

Executive summary

A sustainable aviation policy for the UK over the next 30 years will require the Government to choose up to three runway sites in South East England, from, in effect, a field of four: Heathrow (one), Gatwick (one) and Stansted (two). These expanded airports should continue to be operated as a single system, in order to obtain the maximum efficiency and flexibility from this expensive but vital national infrastructure. In choosing between options for new runways in the South East, the Government will have to make a trade-off between economic benefits and environmental impacts associated with each scheme.

BAA is publishing its response to the Government's SERAS consultation some weeks ahead of the closing date for responses, in order to allow others the opportunity to consider our thinking. We reserve the right to make a further submission before the consultation period closes.

UK aviation: the case for growth

The UK aviation industry is one of the UK's success stories. It directly employs 180,000 people and is responsible for generating a further 370,000 jobs. Our airport and airline industries are not just globally competitive in their own right. They also play a crucial role in promoting growth in the productivity and competitiveness of the wider UK economy, and in supporting the wealth, investment and employment potential of the UK's regions.

High-knowledge and high value-added activities such as information and communications technology, electronics, pharmaceuticals, biotechnology, research and development, insurance, banking, finance and communications, in which the UK is globally powerful, are critically aviation-dependent, as is the UK's largest employer, tourism. International air services are also a key decision factor in attracting inward investment and corporate headquarters to the UK and its regions. The provision of substantial new airport capacity in the South East of England is therefore a critical issue for the UK economy and its competitive future.

Other European governments have shown strong recognition of these arguments, providing enlarged runway and terminal capacities which have enabled airports at Paris, Frankfurt and Amsterdam to grow more rapidly than the UK's main airports in recent years. Amsterdam's Schiphol Airport now has more runways than Heathrow, Gatwick and Stansted combined.

Aviation has also brought considerable social benefits to the UK and its citizens. Flying is now within reach of the vast majority of the population and is a fully integrated part of the national public transport system. The increasing availability of air travel promotes social inclusion and enhances personal mobility. Modern, lower-cost air transport has opened up important opportunities for leisure travel and made it possible for friends and families to visit each other, however far apart they have become geographically. This represents a crucial aspect of Britain's response to the process of globalisation.

A high-quality, efficient air transport industry also gives people the chance to experience cultures and heritage previously only accessible through television and museums. This works both ways, as the UK is an important cultural destination for travellers from all over the world. The UK – and London in particular – is still one of the most cosmopolitan, culturally-diverse and ethnically-tolerant places in the world. Air travel has helped make this possible.

Why we need more runways

The Government forecasts that demand for air travel in the South East will grow from 117 million passengers a year in 2000 to around 200 million in 2015 and 300 million in 2030. No-one can be certain about such forecasts, but we have concluded that the Government's figures are a sound basis for policy making. While some might argue that the forecasts look high, experience has shown that previous estimates have often been too conservative. In simple terms, these forecasts mean that the average London area resident who today takes an average of one and a half round trips by air per year will, by 2030, take roughly three round trips. It is not difficult to imagine how a combination of holidays, family visits, sporting events and work will generate such a pattern of flying. In 1972, for comparison, every resident took an average of less than half a round trip, in an era when air travel was very much the privilege of the few, not the many.

We therefore believe that the forecasts provide the right framework for planning. They already take account of demand reductions resulting from anticipated environmental charges, so do not represent unfettered growth or a predict and provide approach. What they provide is a sound basis for planning for future needs, so that sites for runways can be safeguarded and development delivered in the most effective and flexible way. If the predicted demand does not emerge, our approach allows for runway provision to respond accordingly.

There are no alternatives

While regional airports outside the South East are properly expected to grow faster than airports in London and the South East, they have only a very limited ability to contribute to meeting the forecast demand for air travel in the London area. It would be a serious mistake to think of expansion at regional airports as a substitute for additional capacity at London's main airports.

Neither is it possible for smaller regional airports in the South East to provide significant alternative capacity to that needed at the main airports. Government policy should, nonetheless, continue to extract maximum performance from smaller South East airports and to support regional airports in meeting the demand that they can reasonably be expected to accommodate, subject to the achievement of other social and environmental policy goals, for both point-to-point demand to London as well as access to London for onward transfer.

BAA also welcomes enhancement of the UK rail network, but we believe that the scope for high-speed rail substituting for domestic and short-haul air services is very limited, not least because if the Government was successful in delivering the kind of improvements needed to deliver a high-speed rail network, there may be potential for at the very most 4% of the domestic traffic at the London airports to substitute to rail. At that level, the transfer would make no material difference to the underlying need for new runways in the South East.

The Air Transport White Paper: the right approach

In the Air Transport White Paper, the Government has the opportunity to set out a robust and deliverable long-term framework for aviation to underpin its wider economic strategy. Failure to do this would not only damage the UK's national and regional economies, but it would also consign UK aviation to the same cycle of under-investment and gridlock that has characterised other parts of the UK transport system. That is why, in the Government's own words, 'on any view, doing nothing is not an option.'

The Government has taken the right steps so far in bringing forward options for consultation and is right to tackle aviation and airports policy on a UK-wide basis and across a 30-year horizon. But as soon as practicable, following the closure of the consultation, and certainly by the end of 2003, the Government should publish its White Paper, setting out a sustainable and deliverable 30-year aviation policy framework, so that work can begin on the complex issues which lie ahead.

It will be up to the Government to take the key, specific decisions on the number of runways to be provided and their location. In South East England especially, the impacts of airport expansion are so various and widespread that only the Government can make the necessary strategic judgments. In aviation, there are also numerous international regulatory obligations, upon which only the Government can speak.

A firm but flexible policy framework

In BAA's opinion, the White Paper policy framework needs to be firm enough to provide the necessary clarity to everyone involved, but flexible enough to be robust in the face of inevitable change in a dynamic industry.

For the UK, the optimal approach is one which enables capacity to be provided throughout the South East airports system, creating a flexible base for future developments in UK aviation. This approach would recognise the continued attractiveness of Heathrow as a network hub airport, with or without another runway. While Heathrow's hub role would diminish over time without another runway, relative to Paris Charles de Gaulle, Amsterdam Schiphol and Frankfurt, it would remain a very major global airport providing a network of routes to support London's World City status. This approach would provide a foundation for other South East airports to grow as network providers, as well as bases for point-to-point operations, ensuring that additional airport capacity exists to allow airlines to respond to changes in the market. It cannot be denied, however, that an approach which limits Heathrow to two runways risks damaging London's long-term status as an international aviation hub.

BAA consequently wishes to see clear Government decisions on the following points:

- i The airport location(s) in the South East where new runway development should not be provided during the period covered by the White Paper, so that unnecessary blight is avoided.
- ii The airport location in the South East where a new runway is most urgently needed, along with an indication of the type of runway envisaged and its associated infrastructure.
- iii The other airport location(s) in the South East where new runways will, in all probability, be needed during the 30-year period, and where land should therefore be safeguarded.
- iv The number of runways and the type of runway development, along with their supporting infrastructure, which would be provided at each of these other airport locations.

BAA believes that beyond the first runway, the timing and the sequencing of runways should not be prescribed in the White Paper, but that airport developers should be encouraged to bring forward detailed applications at specific locations identified in the White Paper in response to evolving conditions.

Responsible growth

BAA is committed to the principle of sustainable and responsible development and supports the Government's core sustainability objectives, namely:

- Maintenance of high and stable levels of economic growth.
- Social progress which recognises the needs of everyone.
- Prudent use of natural resources.
- Effective protection of the environment.

Responsible growth in air transport and airports should take place only where it is in accordance with these sustainability objectives. Nationally, however, there is still a balance to be struck in weighing up the economic benefits to the UK and the environmental impacts. However, we believe that there are certain known environmental limits, such as the earth's capacity to handle greenhouse gases, which demand a clear and specific response. BAA recognises such environmental capacity issues, in this case favouring a regime of international emissions trading.

But the discussion about airport development should not purely focus only upon environmental limits. It should also recognise economic and social costs and benefits, not least in the communities around airports, which enjoy significant employment benefits, as well as suffering adverse environmental impacts.

BAA has demonstrated a first-class track record of funding and delivering high-quality airport capacity infrastructure over the last 15 years, working within costs and to time. We are also the most successful airports company in the world at maximising passenger throughput with the minimum land-take. The Government can therefore have confidence that, where its new airports policy relies on development at BAA's airports, it has the best possible chance of the relevant projects being successfully delivered and managed within its overall objectives of sustainable development.

BAA is also determined to maintain effective working relationships with a wide range of stakeholders, including local communities, passengers, airlines, staff and control authorities, so that they can help us ensure that our investment is made in a way which maximises the benefits, minimises the disbenefits, and secures the widest possible support. This is what we mean by stating that the company's goal is the responsible growth of UK aviation.

All of the SERAS options will cost several billion pounds. These options will provide capacity to meet growth in demand for the South East overall. It is therefore both right and necessary for the Government to adopt a policy towards regulation and financing which allows the resources of all BAA's London airports and their passengers to be available to support investment in additional runways wherever they are located.

Safeguarding the environment

BAA recognises that one of the most important environmental issues facing aviation is its contribution to greenhouse gas emissions. We believe that international aviation emissions should be brought within the Kyoto framework as soon as possible, and that the most efficient solution to address aviation's contribution to climate change is through a system of tradeable permits in emissions, involving an environmentally-credible emissions trading system which is open and international. This will force the aviation industry to make a choice: either cut its emissions, or pay for other industries to deliver matching emission reductions.

Because of the potential health impacts of ground-based pollutants, BAA also recognises that the Government needs to be confident that levels of all relevant pollutants could be consistently contained within the EU Directive limits due to apply in 2010. Aviation emissions should not cause breaches of the limits laid down on the EU Directive. But it is important to recognise that aviation is not the only, or the predominant, source of such emissions and that any action must therefore involve a wide range of players.

Our work on the modelling and measurement of local air quality around Heathrow demonstrates that the Government's analysis is very pessimistic, and does not offer an accurate picture from which to devise effective mitigation measures. Having established this, we believe that advances in engine technology will bring about further reductions in aircraft fuel consumption, which will directly help reduce emissions of particulates and nitrogen dioxide. Meanwhile, our plan to provide fixed electrical ground power and pre-conditioned air on aircraft stands, together with operational procedures designed to reduce aircraft taxi times and the increased use of cleaner-fuelled vehicles, will all contribute to reduced emissions at airports. Our assessment is therefore that the Government significantly over-estimates the numbers of people predicted to fall within areas where the EU Directive limit for nitrogen dioxide would be exceeded.

We nevertheless recognise that uncertainty remains over how compliance with the EU Directive can be achieved. For example, it is unclear what action governments may need to take in order to ensure compliance in a number of UK and EU urban areas, as well as what action the Government considers might be achievable through the International Civil Aviation Organisation (ICAO), in order to require aircraft engines to comply with even stricter emissions standards. These are matters on which the Government itself is best placed to judge the likely future outcomes as it has the responsibility for these matters.

For the people living under a flightpath or close to an airport, noise is a major concern and its effective management is integral to locally sustainable and responsible development. And while aircraft have been getting progressively quieter, there is no escaping the fact that new runways will lead to increases in the noise footprint around airports. While the UK Government has a role to work with other governments in developing an international framework to incentivise aircraft and engine manufacturers, we accept that responsible development means that airlines and airports must make further progress to reduce the noise impacts of their operations.

Where surface access is concerned, BAA believes that decisions on funding and delivery of future rail schemes to airports and the provision of road user charging powers for airports are vital elements in planning for the sustainable growth of aviation.

Paying for environmental impacts

BAA agrees that, in common with other industries, aviation should cover its external costs. However, we do not believe that simply monetising and internalising these costs is the solution to environmental impacts. Nor do we accept that the industry should be taxed or charged twice for the same impacts. It is possible – likely even – that cost internalisation, such as through a tax, would leave air users covering the value of the impacts of flying, but leave the impacts unresolved.

We therefore believe that smart, effective economic instruments need to be identified which internalise external costs by encouraging the aviation industry directly to reduce or mitigate its environmental impact. Such a mechanism would allocate resources in a fair, proportionate, effective and economically efficient manner, unlike a blunt fiscal instrument like Air Passenger Duty (APD), VAT or a potential fuel tax. Any smart instruments targeted at specific impacts should replace the existing blunt instruments, which are currently intended to capture some or all of the external costs.

Planning and delivery

It is essential that an aviation policy which aims to deliver significant capacity and infrastructure is backed by a planning framework which enables timely delivery. The White Paper's focus on deliverability needs to be underpinned by a planning process which prevents unnecessary delays, but which ensures that developers and developments remain open to scrutiny by those affected.

In order to secure common agreement on the delivery of new runways, we believe that the new White Paper should establish a sub-national, Government-led group of all the relevant bodies (including the DfT, Government Regional Offices, Regional Assemblies and Development Agencies, strategic transport providers, NATS and airport operators) to work within the framework provided by the White Paper. This is the way, for example, to agree the funding and delivery of the detailed rail and road schemes.

We very much hope that any further runway development at our airports will be negotiated with stakeholders in this way, against a background of clear and firm UK Government strategy.

Eleven key tests for the White Paper

BAA believes that a sustainable airports policy should be subject to the following key tests:

- 1 Does it provide for the continuing growth of the UK aviation industry, which is important in its own right, and as a facilitator of the success and competitiveness of other industries, and in meeting the needs of consumers?
- 2 Is it economically efficient, making the best use of available airport capacity?
- 3 Is the airport development programme sustainable?
- 4 Does the Government's framework clearly identify the intended location of additional runway capacity?
- 5 Has the Government convincingly set out a robust planning process, so that complex developments can be considered in a more timely manner, while remaining inclusive? Is there appropriate encouragement for local agreements on optimal development, including appropriate impact mitigation, compensation and control measures?

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- 6 Is the Government confident that the airports industry will be able to attract private sector funding for the runway development programme?
 - 7 Are all the developments envisaged consistent with maintaining or enhancing the safety and security of UK airports?
 - 8 Is the strategy customer-led? Will the framework make it possible for UK airports to offer a wide range of high quality services to passengers, minimising delays, in conditions competitive with those found at other leading European airports? Does the policy provide for appropriate passenger-handling facilities, as well as runways?
 - 9 Is the approach flexible, enabling the UK aviation industry to respond to rapid changes in the competitive climate?
 - 10 Can the Government give the necessary direction and certainty of funding to enable strategic transport authorities to work with airport developers to deliver the rail and road infrastructure required to support development?
 - 11 Is the approach well-balanced, in terms of meeting the international needs of UK business, along with the reasonable expectations of businesses and individuals in the UK's nations and regions?

Options for responsible growth

On the basis of our present knowledge, following careful consideration of the effects reported in the SERAS document and preliminary work at our own airports on airport layout, road and rail access, air quality and other aspects, BAA has reached the following judgements on the deliverability of specific airport options. These are subject to the Government's assessment as to whether the measures needed substantially to reduce the predicted effects of environmental impacts can be achieved, and that fair and effective arrangements for mitigating and compensating for the local community impacts can be put in place. The costs of such arrangements, including the fair and proportionate costs of any airport-related road and rail access, have not been included in the Government's financial appraisal, so the viability of any of the options will be affected by the scale of these additional costs.

Heathrow

A scheme for a short, 2,000-metre runway at Heathrow should be included in a shortlist of four possible sites from which the Government should select up to three in the White Paper. Our preliminary analysis suggests that this scheme would be financially viable and fundable, subject to the scale of the additional costs not calculated in SERAS, provided that the airport's users are prepared to accept airport charges broadly varying around the level which will exist following the increases for each of the next ten years recently approved by the regulator.

However, we believe that alternative layouts to the option put forward for consultation, containing passenger handling facilities north of the A4, could better deliver the increase in capacity the Government assumed for the runway, and further would enable the Harmondsworth Tithe Barn and St. Mary's Church in Harmondsworth, together with its graveyard, to be preserved, although at the cost of a greater land take.

We broadly agree with the Government's assessment of the noise impacts of a new runway development at Heathrow. However, we believe that the extent to which the relevant EU directive limit for nitrogen dioxide is predicted to be exceeded if a new runway is built has been significantly over-estimated in the SERAS consultation document. As a result, the impact in terms of the number of residents and homes predicted to fall within this area would be substantially less than estimated by the Government. It also needs to be recognised that non-aviation sources are significant contributors to this type of pollution.

Gatwick

A scheme for one new runway at Gatwick should be included in a shortlist of four possible sites from which the Government should select up to three in the White Paper. Our key conclusions in relation to a one new runway scheme are that:

- i The close-parallel option was conceived as having fewer environmental impacts than the wide-spaced schemes which deliver more capacity and take more land, and that is evident from the material reported in the SERAS document.
- ii Either the southern or northern wide-spaced runways option is likely to require additional rail and road infrastructure beyond that needed by the close-parallel runway.
- iii The nature and the scope of the earthmoving activity associated with the northern wide-spaced runway is very substantial and needs to be much better understood, not least in terms of cost.

We believe that a single additional runway at Gatwick would be financially viable, subject to the scale of the additional costs not calculated in SERAS, although the charges needed to remunerate the investment would be significantly higher if applied to Gatwick users only, rather than shared across users of the London system as a whole.

From a surface access perspective, the preliminary work undertaken by the Strategic Rail Authority (SRA) and BAA has provided confidence that a deliverable rail strategy exists for each of the one new runway SERAS options, although the SRA and BAA have not so far been able to identify an appropriate rail strategy for delivering two new runways at Gatwick.

Unlike at other airports where the Government is considering options for runways, at Gatwick there is a legally-binding agreement which the then British Airports Authority signed with West Sussex County Council in 1979, under which the airport operator undertook not to construct a second runway at Gatwick before 2019.

Stansted

Schemes for two new runways, which could be any two of the three SERAS new runway options at Stansted and in any order, should be included in a shortlist of four possible sites from which the Government should select up to three in the White Paper. We believe that one additional runway at Stansted would be financially viable, subject to the scale of the additional costs not calculated in SERAS, although the charges needed to remunerate the investment would need to be shared across users of the London system as a whole. A second new runway could be viable on the same basis, but an appraisal would be best carried out following the investment in the first new runway.

From a surface access perspective, the preliminary work undertaken by the Strategic Rail Authority (SRA) and BAA has identified a number of infrastructure improvements to the West Anglia mainline to increase capacity to support one or two new runways, the most significant being a new railway line from the West Anglia mainline north of Harlow Mill direct to Stansted Airport railway station. However, this work has not so far been able to identify an appropriate rail strategy for delivering three new runways at Stansted.

Cliffe

A scheme for a new airport at Cliffe should not be regarded as a candidate for inclusion in the new White Paper, because of the considerable complexities of developing an airport at a wholly new site within the timescale stated in the consultation documents. We seriously doubt whether Cliffe could be commercially viable without very considerable public subsidy. This option also raises serious environmental concerns.

7.1 Stansted Airport is London's third international gateway and one of the fastest-growing airports in Europe, handling over 16 mppa (million passengers per annum). Its single terminal is home to approximately 40 airlines which serve around 100 different destinations, mostly European and Mediterranean. Stansted has a significant level of business traffic and over a third of its passengers are visiting friends and relatives. Stansted pioneered the no-frills service market in the UK, but also has a strong charter and cargo presence. Stansted has maintained phenomenal growth over the past five years due to the demand for short-haul low cost air travel and is seen as a centre of excellence for this market.

7.2 The Government has three new runway options proposed for consideration at Stansted:

- A full-length independent runway located 2,450 metres to the south east of the existing runway
- A full-length close-parallel runway located 1,300 metres to the north west of the existing runway
- A close-parallel runway located to the south east of the proposed wide-spaced runway.

Some or all of these options appear in several of the packages where more than one runway would be provided in the South East during the 30-year horizon of the White Paper.

7.3 BAA's principal interest at the outset of our appraisal of the Stansted options was to understand how the new runways would perform in aeronautical terms, ie whether their operation could be integrated efficiently with the existing airport for the purpose of maximising the release of additional runway capacity. But it was also essential to understand the impacts of the options on the environment and local communities, so our work has also focused on how best to achieve the increments of capacity stated in the SERAS document with the minimum negative impact.

7.4 In this Chapter, we therefore consider the airport layout issues associated with both the maximum use of the current runway, and with new runways. We also consider the road and rail links which would be needed to support growth, the impacts on communities and environment, in terms of land and housing, air noise and air quality and what measures would be needed to address these impacts. Finally, we briefly consider the financial appraisal of the Stansted runway options, and examine any implications for regional planning.

7.5 In Chapter 3 of our submission, we call for Government decisions in the new White Paper on where a new runway is most urgently needed and on those other sites in the South East where, over the 30-year period, new runways will be required. In answer to SERAS Question 1 at the back of this document, we say that the Government should make a choice of up to three runway sites from the SERAS runway options at Heathrow, Gatwick and Stansted.

7.6 BAA is satisfied that each of the three Stansted SERAS options could work from an aeronautical and airport operational point of view. We have also carried out our own preliminary work on airport layout, rail and road access, air quality, and other aspects, in order to add our views on those matters to the assessment work reported in the SERAS document

7.7 In our view, taking everything we know now into account, schemes for one or two new runways, which could be any of the three SERAS new runway options at Stansted and in any order, should be included in a shortlist of four possible sites from which the Government would select up to three in the White Paper, in order to provide capacity in the South East over the next 30 years. This conclusion assumes the implementation of appropriate funding arrangements which we outline in Chapter 3, as well as a process which we describe in Chapter 13 to allow airport operators to expedite proposals quickly and safely. It will be for the Government to decide whether measures needed at Stansted to reduce the predicted environmental effects can be delivered, and that fair and effective arrangements for mitigating and compensating for the significant local community impacts can be put in place.

7.8 Insofar as a third runway is concerned, BAA has not so far been able to identify an appropriate rail strategy beyond that identified for a two new runways scenario. The SRA and BAA believe that there would be a need to provide significantly enhanced rail infrastructure, over and above that required for the one and two new runway options, in order to support a four runway airport.

- 7.9** BAA provided technical information to the DfT during its preparation of layout plans for schemes at Stansted at the SERAS optioneering stage. In principle, the schemes described in the SERAS document have the capability to achieve the broad orders of additional runway capacity ascribed to them. As with Gatwick, where we also gave the DfT technical assistance at the optioneering stage, we have continued to consider layout options for Stansted but, unlike at Gatwick, we have no further suggestions to those which we gave to the DfT at that time. We therefore have only a few additional points to make about the runway layouts. However, in order to help follow some of the points we make in this chapter, we include here as Figure 7A DfT's Option 7, which shows the three new runways layout illustrated in SERAS Figure 9D. This is not an option which BAA favours for inclusion in the White Paper, as we make clear in preceding paragraphs, but it does help to understand the possible locations and possible effects of the one and two new runways options which we do think should be on the Government's shortlist for inclusion in the White Paper.
- 7.10** BAA has also been concerned to minimise the impacts of any development on the environment and local communities. Therefore, in considering these options and any firm plans which might emerge from them, we would attempt to limit the number of properties lost and to preserve sites of significant local heritage. We have regular dialogue with communities which live alongside our airports and this process has continued during the consultation period. We have tried, where possible, to respond to concerns expressed to us, and would not only try to limit the number of homes which would have to be taken, but also to limit the effects on those properties remaining which would be in close proximity to any new runway and its associated facilities, and to preserve or replace the local road network which would be affected.

Maximum use case

- 7.11** We have commented in the Heathrow and Gatwick chapters about the ability of those airports to deliver the amounts of capacity featured in the DfT's maximum use case. At Stansted, we believe that the SERAS maximum use case of 35 mppa could be achieved off the existing runway by expanding terminal facilities, aircraft stands and car parking within the existing airport's land boundary. Surface access infrastructure issues for the 35 mppa case are covered later in this section. The existing layout with its current surface access links is shown on Figure 7B.

One new runway option

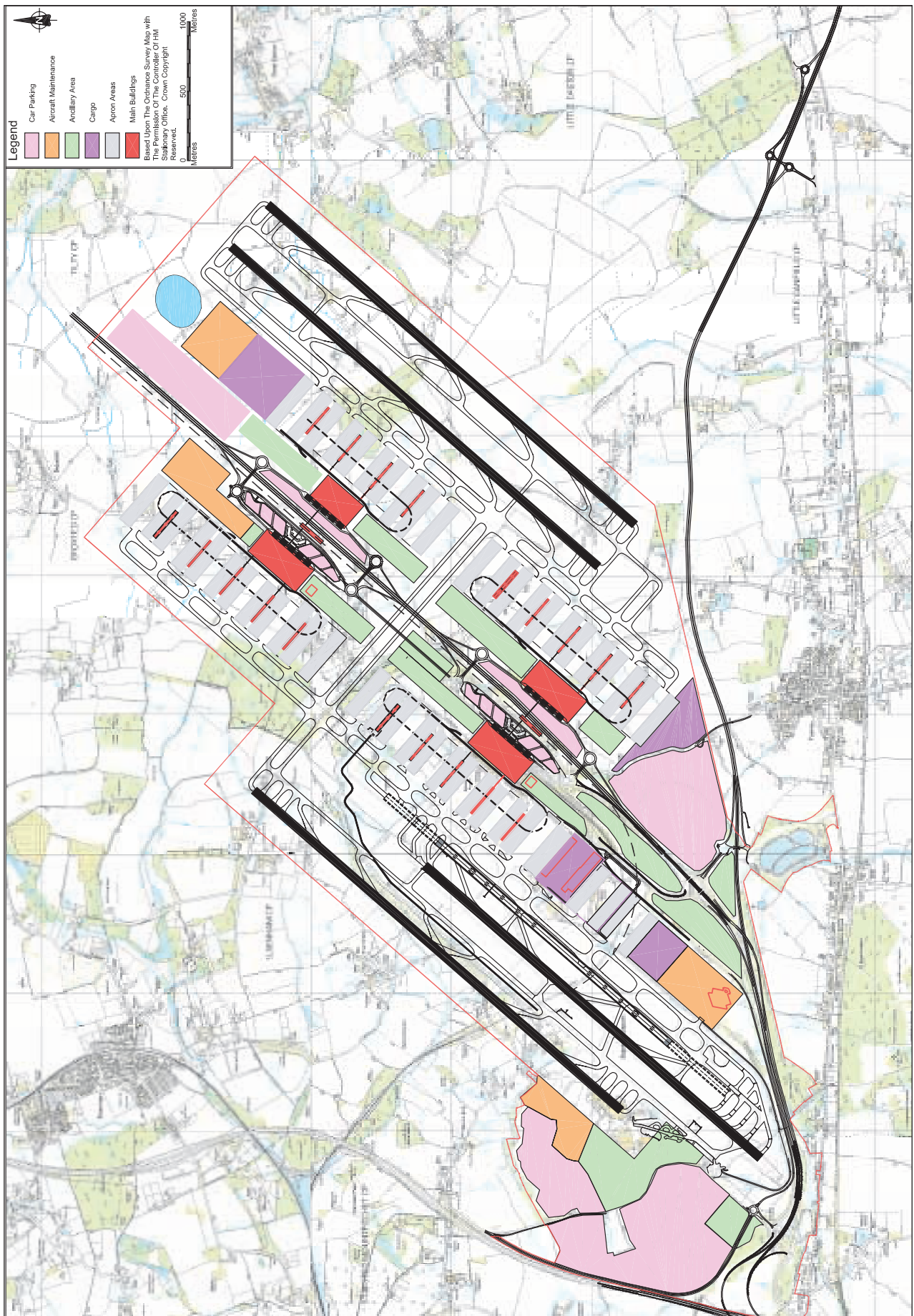
- 7.12** A new full-length runway option, shown in SERAS Figure 9B, is proposed some 2,450 metres to the south-east of the existing runway. Terminal and aircraft stand capacity would be provided between the two runways. The principal areas affected by the one new runway option would be Molehill Green to the east of the airport, and Coopers End and the northern end of Bammers Green to the south of the airport.
- 7.13** BAA believes that if both the existing and new runways were to operate in mixed mode, as the SERAS document assumes, then the airport runway capacity of this option could deliver around 85 mppa rather than the 82 mppa reported in the SERAS document.
- 7.14** However, BAA believes that in this SERAS option there is a case for operating only the existing runway in mixed mode and the new runway in segregated mode in order to minimise the air noise impact on Takeley and Hatfield Forest. More detailed work would be needed to discover whether a capacity of 82 mppa could be maintained in those circumstances.

Two new runways option

- 7.15** This SERAS option adds a full-length close parallel runway some 1,300 metres to the north-west of the existing runway (SERAS Figure 9C). The principal additional areas affected by the two new runways option would be Gaunts End to the north of the existing airport boundary, and some other areas to the south of Tye Green and Burton End.
- 7.16** BAA considers that the SERAS capacity estimate of 102 mppa is reasonable, although more capacity could be created if the stagger between the close parallel runways was increased by some 1,200 metres to around 2,500 metres. The layout could also be modified in order to move the northern-most passenger terminal away from Eastend Wood.

Three new runways option

- 7.17** This SERAS option adds a close parallel runway to the south-east of the new wide-spaced runway (the one new runway option), providing the airport with two pairs of close parallel runways. The principal additional area affected by the three new runways option would be Bammers Green to the south of the existing airport boundary.



Plan 7A: Stansted Dft Option 7 – 3 new runways

- 7.18** The mode of operation for these four runways could be either that each pair of runways would be used for either departures or arrivals, or that they would operate as two pairs of arrival/departures runways. In either mode, BAA believes that the SERAS capacity estimate of 129 mppa is likely to be an under-estimate and that up to 140 mppa could be achieved.

Rail and road links

Rail links

- 7.19** The SERAS document lists a series of rail services and infrastructure schemes for improving access to Stansted under the maximum use scenario as well as in the options for one, two and three additional runways. The details give an indication of what may be needed, but no firm conclusions are drawn.
- 7.20** BAA's approach to a rail strategy for new runways at Stansted must be seen in the context of an evolving rail environment along the West Anglia mainline which links Liverpool Street, Stansted and Cambridge. The SRA is currently reviewing future services in the context of its emerging Capacity Utilisation Policy, as well as continuing negotiations for re-franchising the West Anglia mainline operations. In addition, consideration of the potential form of enhancements to the West Anglia mainline and access arrangements to Stansted Airport will continue, irrespective of the potential for the provision of additional runways at Stansted.
- 7.21** BAA has taken specialist advice and has undertaken some preliminary technical work jointly with the SRA to consider the development of a long-term rail strategy for the West Anglia mainline. We believe that this approach has identified potential schemes which are deliverable and have the capacity to support new runway development at Stansted. The results of the joint working between the SRA and BAA are reported in Appendix 1.
- 7.22** On the basis of our high-level evaluation and our joint working with the SRA, we believe that, given the current plans to increase the number of carriages on the Stansted Express services up to 12 cars, the option exists to serve the maximum use case of 35 mppa at Stansted without triggering the requirement for a second tunnel bore to provide additional rail access to Stansted Airport rail station.
- 7.23** In the context of the SERAS one and two new runways scenarios for Stansted, a number of infrastructure improvements to the West Anglia mainline have been identified to increase capacity and so support potential future airport and non-airport train services. The most significant enhancement that has been identified is a new 'southern' railway line from the West Anglia mainline north of Harlow Mill direct to Stansted Airport railway station. Further study will be required to identify an alignment which is technically and environmentally sustainable, particularly with regard to the need to safeguard Hatfield Forest. A potential route for this new 'southern' railway line is shown illustratively coloured green on BAA Plan 7C. A wide range of complementary infrastructure schemes to provide increased capacity on sections of the existing West Anglia mainline between London and Harlow have also been identified. The SRA and BAA are confident that an efficient project, to be implemented in stages, can be developed to enable extra rail capacity to be provided to match both the growth in airport business and within the rail corridor in general.
- 7.24** An option also exists for extending the new 'southern' airport line between Harlow Mill and Stansted to the north, so that it rejoins the existing West Anglia mainline south of Newport. A potential route for this new 'northern' railway line is shown illustratively coloured green on BAA Plan 7C. This 'northern' extension would enable some lengthened Cambridge trains to operate via Stansted Airport and potentially be integrated with the existing Stansted Express service. This proposal is believed to warrant more detailed consideration, and the advantages could justify bringing forward this new 'northern' railway line in support of an earlier stage of the airport development.
- 7.25** While we are confident that an appropriate rail strategy can be delivered for two new runways at Stansted, BAA's preliminary studies have not so far identified an appropriate rail strategy for three new runways at Stansted. Both the SRA and BAA believe that the growth in non-airport rail demand, especially to London, would exceed any growth in airport rail demand for a four-runway airport at Stansted and so require



Plan 7C: Stansted Airport – BAA outline rail route alignment

substantial new rail infrastructure significantly in excess of the package for the two new runways option. Further consideration of an appropriate rail strategy for three new runways at Stansted could therefore only be undertaken in the context of the Government's emerging Regional Spatial Strategy for the East of England.

- 7.26** As outlined in Chapter 13 of this response, the Government needs to ensure that appropriate measures are put in place following the publication of the White Paper in order that rail schemes are, first, funded proportionate to the value airport and non-airport traffic derives from them and, second, delivered speedily following any decisions to develop further runway capacity.

Road links

- 7.27** BAA agrees with the SERAS analysis which assumes that, following the completion of the new slip roads at M11 Junction 8, and the improvement and re-alignment of the A120 (both currently under construction), no further road infrastructure would be required for the maximum use scenario.

- 7.28** BAA believes that the airport access road infrastructure identified by SERAS analysis for the one, two and three new runways scenarios for Stansted needs further review. The Government's regional policy envisages significant housing development in the London-Stansted-Cambridge corridor, as well as important economic development in Cambridge and Harlow. Our preliminary review of the strategic road infrastructure has identified the need for a co-ordinated approach to assess the level of M11 improvements required to support increased levels of activity at Stansted, over and above what would in any event be required to deliver an appropriate regional strategy.

- 7.29** As outlined in Chapter 13 of this response, the Government would need to ensure that appropriate arrangements are put in place following the publication of the White Paper, in order to identify the precise strategic and regional road infrastructure that would be required for both airport and non-airport reasons.

Impacts on people and the environment

- 7.30** Critical to the deliverability of any sustainable runway development at Stansted is the impact it will have on the people who live near the airport and on the local environment. The effect on land and housing, air noise and air quality will be key determinants for the Government as to whether any new runways can be included in a White Paper. We look at each of these issues in turn.

Land and housing

- 7.31** The unavoidable impact of any new runway development at Stansted is that homes would need to be purchased, and residents compensated for the loss of those homes. While BAA would make every effort to minimise the housing impacts of any new runways at Stansted, a number of homes would still need to be removed if the Government decided that any Stansted developments should go ahead.

- 7.32** The SERAS analysis shows that the one new runway option would increase the current airport land by 7 sq km, from 9.5 sq km to 16.5 sq km. Around 100 houses (around Molehill Green, Bamber's Green and Broxted Hill) would need to be purchased, and 700ha. of high-grade agricultural land to the north-east of the airport would be lost.

- 7.33** The analysis shows that a two new runways option would increase the airport land area by a further 2.5 sq km, and that a three new runways option would increase airport land area by another 3 sq km. With both of these bigger options, around 200 houses would need to be purchased – those required for the one new runway scheme, together with other properties in those areas, as well as properties in Brick End and parts of Gaunt's End, and possibly Tye Green. Some 1,200 ha. of prime agricultural land would be lost to the north and the north-west of the airport. BAA has not undertaken work itself to verify the effects of the SERAS options on land and property, heritage, ecology and water as reported in the SERAS document.

- 7.34** We believe, based on our experience of developing our airports, that it would be possible to reduce the amount of land required for the three options, but we have done no detailed work to quantify those reductions.

Air noise

- 7.35** BAA has looked at the input assumptions which the DfT has made in preparing its air noise contours. On the basis of the assumptions which the DfT has made about the number of aircraft and the fleet mix in the maximum use and one, two and three new runway cases in 2015 and 2030 (and subject to any of the differences in capacity estimates between BAA and those quoted in the SERAS document), BAA believes that the areas of the 16-hour LAeq contours shown in Table 10.2 of the SERAS document would be broadly representative of the future air noise climate around Stansted with those airports operating at the air traffic levels assumed.

- 7.36** Currently, around 6,000 people fall within the 57 Leq noise contour at Stansted. We recognise that by 2030, the number of people within the 57 Leq contour could rise to 14,000 with one new runway, 24,000 with two new runways, and 28,000 with three new runways, and that people who are not currently overflown would, as a result of new runways, be newly exposed to air noise from arriving or departing aircraft.
- 7.37** We explain in Chapter 4 of our submission, and in response to SERAS Question 16 at the end of this document, measures which we have developed in conjunction with airlines and NATS designed to address particular local air noise issues. In addition to measures of that kind, further international standards and measures could be brought forward to contribute to the noise management of future runways at Stansted. In circumstances where BAA did promote any additional runways at Stansted we would expect (as was the case with its consent for Heathrow Terminal 5) an air noise cap to be imposed as a planning condition on any approval, to give communities a degree of certainty about the noise environment which would exist. The SERAS document describes at the end of Chapter 16 possible further measures which would mitigate or compensate for the effects of air noise on the local community. BAA's views on these possible further measures can be found in its response to Question 18.

Air quality

- 7.38** Work commissioned by the DfT to model the predicted air quality impacts of additional runways concludes that there would only be small a number of people at Stansted falling within an area exposed to an exceedence of the European Union (EU) nitrogen dioxide (NO₂) annual average Daughter Directive limit value.
- 7.39** The DfT's analysis shows no-one affected in either the SERAS base case or the SERAS maximum use case in 2015, and that only 21 people (10 properties) are predicted to be exposed in 2015 if one new runway was built. In 2030 all the new runway options result in populations exposed to exceedences of the EU NO₂ limit value, ranging from 298 people (150 properties) with two new runways to 45 people (23 properties) with one new runway. In its consultation document, the DfT also concludes that it is likely that such impacts could be prevented in practice.
- 7.40** The air quality work we describe in Chapters 5 (Heathrow) and 6 (Gatwick) indicates that there is a systematic over-prediction bias in the DfT air quality assessments. This suggests therefore that the air quality impacts predicted for the Stansted options are overstated. Inspection of the detailed DfT results shows that the predicted NO₂ exceedences in 2030 are predominantly due to aircraft-related emissions which account for between 66% and 76% of total NO_x emissions in the Stansted study area across all options.
- 7.41** Our work to improve the DfT's original air quality model has identified, with a high degree of confidence, a systematic over-prediction in the contribution of aircraft emissions to NO₂ concentrations outside the airport boundary. The effect of applying a similar improvement, as found at Heathrow and Gatwick, to the Stansted modelling of aircraft emissions would, given their significance in the Stansted area, be likely to result in a significant reduction in the modelled airport-related NO₂ contribution away from the main runways. Furthermore planned air quality improvements by the industry, Defra and local authorities would also contribute to improved future performance.
- 7.42** We would conclude, therefore, that there is a high probability that a revised improved Stansted air quality model, which accounts for both the systematic over-prediction bias in modelling the effects of aircraft emissions and the air quality improvements planned by industry, local authorities and Defra would show reduced air quality impacts at levels that would result in few, if any, people exposed to NO₂ in excess of the EU limit value in any SERAS option in either 2015 or 2030.

Economic impacts and regional planning

- 7.43** We believe that runway developments at Stansted would generate significant economic benefits for airlines, users, business, tourism, competitiveness, productivity, investment and employment. Stansted is critical to the East of England region, and a main driver of the sub-region in which it is located, with significant regeneration potential for areas of north and east London.
- 7.44** The SERAS document sets out estimates of the employment benefits of runway developments at Stansted, suggesting that from a 1998 base of 10,000 direct and indirect employees, one new runway could deliver 60,000 jobs by 2015, while two new runways could deliver 74,000 jobs by 2030. However, we believe that the SERAS document overstates the employment impacts around Stansted, for the following reasons.
- 7.45** First, the assumption that in 1998 direct employment existed outside the airport boundary additional to on-airport is incorrect. As a consequence the forecasting base has, in BAA's view, been overestimated. Current development proposals do not require the allocation of any airport-related activities outside the boundary.

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- 7.46** Second, we disagree with the use of a multiplier of 0.3 for the calculation of indirect employment related to direct employment if the results are located only to the defined core and wider catchment areas. From previous survey data BAA would recommend that if that approach is to be taken then a multiplier of 0.06 would be more appropriate.
- 7.47** Third, we believe that both the core and wider catchment areas have been drawn too tightly, and fail to take account of other Districts with a high proportion of resident airport employees and an already changing pattern of employee residence.
- 7.48** A consequence of the overstatement of employment potential will be an overstatement of the land and housing needed to support the forecast levels of employment. The employment overstatement will be further exaggerated by a shift in labour supply pattern which is already evident and which will not be triggered solely by consideration of the larger development options proposed in SERAS.

Financial appraisal

- 7.49** As part of the background to the SERAS consultation, the DfT carried out a preliminary financial appraisal exercise to identify the relative implications for airport passenger charges of the individual SERAS options and packages of options. Using the DfT's financial model, BAA has carried out our own sensitivity analysis to reflect our own judgements and experience in delivering major infrastructure projects. The results of BAA's sensitivity analysis for the first new runway options in the South East are contained in full in Chapter 9.
- 7.50** The DfT and BAA analysis has been based on the indicative assessments in the SERAS consultation material of the cost of providing the infrastructure. The SERAS costs include an assessment of costs for surface access schemes which may well not be those which are ultimately provided, and they exclude costs for environmental mitigation and compensation which might be required. Further information concerning possible mitigation and compensation measures is set out in our answer to Question 18 in Chapter 15 of this submission. On the basis of three hypothetical scenarios described in our response to the question, the mitigation and compensation costs associated with one new runway range between £20 million and £250 million, between £30 million and £270 million for two new runways, and between £35 million and £390 million for three new runways. Until these costs are known, there will remain a degree of uncertainty about these assessments.
- 7.51** We currently believe that the option for one new runway at Stansted would be financially viable, subject to the scale of the additional costs not calculated in SERAS, but the charges needed to remunerate the investment would need to be shared across users of the London system as a whole rather than applied to Stansted users only. The analysis in Chapter 9 shows that one new runway would require charges to increase by around 35% above the 2003/04 level (in real terms) if it was remunerated on a 'system' basis, and by around 120% on a 'stand-alone' basis.
- 7.52** A financial appraisal of any further runway investments at Stansted, beyond the first runway, would be best carried out following the approval, construction and operation of the first runway investment, taking into account the approach to financing the investment (ie the 'system' approach or 'stand-alone') and subsequent growth in passenger traffic across the South East system.
- 7.53** The modelling results are highly sensitive to changes in the key assumptions. For example, the level of charges required to remunerate the options would be greater if the target rate of return in the model is not high enough to attract investors to provide funds for investment in new airport capacity, or the airport is expected to make more significant contributions to surface access infrastructure or mitigation and compensation schemes, than have been assumed in the modelling.

Chapter 11: The Cliffe option

- 11.1** The most ambitious option for consideration in the SERAS document is an entirely new hub airport located on the Cliffe Marshes, in north Kent. The Government's principal option is for a four-runway airport, comprising two pairs of close parallel runways, timed to be built in stages, with the first two runways opening together, and the third and fourth to be added as demand requires them. The possibility exists for a fifth runway to be added should one be deemed beneficial from a noise perspective.
- 11.2** BAA has not undertaken any detailed work on this option, but we make a number of general points which are consistent with the approach to the provision of additional capacity advocated throughout in this document, along with a number of specific points.
- 11.3** BAA has no reason to believe that a four- or five-runway airport at Cliffe could not work from an aeronautical and an airport operational point of view (subject to our concerns explained later about safety). But following consideration of the structural issues and effects reported in the SERAS document, we believe the Government would have to think very carefully indeed about the complexities of developing an airport at a wholly new site at Cliffe, when so many issues cast considerable doubt on its viability. Even if all of the structural problems could be overcome, the Government would need to consider further the challenges that would remain. In our view, these challenges would be likely to extend the development period of Cliffe well beyond the timescale stated in the consultation document, and thereby cast doubt over Cliffe's ability to contribute to meeting demand in the South East as early as indicated.
- 11.4** In our view, taking everything we know now into account, the option to develop a four-runway airport at Cliffe should not be regarded as a candidate for the White Paper to provide airport capacity in the South East over the next 30 years.

Structural issues

- 11.5** As the Government acknowledges in paragraph 11.1 of the SERAS document, building Cliffe would represent a radical change to airport provision in the South East of England. The nature of the Cliffe proposal would, in our view, raise the following structural issues that the Government would need to evaluate when coming to policy decisions concerning the Air Transport White Paper.

Demand

- 11.6** The Cliffe proposal assumes that a significant proportion of traffic is 'seeded' at the airport to create a network of services and frequencies on the day the airport becomes operational. Aside from financial matters which are addressed below, the main reason for seeding services would be to lay the foundations for Cliffe to become a hub airport.
- 11.7** If Cliffe is to become a successful airport, then it should be an attractive proposition to airlines, particularly those that operate or would want to operate at Heathrow. In this regard, BAA believes that before an airline group would move away from Heathrow it would have had to have been convinced that it would be gaining more from moving than its competitors would be gaining from the use of the additional capacity which its move would release at Heathrow. Indeed, from its own discussions with airlines at Heathrow, BAA believes significant doubt exists over the willingness of airlines voluntarily to relocate to Cliffe.
- 11.8** If indeed airlines would not move voluntarily to Cliffe, then the Government would have to consider policy mechanisms to achieve that outcome. The principle policy mechanisms explored in the SERAS document are traffic distribution rules, 'carrot and stick' measures, public subsidy and, in the most extreme, the forced closure of an existing South East airport. We do not believe such mechanisms would be wise, for the following reasons.
- 11.9** In the past, the UK and other countries have used the concept of traffic distribution rules for the purposes of implementing policy and influencing the type and amount of air traffic using specified airports. The UK Government abandoned its 1986 traffic distribution rules in March 1991. While it may in theory be possible to draft traffic distribution rules, history tells us that these have had a limited effect and have now all but disappeared from the Government's policy agenda. In any event, this is not a direction we would wish to see maintained in policy-making.

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- 11.10** Incentives for airlines to re-locate their operations to Cliffe might come from a preferential airport charging regime which, in theory, should enable airlines to provide discounted fares. The likelihood of success for this measure is very small. Assuming the internationally-accepted 'cost-related' principle is applied, the level of charges required to remunerate such airport development would be high (such as at Kansai in Japan) and this would have consequences on the competitive effectiveness of the airlines that did relocate. Even if it were possible to keep the level of airport charges artificially low (for example, lower than at Heathrow), airport charges as a percentage of airline costs are very small (typically less than 5%), and so lower airport charges at Cliffe would be unlikely to allow airlines to provide the level of discounts in fares that would be required to generate the volumes of passengers to offset any reductions in profitability they would experience during the early years of operation.
- 11.11** The approach most likely to succeed at Cliffe is for the Government to provide public sector finance, possibly for the following purposes:
- To enable airport developers to pre-fund the development.
 - To keep airport charges low enough in the early years of operation (when the profile of airport operations is very peaky) so that airlines are able to transfer their operations with some confidence that they would be financially viable in the early years.
- 11.12** But this approach would have ramifications for the Government's public sector borrowing, and would also be likely to cause significant distortions in the South East airports market, both before and after the development opens. Before making a decision to include Cliffe in the White Paper, the Government would clearly need to satisfy itself that other runway options at the existing South East airports, which could be privately-financed, would not achieve its policy goals.
- 11.13** Setting aside the issues surrounding the legality and effectiveness of these policy mechanisms, there is a further factor that in requiring airlines to transfer from Heathrow and possibly other London airports, such a policy would undermine the viability of Heathrow and/or those other airports from which significant amounts of traffic would be taken.
- 11.14** Even the extreme action of closing Heathrow, or another South East airport, would be likely to require high levels of Government subsidy. Experience from Hong Kong (where the Government took the decision to close Kai Tak Airport and construct Chep Lap Kok Airport), suggests that the direct replacement of one airport by another could only be achieved through high levels of Government subsidy. Furthermore, there would be enormous regional planning implications of closing an existing South East airport. There is in any event no guarantee that airlines would re-locate to Cliffe from an existing South East airport that had been closed, as they may prefer instead to relocate a sizeable part of their operations to airports with spare capacity in mainland Europe. So even if it was thought that Cliffe should be developed as a hub airport, there is doubt as to whether government actions would be sufficient to provide the certainty needed by developers that it would be fully utilised.
- 11.15** In any case, any reduction in the use of any of London's existing airports would run counter to a fundamental part of the Government's policy, which we strongly support, that the best use should first be made of existing infrastructure. This is more efficient environmentally and therefore more in tune with the Government's central goal of providing for the growth of UK aviation in a sustainable way.

Financing

- 11.16** Government policy is for airport development to be funded by the private sector. Paragraph 15.12 of the SERAS document recognises that in order for Cliffe to be funded by the private sector, the airport's capacity would have to be substantially used from the time of opening. In light of the uncertainty outlined above about the demand for Cliffe, our view is that any private sector airport developer is likely to view the unpredictability of demand as a perilous risk to its business.
- 11.17** BAA notes that the Cliffe proposal is estimated in the SERAS consultation document to cost £13 billion. Setting aside the possibility that these costs exclude contributions to some very large surface access schemes and may yet prove to be underestimates, there would be the need for a private sector developer to pre-fund design and construction of the scheme, presumably ahead of receiving any funds once the airport has opened. The SERAS document makes no mention of a specific mechanism that would deliver funds to the developer during the design and construction stages.
- 11.18** We recognise that the timescales for delivering the first additional runway at any existing South East airport would be challenging. But given that Cliffe would be a new airport with complex construction, we doubt that Phase 1 at Cliffe could open in 2011. For that opening date to be achieved, the eight-year planning, design and

construction programme for the development would need to outperform the design and construction programme achieved by the new Hong Kong airport, Chep Lap Kok, which is around half the area of the Cliffe site and which took nine years from decision to opening. It would also assume that the supporting rail and road infrastructure and the ecological relocation measures had received planning permission, had obtained the necessary finance, and were complete prior to opening in 2011.

- 11.19** Finally, the problems of longer timescales would manifest themselves not only in greater costs for the development itself, but also in greater 'shadow' or delay costs incurred by the travelling public which, depending upon their scale, might have some effect in dampening down demand for air travel and would have an effect on the UK economy.

Ecology

- 11.20** Cliffe Marshes is a site of national and international importance for birds, flora and fauna and is protected by the EC Habitats Directive. The special ecological circumstances associated with Cliffe require the Government first to demonstrate that it has considered all reasonable alternatives, and second to promote compensatory measures to prevent the overall loss of habitat and bird numbers.

- 11.21** In relation to the first point, BAA's view is that the incremental growth of its existing airports should be considered to be a reasonable alternative to the Cliffe proposal. On the second point, paragraph 11.17 of the SERAS document identifies one possible compensatory measure as being to purchase land and create a new habitat elsewhere in Kent. Clearly, such compensatory measures will at the very least require an effective Government policy mechanism, if not financial support from the Government as well.

Airspace

- 11.22** We note the strong concerns already expressed by NATS about the implications of a major airport development at Cliffe for South East airspace management. BAA understands that from an air traffic control perspective it would be considerably easier to accommodate further capacity development at existing airports in London's airspace than the development of capacity at entirely new sites such as Cliffe. We also understand that the development of Cliffe would also require changes to Belgian and Dutch airspace. We make these points in more detail, along with others on airspace considerations generally, in Chapter 12.

- 11.23** Allied to airspace management is the potentially significant bird strike hazard from locating an airport in a habitat heavily used by birds. A report by the Central Science Laboratory and the British Trust for Ornithology, dated March 2003, found that the risk of bird-strike at Cliffe would be three times the level than at most, if not all, major airports in the UK. It concluded: "Without a comprehensive and aggressive bird management programme in place, incorporating careful and considered airport design, appropriate habitat management and active bird control, an airport could not operate safely in that location. Even with such world class management and mitigation measures in place as identified in this report, it is not considered possible to reduce the risk to a level similar to that experienced at other UK airports."

Layout issues

- 11.24** BAA did not provide any technical assistance to the DfT in the preparation of layout plans for Cliffe. We have not undertaken any detailed work on the layout arrangement shown in Figure 11A but we have no reason to challenge the runway capacity assumptions in the SERAS document. We therefore have no comments to make about the layout plans or the runway capacity estimates for the Cliffe option in the SERAS document.

Rail and road links

- 11.25** As with the existing South East airports, the provision of rail infrastructure and services would be an important pre-requisite for Cliffe to operate as a major airport, whether it has two, four or five runways. The proposals assume a 48% public transport mode split, with approximately 20,000 rail trips to and from Cliffe in the morning peak period, potentially requiring the use of double-deck trains. While BAA has not undertaken any detailed analysis of the rail and road schemes which might be needed for the Cliffe option, we believe that the rail schemes outlined in the SERAS document are problematical in respect of the planned rail services in Kent which would require to be displaced. BAA awaits the comments of the SRA on this issue.

- 11.26** The airport access road improvements require links to the A2/M2 and to the A13 via a Lower Thames Crossing. In addition, the Lower Thames Crossing scheme is assumed to be provided irrespective of whether the Cliffe proposal proceeds, and that the costs associated with it are not included in the costs for developing Cliffe.

11.27 In relation to potential strategic road improvements, widening of the eastern sections of the M25 would be required, and at higher levels of capacity a second road crossing of the Thames would be required to access the labour market north of the Thames and to provide some relief to the other road crossings. All of these schemes are substantial in nature and are largely assumed to be required in any event, with only an allowance for the second road crossing included in the costs for developing Cliffe.

Impacts on people and the environment

Land

11.28 We have already indicated the ecological impact that a new airport in this location would have on several nationally and internationally designated areas, and the protection which one such designated site is afforded under the EC Habitats Directive. In addition, paragraph 11.21 of the SERAS document acknowledges that the raised airport platform is likely to increase the risk of flooding elsewhere on the Hoo Peninsula. Finally, we note that for Phase 1 the volume of cut and fill of earthworks is approximately 120 million cubic metres to construct the two runway option. These volumes compare with the 1 million cubic metres of material excavated and re-used on the Terminal 5 site at Heathrow, the 1.8 million cubic metres of material removed from site to make the cutting for the M3 at Twyford Down, and the 2.3 million cubic metres of material which were excavated and re-used on the site of Manchester Airport's second runway.

Air noise and air quality

11.29 The SERAS document reports no significant air noise and air quality impacts, due mainly to the location of the proposed airport. BAA does not challenge this assessment.

Economic impacts and regional planning

11.30 BAA agrees that the development of a completely new airport would allow the incorporation of the latest technology and the achievement of economies of scale with resulting improvements in productivity. But while we feel that the long-term productivity gain of 1.5% a year is realistic, we also believe that the level of employment for the four years between the notional opening date of 2011 and 2015 may prove optimistic. Provided that the chosen government instrument works and traffic levels are high at opening, staffing levels at start-up are likely to be higher than assumed.

11.31 Given the opportunity to contain most, if not all, airport related activity within the boundary of the new airport, we also question the need to assume 15% direct off-airport employment.

11.32 The core catchment area of Cliffe extends to six districts and lies in equal proportions either side of the River Thames. The provision of sufficient means of surface access linking these centres of population with the new airport would be critical to the utilisation of the potential workforce to the north of the Thames.

11.33 The SERAS document makes a number of assumptions about employment at Cliffe which have the effect of reducing employment and subsequent land-related impacts. These are:

- An indication that 'commuter draw-back' could lessen housing requirements.
- The widening of the catchment area for direct and indirect employment by the provision of rail links to Stratford and Ashford. This is a different approach from the other airport locations where both the core and wider catchment areas are assumed for impact purposes to contain all additional employees.
- The attraction of potential workers to Cliffe using a variety of incentives such as 'training and various subsidies'.

11.34 In our view, assumptions of this nature should have been applied to the SERAS assessments at Heathrow, Gatwick and Stansted. Equal treatment of the sites would have shown reduced employment and land-related impacts at the three main BAA South East airports.

11.35 Clearly it will be for the Government to determine whether the Cliffe option serves its policy objectives to a greater or lesser extent than the existing sites. As part of its consideration, the Government will need to determine the extent to which the structural issues associated with the Cliffe proposal can be resolved to enable a developer to consider promoting a planning application for the scheme.

Financial appraisal

- 11.36** We have already raised a number of issues about the financing of a new airport at Cliffe. As part of the background to the SERAS consultation, the DfT carried out a preliminary financial appraisal exercise to identify the relative implications for airport passenger charges of the individual SERAS options and packages of options. Using the DfT's financial model, BAA has carried out its own sensitivity analysis to reflect its own judgements and experience in delivering major infrastructure projects. The results of BAA's sensitivity analysis for the first new runway options in the South East are contained in full in Chapter 9.
- 11.37** The DfT and BAA analysis has been based on the indicative assessments in the SERAS consultation material of the cost of providing the infrastructure. The SERAS costs include an assessment of costs for surface access schemes which may well not be those which are ultimately provided, and they exclude costs for environmental mitigation and compensation which might be required. Further information concerning possible mitigation and compensation measures is set out in our answer to Question 18 in Chapter 15 of this submission. On the basis of three hypothetical scenarios described in our response to the question, the mitigation and compensation costs associated with two new runways at Cliffe range between £4 million and £25 million, and the costs associated with four new runways between £20 million and £60 million. Until these costs are known, there will remain a degree of uncertainty about these assessments.
- 11.38** That said, we currently believe the airport charges which would be needed to remunerate two new runways at Cliffe would be considerably higher than for any other SERAS option. The analysis in Chapter 9 shows that charges would need to be around four times the current level of charges at Heathrow (which are £6.48 per passenger in 2003/04). The Government will have to consider whether, on the basis of these figures, Cliffe could be commercially viable without very considerable public subsidy.
- 11.39** The modelling results are highly sensitive to changes in the key assumptions. For example, the level of charges required to remunerate the options would be greater if the target rate of return in the model is not high enough to attract investors to provide funds for investment in new airport capacity, or the airport is expected to make more significant contributions to surface access infrastructure or mitigation and compensation schemes, than have been assumed in the modelling.

Chapter 14: Conclusions

- 14.1** The provision of substantial new airport capacity in the South East of England is a critical issue for the UK economy and its competitive future. The UK Government has taken the right steps so far in bringing forward options for consultation. As soon as practicable following the closure of the consultation, and certainly by the end of 2003, the Government should publish its intended White Paper setting out a sustainable and deliverable 30-year aviation policy framework, so that work can begin on the complex issues which lie ahead.
- 14.2** In our submission, we have sought to provide the technical expertise and experienced commentary which will help the Government to reach conclusions about the feasibility and viability of many of the options which it is considering. We hope that we have helped the Government to eliminate options which are not realistically deliverable, so that it can release communities affected by these options from unnecessary blight at the earliest opportunity. Among the remaining options, however, it remains the responsibility of Government to select the developments it wishes to see proceed. Only Government can weigh up the many competing interests at stake in every location.
- 14.3** In our view the White Paper must set out a clear planning and economic framework for future airport development as well as a constructive and flexible future regulatory regime which will allow the full resources of the London airports system to be available to provide capacity at individual airports.
- 14.4** We regard the passenger forecasts which the DfT has produced as a sound basis for enabling the Government to take decisions about future airports policy and believe that air passenger demand should be met as fully as possible, as long as new capacity can be provided in a way consistent with the Government's airports policy objectives and a sustainable, deliverable and flexible approach. Some 100 mppa of additional capacity would need to be provided in order to meet the shortfall over the next 30 years. On that basis, any two new runways would be inadequate and any four new runways would over-provide capacity.
- 14.5** The White Paper should provide clear decisions on the following points:
- The airport location(s) in the South East where new runway development should not be provided.
 - The airport location in the South East where a new runway is most urgently needed, and the type of runway development, along with its supporting infrastructure, which should be provided at that location.
 - The other airport location(s) in the South East where new runways will, in all probability, be needed during the next 30 years, enabling land to be safeguarded, but not the sequence or the precise timing of when any new runways should be brought on-stream, since this will have to be judged in the light of actual trends in demand.
 - The number of runways and the type of runway development, along with their supporting infrastructure, which might be provided at these other locations.
- 14.6** On the basis of our examination of the options set out in the SERAS consultation, we conclude that a sustainable aviation policy for the UK over the next 30 years will require the Government to choose up to three runway sites in South East England, from, in effect, a field of four: Heathrow (one), Gatwick (one) and Stansted (two). These expanded airports should continue to be operated as a single system, in order to obtain the maximum efficiency and flexibility from this expensive and vital national infrastructure. It will be for the Government to decide whether measures needed at these airports to reduce the predicted environmental effects can be delivered, and that fair and effective arrangements for mitigating and compensating for the significant local community impacts can be put in place.
- 14.7** In our view, taking everything we know now into account:
- A scheme for a new 2,000 metre runway at Heathrow should be included in the short list. It works from an aeronautical and operational point of view, and it would be financially viable and fundable, subject to the scale of the additional costs not calculated in SERAS, provided that the airport's users are prepared to accept airport charges broadly varying around the level which will exist following the increases for each of the next ten years recently approved by the regulator.
 - A scheme for one new runway at Gatwick should be included in the shortlist. All of the three Gatwick runway options work from an aeronautical and airport operational point of view, although there are differences between them in terms of the scale of impacts and difficulties. One additional runway at Gatwick would be financially viable, subject to the scale of the additional costs not calculated in SERAS,

although the charges needed to remunerate the investment would be significantly higher if applied to Gatwick users only, rather than shared across users of the London system as a whole. An appropriate rail strategy has not been identified for delivering two new runways at Gatwick.

- A Stansted scheme for one and two new runways should be included in the shortlist. All of the three Stansted runway options work from an aeronautical and airport operational point of view, although there are differences between them in terms of the scale of impacts and difficulties. One or two additional runways at Stansted would be financially viable, subject to the scale of the additional costs not calculated in SERAS, although the charges needed to remunerate the investment would need to be shared across users of the London system as a whole. An appropriate rail strategy has not been identified for delivering three new runways at Stansted.
- A scheme for a new airport at Cliffe should not be included in the shortlist. While BAA also has no reason to believe that, safety concerns aside, a four- or five-runway airport at Cliffe could not work from an aeronautical and airport operational point of view, the considerable complexities of developing an airport at a wholly new site cast doubt on its ability to deliver capacity within the timescale stated in the consultation documents. We also seriously doubt whether Cliffe could be commercially viable without very considerable public subsidy.

14.8 Any new developments provided for in the White Paper must be sustainable, balancing the objectives of high and stable levels of growth, social progress, prudent use of natural resources and effective protection of the environment. BAA is in favour of the responsible growth of UK aviation. We suggest that eleven practical tests can be applied to an effective airport development strategy:

- i Does it provide for the continuing growth of the UK aviation industry, which is important in its own right, and as a facilitator of the success and competitiveness of other industries, and in meeting the needs of consumers?
- ii Is it economically efficient, making the best use of available airport capacity?
- iii Is the airport development programme envisaged sustainable?
- iv Does the Government's framework clearly identify the intended location of additional runway capacity?
- v Has the Government convincingly set out a robust planning process, so that complex developments can be considered in a more timely manner, while remaining inclusive? Local agreements on optimal development should be encouraged wherever possible, including appropriate impact mitigation, compensation and control measures.
- vi Is the Government confident that the airports industry will be able to attract private sector funding for the runway development programme?
- vii Are all the developments envisaged consistent with maintaining or enhancing the safety and security of UK airports?
- viii Is the strategy customer-led? Will the framework make it possible for UK airports to offer a wide range of high quality services to passengers, minimising delays, in conditions competitive with those found at other leading European airports? Does the policy provide for appropriate passenger-handling facilities, as well as runways?
- ix Is the approach flexible, enabling the UK aviation industry to respond to rapid changes in the competitive climate?
- x Can the Government give the necessary direction and certainty of funding to enable the strategic transport authorities to work with airport developers to deliver rail and road infrastructure required to support development?
- xi Is the approach well-balanced, in terms of meeting the international needs of UK business, along with the reasonable expectations of businesses and individuals in the UK's nations and regions?

14.9 BAA believes that if the Government pursues a responsible approach which meets these tests, the UK will have a world-class airports system.