012.pdf
- 4 In [Natural Capitalism: Creating the Next Industrial Revolution](#)^[1] According to the authors, the "next industrial revolution" depends on the espousal of four central strategies: "the conservation of resources through more effective [manufacturing](#) processes, the reuse of materials as found in natural systems, a change in values from quantity to quality, and investing in natural capital, or restoring and sustaining [natural resources](#)." ref: <http://www.natcap.org/>
- 5 <http://science.howstuffworks.com/science-vs-myth/everyday-myths/does-hybrid-car-production-waste-offset-hybrid-benefits1.htm> Does hybrid car production waste, offset hybrid benefits? by [Dave Roos](#)
- 6 The Chemistry Growth Agenda: Annual Summer Lecture from SCI Honorary President, Paul Booth OBE <http://www.soci.org/News/SCI/SCI-AGM-2013> Lecture will be available on the Society's web site by end August 2013.
- 7 Endless growth will not deliver a healthy economy by Andrew Simms www.guardian.co.uk 1st May 2013 and <http://www.guardian.co.uk/environment/blog/2013/may/01/endless-growth-not-deliver-healthy-economy>
- 8 IATA calls for more airline consolidation, Andrew Parker Financial Times 1st July 2013 ref: <http://www.ft.com/cms/s/0/4ab0d412-e248-11e2-87ec-00144feabdc0.html#axzz2Xq6pZxeD>
- 9 Civil Aviation Authority 'Airport Market Power Assessments – Annex' (annex to the CAA's Initial Views - February 2012) ref: <http://www.caa.co.uk/docs/5/MarketPowerAnnex.pdf>
- 10 http://en.wikipedia.org/wiki/Lago_Agrio_oil_field The Lago Agrio field is known internationally for the serious ecological problems that oil development has created there, including [water pollution](#), [soil contamination](#), [deforestation](#) and cultural upheaval.
<http://www.bbc.co.uk/news/world-africa-22487099> Niger Delta pollution: Fishermen at risk amidst the oil By Will Ross BBC News, Bayelsa state