Civil Aviation Authority

Economic regulation at Heathrow from April 2014: initial proposals

CAP 1027

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www.caa.co.uk

April 2013

ISBN 978 0 11792 825 1

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The latest version of this document is available in electronic format at www.caa.co.uk/publications
Published by TSO (The Stationery Office) on behalf of the UK Civil Aviation Authority.

Printed copy available from:
TSO, PO Box 29, Norwich NR3 1GN
Telephone orders/General enquiries: 0870 600 5522
Fax orders: 0870 600 5533
www.tso.co.uk/bookshop
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Executive Summary

Purpose of this document

1. This document sets out the CAA's initial proposals for the appropriate economic regulatory framework for Heathrow Airport Limited (HAL) that will apply when the present regulatory arrangements expire in April 2014. The present regulatory arrangements cover the years 2008/09 - 2013/14 including an additional year of extension, and are known as the fifth quinquennium (Q5/Q5+1). The arrangements to apply beyond this date are commonly known as the sixth quinquennium (Q6) although the length of the regulatory period can be more or less than five years.

2. The CAA is making its initial proposals in pursuance of its duties under the Civil Aviation Act 2012 (the Act) and, in particular, its primary duty to further the interests of users in terms of the range, availability, continuity, cost and quality of airport operation services, and to, where appropriate, promote competition in the provision of those services. Users include passengers and those with a right in cargo.[1] The CAA's duty covers present as well as future users. The CAA must also have regard to the need to secure economy, efficiency and the ability of the licence-holder to finance its services.[2]

3. Please note the **deadline for responses** to this consultation is **25 June 2013**. The CAA cannot commit to take into account representations after this date. The introduction of this document sets out a number of strategic questions on which the CAA would especially welcome feedback from stakeholders.

4. The CAA would like to thank HAL, the airlines operating at Heathrow (the airlines) and other stakeholders for their positive contributions to the CAA's review so far. Notwithstanding some understandable differences owing to their commercial perspectives, the CAA welcomes the fact that all stakeholders have made it clear that they share a common aspiration to make Heathrow Airport (Heathrow)

[1] Section 69(1) of the Act.

[2] Section 1(3) of the Act.

successful in pursuit of improving the experience for passengers and cargo owners, both today and in the future.

Next steps

5. Following the CAA's consideration of responses to this document, it aims to publish its final proposals in October 2013. If a licence for HAL is required, the CAA aims to publish the notice proposing to grant the licence in December 2013. This notice will specify the airport area for which it is granted and the licence conditions proposed to be included to give effect to the CAA's decisions. Selected draft licence conditions are attached to this document.

The CAA's initial proposals reflect its firm commitment to put users at the heart of airport economic regulation

6. The CAA's review has taken place alongside the government's reforms to the regulatory framework for airports, which culminated in the Act. The CAA fully supported the new legislation as it modernised its regulatory tool-kit in line with other UK economic regulators, specifically by giving the CAA a clear primary duty to further the interests of passengers and cargo owners. It also introduced a new flexible licensing regime.

7. The CAA considers that users' interests are generally best served where they have genuine choice among airports that are competing and innovating vigorously for their custom. Where effective competition between airports is not present, and an airport operator has substantial market power (SMP), the CAA needs to consider necessary and proportionate safeguards for users. In doing so, the CAA needs to assure itself that relying on general competition law would not be a more effective safeguard than issuing a licence to the airport operator, and that the potential benefits of regulation by a licence are likely to outweigh the potential costs. Taken together, these factors form the basis of the Market Power Test (MPT) in the Act that is required to be satisfied by the CAA before it can impose on an airport operator the need to hold a licence.

8. The CAA considers these conditions are likely to be met in the case of HAL. Alongside this document, the CAA has published a summary of its view that it is 'minded to' conclude that the MPT in the Act is met for continuing regulation of HAL. The CAA's full MPT document will be published at the end of May 2013. The CAA's view is subject to consultation and the CAA will review its position later this year.

9. HAL is the operator of Heathrow, the UK's busiest airport, serving around 70 million passengers per year. Heathrow is nearly twice the size of the next busiest airport, Gatwick, by number of passengers, and it is also the UK's hub airport. Demand for Heathrow's services remains extremely high. It is operating very close to full capacity with over 99% of its slots utilised.

10. Supported by the airlines, HAL has a clear vision to be "Europe's hub of choice and the UK's direct connection to the world by making every journey better". The CAA does not doubt HAL's or the airlines' commitment to seek to realise this vision. The CAA welcomes the progress made by HAL during Q5 to raise passengers' satisfaction and improve its operational performance in those areas that were key passenger priorities when the regulatory arrangements were established in 2008, for example, the length of security queues.

11. Nevertheless, the CAA considers that HAL's SMP and the lack of effective choice available to passengers and airlines using Heathrow present a number of risks that require continuing economic regulation beyond April 2014. These risks include lower levels of efficiency, higher prices, inconsistent service quality, and investments that are less appropriate than may otherwise be the case. These risks directly affect the range, availability, continuity, cost and quality of airport operation services and the adverse effects of those risks are ultimately borne by passengers and cargo owners.

12. In designing the most proportionate and effective regulatory arrangements, the CAA has sought to understand users' priorities. Given that over 95% of cargo traffic at Heathrow travels in the bellyhold of passenger aircraft, the CAA considers that the interests of cargo owners are broadly aligned with those of passengers. Consequently the CAA considers that users' priorities are the same as passengers' priorities. The CAA has identified passenger priorities in three principal ways: through Constructive Engagement (CE) between

HAL and the airlines, independent passenger research and challenge by the CAA's Consumer Panel.

Constructive Engagement between HAL and the airlines

13. The CAA oversaw a detailed CE process during which HAL was required to develop and discuss an initial business plan (IBP) and then a full business plan (FBP). This process recognises that airlines' commercial interests often, but not always, align with the interests of their passengers. It also recognises that airlines are materially affected by the CAA's decisions.

14. The CAA welcomes the fact that both HAL and the airlines engaged in good faith and agreed a vision statement for the airport and a suite of key service propositions for Q6. Significant progress was also made between HAL and the airlines in several key building blocks for future price caps, such as traffic forecasting, the general shape of the capital programme and service quality metrics. Not surprisingly, there was not consensus on the contentious areas of the scale of efficiencies in HAL's operating expenditure (opex) and the appropriate return to HAL's capital providers, known as the weighted average cost of capital (WACC). Nevertheless, the CAA welcomes the enhanced level of transparency and information sharing by HAL compared to Q5. This was appreciated by the airlines and helped contribute to a positive process. CE has been an important input into the CAA's initial proposals for HAL.

CAA independent passenger research

15. The airlines' commercial interests may not always be aligned with the interests of passengers. Hence, it is important for the CAA to form its own view on passengers' priorities to influence the CE discussions and validate the outcomes.

16. To inform its views, the CAA has undertaken considerable primary passenger research and surveys, and has evaluated the third-party research to which it has access. It has received such research from airport operators, airlines, and independent agencies. It has been able to draw some key themes from this information to influence its initial proposals.

17. Survey evidence suggests that the quality of the airport itself ranks significantly behind passengers' primary concerns. These include the

ease of access to the airport, the availability of airline routes, and the price of the airfare, of which HAL's charges tend to be only a small fraction.

18. That said, passengers' satisfaction at Heathrow is relatively high and has increased over Q5. There remain some sustained variances between passengers' satisfaction levels with different terminals at Heathrow. Though most passengers, on most journeys, say they have a "good" or "excellent" experience, this is not always the case. And, especially at times of service disruption, such as those that have arisen recently at Heathrow as a result of heavy snow, passengers' interests have been not always been secured by HAL or the airlines.

Challenge from the CAA's Consumer Panel

19. The CAA has sought scrutiny from its Consumer Panel on its approach to understanding passengers' priorities from airport operation services. In particular, the Consumer Panel has challenged the CAA to ensure that HAL's price rises during Q6 should be no more than the minimum necessary.

20. The Consumer Panel also highlighted that, although most passenger research indicated high levels of satisfaction with Heathrow, such research focused on average performance. The Consumer Panel encouraged the CAA to consider the needs of different sub-groups and the importance of performance during times of disruption.

21. Against this background of its research on passengers' interests, the CAA has developed a number of initial proposals that are set out in this document. Broadly speaking, these can be grouped into four broad policy initiatives.

- A challenging but fair cap on HAL's ability to increase its airport charges[3] over the next five years.

[3] In this document, the term "airport charges" in relation to an airport means -

a) charges levied on operators of aircraft in connection with the landing, parking or taking off of aircraft at the airport (including charges that are determined by reference to the number of passengers on board the aircraft), including any separate charge for aerodrome navigation services; and,

b) charges levied on aircraft passengers in connection with their arrival at, or departure from, the airport by air.

- Minimum service standards that passengers can expect from HAL.
- Measures to strengthen HAL's operational resilience to help reduce the negative impacts on passengers from service disruption.
- A new licence for HAL to enable the CAA to respond more effectively to passengers risks.

The CAA's initial proposals are for a challenging but fair cap on HAL's ability to increase its airport charges over the next five years

22. The CAA must balance the desire of present users to pay lower airport charges with the interests of future users and HAL's ability to continue to be able to invest in modern infrastructure and services in a timely manner. Under section 1(5) of the Act, if there is a potential conflict between the interests of different classes of users, the CAA can carry out its functions in a way that will further such interests as it thinks best.

Stability in the RAB-based methodology for setting price caps

23. The CAA's calculation of the maximum price caps for Q6 is derived on the basis of a single till Regulatory Asset Base (RAB) model – the same methodology that calculates the present price cap. The CAA considers this form of regulation is appropriate given HAL's degree of market power. The RAB is a well-known model for regulation across different sectors where the regulated company has SMP. For example, it used in regulated sectors such as energy, water, rail, and wholesale telecommunications.

24. The RAB approach is also appropriate where there is a requirement to ensure that there is a well-understood way of balancing the needs of users today and the needs of users in the future. This is because the RAB approach ensures that airport charges should be no more than the minimum needed to remunerate an efficient airport operator, whilst ensuring a fair return on investment. Appropriate investment in facilities for the benefit of future passengers can be remunerated from present revenues. Given the significance of HAL's previous

investments and its continuing need for significant investment in Q6, the CAA considers the RAB to be the most appropriate form of regulation.

25. Compared to the level of capital expenditure (capex) required in Q4 (for Terminal 5) and Q5 (for Terminal 2), HAL is proposing a smaller capital budget for Q6 of about £3 billion. This is still a significant sum to finance and it will make a contribution towards the achievement of the two runway Heathrow master plan. That said, much of the budget will be spent on required asset renewal and maintenance and on the airfield resilience programmes to accommodate the expected changes in airline fleet mixes towards more wide bodied aircraft, such as A380s. The CAA has adopted HAL's estimate of about £3 billion for capex in Q6 for the purposes of these initial proposals.

26. The CAA continues to consider that the single till approach remains appropriate for HAL. This replicates what is commonly seen in competitive airport markets. It derives a net revenue requirement from airport charges after deducting a contribution from commercial revenues and other charges.

27. The CAA notes that there appeared to be high-level of consensus between HAL and the airlines during CE that the calculation of maximum price caps should be based on a RAB-based single till methodology. HAL's business plans were prepared on this basis as were responses from the airlines.

28. The CAA encouraged a discussion about the duration of the next regulatory period, but has adopted the period of five years, since it appeared that HAL and the airlines considered it appropriate. The CAA will consider a minor adjustment to align the regulatory year with the statutory reporting year, in order to aid transparency.

There is a stark difference between HAL and the airlines on two key components of price caps

29. Despite the progress made in CE, HAL and the airlines have significantly different views on what represents an acceptable price profile for Q6. HAL would like to raise its airport charges by 5.9% above Retail Price Index (RPI) inflation in every year. By contrast, British Airways (BA) has prepared an analysis, which has the support of the airline community, to reduce HAL’s airport charges by 9.8% below RPI in every year.

30. The cumulative effect of this difference is stark. In 2011/12 prices, by the end of 2018/19, HAL is proposing an average airport charge per passenger of £27.30 compared to the airlines' proposal of £12.56 – a difference of over 50%. The difference between the two positions is driven largely by the views taken on two key elements of the price cap: the projections for the level of opex and the WACC.

There is an operational cost efficiency challenge for HAL

31. HAL projects that its opex will fall slightly in real terms (i.e. inflation adjusted) over the Q6 period, from £1,050 million in 2013/14 to £1,038 million in 2018/19. The airlines, on the other hand, consider that HAL can make significant further efficiencies. The airlines argue that HAL's opex could be reduced by about 20% compared to HAL's projection for its total opex in Q6.

32. The CAA has undertaken its own detailed scrutiny of HAL's opex projections for Q6. The CAA has completed several pieces of research itself as well as commissioning several independent consultants' reports to benchmark HAL's opex projections. This has covered issues such as employment costs (including pension costs), central services, maintenance functions, etc. All these reports (except the WACC studies) have been published alongside this document. The CAA shared drafts for comments with HAL and the airlines prior to publication, although it should be recognised that the findings have not been agreed.

33. The overriding message from this body of analysis is that, despite the efficiencies included within HAL's FBP, there remains significant scope for further savings in Q6. For example, the independent benchmarking of HAL's employment costs suggests that its pay rates and pension benefits are generous compared to comparators'.

34. Having determined that HAL could be reasonably expected to be more efficient, the CAA must judge the scale and timeframe for factoring this into its regulated charges. Put more simply, how much should shareholders, rather than users, fund in Q6?

35. The CAA recognises that it is not reasonable to expect HAL to eliminate all inefficiencies overnight. It may have legacy issues in its cost base that will take time to address. That said, users would expect HAL to make all reasonable efforts to become more efficient, especially where issues were raised by the CAA at the Q5 review for

HAL to address in the last five years. In making its judgement, the CAA also recognises that reducing opex may, in some cases, impose some other risks on users, especially if HAL's reaction is to respond with service reductions or inferior performance and unwind the advances it made during Q5. There are also difficulties establishing the counterfactual on opex, given the uniqueness of operations at Heathrow.

36. The CAA has been able to derive a range of potential efficiency savings in Q6 from its consultants' studies. This range is between 1.5% and 5.6% of the total HAL opex forecast for the period. The CAA's initial proposals are to set its assumption moderately above the mid-point of this range at 4.2%. The CAA has assumed that this additional cost saving is phased over the period of Q6 rather than introduced in full in the first year

37. The CAA's assumption is equivalent to HAL reducing its total opex by 1.8% per year from 2013/14 levels (in real terms). This compares to HAL's projections of reducing its total opex by 0.2% per year over the same period.

38. This approach has regard to the need to protect users from continuing to pay for HAL's inefficiency. It gives HAL a strong incentive to improve its performance further, while recognising that the CAA must take into account the practical difficulties that HAL will face in moving to more efficient operations.

Weighted average cost of capital

39. The WACC is a critical element of the price cap because it acts to reward past investment – as represented by HAL's RAB of over £13 billion – and provide sufficient, but not excessive, incentives for capital providers to fund future investment in Heathrow.

40. Expressed in pre-tax real terms, HAL has argued that the WACC should increase to 7.1%, compared to the Q5 settlement of 6.2%.[4] HAL argued that its equity is more risky than the CAA and the Competition Commission (CC) took into account for the Q5 settlement. HAL considers that its equity is exposed to asymmetric

[4] The Q5 headline WACC was 6.2%. This was adjusted to 6.01% to reflect the timing of cash flows and it was 6.01% which was applied to the Q5 RAB to calculate the price cap. To improve transparency for Q6, the CAA has taken account of this adjustment in selecting its WACC

risks. It argues that there is limited upside potential given Heathrow's capacity constraints, but that it faces downside risks from shocks such as the Icelandic ash cloud.

41. BA commissioned research that suggested HAL's WACC should decline compared to Q5 and should be in the range 4.5% to 5.5% pre-tax real. BA argued for a HAL WACC of 4.5% pre-tax real. BA considered that the cost of debt has declined significantly, and it challenged the presumption that HAL faced more risk compared to Q5 or that this risk is significantly asymmetric.

42. The CAA commissioned an independent assessment of HAL's WACC. This did not find that HAL's business should be viewed as riskier than the CAA and the CC assumed at the Q5 reviews. However, it did find that the cost of debt has fallen significantly as interest rates have declined to record low levels. In addition, the corporation tax rate has been reduced significantly compared to Q5 and the government has signalled that it will reduce it further. Taking these factors into account, the CAA's independent consultants recommended a range for HAL's WACC of 4.2% to 5.6% pre-tax real.

43. The CAA's judgement about where in this range it should set its assumption has been informed by many factors. The CAA recognises that there are risks to passengers in how it sets the WACC within a given range. If it sets too high a WACC, passengers may pay more than may be necessary to reward capital providers. However, setting a WACC too low would mean that HAL was unable to raise sufficient capital to modernise and upgrade its facilities in the long-term interests of passengers.

44. Experience of what happened during Q5 is useful in calibrating the CAA's judgement for Q6. Despite the very challenging macroeconomic environment for aviation over this period, HAL was able to raise significant debt finance during Q5 and could also sell two minority equity stakes at a premium to its RAB.

45. It is important that, once the level of the WACC is set, HAL is able to attain this level of profitability if it meets the other price control assumptions, particularly relating to efficiency and service quality. The CAA notes that actual returns to equity were low compared to the Q5 assumption. However, this mainly reflected a variance in actual traffic to the traffic forecast used for Q5. For Q6, both HAL and the

airlines have worked together constructively to improve the methodology for traffic forecasting. Importantly, unlike for Q5, the CAA's traffic assumption includes an allowance for traffic shocks. The new licensing framework also enables the CAA to revisit the price control within the five year period, if key assumptions such as traffic are significantly out of line with projections. Both of these factors represent a change compared to Q5.

46. The CAA proposes to retain its notional gearing assumption of 60% debt finance and 40% equity finance. The CAA recognises that HAL's actual gearing is higher than this. However, the notional gearing is consistent with the principle that capital structure is a matter for the company and therefore HAL, rather than users through the CAA adjusting the price caps, should bear the risks of financial failure and distress.

47. Considering all these factors, the CAA's initial proposal for HAL's WACC is to set it at 5.35% in pre-tax real and to apply this to the RAB. The CAA has taken into account determinations made by other economic regulators. The CAA notes that its WACC assumption places HAL slightly above the assumption that Ofgem used recently for gas distribution and transmission companies, but below the level which Ofcom has recently adopted for BT's wholesale business.

48. One challenging issue is how to treat the cost of debt in light of the uncertainty over how long current market circumstances can be expected to continue. The CAA proposes to explore further whether it should introduce some form of debt indexation.

49. The CAA has assessed the financeability of its initial proposals and has concluded that HAL is financeable given the notional financial structure assumed. With these assumptions, the CAA considers that HAL can continue to maintain a solid investment grade credit rating.

50. Recognising that capital structure is a matter for HAL and that users ought not to insulate shareholders from financial distress through price rises, the government has been keen for the CAA to consider how to use the HAL licence to strengthen HAL's financial resilience. In particular, the government has been keen for the CAA to consider some of the measures that are commonly seen in other sectors.

51. HAL's securitised debt structure contains a number of contractual protections, which, in effect, ring fence the business from certain risks. The additional value that users will gain if the CAA introduces a full regulatory ring fence is therefore relatively low, especially if such a measure requires a costly refinancing by HAL. Nevertheless, the CAA proposes to use the licence to introduce some measures aimed at strengthening HAL's financial resilience, such as a requirement to develop a continuity of service plan in the event of financial distress.

CAA's initial proposals for Q6 price caps

52. The CAA has had to reach some judgements on other items that contribute to the price caps, such as the traffic forecast, the capital budget, and levels of other charges and revenues. The CAA's initial proposals in these areas contain some changes from HAL's business plan, but these do not affect the level of prices as significantly as the assumptions above on opex and WACC.

53. Taking all the inputs together, the CAA proposes a maximum average price cap of **RPI-1.3% per year in Q6**. The CAA acknowledges that this cap could be profiled in alternative ways throughout the course of Q6 and will it consider this further in preparing its final proposals.

54. The CAA's primary duty includes, where appropriate, carrying out its functions in a manner that it considers will promote competition in the provision of airport operation services. The CAA has reviewed how HAL's prices compare with a peer group of airports. Notwithstanding the difficulties in making such comparisons, Heathrow is a relatively expensive airport compared to the hub airports in Amsterdam and Frankfurt, though it is similar to Paris. In this context, it appears reasonable for HAL's prices to rise by a small amount below the level of RPI inflation for the next five years.

The CAA's initial proposals set minimum service standards passengers can expect from HAL

55. HAL has improved service quality considerably since the start of Q5. Its passenger satisfaction scores (measured by the Airport Service

Quality (ASQ) index) have increased over the period. For example, in the first quarter of 2007, HAL's average ASQ score was regularly below 3.5 (out of 5). Since then, it rose steadily over Q5 to exceed 3.9 by the end of 2012.

56. It is noticeable that there remains a variance between the different terminals. Terminal 5 received the highest passenger satisfaction score. HAL and the airlines expect the new Terminal 2 to improve further the average score when it opens in 2014.

57. HAL has also improved its performance against the CAA's regulatory standards under the Service Quality Rebate (SQR) scheme. This has especially been in the areas of security queues, wayfinding and cleanliness of the terminals. HAL is now receiving bonuses under its Q5 price control for its service quality performance levels above certain standards. Nevertheless, HAL is also paying the airlines rebates in some areas, such as departure longue seating availability in Terminal 3.

58. The CAA is pleased to note that both HAL and the airlines have acknowledged that the Q5 quality of service standards have helped improve HAL's performance in passengers' interests. Both HAL and the airlines have agreed that the Q5 SQR scheme should provide a basis for the Q6 arrangements. Both HAL and the airlines have suggested refinements and evolutions to this scheme.

59. The CAA has considered the appropriate arrangements for service quality during Q6 against its own independent research into passengers' preferences. The key finding was that airport service quality is not a key driver behind passenger airport choice. It sits significantly below the cost and convenience of getting to the airport, airline route availability and the price of the flight. The overriding concern for departing passengers once at the airport is that they depart on time, or, for arriving passengers, that they leave the airport promptly once their flight arrives.

60. In July 2012, the CAA added a question to the CAA's own Passenger Survey asking passengers to rate their overall experience in the airport terminal. The provisional results for the second half of 2012 indicate that the majority of passengers rate their experience as "good" or "excellent" (from 83% in Terminal 1 to 89% in Terminal 5 based on 40,000 responses across the airport). In winter 2012/13, the

CAA conducted a further, one-off survey of passenger satisfaction with airport processes (1,500 passengers at Heathrow, including departing, arriving and connecting passengers). This indicated that the majority of passengers had a perceived queue time quicker than that which they deemed to be reasonable, and that the majority of passengers did not identify a single source of dissatisfaction.

61. Broadly speaking, this suggests that regulatory incentives should be aimed at consolidating recent performance improvements rather than at driving HAL to invest in service quality levels for which passengers would not be prepared to pay.

62. In the context of improving passenger experience more generally, the CAA fully supports HAL's commitment to continuous improvement but does not consider that this will be aided by expanding the regulatory incentives much further.

63. The CAA considers that HAL should be incentivised to continue to improve the equivalence of experience between terminals so that one group of airlines does not gain an enduring advantage over another group of airlines. Although the CAA recognises that this might pose some challenges where the different terminals have different ages and physical configurations, it considers that the target of a common baseline is a reasonable passenger expectation, since airport charges do not differentiate by terminal service proposition.

64. In summary, the CAA's initial proposal is to retain the SQR scheme for Q6 but to make a number of changes.

65. One evolution that the CAA proposes to introduce, and that is supported by HAL and the airlines, is to raise the targets applying to connecting passengers and harmonise the direct passengers' and connecting passengers' security queuing standards. Relaxing the standard on queue times in central search slightly, while improving the queue time for transfer search, will achieve this. The CAA expects this can occur in a way that will be cost neutral. It should also improve the experience of transfer passengers without significantly affecting the satisfaction of direct passengers.

66. The CAA proposes that standards for the other SQR elements, such as those related to passenger satisfaction levels with certain issues such as wayfinding, cleanliness, and flight information should in the

main reflect the performance levels that HAL was able to achieve in December 2012. This will help to consolidate the improvements HAL made in Q5.

67. The CAA proposes that the level of the rebates to airlines allocated to HAL's performance will remain the same as during Q5, at 7% of airport charges per year. However, the CAA proposes to reconfigure the way that bonuses are paid, to avoid HAL receiving bonuses from the start of Q6. Instead, the CAA proposes to provide HAL with an opportunity to receive bonuses should it achieve an acceptable minimum baseline performance across all the terminals.

68. The CAA proposes to remove bonuses from two SQR elements where HAL has been able to meet the standard easily. This reduces the overall maximum bonus from 2.2% of airport charges per year to about 1.4%. The CAA invites views on whether and how this unallocated bonus potential should be used to incentivise HAL's performance in other areas within the current SQR, or whether the levels of rebates should be reduced proportionately to keep the balance of the incentive package similar compared to Q5.

69. The CAA proposes to simplify the way in which HAL presents performance reporting against the SQR scheme to passengers in its terminals. The CAA will also consider information disclosure more generally later this year when it consults on its policy for using its new information powers under the Act. This consultation will cover more parties than just airport operators and could include the airlines and others such as groundhandling agents.

The CAA's initial proposals include measures to strengthen HAL's operational resilience to help reduce the negative impacts on passengers from service disruption

70. The passenger experience from service disruption is one area not covered well by the existing SQR scheme. It is also not covered in depth by existing passenger survey research. Nonetheless, passenger experience at Heathrow over the past couple of years when faced with some adverse weather events such as snow has

fallen short of what some passengers might reasonably expect. This is a significant risk at Heathrow, given that it is operating so close to full capacity and so bottlenecks can quickly result from even short-term service disruption. The CAA therefore intends to use HAL's licence to strengthen its approach to planning for service disruption and its response to passengers in the event of service disruption.

71. The CAA recognises that ensuring operational resilience and dealing with passenger disruption is a task that goes beyond HAL and includes responsibilities on airlines and other parties such as groundhandling agents, retail concessionaires, NATS Services Limited (NSL), and surface access providers. The HAL licence can only impose obligations on HAL as the regulated company.

72. The CAA has developed a draft licence condition that embodies the following principles to ensure that HAL:

- has effective plans in the event of service disruption, no matter what the cause, that have been drawn up with relevant third parties;
- ensures that it has effective collaborative and governance mechanisms, enabling it to work with third parties in the interests of passengers; and
- manages the impact of disruption on passengers by providing relevant and timely information.

The CAA's initial proposals include a new economic licence for HAL that will enable the CAA to respond more effectively to passenger risks

73. The CAA has developed a draft licence for HAL to apply from 1 April 2014. This follows the CAA's work for Department for Transport (DfT) on an indicative licence, which was published in January 2012. The draft licence has been prepared by benchmarking approaches in other economic regulated sectors in the UK. It is currently structured as follows.

- Part I: Scope and Interpretation of the Licence. These terms define the airport operator, airport area and points of interpretation.

- Part II: Condition on fees and revocation. These conditions enable the licence to be operational and govern the arrangements for payment of fees to the CAA and licence revocation.
- Part III: Price control conditions. These conditions will give legal effect to the CAA's final decisions on this issue, as well as any relevant conditions on issues such as capital efficiency and transparency and consultation requirements.
- Part IV: Service quality conditions. These conditions give effect to the SQR scheme and the CAA's policy on strengthening HAL's operational resilience.
- Part V: Financial conditions. These conditions relate to HAL's obligations to produce regulatory accounts and certain obligations to improve its financial resilience, such as by maintaining a continuity service plan.
- Part VI: Other conditions. There may be some potential licence conditions that the CAA could pursue, such as provisions to revisit the price control settlement within the period if there is a significant, unforeseen change of circumstances.

74. The CAA will develop the HAL licence over the course of 2013. In doing so, it will work closely with HAL, the airlines and other stakeholders. Unlike the regulatory settlement for Q5, the licence enables the CAA to respond to risks in the course of Q6.

75. The CAA considers that establishing the basic architecture should be the main priority for the licence before April 2014. Therefore, it does not aim to cover all possible issues. The CAA will need to consider which issues should be regarded as a priority for April 2014 and which issues should be considered after this date.

76. The CAA is required to ensure that any new licence obligations are transparent, accountable, proportionate, consistent and targeted. This includes adopting, where appropriate, so-called 'sunset' provisions to ensure that parts of the licence do not become out of date and can be refreshed, modified or removed in light of the interests of passenger and market circumstances.

Incentives to enhance capital efficiency

CAA review of HAL's capital efficiency in Q5

77. During Q5, the CAA commissioned a study to assess HAL's capex efficiency on a number of key projects. Broadly speaking, the report found that HAL's approach was reasonable in a number of areas. However, it did conclude that one project in particular did experience problems that HAL should have reasonably foreseen and mitigated. This was the project for Terminal 3 Integrated Baggage (T3IB), in which the consultants concluded that inefficiencies including via procurement processes resulted in about £30 million in excess costs. Once spent, capital costs go into the RAB. There is, therefore, a risk that HAL will be rewarded for this inefficiency and hence the CAA proposes an adjustment to the amount that will be added to the RAB in Q6 to reflect this.

Improving HAL's capital efficiency in Q6

78. The CAA is keen to use the new licensing framework to introduce a more flexible approach to regulating capex. Traditionally, the entire capital budget had to be known at the start of the price control period although the business cases of the capital programmes and projects were at varying levels of maturity. This introduced risk and inevitable tension around the regulatory settlement. The CAA welcomes the progress made by HAL and the airlines in helping the CAA develop a better way to regulate capex by having two capital budgets: core and development.

79. The core budget will be included in the baseline Q6 price cap. It will cover projects that are suitably advanced and which can be scoped and costed with reasonable confidence. Other projects that do not meet these tests will go into the development budget. Projects will move from the development budget to the core budget once the business case evaluation is sufficiently mature.

80. The CAA will consider whether this approach could be supplemented by introducing a licence condition to ensure that all major projects are procured at best value (perhaps by using a competitive tender process).

A commitment to continue to work closely with all stakeholders

81. The CAA welcomes feedback from stakeholders on its initial proposals contained in this document. It will reflect on this feedback and produce final proposals in October 2013. The CAA recognises that HAL and the airlines have very different commercial incentives in relation to Q6 price caps. The CAA looks forward to continuing to work with them, and other stakeholders, in pursuit of a regulatory settlement that it considers is best calculated to further the interests of users.

CAA

April 2013

CHAPTER 1

Introduction

Purpose of this document

1.1 This document sets out the CAA's initial proposals for the economic regulation of HAL from 1 April 2014 (Q6). The CAA is making these initial proposals pursuant to its powers and duties in the Act. Part 1 of the Act came into force on 6 April 2013 and replaces the framework for airport economic regulation under the Airports Act 1986 (AA86) that has governed all previous quinquennial reviews.

1.2 The CAA welcomes views on its initial proposals contained within this document by **no later than 25 June 2013**. The CAA cannot commit to take into account representations after this date. The CAA will also be consulting on its final proposals in October 2013. Given the timescales for the consultation on the final proposals are likely to be short, the CAA would ask stakeholders to ensure that they provide all information that they consider relevant in response to the initial proposals. The CAA reserves the right not to take into account information, or place less weight on information that is provided after 25 June 2013 that could have been provided earlier.

1.3 The CAA has published alongside this document a number of documents that may also be of interest to stakeholders. These include the CAA's summary of its 'minded to' position on whether HAL satisfies the MPT in the Act in relation to an airport area at Heathrow. The CAA has also published a number of independent consultant reports that it commissioned to support its initial proposals. All these reports can be obtained from the CAA's website.[5]

1.4 The CAA has reflected views from stakeholders based on their submissions to the CAA: most of these submissions were in written form and have been published on the CAA's website; some submissions have been made in bilateral and multi-lateral meetings. The CAA has endeavoured to check the accuracy of all these attributed statements. Should any stakeholder consider that the

[5] www.caa.co.uk

attributed statement does not reflect their previous submissions to the CAA, it is open to the stakeholder to raise this in their response to this document.

1.5 References in this document to 'the airlines' mean views submitted to the CAA by the representative body for airlines for the purposes of CE. In the case of Heathrow, it means the London Airline Consultative Committee (LACC). The CAA acknowledges that the views of individual airlines may differ on particular issues.

1.6 This is a redacted version of the CAA's initial proposals. Some information has been removed at the request of HAL on the basis that it is commercially confidential. Redactions are clearly marked. In accepting redactions for the purposes of this document, the CAA reserves its right to revisit its position for its final proposals.

1.7 The price base used in this document is 2011/12 prices unless otherwise stated.

Questions for stakeholders

1.8 The CAA would welcome feedback on any aspect of these initial proposals. It recognises that some stakeholders have more resources than others to engage with the detail. That said, it is important the initial proposals are seen as package. Hence, the CAA would especially welcome feedback from stakeholders on the following strategic questions.

- Does the proposed cap on increases in airport charges of RPI-1.3% per year represent a fair but challenging target for HAL?
- Is the CAA's approach to strengthen incentives on HAL consistent with, and proportionate to, users' interests? These incentives include those related to opex efficiency, capex efficiency, service quality and operational resilience.
- Is the CAA's approach to developing the initial licence for HAL reasonable?

1.9 The CAA is currently working with DfT to assess the effects of the Airport Economic Regulation provisions contained in the Act. In order to assist with this process, the CAA invites views from stakeholders on

the following question.

- What do you expect the CAA to undertake for Q6, using its powers under Part 1 of the Act, which it could **not** have undertaken using its powers under Part 4 of the AA86? In particular, are there any benefits/costs in relation to future opex, capex and the WACC?

Contact details for your response

1.10 Please email your response to airportregulation@caa.co.uk. If you would like to discuss informally with the CAA any aspect of this document, please contact Peter John (peter.john@caa.co.uk) or Tim Griffiths (tim.griffiths@caa.co.uk).

1.11 Where responses, business plans or other submissions include estimates of the price cap, building blocks or similar financial information, such estimates and information should be expressed in 2011/12 prices.

1.12 The CAA will publish responses to this consultation on its website shortly after the close of the consultation period. If there are parts of your response that you consider commercially confidential, please mark them clearly as such. Please note that the CAA has powers and duties with respect to information disclosure that can be found in section 59 and Schedule 6 of the Act and in the Freedom of Information Act 2000.

Next steps

1.13 Following its review of responses to this consultation, the CAA will issue final proposals for consultation in October 2013, and the formal notice in relation to the proposed licence and its conditions under section 15(1) of the Act in December 2013. Following this, the CAA will issue the licence and final conditions under section 15(5) of the Act in January 2014 before the new arrangements come into force on 1 April 2014.

1.14 The planned period for representations on the December 2013 notice reflects the extensive consultation that will by that stage have taken

place on the substantive content of the licence. The CAA would particularly welcome comments within this consultation period on whether the licence conditions correctly reflect the final proposals and whether they are workable and clear from a technical perspective. The Act specifies that, if the conditions included in the licence granted in January 2014 differ significantly from those proposed in the notice in December 2013, the CAA must reconsult on the changes. The CAA would expect any changes between the formal notice under section 15(1) and the final licence and conditions in January 2014 to be limited to minor technical changes that may be necessary to make the licence and its conditions fully workable. If any substantive changes are required, the CAA would need to reconsult in early January 2014.

1.15 In July 2013, the CAA Board will again invite HAL and airline representatives to present their views on the appropriate future level for HAL's charges.

1.16 The CAA intends to update its work and commission further consultancy support as required. It will continue to engage regularly with HAL and the airline community to help improve its understanding of their respective positions.

CHAPTER 2

Context for the CAA's initial proposals

2.1 This chapter sets out the process that has shaped the CAA's initial proposals, the relevant statutory context under the Act, a discussion about the most appropriate form of regulation for HAL, and the influence of CE on the CAA's thinking.

The process that has shaped the CAA's initial proposals

2.2 The CAA's initial proposals have been informed by a number of factors including:

- previous significant CAA consultations in July 2011 and May 2012, designed to establish the key issues of concern to stakeholders and explore the interpretation of the CAA's new duties under the Act; [6]
- the CAA's 'minded to' view on whether HAL passes the MPT in the Act to warrant continued regulation after April 2014;
- a process of CE between May 2012 and December 2012, overseen by the CAA, whereby HAL and the airlines discussed all the main building blocks for the calculation of future airport charges. This process culminated in a report to the CAA signed jointly by the HAL and airline co-chairs of the Heathrow Joint Steering Team (JST);
- a stakeholder session with the CAA Board in February 2013, at which both HAL and representatives from the Heathrow airline community explained their respective positions on Q6;

[6] CAA, Consultation - Q6 Airport Price Controls - Consultation on the Q6 Airport Price Controls - July 2012, available at: http://www.caa.co.uk/default.aspx?catid=2162&pageid=12352.

CAA, Review of Price regulation at Heathrow, Gatwick and Stansted Airports ("Q6") Policy update May 2012 http://www.caa.co.uk/docs/5/Q6PolicyUpdate.pdf.

- written representations received from stakeholders in the course of the CAA's process and regular meetings with stakeholders. Some of these meetings were bilateral and some meetings were trilateral. Some stakeholders have given the CAA consultancy studies that they have commissioned;
- an IBP from HAL in July 2012 and FBP in January 2013, setting out its view on the appropriate price profile for Q6 and its projections for the building blocks for calculating this price profile;
- several independent studies[7] commissioned by the CAA on the efficiency and appropriateness of HAL's business plan projections. (see figure 2.1); and
- advice from the CAA Consumer Panel.

Figure 2.1: Independent consultancy studies commissioned by the CAA

Topic	Consultant
Cost of capital	PwC
Scope for future efficiency gains at Heathrow, Gatwick and Stansted	CEPA
Q6 capex review	Alan Stratford Associates
Assessment of maintenance and renewal costs at Heathrow and Gatwick	Steer Davis Gleave
Assessment of commercial revenues at Heathrow and Gatwick	Steer Davies Gleave
Other operating expenditure at Heathrow and Gatwick	Steer Davies Gleave
Central support costs	Helios
Comparing and capping airport charges at regulated airport	Leigh Fisher
Employment cost study at Heathrow, Gatwick and Stansted	IDS Thomson Reuters
Q5 capex and consultation review, Heathrow	Alan Stratford Associates

Source: CAA

[7] These studies are available at: http://www.caa.co.uk/default.aspx?catid=78&pagetype=90&pageid=14279

Statutory context to the CAA's review

2.3 The Act creates a new framework to govern the application of economic regulation to the airport sector. In essence, it modernises the previous arrangements and brings the CAA's duties and powers into line with modern regulatory best practice. Under the revised framework, the CAA has a new primary duty focused on the interests of passengers and those with rights in cargo. The scope of this duty concerns the range, availability, continuity, cost and quality of airport operation services. The CAA must carry out its functions, where appropriate, in a manner that will promote competition in the provision of airport operation services.[8] The Act enables the CAA to regulate through a flexible licensing approach. Figure 2.2 below lists the CAA's statutory duties under the Act.

Figure 2.2: CAA statutory duties under the Act

S1	CAA's general duty
(1)	The CAA must carry out its functions...in a manner which it considers will further the interests of users of air transport services regarding the range, availability, continuity, cost and quality of airport operation services.
(2)	The CAA must do so, where appropriate, by carrying out the functions in a manner which it considers will promote competition in the provision of airport operation services.
(3)	In performing its duties under subsections (1) and (2) the CAA must have regard to: (a) the need to secure that each holder of a licence...is able to finance its provision of airport operation services in the area for which the licence is granted, (b) the need to secure that all reasonable demands for airport operation services are met, (c) the need to promote economy and efficiency on the part of each holder of a licence...in its provision of airport operation services at the airport to which the licence relates, (d) the need to secure that each holder of a licence...is able to take reasonable measures to reduce, control or mitigate the adverse environmental effects of the airport to which the licence relates, facilities used or intended to be used in connection with that airport…and aircraft using that airport, (e) any guidance issued to the CAA by the Secretary of State..., (f) any international obligation of the United Kingdom notified to the CAA by the

[8] Airport operation services are further defined in the Act at section 68.

S1	CAA's general duty
	Secretary of State..., and (g) the principles in subsection (4).
(4)	Those principles are that - (a) regulatory activities should be carried out in a way which is transparent, accountable, proportionate and consistent, and (b) regulatory activities should be targeted only at cases in which action is needed.
S104	Regulatory burdens
	The CAA also has a duty not to impose or maintain unnecessary burdens while performing its regulatory functions under Chapter 1 of Part 1 of the Act.

Note: In performing its duties under section 1(1) and 1(2) of the 2012 Act the CAA must have regard to any international obligations of the UK notified to it by the Secretary of State. On 12 April 2013 the CAA was notified of the following international obligations, as they affect charges on airlines: Article 15 of the Chicago Convention; Air services agreements in force between the EU and its member states and any third country or countries; and Air services agreements in force between the UK and any third country or countries. These same obligations applied to the CAA in previous price control reviews conducted under the AA86.

Who should be regulated?

2.4 The Act prohibits an operator of a dominant airport area from charging for airport operation services, unless it has a licence granted by the CAA. An airport area is dominant if the CAA determines (and publishes) that the MPT is met in relation to the area by the relevant operator. The MPT has three parts:

- that the relevant operator has, or is likely to acquire. SMP in a market, either alone or taken with such other persons as the CAA considers appropriate;
- that competition law does not provide sufficient protection against the risk that the relevant operator may engage in conduct that amounts to an abuse of that SMP; and
- that, for users of air transport services, the benefits of regulating the relevant operator by means of a licence are likely to outweigh the adverse effects.

2.5 The CAA has published a summary of its 'minded to' position alongside this document. It considers that the MPT is met in relation

to, at least, the core area of Heathrow and this is likely to endure over the period April 2014 to March 2019. The CAA will publish its full MPT document at the end of May 2013.

2.6 The CAA may include licence conditions that it considers are needed to prevent the risk of abuse of SMP as well as any other condition that it considers is needed to further the interests of users of air transport services and, where appropriate, promotes competition in, or the provision of airport operation services. In particular, the CAA may include a price control licence condition that regulates prices either by specifying or by approving the maximum amount that the operator may charge, if the CAA considers such a condition is necessary or expedient having regard to the risk of abuse of SMP.

2.7 HAL and the airlines have standing to appeal the CAA's January 2014 decision on licence conditions to the CC subject to certain qualifying criteria being met. In the event of an appeal that meets the qualifying criteria the CAA's decision will stand until the CC determines the appeal, unless it has granted interim relief or the appeal relates to specific financial arrangements. While CC appeals should normally be determined within 24 weeks, this can be extended if a relevant appeal (on the MPT) to the Competition Appeal Tribunal (CAT) is ongoing.

2.8 In deciding how to regulate an airport operator, the CAA is required to follow its duties set out in the Act. In addition to its primary duty explained above, the CAA must also have regard to a range of other matters. These include the need for each airport operator to finance the provision of airport operation services in its licence area; and better regulation principles.

Cargo

2.9 The CAA's primary duty includes furthering the interests of those with rights in cargo. Around 95% of the cargo by weight that is flown in or out of Heathrow is carried in the bellyhold of passenger carrying aircraft. The interests of passengers and those with rights in cargo are, therefore, closely aligned as much that affects the cost or quality of service provided to passenger aircraft, such as the provision of runways, taxiways, air traffic services and aircraft stands, would have an impact on both passengers and those with rights in cargo.

2.10 Cargo only flights at Heathrow account for 0.5% of movements.

There is currently a condition that requires HAL to charge non-passenger carrying flights (such as all-cargo services) no more than it would charge an equivalent passenger carrying flight.

2.11 In the light of these characteristics, the CAA's analysis of user interests as part of its primary duty is confined to the interests of passengers.

Form of regulation for HAL

2.12 The CAA's initial proposals for HAL are based on a Regulatory Asset Base (RAB) methodology, using a 'single-till' approach. There are several reasons for why the CAA considers this to be the most appropriate form of regulation for HAL in Q6.

Regulatory Asset Base

2.13 First, the CAA considers this form of regulation is appropriate given HAL's degree of market power. The RAB is a well-known model for regulation for organisations have SMP. For example, it used in regulated sectors such as energy, water, rail, and wholesale telecommunications.

2.14 Second, the RAB approach is appropriate where there is a requirement to ensure that there is a well-understood way of balancing the needs of users today and users in the future. This is because the RAB approach ensures that airport prices should be no more than the minimum needed to remunerate an efficient airport operator, whilst ensuring a fair return on investment. Appropriate investment in facilities for the benefit of future passengers can be remunerated from present revenues. This helps to underpin investor confidence in HAL. Given the significance of HAL's previous investments and its continuing need for significant investment in Q6, the CAA considers the RAB to be the most appropriate form of regulation.

2.15 Third, the CAA notes that there appeared during the business planning for CE to be high-level of consensus between HAL and the airlines that the calculation of maximum price caps should be based on a RAB-based single till methodology. The HAL business plans were prepared on this basis as were responses from the airlines.

2.16 Fourth, the CAA has consulted with stakeholders, including HAL and the airlines operating at Heathrow, about alternative forms of regulation. However, there appears a broad consensus that none of these alternatives would be as effective as a RAB-based approach for Heathrow.

2.17 Neither HAL nor the airlines have discussed the possibility of voluntary airport price commitments (as have been suggested by Gatwick Airport Limited (GAL) for Q6). Given the CAA's views on HAL's market power, and the reasons discussed above for continuing with a RAB-based price cap for HAL, the CAA does not consider voluntary airport price commitments would be a suitable form of price regulation for HAL in Q6.

Single till

2.18 The CAA continues to consider that the single till approach remains appropriate for HAL. The CAA notes that this was the basis of HAL's business plans and the responses from the airlines. There was a significant debate during previous regulatory reviews about the use of the single till.[9] The CAA considers that there are strong arguments in favour of continuing with this approach.

- It replicates what is commonly seen in competitive airport markets by deriving a net revenue requirement from airport charges after deducting a contribution from commercial revenues and other charges.
- Historically under the single till there have been adequate investment incentives for the airport operator. Likewise there appear to be limited distortions to the wider UK airport industry where the CAA observes a number of airports investing substantially in infrastructure.[10]

[9] The single till approach was discussed in detail in the Q4 regulatory process and the issue was considered again in Q5. On both occasions the CC, CAA and stakeholders considered the single till was the appropriate approach.

[10] CAA notes that Birmingham, Gatwick, Heathrow, Luton, and Southend have proposed to or are undertaking significant airport development work.

- While a 'dual till' approach may improve efficiency in terms of capacity utilisation the gains are likely to be marginal even at capacity constrained Heathrow.[11] The CAA further notes that airports facing a single till are setting their charging structures flexibly so as to incentivise efficient capacity usage.
- The single till recognises the complementarities that are present across airport operation.
- Through the single till there are currently benefits that arise to users. Through the offsetting of commercial revenues, aeronautical charges to airlines are reduced and this is likely reflected in lower average airfares for passengers. Moving away from this would mean a substantial transfer of income ultimately from users to the airport.

2.19 There are benefits in terms of regulatory efficiency, transparency and simplicity. Under dual till regulation the CAA would need to consider in detail the scope for regulation over non-aeronautical activities. There would also need to be significant effort expended in allocating cost, revenues and capex to the various baskets of products that would be formed. Both of these are likely to significantly increase the regulatory burden placed on the operator and other stakeholders. It could also make the regulatory process less transparent for users.

2.20 The CAA has undertaken a 'minded to' assessment of the market power that HAL holds for airport operation services[12] in the core airport area. The core airport area is defined by the Act as the "land, buildings and other structures used for the purposes of the landing, take off, manoeuvring, parking, and service of aircraft at the airport, the passenger terminals and the cargo processing areas".[13] This includes airport charges and other aeronautical services the detail of which is set out in the product bundle of the HAL market power assessment.[14] If an airport operator has SMP over the core airport

[11] Competition Commission report, BAA Ltd: A report on the economic regulation of the London airport companies (Heathrow Airport Ltd and Gatwick Airport Ltd), November 2007, available at http://www.caa.co.uk/default.aspx?catid=5&pageid=8779.

[12] As defined in section 68(1) and section 68(3)(a) of the Act.

[13] Section 5(4).

[14] The CAA's summary of its 'minded to' view on whether HAL passes the MPT can be obtained from the CAA's website: www.caa.gov.uk.

area, it would therefore have SMP over airport charges and other aeronautical services, the detail of which is set out in the product bundle of the HAL market power assessment. The CAA is not required to cover all airport operation services in its assessment. However, using a single till approach, the CAA would seek to take account of revenues from these services in setting regulatory controls on airport charges as it does at present.

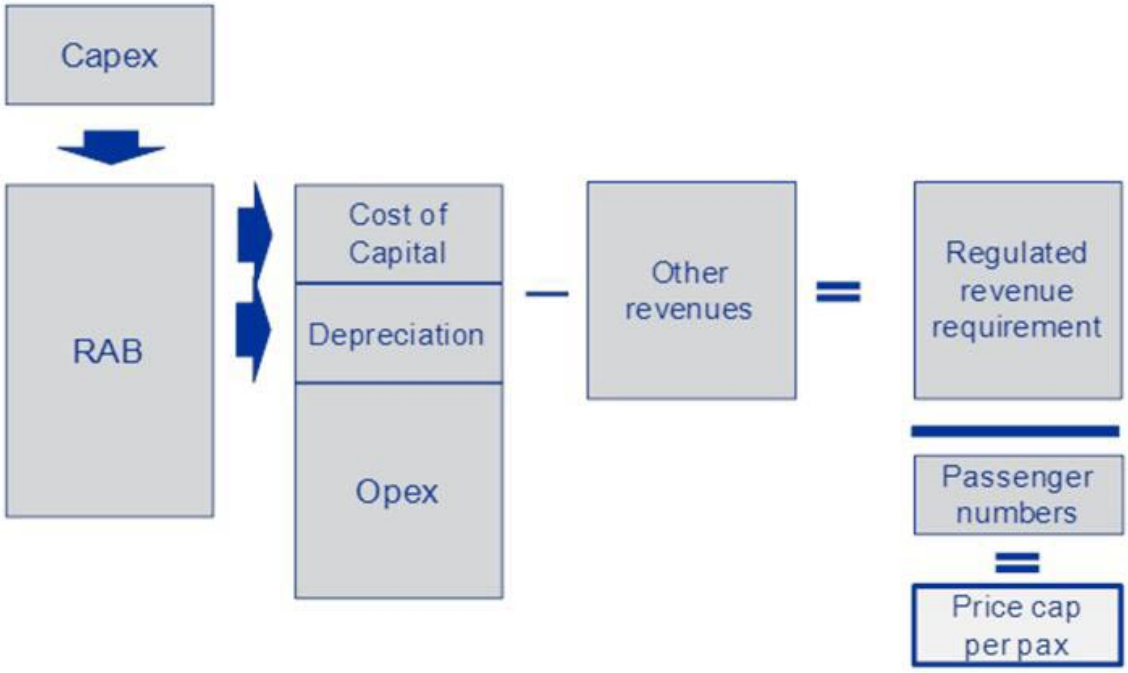
2.21 Under its general duty in section 1(1) of the Act the CAA must carry out its functions in a manner that it considers will further users' interests. Where a licence is issued, under section 18(1)(b) the CAA can include such other conditions that it considers necessary or expedient having regard to its general duty and, under section 21(1)(f), provisions relating to activities carried on outside the airport area for which the licence is granted. These conditions and provisions do not need to be supported by a separate MPT under the Act.

2.22 Overall the CAA considers that the single till methodology for Q6 is in the users' interests.

Components of the price cap for Q6

2.23 There appears broad consensus between HAL and the airlines that the CAA should continue to calculate the price cap in relation to a maximum average revenue yield per passenger. The calculation of the price cap involves a number of 'building blocks' as shown in figure 2.3. This document sets out the CAA's initial proposals on each of these components.

Figure 2.3: Building blocks to calculate the HAL price cap



Source: CAA

Duration of the price control for Q6

2.24 During CE and in their submissions to the CAA, both HAL and the airlines assumed that the price control period would remain at five years, with 31 March year ends. For this reason, the CAA's initial proposals for the price cap are on a five year basis.

2.25 HAL has requested that the CAA consider changing the regulatory year end from 31 March to 31 December to align it with HAL's year end for statutory accounting purposes. HAL's FBP proposed aligning the periods by means of reducing the initial 'year' of Q6 to nine months, meaning that Q6 would be composed of an initial nine month period (1 April 2014 to 31 December 2014) followed by four years to 31 December 2018. The CAA's initial view it that it would not be appropriate, at this stage in the process, to increase Q6 to five years and nine months because the nine month period after April 2019 has not been subject to CE nor included in submissions to the CAA. However, it welcomes views from stakeholders on this.

2.26 The CAA invites stakeholders' views on HAL's request to change the regulatory year end. The CAA sees merit in aligning the regulatory year end (currently 31 March), statutory accounts year end (currently

31 December) and the charging year end (currently 31 March), although the CAA notes that it creates one off costs. If the CAA were to make the change, it would expect the 31 December year end to remain in place for the foreseeable future. The CAA would consider introducing a licence condition that stipulated the year end for regulatory, statutory account and charging purposes.

2.27 The CAA notes that, in order for the CAA to make such a change, it will require all further submissions that include estimates of building blocks to be both on a nine month and four year basis and on a five year basis. Since the year end issue has not been resolved, the CAA has not included specific price control formulae in the current draft of HAL's licence.

Influence of Constructive Engagement

2.28 The objective of CE was for HAL and the airlines to work together to try and agree inputs to the CAA's Q6 price control reviews, or else to be very clear where differences of opinion lay. The CAA established a formal process for CE by issuing a detailed mandate in April 2012.[15] The CAA conducted a mid-CE review in September 2012 and issued further guidance to the parties for the remainder of CE.[16]

2.29 Compared to Q5, CE has been a much more extensive process covering all elements of the price control building blocks. In December 2012, the co-chairs of the JST provided the CAA with a detailed CE report The CAA held a number of post CE meetings in January 2013 with both HAL and airlines to discuss the outputs of CE, explore whether any differences could be narrowed further, and fully understand any differences of opinion.

2.30 The CAA acknowledges that CE at Heathrow has worked well in Q6. Both HAL and the airlines have committed to CE and this has enabled a mature dialogue to take place. There has been increased transparency of information from HAL over that experienced in Q5 – this has been welcome development to the airlines and the CAA.

[15] CAA,CAA Mandate for Constructive Engagement, April 2012, available at: http://www.caa.co.uk/docs/5/HeathrowCEMandate.pdf .

[16] CAA letter to HAL, 5 October 2012.

2.31 A large number of airlines participated in CE and it has provided a valuable input into the CAA's initial proposals as set out in this document. The CAA is pleased to note that the process itself was run smoothly (with efficient document and record keeping) and was assisted by the parties appointing an independent facilitator.

2.32 The CAA is pleased to note that HAL and the airlines have agreed on a long-term vision for the airport: "The UK's direct connection to the world and Europe's hub of choice by making every journey better". This vision was developed further during CE. CE also helped refine the next phase in moving towards the agreed master plan for the long-term development of the airport. The CAA is also pleased to record that HAL and the airlines were able to agree some common joint passenger priorities for Q6. These included delivering a noticeably better passenger experience, improving resilience, ensuring hub capacity and driving efficiency.

2.33 The clarity on joint priorities, service propositions and a supporting set of passenger principles has enabled the Q6 workstreams to make good progress and developed the joint thinking on what is important for the passenger in Q6. For example, there was general agreement between HAL and the airlines of the need to enhance the experience for the passenger further during Q6, through an increased focus on resilience to improve punctuality.

2.34 Sufficient hub capacity will be required to cater for the changes in airlines' fleet mix as the next generation of aircraft come into service. This will be achieved through a combination of technology, collaboration, and infrastructure development. These factors have influenced the shape of the capital plan for Q6.

2.35 HAL and the airlines made significant progress, and arrived at a shared understanding, if not total agreement on a number of areas critical for future service delivery. These included improvements to the methodology for forecasting future passenger traffic; the size and scope of the capex budget (which HAL estimates at £3 billion for the period); commercial revenues; capex efficiency measures; and the nature of the regulated service quality incentives. New regulatory concepts such as the separation between a core and development capex programme also emerged from the Heathrow CE process.

2.36 Despite this significant progress when compared with Q5, HAL and

the airlines were not able to reconcile during CE a substantial difference of opinion on the critical aspect of the maximum level of HAL's charges for Q6. Given commercial incentives, failure to agree future prices is not surprising. However, the cumulative difference between HAL's and the airlines' positions remains stark.

2.37 HAL's FBP included a Q6 price profile that would see prices rise by 5.9% per year above inflation, measured by RPI. HAL argues that this level of prices is consistent among other things with its views on rebasing the price control for the reduction in passenger traffic compared to the forecast upon which the Q5 settlement was based; its view on the appropriate WACC to reward past investment and encourage new investment; and its level of opex and efficiencies expected.

2.38 By contrast, the airline community appears fairly united in the view that the Q6 settlement needs to be affordable to avoid airlines and their passengers being negatively impacted by excessive rises in airport charges, in an expected competitive and economic environment for airlines that will remain extremely challenging. The airlines have significant concerns over the projections used by HAL to calculate its price profile, especially in relation to opex and the WACC. Using airline assumptions for these and other items could significantly reduce the maximum price profile compared to HAL's FBP. One analysis prepared by BA would imply a price profile of RPI-4 to RPI-5% per year, though BA has since argued[17] that a price profile of RPI-9.8% is more appropriate.

2.39 The CAA does not regard its regulatory role at Heathrow as brokering agreement between stakeholders where fundamental commercial differences remain. Ultimately, the CAA must determine all the components (building blocks) of the RAB-based price control in a manner that is best calculated to further its duties, in particular its primary statutory duty to further users' interests and promote competition. However, in doing so, the CAA would expect to take into account the views of stakeholders.

2.40 In reaching its initial proposals the CAA has placed significant weight on agreements reached by the parties during CE. It has, however, sought to validate the broad structure of agreed service priorities and

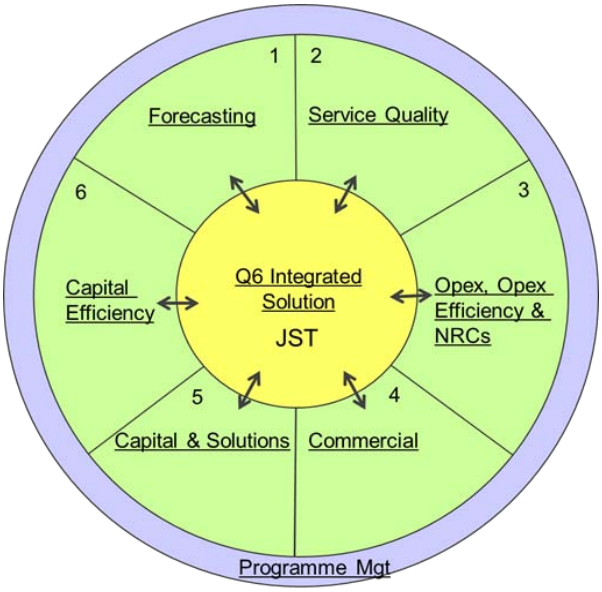
[17] BA letter to CAA, 16 April 2013.

the capital programme with its own independent assessment of passenger priorities. This assessment was collected from a number of sources such as CAA market research and third-party market research. This work was shared with HAL and the airlines during CE to inform the participants' thinking.

Output of individual Constructive Engagement workstreams

2.41 The structure of the bottom-up workstreams for CE at Heathrow for Q6 is shown in figure 2.4.

Figure 2.4: CE workstreams



Source: HAL

2.42 The **Passenger Forecast workstream** agreed the basic structure of the forecasting model and underpinning assumptions. There is, however, disagreement on the inclusion or exclusion of traffic shocks in the forecast. The forecast model has been independently reviewed.

2.43 The **Service Quality workstream** has focused on maintaining or improving the service experienced by passengers in line with the agreed vision, service propositions and passenger principles. The workstream has agreed that the service quality scheme for Q6 should be broadly based on the Q5 SQR scheme, retaining many of the

existing standards.

2.44 Discussion within the **Opex workstream** was challenging. Whilst the CE process has enabled the airlines to form a better understanding of HAL's cost base, there remains a significant difference of opinion between HAL and the airlines on the scope for further efficiencies in Q6.

2.45 The **Commercial workstream** reached agreement on the methodology for the base commercial revenue forecast and on many of the impacts, although a further 'stretch' for HAL on some revenue lines has been sought by the airlines.

2.46 The **Capital and Solutions workstream** reached agreement on many aspects of the Q6 Capital Plan, including the extent of asset replacement, the widening of taxiways to cope with A380s, the closure of Terminal 1 (though timing for closure has not yet been finalised) and progressing Terminal 2 Phase 2 as the next step towards the master plan. However, a Q6 capital plan has not been agreed by the airlines. HAL has tabled a prioritised and integrated lead plan based on £3 billion of capital investment. The airlines have provided their own prioritised plan to terminal level and have consistently maintained that the finalised capital plan can only be determined once all aspects of the regulatory settlement have been considered.

2.47 The **Capital Efficiency workstream** reached agreement in principle on the concept of a core/development capital framework, and an independent fund surveyor, although differences exist in incentivisation and in the application of construction price inflation. An extensive handbook has been developed to set out how efficiency will be delivered in Q6 capital projects.

2.48 An additional **Rail workstream** was formed to review the rail strategy and the case for a capital contribution to the Crossrail project. The group recognised the long-term strategic importance of Heathrow Express (HEX), but disagreed on the treatment of a capital contribution to Crossrail funding.

CHAPTER 3

Traffic Forecasts

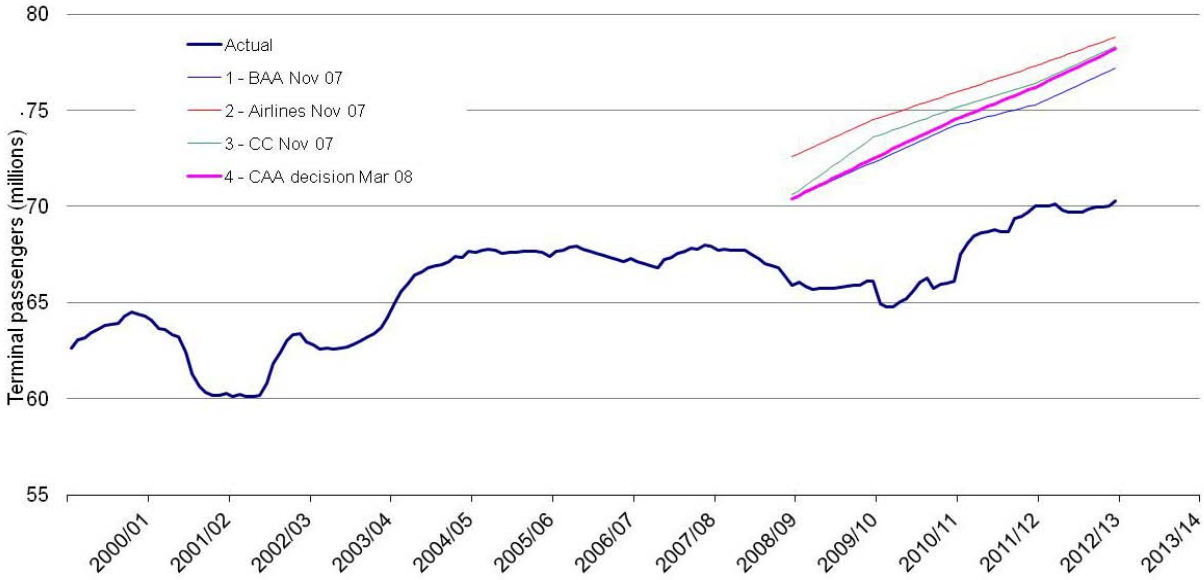
3.1 This chapter discusses the CAA's traffic forecasts for Heathrow for Q6. It sets out the background to the forecasts and the process undertaken during CE to improve forecasting capability. It evaluates key issues such as demand shocks. It concludes with the CAA's initial proposals for the traffic forecast that contributes towards the calculation of the Q6 price control.

Background – improving traffic forecasting capability

3.2 Traffic forecasts are important in a number of ways. They define the denominator in the price cap for Q6, which sets a maximum average revenue yield. They also influence other items dependent on passenger numbers, such as commercial revenues.

3.3 In its Q5 price control decision, the CAA used traffic forecasts that predicted a total of 371.8 million passengers in the five years between 2008/09 and 2012/13. This was slightly higher than the final traffic forecast proposed by BAA and lower than the traffic forecasts given by the CC and the airlines. Figure 3.1 shows that all these forecasts significantly exceeded the actual passenger traffic at the airport over Q5.

Figure 3.1: Heathrow passenger traffic - 12 month rolling average



Source: CAA airport statistics, Q5 decision document

3.4 Traffic in Q5 was affected by the worldwide economic downturn beginning in late 2008, which was not predicted when the Q5 forecasts were set. The CAA has been keen to learn lessons from Q5 and encouraged HAL and the airlines to develop a more robust 'best in class' approach to traffic forecasting. HAL has adopted a new traffic forecasting methodology for Q6, specifically producing output for Heathrow only, which replaces the BAA methodology used in Q5 and which produced traffic forecasts for the London area, and for Heathrow, Gatwick and Stansted separately.

3.5 HAL's new methodology consists of two separate forecasting models: an econometric model, which analyses likely future demand, and a capacity model, which extrapolates from trends in supply and known airline capacity plans. Both models include an allowance for non-economic demand 'shocks' and generate a probability distribution of future traffic through a 'Monte Carlo' technique.[18]

3.6 The econometric model is based on a regression analysis of passenger traffic at Heathrow only for the period from 1996 until 2011, against economic, cost and airline fare variables. Forecasts are

[18] Each input is considered as a range of possibilities and multiple forecasts are generated. Each uses particular input values chosen from those ranges.

generated using ranges for each of these input variables based upon standard industry sources.

3.7 The capacity model explains passenger numbers as a function of supply decisions: number of aircraft, average aircraft size and passenger load factor. The model considers long haul and short haul services separately, and therefore requires an assumption about the future proportion of such services at the airport.

3.8 For HAL's January 2013 FBP, the two models produced very similar output for Q6. HAL chose to use the output from the econometric model.

Constructive Engagement

3.9 The forecasting workstream was set up in February 2011 as part of the Q6 CE process to specifically focus on the area of passenger forecasts. The group included representatives from BA, Virgin Atlantic, bmi, IATA and the HAL commercial team and met regularly between February 2011 and November 2012, reporting to the JST. The CAA was present as an observer at all meetings.

3.10 The group selected an independent expert (Dr John Bates) to provide a peer review of the econometric model. Dr Bates submitted his report in September 2011, with recommendations for improvements to the model. The HAL team either implemented these recommendations or explained why it was not practical or desirable to do so immediately.

3.11 Dr Bates completed a follow-up review in November 2012, in which he concluded: "the analysts have responded creatively and constructively to the various suggestions made in my previous report concerning the data and its analysis" and "the result is an improved and much more credible model". His remaining reservation was on the approach to documenting the model, but he felt that, for his review purposes, the explanation by HAL had been sufficient for him to understand the model.

3.12 The CE report highlighted five areas of consensus between HAL and the airlines (the forecasting methodology, the input data sources, the use of both econometric and capacity models, the timing of forecast

updates, and the output from forecast runs made on 30 November 2012), and two areas of disagreement (the use of shocks as part of the forecast models, and the method for combining the outputs of the econometric and capacity models to produce a single forecast). These two areas of disagreement are discussed in more detail below.

HAL's January 2013 Business Plan

3.13 In its latest business plan, HAL described its forecast methodology and published latest central, high and low passenger forecasts. These forecasts are generated on the assumptions that the cap of 480,000 air traffic movements (ATMs) per annum at Heathrow remains throughout Q6 and that schemes to increase runway capacity in south east England have no impact in Q6.

3.14 HAL has proposed the traffic forecast shown in figure 3.2. These forecasts include an allowance for demand 'shocks'.[19]

Figure 3.2: HAL passenger forecasts

Passengers (m)	2014/15	2015/16	2016/17	2017/18	2018/19	Q6 Total
Central case	69.5	70.3	71.0	71.8	72.6	355.2
Low case	67.9	67.8	68.3	69.1	69.9	343.0
High case	70.6	71.5	72.3	73.1	74.0	361.5

Source: HAL FBP

3.15 In its written submission to the CAA in response to the HAL FBP, BA assumed an 'unshocked' passenger forecast. That is, the passenger forecast should not try to take account of future demand shocks. On this basis, BA forecast passenger numbers would be around 0.9m per year higher than those proposed by HAL. BA considers that allowing higher traffic forecasts when the cost of capital already contains an allowance for volume risk would be double-counting.

[19] The inclusion of shock effects means that each year's traffic is about 2% lower than the unshocked forecast. This explains the apparent drop from 2012/13 levels.

Discussion of the key issues

3.16 HAL's forecasting methodology has been generally agreed by the airlines and, for the econometric model, a third-party review was undertaken and the recommendations acted upon. Therefore, the CAA considers that using HAL's methodology will provide a good basis for setting traffic forecasts for Q6.

3.17 The CAA has identified four main issues to consider with regard to the traffic forecasts: the inclusion of shocks in the forecast; the size of the shock impact (if shocks are to be included); the method to combine the results of the econometric and capacity models; and a technical issue about the effect of using truncated and non-symmetric distributions of input variables.

Inclusion of demand shocks

3.18 All parties accept that the inclusion of shocks in the forecasting model is likely to produce a more accurate traffic forecast in total for Q6. The traffic forecasts used in the price control calculation should be the best estimate of actual passenger numbers during the forecast period. Since demand shocks are a phenomenon whose existence is accepted by all parties, the CAA considers that it is appropriate for the traffic forecast to attempt to account for their effect.

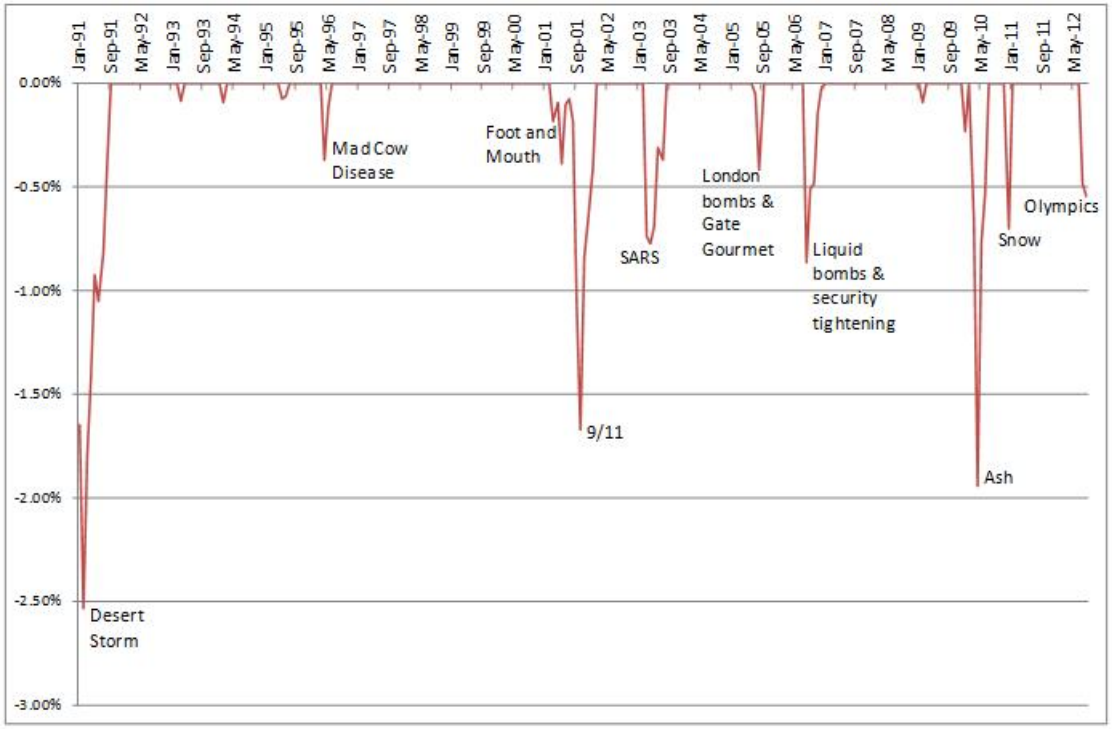
Size of demand shocks

3.19 In its modelling, HAL has defined demand shocks as significant departures from the expected trend in Heathrow passenger numbers. As such, it excludes the effects of recession where forecast errors are simply due to inaccuracies in forecasts of economic activity. The main shocks experienced at Heathrow were the September 2001 event and the April 2010 closure of airspace due to volcanic ash. However, HAL has identified many smaller shocks, ranging from SARS to the 7 July London bombings to disruption from snow in 2010.

3.20 Airlines have argued that this analysis overestimates the impact of shocks since many trips affected by shocks, rather than being lost, are deferred into the following months or to other destinations, effects not large enough to be detected as a 'positive shock'. Also the size of many shocks is related to HAL's ability to recover from adverse events (e.g. winter weather) and so the risk should be borne by the airport operator and not mitigated through the traffic forecast.

3.21 The distribution of shocks used in HAL's model has been derived from the period January 2001 to August 2012. However, as figure 3.3 shows, this period had many more demand shocks identified than the years preceding it. HAL has used this period because it considers that shocks are more likely and their effects stronger at a capacity constrained airport, and because it is from 2001 that Heathrow's movements approached the 480,000 cap.

Figure 3.3: Heathrow traffic shocks 1991 – 2012, effect on annual passengers



Source: HAL

3.22 The CAA considers that the extent of the major shocks to Heathrow traffic over this timescale (Desert Storm, 9/11, SARS and ash) was not materially affected by capacity constraints, and therefore the expected size of shocks for Q6 should be based on the whole period. The CAA considers that the presence of as large a shock as Desert Storm at the start of the period is counterbalanced somewhat by the relatively shock-free period in the mid 1990s.

3.23 This analysis may underestimate the effects of shocks since smaller events may be exacerbated by congestion at Heathrow. There may also be merit in an argument that this analysis is an overestimate

since the magnitude of certain shocks (for example, snow) is influenced by the efficiency of HAL's response. However, the CAA considers that, to the extent that these arguments are valid, they have only a minor effect on the calculation and may tend to cancel each other out.

3.24 Analysis of the shock effects illustrated in figure 3.3 leads the CAA to conclude that the average effect of demand shocks should therefore be assumed to be -1.2% per annum rather than -1.4% per annum estimated by HAL.

Combining econometric and capacity forecasts

3.25 As described above, HAL has developed two models for forecasting traffic at the airport: an econometric model which predicts demand based on the historical relationship between passenger numbers and economic indicators and a capacity model which uses trends in aircraft numbers, sizes and occupancy to predict future supply. Although the latest forecasts from these models are fairly similar through Q6, they could vary. It is therefore necessary to have a method for combining the two outputs to produce a single demand forecast.

3.26 HAL has used the output of the econometric forecast in its FBP, on the basis that the two model outputs are sufficiently similar over the Q6 period. However, the airlines have argued that, in the short term, an airline is likely to amend its yield to ensure its services operate at around the target load factor. Therefore in the short term, the capacity forecast should be the more accurate, with the econometric forecast taking precedence in the mid to long term as supply is adjusted in line with demand.

3.27 Given the similarity of the current outputs of the two forecast methods for Q6, it does not seem necessary to the CAA to decide upon the best way of combining them at this stage. Therefore, the CAA proposes to accept HAL’s decision to use the output of the econometric forecast, with the exception of the first year of the quinquennium where it considers that airlines’ capacity decisions are likely to reflect the outturn passenger numbers better than they reflect long term trend of demand.

Truncated and non-symmetric input variables

3.28 Both forecasting models use a Monte Carlo method, with the distribution of each input variable defined by a truncated normal distribution. For many of the input variables, the distribution is not truncated symmetrically, and therefore the mean of the randomly chosen variable will not be equal to the mode (or peak) of the distribution, which is one of the key input variables. The airlines have suggested that this could introduce a downside bias into the traffic forecast.

3.29 The CAA asked HAL to undertake sensitivity runs to examine the effect on the central forecast of truncated and/or non-symmetric distributions of input variables. Figure 3.4 shows selected outputs from this sensitivity analysis.

Figure 3.4: Effect of truncated and non-symmetric input variables

Passengers (m)	2014/15	2015/16	2016/17	2017/18	2018/19	Q6
Econometric model						
With input distributions	69.5	70.3	71.0	71.8	72.6	355.2
No input distributions	69.9	70.7	71.5	72.4	73.3	357.8
Difference	0.4	0.4	0.5	0.6	0.7	2.6
Capacity model						
With input distributions	69.8	71.0	71.4	71.4	71.3	355.0
No input distributions	70.4	71.9	72.3	72.3	72.1	358.9
Difference	0.6	0.9	0.9	0.9	0.8	3.9

Source: CAA

3.30 The CAA notes that, of itself, the effect highlighted in figure 3.4 may not need to be addressed. However, the CAA considers that for two key input variables, shocks and total passenger ATMs, the bias introduced by the non-symmetric nature of the distributions is unwarranted.[20]

3.31 The CAA has amended HAL's central forecast to remove the bias introduced by the non-symmetric nature of these two distributions.

[20] For shocks, the CAA considers that the mean should equal the mean annual effect of shocks from the history illustrated in Figure 3.3; and for passenger ATMs, that the mean should equal the latest airline schedule information.

CAA initial projections

3.32 In the light of the above discussion, figure 3.5 shows the CAA's proposed amendments to HAL's traffic forecasts.

Figure 3.5: CAA proposed Q6 passenger forecasts for Heathrow

Passengers (m)	2014/15	2015/16	2016/17	2017/18	2018/19	Q6 Total
Econometric model						
HAL forecast	69.49	70.26	71.03	71.81	72.60	355.19
Shocks from 1990	+0.15	+0.16	+0.16	+0.16	+0.16	+0.79
Shocks bias	+0.31	+0.32	+0.31	+0.30	+0.33	+1.58
CAA forecast	69.96	70.74	71.49	72.28	73.09	357.56
Capacity model						
HAL forecast	69.84	71.02	71.44	71.39	71.31	355.02
Shocks from 1990	+0.16	+0.16	+0.16	+0.16	+0.16	+0.79
Shocks bias	+0.33	+0.34	+0.35	+0.33	+0.29	+1.64
PATM bias	+0.48	+0.53	+0.50	+0.46	+0.47	+2.43
CAA forecast	70.81	72.05	72.45	72.34	72.23	359.88
Combined forecast						
CAA forecast	70.8	70.7	71.5	72.3	73.1	358.4

Source: CAA

3.33 In summary, the CAA proposes to use the traffic forecasts in figure 3.6 for its HAL Q6 price control. This gives a total over the five years of 358.4 million passengers. HAL's central estimate of 355.2 million is 0.89% lower than the CAA forecast, and BA's estimate of 361.8 million is 0.95% higher.

Figure 3.6: CAA proposed Q6 passenger forecasts for Heathrow

millions	2014/15	2015/16	2016/17	2017/18	2018/19	Q6 Total
Passengers	70.8	70.7	71.5	72.3	73.1	358.4

Source: CAA

CHAPTER 4

Capital Expenditure

4.1 This chapter considers the appropriate level of capex for Q6 to be taken into account in the price control calculation. It reviews the positions of HAL and the airlines reached during CE, and the subsequent HAL FBP. It considers some key areas of difference between HAL and airlines. It concludes by setting out the CAA's initial projections for the level and phasing of capex for Q6. It does not include a detailed project-level review of the capital programme, as this work, including HAL's business cases, is not yet finalised. The CAA will continue to engage with stakeholders before the final proposals are published.

4.2 It should be noted that the Q6 capex will not be fully paid for during the price control period. Consistent with the RAB methodology, new capex will be added to the RAB. Each year, a contribution to prices is made from a capital charge (i.e. the WACC multiplied by the RAB) and a depreciation charge. Therefore although Q6 capex will not have a significant effect on Q6 prices, it will need to be fully charged to prices over time.

Constructive Engagement

4.3 As summarised in chapter 2, the strategic agreement between HAL and the airlines on the vision for Heathrow, the master plan, and the joint priorities gave a clear purpose and direction to the shape of the capital programme for Q6. The programme aimed to deliver a better passenger experience, improve resilience, ensure hub capacity and drive efficiency. A capital solutions working group was set up to consider capital investment for Q6 at a more granular level. This considered a full range of projects and then focused on major groupings of projects against the joint priorities.

4.4 HAL and the airlines reached a significant degree of consensus on many aspects of the Q6 capital plan, including the extent of asset replacement, widening of taxiways to cope with more large code F

aircraft e.g. A380s, the closure of Terminal 1 (though timing for closure has not yet been finalised) and progressing Terminal 2 Phase 2 as the next step towards the master plan. HAL and the airlines each produced a prioritised list of projects.

4.5 Although it appears to the CAA that there is considerable common understanding between HAL and the airlines on the scale and nature of the majority of the capex programme, the HAL Q6 capital plan has not been agreed. The main factor limiting the scope for agreement was a difference of view on the high level methodology that should determine the overall scale of the programme. HAL tabled a prioritised lead plan based on £3 billion of capital investment, which it considered sufficient to address future demands whilst continuing to enhance the passenger experience and ensure an overall competitive package.

4.6 The airline community provided its own prioritised plan[21] but consistently maintained that the finalised capital plan could only be determined, based on affordability, once all aspects of the regulatory settlement had been considered. Besides these points of dispute, there were a number of other areas where there were residual disagreements, which are examined in detail below.

4.7 The CE report noted that it was based on specifications and costings of projects with a relatively low level of maturity. Work would continue to develop a number of individual projects to the stage of Gateway[22] 3 of this process at which a solution would be fully specified and costed at a P50 level (i.e. the probability of costs being in excess of forecast is as high as costs being less than forecast).

4.8 The capital solutions working group pointed out that in addition to generic risks, the delivery of the capex programme would be subject to some specific risks such as:

[21] This includes components for each terminal reflecting the priorities of the airline occupants of those terminals.

[22] Heathrow's project process has been developed around a Gateway assurance model. Projects are reviewed at key points (Gateways) throughout their life to ensure that the project is still on track and has the appropriate project management systems in place to ensure delivery. Gateway 3 is a particularly key Gateway at which a single solution is agreed with a mature time and cost definition (at a P50 level of resolution).

- any delay in the opening of the new Terminal 2, the cut-in of the T3IB system or the closure of Terminal 1 would postpone the realisation of anticipated benefits for users;
- a delay would also impact the delivery of other critical projects and the delivery of works on Terminal 2 Phase 2 including the Terminal 2 based baggage system;
- any subsequent decisions with regard to enhanced service quality standards for passengers and control post security could change the investment requirements and priorities;
- a re-prioritisation may be necessary if, for whatever reason, projects scheduled to be concluded before the commencement of Q6 are delayed; and
- the prioritisation of additional capacity for code F aircraft may need to be brought forward or delayed depending on the evolution of demand.

HAL's January 2013 Business Plan

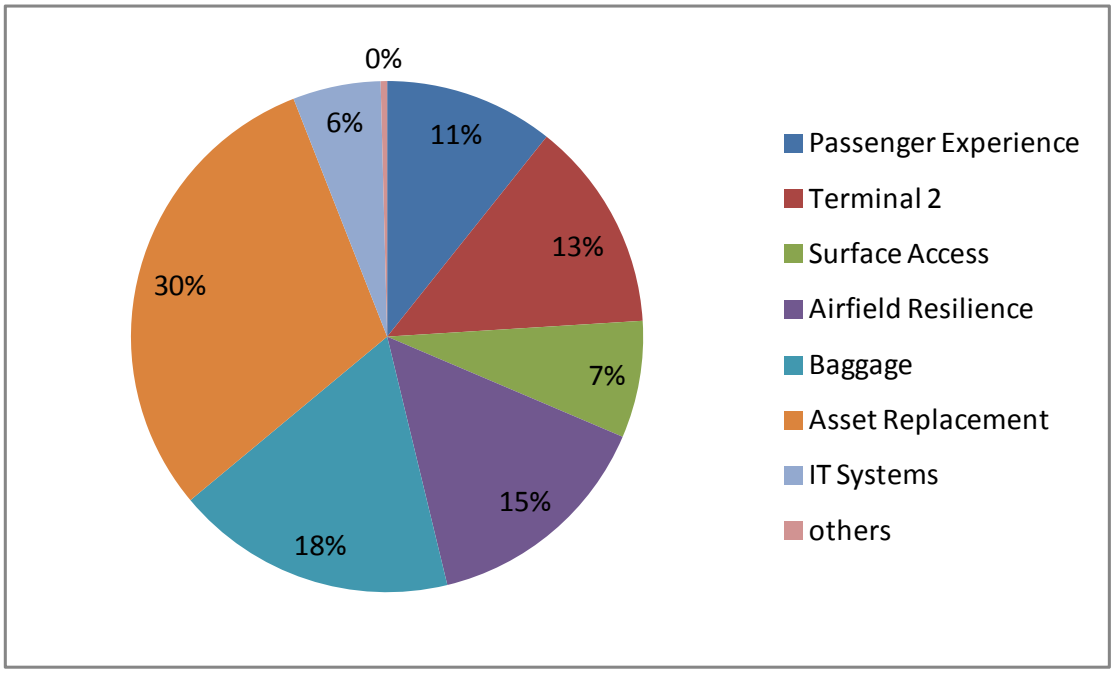
4.9 HAL's FBP proposed an overall capex plan for Q6 of £3 billion (consistent with HAL's position in CE) of which 75%[23] (£2.3 billion) was supported by 26 business cases.[24] HAL's shareholders have indicated that, in light of their assumptions on risk and in the context of the regulatory building blocks, a £3 billion capital investment plan is likely to be both sufficient and appropriate.

4.10 HAL reconciled the Q6 capex plan with the joint priorities agreed as part of CE (figure 4.1).

[23] The business cases do not include information on roll-over projects currently being delivered in Q5. These equate to a further £400 million.

[24] While these business cases provide an up to date outline of the costs and benefits of the project the projects in the portfolio have not generally reached sufficient maturity to pass through the capital investment gateway governance process.

Figure 4.1: Allocation of Q6 capex programme to joint priorities



Source: HAL

4.11 HAL expects the capital plan to be structured into a set of programmes. The emerging programmes are expected to provide the following passenger benefits.

- **Passenger experience:** This includes a broad range of initiatives impacting on the passenger experience including:
  - enlarging and relocating the parking facilities with a separate personal rapid transit into the Central Terminal Area;
  - automated bag drop facilities (subject to trials in Terminal 3 and Terminal 5);
  - facilitating an improved transfer security standard (identified chapter 11);
  - new retail facilities in Terminal 5 to improve the departure lounge experience;
  - new premium range products and services;
  - e-business and electronic media investments for passenger communication and marketing;

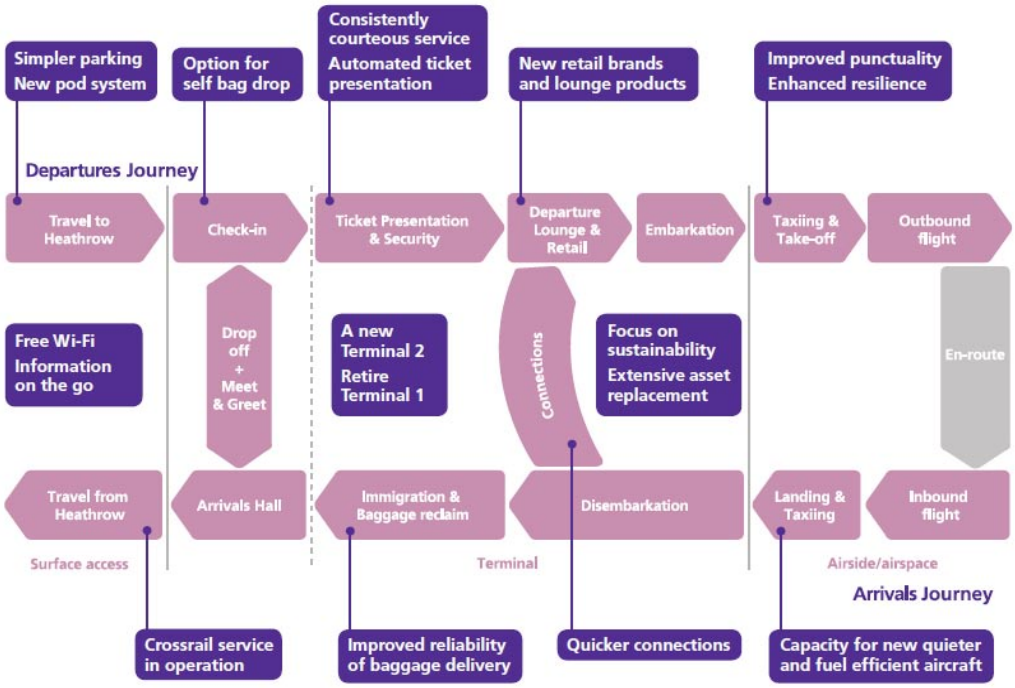
  - closing Terminal 1 and moving passengers to more modern terminals; and
  - investment in passenger facilities in Terminal 3 such as wayfinding, improved connections and increased non-aeronautical income.

- **Terminal 2:** This relates to the opening of the new terminal with a processing capacity of 20 million passengers per year. HAL expects that this will improve passenger satisfaction significantly, as passenger satisfaction tends to be higher in new facilities. This project also includes works for phase 2 in Q6 which primarily consists of design, preparatory site clearance and enabling work.
- **Surface access:** A budgeting allowance has been made in the capital plan for a contribution to Crossrail funding and enabling works for Crossrail at the airport. It also includes an allowance for a link to Terminal 2 and replacement of some infrastructure and rolling stock for HEX.
- **Airport resilience:** This includes investment in physical taxiway and stand capacity to enable more resilient operations by a new generation of wide-bodied aircraft, airfield efficiency and resilience improvements to improve approach efficiency, departure efficiency surface efficiency and airfield management. HAL states that these resilience measures will require extensive collaboration with NSL, NATS (En Route) plc (NERL), airlines and groundhandlers. A measure of success will be the removal of stacks. HAL predicts that this will improve its ability to cope with extreme conditions and to reduce the number of severely disruptive 'red' days from 37 to 29. HAL has also included in this category work to improve the Terminal 5 security zone, which has been identified as a capacity constraint; and some capacity improvements to expand A380 capacity in Terminal 4. HAL has also included a budget to enable others to increase the storage of aviation fuel to improve resilience against interruptions of supply (such as the Buncefield fire of 2005).

- **Baggage:** The largest element of this budget is the replacement of current standard 2 hold baggage screening machines with 62 standard 3 machines. This is driven by the DfT security requirements that come into force in September 2018. In addition, there is a significant amount of baggage replacement expenditure to extend the life of the system in Terminal 1, works in Terminal 3 and Terminal 4 and some lesser works in Terminal 5.
- **Asset replacement and compliance:** The airlines and HAL have agreed that this category of investment is a high priority. HAL describes this programme as making a primary contribution to risk avoidance and delivering a stable asset base from which enhancements to the status quo can be made.
- **Business systems and technology:** This programme relates to keeping business functions operational which is critical to avoid disruption to the passenger journey and experience. In addition, this programme will limit the IT maintenance cost increase and support other programmes. IT replacement will increase Wi-Fi capacity by 700% providing a direct passenger-facing benefit (particularly when information is required during disruption).

4.12 HAL summarised the improvements to the passenger journey in a diagram, reproduced below as figure 4.2.

Figure 4.2: Contribution of Q6 capex programmes to improving the passenger experience



Source: HAL

Discussion of the key issues

4.13 A RAB-based price control requires the CAA to make assumptions about the scale and phasing of capex during Q6. The CAA recognises the substantial effort during CE to reach an aligned position on the prioritisation of the majority of the programme. The maturity of these projects varies but none have reached the point at which the solution was sufficiently defined and the costings sufficiently assured (at a P50 level) to pass Gateway 3 and be considered a 'core project' at the time of the CE report.

4.14 The CAA therefore acknowledges that HAL and the airlines are still undertaking further work including the development of business cases. This work is being conducted within the Q6 Portfolio Stakeholder Programme Board. HAL and the airlines continue to refine the programme in time to inform the CAA's final proposals in October 2013. The CAA's consultants have not yet completed a full, independent review of Q6 capital projects. For these reasons, the

CAA is not in a position to give an opinion on the capital programme at an individual project level in these initial proposals but reserves the right to do so for its final proposals.

Capex budget for Q6

4.15 In assessing the proposed Q6 capex programme and budget, the CAA has been guided by its primary duty under the Act to further passengers' interests. The key message, set out in chapter 11, is that Heathrow passengers are broadly satisfied with the airport and airport facilities do not tend to score highly for making decisions to purchase air travel. In addition, Q6 will see some significant improvements to the passenger experience based on the extensive capex programmes in Q4 and Q5. When Terminal 2 opens at the end of 2014, two-thirds of passengers at Heathrow will travel through modern terminals (Terminal 2 and Terminal 5), which are expected to have higher passenger satisfaction ratings than older terminals.

4.16 There also appears to be a consensus between HAL and the airlines about the effect of the Q6 programme, namely its focus on:

- maintaining the current level of service;
- satisfying higher compliance standards in baggage security and the environment;
- providing for the expected passenger growth provided by a new generation of wide-bodied aircraft;
- keeping abreast of IT requirements by the wider airport community including the provision of 700% more Wi-Fi capacity;
- improving the experience for connecting passengers in terms of security standards (where there has hitherto been a lower standard than for point-to-point traffic) and baggage transfer; and
- providing for sufficient additional resilience by arrival, departure, ground movement and airfield management.

4.17 Against this background, following successive regulatory settlements of relatively high capex spend of around £5 billion per quinquennium, the CAA is comfortable with HAL and the airlines in seeking a more modest level of capex in Q6. The CAA does, however, wish to use the new flexibilities of the licence to keep the situation under review and adopt a two-tier capex plan that enables the programme to

respond to new developments and changes (see chapter 13).

4.18 A programme on this scale will maintain the current level of service at Heathrow. In addition it will improve resilience, which is supported by the airlines given their growth and fleet ambitions. The CAA would welcome the views of HAL and airlines on the scale of the capex budget in light of the CAA's initial proposals for the other building blocks of the price cap calculation.

4.19 The CAA appreciates that it is important that the capital budget is set with value for money as a paramount objective. To strengthen the challenge on providing value for money, the CAA has commissioned expert consultants to review HAL's approach. However, given the relatively early stage costing of almost all the programme, the consultants have not been asked to do substantive analysis of individual projects at this stage. The focus of the CAA's initial proposals is on the aggregate scale and phasing of a prospective investment programme and its effect on regulated charges. The CAA may commission a greater level of validation for its final proposals.

Specific issues in relation to the capex programme

4.20 While the CAA is not focusing on the detail of individual projects in these initial proposals, there are some issues of wider significance that it considers it should comment upon. These are where the programme will either make changes or not make changes from the current status quo for passengers or where there is disagreement between HAL and the airlines following CE.

Renewal costs

4.21 The CAA commissioned Steer Davis Gleave (SDG) to review HAL's renewal costs. In the broadest terms, SDG do not consider that the size of the programme for Q6, at approximately £1.5 billion, is out of proportion to the HAL asset base.

4.22 SDG considers that it would be appropriate to revisit the scope of proposed renewal works under many of the programmes. For example, the scale of the £650 million engineering asset renewal programme seems to have been determined largely by a 'top-down' reduction from an initial cost of circa £900 million and it is not clear what level of analysis lies behind the reduction. Overall, but based on rather limited information provided to it, SDG was able to identify core

savings targets for renewals costs in Q6 of £84-110 million relating to hold baggage screening and £9 million relating to the re-lining of the Central Terminal Area (CTA) tunnel, with a super-stretch target of £34 million. This represents a savings target of 9-11% on the renewals programme of £1.5 billion.

4.23 The CAA will provide its view on renewals costs in its full review of the Q6 projects and capital programme in the October 2013 final proposals.

Operational resilience and disruption

4.24 One of the elements of the passenger experience that may not be well covered by the existing SQR scheme is operational resilience and disruption. The CAA has indicated to stakeholders that it expects that HAL's initial licence will contain provisions aimed at strengthening HAL's resilience planning and performance. In this context, a wide range of capital projects contribute to mitigating the risk of disruption as described above.

4.25 One area considered fairly late in the CE process was a potential project to address issues with the current process of aircraft de-icing. There seemed to be general agreement in the working group that this was a significant issue during severe weather disruption. However, both HAL and the airlines agreed that the draft proposal presented would be too costly and both sides questioned the feasibility of the process changes that would be required.

4.26 The CAA would like the parties to continue to consider this issue, as part of their work to review and improve the processes for extreme weather conditions, the benefits of making significant improvements in de-icing, and whether there are less costly solutions which would contribute to stopping de-icing becoming a significant constraint on operations.

Crossrail contribution

4.27 Under the Crossrail governance arrangements agreed in 2008, the contribution from HAL is dependent on it making a business case which the CAA can approve. DfT has a role to advise HAL on various assumptions and table a counter service offer in the event that the CAA is not minded to approve a contribution. The maximum contribution was agreed in 2008 at £180 million in 2008 prices (£235

million in 2014/15 prices).

4.28 HAL and the airlines agree that the current financial business case for a contribution to Crossrail is negative (measured in net present value terms). Nevertheless, HAL has included a provision of £100 million in case a contribution is mandated by the CAA. This provision covers not only a potential contribution but also station works associated with accommodating larger volumes of traffic per train for Crossrail compared to the existing HEX and Heathrow Connect service. In a separate business case, HAL has also made an allowance of £50 million for access to HEX from Terminal 2. The airlines do not accept the reasons given for the contribution to funding Crossrail on the basis of the business plan analysis. However, they accept an allowance for station works and access to Crossrail from Terminal 2.

4.29 The CAA considers that there is a case for a contribution to the station works. It does not believe that there is currently a case for a contribution to Crossrail funding based on the business case developed so far by HAL. The current business plan is significantly net present value negative.

4.30 Since HAL developed its business case, DfT has commissioned independent research on a wider range of benefits associated with Crossrail to the airport that it considers may be relevant to the CAA's primary duty. DfT expects to publish this research shortly. The CAA will consider any revised business case put forward by HAL pending HAL's further discussions with DfT and the airlines. This will need to be received and approved in time for the CAA's final proposals if any contribution is to be remunerated within Q6.

4.31 The CAA notes that the context for the original agreement in 2008 has fundamentally shifted with the government's policy on capacity expansion in the South East. The CAA notes that the significantly lower probability of a third runway compared to 2008 makes the current business case very challenging. However, the contribution is tied to the building of certain works that will be completed during the Q6 period. This raises the prospect that should government policy change, HAL and the airlines may stand to receive an unanticipated gain from extra traffic. The CAA therefore considers that one possible option for further consideration between HAL, DfT and the airlines might involve making the contribution contingent on additional traffic at Heathrow being sufficient to make the business case positive.

Hold baggage screening standard 3 machines

4.32 The replacement of existing equipment with higher specification machines by 2018 is mandatory under DfT requirements. Both HAL and the airlines agreed that no detailed solution has been developed and that early design works should be undertaken in 2013. The airlines were particularly concerned with practical considerations of physically accommodating the (potentially very large) new machines in the existing Terminal 1 system which would continue in use for handling Terminal 2 transfer baggage until the completion of a transfer baggage facility for Terminal 2 as part of the Terminal 2 phase 2 project. While HAL has made provision for full replacement, airlines have suggested that they might approach DfT with a view to seeking to change the timescales so that the deadline for implementation would be moved to Q7.

4.33 Policy in this regard is a matter for DfT and until and unless there is a change of policy the CAA will use DfT's position for the purposes of Q6 planning.

Passenger Rapid Transit System

4.34 At the Q5 review, the CAA decided not to allow the passenger rapid transit (PRT) system between Terminal 5 and car parking into the RAB, as it was a novel project which did not enjoy airlines' support. The CAA said at that time that it would be open to considering, as part of the Q6 price control review, the inclusion of both the Q4 and Q5 capex on this project within the Q6 opening RAB.

4.35 The CAA notes that HAL is planning further spending on PRT as part of its FBP. There is around £9 million of asset replacement on the existing system and also an extension of the system as part of the northern perimeter project.

4.36 The CAA has not detected support from airlines for this spending and as yet has not decided whether this spending should be allowed into the RAB or whether there is a case for allowing the (un-depreciated) spending from Q4 and Q5 into the RAB.

Terminal specific issues

4.37 The following four issues involve terminal specific investments on which there is not a united airline position. Generally speaking airlines are keen to prioritise projects that affect the terminal from which they

operate.

Terminal 2

4.38 Terminal 2 is expected to be dependent on the continuing use of the existing Terminal 1 baggage system until a baggage system is created as part of the second phase of Terminal 2. HAL has included £220 million for design and enabling works for the second phase of Terminal 2A. Some airlines have questioned whether the investment should commence earlier. They consider that the pace of delivery and the capital spend within Q6 should be defined by the results of the risk assessment on the Terminal 1 baggage system and the associated mitigation strategy.

4.39 The CAA supports on-going work to identify and mitigate any risks of the Terminal 1 baggage solution to ensure that there are not risks in this approach that would be unacceptable to future passengers. The CAA will review this situation before its final proposals.

Terminal 3

4.40 Although HAL plans to close Terminal 3 under the master plan, it is expected to remain in use until at least the late 2020s. While both HAL and the airlines agree that any refurbishment should take place in Q6 rather than Q7 to achieve best value, there is a significant difference between HAL and the relevant airlines about the extent of the work to be done. The CAA acknowledges that there is continuing engagement to refine the programme to achieve acceptable standards in Terminal 3 for the remainder of its life. The CAA considers that this will need to maintain a trade-off between achieving a reasonable experience for passengers in light of the experience in the newer Terminal 2 and Terminal 5, with the limited outstanding expected life of Terminal 3. That said, Q6 may provide the last opportunity for capital works in Terminal 3 to improve the passenger experience significantly. The closer the date for Terminal 3 closure, the less likely it is that capital projects may make a positive business case. The CAA expects to review this issue again before its final proposals.

Terminal 4

4.41 Airlines have argued for additional capacity enhancement in Terminal 4 within the terminal and two additional A380 stands rather than the one planned by HAL. The CAA's initial proposals provisionally assume the programme for Terminal 4 in the HAL FBP, pending the

CAA understanding further the basis for its preparation with HAL and the airlines.

Terminal 5

4.42 BA and HAL disagree about the need for additional premium lounge space. In addition, while BA and HAL agree the need for additional development of departures security, international reclaim capacity and the integration of further domestic and Common Travel Area (i.e. Ireland and the Channel Islands where passengers are required to clear customs but not immigration) there are as yet no agreed solutions. The CAA notes that work in this area is continuing and expects to review the situation before its final proposals.

CAA initial projections

4.43 The CAA has adopted the following capex budget for Q6 (figure 4.3) in line with HAL's FBP.

Figure 4.3: CAA's initial projections for capital expenditure (2011/12 prices)

£ millions	2014/15	2015/16	2016/17	2017/18	2018/19	Total
Capex	660	697	591	591	464	3,002

Source: CAA

CHAPTER 5

Operating Expenditure

5.1 This chapter contains a summary of the outcomes of CE and describes the opex projections contained in HAL's Q6 FBP. It then assesses how the projections for Q6 compare with the evolution of opex in Q5 and sets out a summary of the conclusions of a number of independent consultancy studies on HAL's opex commissioned by the CAA. Finally, it sets out how the CAA has used this evidence to develop initial opex proposals for the Q6 settlement.

Constructive Engagement

5.2 HAL and the airlines were able to reach agreement on some issues identifying net potential savings of £69 million over Q6 relative to the IBP. These agreements are described below:

- **Project related savings -** savings identified through individual project business cases over Q6 amounting to £36.5 million. Additional efficiencies of £9.7 million were also identified within the asset replacement project business cases.
- **Dynamic security post closures -** a saving of approximately £12.5 million over Q6 is possible as a result of the use of dynamic security post closures.[25]
- **Police costs -** a saving of £10 million over Q6 has been identified.
- **Terminal 1 closure -** closure should be implemented as soon as practical.

[25] Dynamic security post closure involves the closure of staff security posts in response to changing levels of demand. This is contingent on the maintenance of the current 20 minute SQR standard.

- **Potential changes to SQR standards -** changes to SQR standards for direct passengers have been discussed throughout the CE process including reductions in standards that could yield opex savings. It was subsequently agreed that such changes would not be made.
- **Alignment of transfer and direct passenger SQR standards -** the SQR standard for transfer passengers should be aligned with the existing Q5 standard for direct passengers. This was estimated to increase opex by £15 million over Q6.[26] HAL subsequently altered the harmonisation proposal to be opex and capex neutral (these proposals are discussed in more detail in chapter 12).

5.3 Notwithstanding the agreements above, there were disagreements between HAL and the airlines on a number of other issues including.

- **Pensions -** the potential for reductions to HAL's pension costs.
- **Future opex efficiency targets -** The airlines considered the 1.2% efficiency for underlying opex included in the IBP to be insufficient and wanted more ambition in HAL's plans so that the cost base would remain flat in nominal terms.[27] The airlines also stated that solutions currently in development should not be considered part of the 1.2% underlying opex target.
- **Terminal related opex -** the airlines were concerned about the level of HAL's opex projection for Terminal 2 relative to costs in the other terminals.
- **Security -** the airlines were keen for HAL to explore the potential for process efficiency improvements fully. This included: the use of agency staff to assist with passenger processing in peak times; apparently low security passenger flow rates in some terminals; and the potential for improvements to HAL's security rostering efficiency.
- **Other costs -** the airlines questioned HAL's projected levels of expenditure on professional fees, insurance, rent, rates and utilities.

[26] The FBP includes an alignment using a different passenger standard. This change is not expected to have any impact on costs.

[27] This target has been raised to 1.4% in HAL's FBP.

HAL's January 2013 Business Plan

5.4 As part of the CE process, HAL published its IBP in July 2012 providing initial Q6 opex forecasts. These were updated in HAL's FBP in January 2013 resulting in a 2% reduction in total cumulative opex over Q6 compared to the IBP. The information supplied by HAL enabled comparisons to be made between Q5 and Q6.

HAL's opex performance over Q5

5.5 Over Q5 (and including the additional year for the extension, Q5+1), HAL expects its opex to fall slightly from £1,054 million in 2008/09 to £1,050 million in 2013/14, an average rate of -0.1% per year (figure 5.1). Passenger numbers are expected to grow by 0.9% per year over this period so that opex per passenger will fall from £15.99 to £15.26. Total staff man-years are also expected to fall from 7,907 to 6,893 with significant reductions in ✂✂✂and ✂✂✂✂✂✂ headcount in particular.

5.6 Over Q5, the main changes in HAL's opex were as a result of Terminal 5 opening in March 2008, which significantly increased facilities, utilities and rent and rate costs in the first two years of the period. This was offset by the closure of the old Terminal 2 in November 2009. Since then, costs have risen gradually. HAL attributes these increases to adverse winter weather in 2010/11 and the Olympic Games in 2012.

5.7 Security costs increased at the start of Q5 as a result of the introduction of the SQR (estimated by HAL to have increased costs by £18 million per year) and the opening of Terminal 5 (estimated by HAL to have increased costs by £20 million per year). In addition, changing security legislative requirements are estimated to have increased costs by around £10 million per year by the end of 2011/12. The closure of Terminal 2 is estimated to have reduced security costs by £6 million per year. A number of efficiency measures have also been introduced so that overall security costs are expected to fall by 2.5% per year over the period.

5.8 Pension costs are expected to rise significantly over Q5, from £46 million in 2008/09 to £73 million by 2013/14. HAL replaced its Defined Benefit (DB) scheme with a Defined Contribution (DC) scheme for new entrants in June 2008. This has significantly reduced the

average contribution rate from around 30% of pensionable pay to around 10% for new employees on the DC scheme. In time, this is expected to reduce HAL's total pension costs as the proportion of employees on the DC scheme increases with staff turnover.

5.9 However, in the medium term, a worsening of macroeconomic conditions has reduced the rate of return on existing pension assets and increased the level of cash contribution required for the DB scheme. As a result, following agreement with the Trustees, HAL is planning to make a contribution of ✂ million per year over ✂✂✂ to repair its pension deficit - increasing pension costs.

HAL's Q6 opex projections

5.10 Over Q6 HAL expects opex to fall from £1,050 million in 2013/14 to £1,038 million in 2018/19, a rate of -0.2% per year (figure 5.1). HAL is projecting an average annual expenditure of £1,047 million over Q6. This compares to HAL's projection for opex in the last year of Q5 (2012/13) of £1,042 million and for Q5+1 (2013/14) of £1,050 million.

5.11 HAL expects passenger growth of 1.1% per year over this period. Based on this, opex per passenger will fall from £15.26 to £14.30. HAL's average annual opex per passenger in Q6 is projected to be £14.74 which compares to £14.98 in the last year of Q5 (2012/13) and £15.26 in Q5+1 (2013/14).

5.12 Total staff levels are expected to continue to fall from 6,893 in 2013/14 to 5,797 in 2018/19, with significant falls in ✂✂✂✂✂✂✂✂ in particular (figure 5.1). Over Q6, HAL is projecting an average of 6,129 employment man-years. This compares to the last year of Q5 (2012/13) of 7,152 and for Q5+1 (2013/14) of 6,893.

5.13 HAL's FBP opex projections are based on an assumption that pay rates will change by ✂✂✂ per year. In addition, HAL has forecast efficiency 'stretch' savings of £138 million over the Q6 period.[28] Overall after excluding 'structural' factors such as Terminal 2 opening and Terminal 1 closure, HAL's FBP implies an underlying opex reduction of 1.4% per year over Q6.

5.14 Opex costs are projected to increase significantly in the first year of

[28] The CAA estimates that this is equivalent to a 'frontier shift' of 0.87% per year. This point is discussed in the discussion of key issues section.

Q6 following the opening of Terminal 2 in July 2014. Overall, HAL expects Terminal 2 to increase opex by around £100 million per year through higher security, facilities management, rent, rates and utility costs. This is partially offset by the planned closure of Terminal 1 in 2016, which is estimated to reduce opex by £58 million per year.

5.15 Rent and rates costs are expected to increase from £125 million in 2013/14 to £175 million by the end of Q6. This is the result of two effects: first an increase in the level of rateable value at the airport related to new assets; second, a significant increase in rates costs following the national property revaluation expected to occur in 2017.

5.16 Terminal 2 is expected to increase rates costs by ✂ million per year, whilst the closure of Terminal 1 is expected to decrease rates costs by ✂ million per year. Other new infrastructure is expected to increase rates costs by ✂ million per year. The national revaluation is expected to increase rates costs by 18.4% (excluding new assets).[29]

5.17 Security costs are expected to decline by 3.1% per year over Q6 (figure 5.2). Significant changes over the period are expected to be caused by the opening and closure of terminals; the opening of Terminal 2 will increase costs by ✂ million per year; the closure of Terminal 1 is expected to reduce costs by ✂ million. Underlying security efficiency is also expected to improve through a variety of initiatives, which, in combination, are expected to reduce security opex by ✂ million per year. These initiatives include plans for further reductions in absenteeism, improvements in roster efficiency and the elimination of some fixed security posts.

5.18 Pension costs are expected to decline gradually throughout Q6 following a significant increase to the end of Q5+1 (described above). The FBP also includes a ✂million pension efficiency saving based on ✂✂✂✂✂✂✂✂✂✂✂✂✂✂✂✂✂✂✂. HAL has also included deficit repair payments of £✂ million from 2015/16 to the end of Q6.

5.19 Figure 5.1 summarises the total level of Q6 opex split by the main cost categories and their compound annual growth rates (CAGR) over Q6 with 2013/14 as the base year.

[29] Figure based on analysis in Steer Davies Gleave report; Review of other operating expenditure at Heathrow and Gatwick Airports – Final Report, page 11-12, available at www.caa.co.uk.

Figure 5.1: HAL's Q5 opex performance and Q6 forecasts

January 2013 FBP Forecast	Q5					Q5+1	Q6				
£m 2011/12 prices	**2008/09**	**2009/10**	**2010/11**	**2011/12**	**2012/13**	**2013/14**	**2014/15**	**2015/16**	**2016/17**	**2017/18**	**2018/19**
Security Costs (includes police)	177	169	163	164	162	156	160	153	142	135	133
Total Operational Staff	62	54	55	56	64	73	69	64	69	59	59
Facilities Management	172	177	158	161	165	173	204	199	192	187	187
Utilities	94	120	98	90	85	95	102	105	107	106	106
Rent and Rates	117	125	113	120	127	125	140	143	142	165	175
Other	156	150	142	149	137	123	122	119	119	119	119
Commercial	39	52	42	43	48	49	48	47	47	47	49
Rail	71	75	72	64	64	63	57	57	56	56	55
Central Support Services	120	106	119	119	116	121	108	103	103	103	103
Pensions	46	56	63	64	75	73	72	60	57	55	53
Total	1,054	1,083	1,026	1,030	1,042	1,050	1,082	1,050	1,034	1,030	1,038
Passengers (m)	65.9	66.1	66.1	70.1	69.6	68.8	69.5	70.3	71.0	71.8	72.6
Total opex / passenger	15.99	16.38	15.53	14.69	14.98	15.26	15.57	14.93	14.56	14.34	14.30
Man Years											
Total	7,907	7,406	7,457	7,464	7,152	6,893	6,552	6,362	6,051	5,854	5,797

Source: HAL FBP

Figure 5.2: HAL Q6 opex summary

£m 2011/12 prices	Total Q6	% of Total	CAGR (Q6)
Security Costs (includes police)	723	14%	-3.1%
Total Operational Staff	319	6%	-4.1%
Facilities Management	969	19%	1.6%
Utilities	526	10%	2.1%
Rent and Rates	764	15%	6.9%
Other	597	11%	-0.7%
Commercial	238	5%	0.1%
Rail	281	5%	-2.7%
Central Support Services	520	10%	-3.2%
Pensions	298	6%	-6.2%
Total	5,234	100%	-0.2%
Passengers (m)	355		1.1%
Total opex / passenger	14.7		-1.3%

Source: HAL FBP

Airline views

5.20 In response to HAL's FBP, the airlines have collectively stated in meetings with the CAA that they are concerned by an apparent lack of cost control by HAL and have suggested that there is a significant asymmetry of cost pressures between the airlines and airports. The airlines have commented that they seek to manage their businesses so that non-fuel costs remain constant in nominal terms ('flat nominal') and that they wish to see the same pressure applied to HAL through the CAA's price determination. The CAA notes that HAL's FBP assumes opex rises in line with inflation minus 0.2%, a little below being constant in 'real terms'.

5.21 BA's Q6 position paper, submitted in January 2013, made a number of points about HAL's opex performance and projections. BA stated that there is evidence that HAL is a relatively inefficient operator when benchmarked against other UK and European airports; and that there is evidence of excessive wage growth over a sustained period. BA made a number of specific cost-saving proposals that in total amount to £1,260 million cumulatively over the course of Q6.

5.22 BA emphasised a number of areas where it considered HAL could make efficiency improvements. These included:

- increased security efficiency;
- reduced pension costs;
- reductions in planned Terminal 2 costs; and
- reduction in central service costs (HR, finance and IT etc.).

5.23 BA said that it did not consider that this would put at risk service quality and it pointed to several instances of it having to reduce its own costs where it needed to ensure effective planning for service continuity, including significant reductions in its pension costs.

5.24 In addition to BA's submission, the CAA also received written representations on HAL's efficiency from Virgin Atlantic and the Airline Operators Committee (AOC). Both made similar points to BA and considered that HAL needed to show more ambition in reducing its operating costs in Q6.

Discussion of key issues

5.25 The CAA recognises that HAL's opex efficiency is a key component of the calculation of final prices and an area where there is a stark difference of views between HAL and the airlines as to what constitutes an appropriate level of ambition for Q6.

5.26 The CAA has undertaken several pieces of analysis to inform its initial proposals. These include assessing HAL's performance in Q5 against the forecast it used to set the price control; commissioning several independent studies of various aspects of HAL's opex projections for Q6; undertaking various benchmarking studies; and developing a comparison of airport and airline cost performance. These analyses are described in the following sections.

HAL Q5 performance compared to forecast

5.27 HAL's opex has been higher than the CAA's Q5 settlement despite Heathrow experiencing lower than expected passenger numbers (figure 5.3). Indeed, HAL's opex has been above the Q5 settlement in every year to date and by the end of Q5 cumulative opex is expected

to be 7% higher than the Q5 settlement. HAL has argued, however, that when exceptional factors such as the delayed closure of Terminal 2 and winter resilience are taken into account opex has been within the Q5 settlement.

Figure 5.3: HAL's performance on operating costs in Q5

£m 2011/12	Q5						
	2008/09	2009/10	2010/11	2011/12	2012/13	Total	CAGR
Q5 Forecast	968	952	956	962	973	4,812	0.1%
Outturn	1,071	1,052	996	1,001	1,035	5,155	-0.8%
Variance	103	100	40	39	62	344	-
Variance %	11%	11%	4%	4%	6%	7%	-

Source: HAL Regulatory Accounts and Airport Business Model (for 2012/13)

Note: CAGR is calculated as a difference over the period 2008/09 to 2012/13

5.28 There are many sources for the variance over Q5 for which data are available (figure 5.4). For example, HAL's spending on intragroup services, maintenance, equipment and rent and rates costs have all been higher than expected.

5.29 The most significant area of over-spend compared to the Q5 settlement was related to intragroup costs. This includes central services such as HR, finance, and IT. There was also a significant level of exceptional expenditure related to pension costs and SQR penalties. On the other hand, HAL's spending on utilities, police and rail has been lower than expected.

Figure 5.4: HAL's opex breakdown 2008/09 to 2011/12

£m 2011/12	CAA	Actual	Var	Var
Staff	1,072	1,073	2	0%
Police	152	130	-22	-15%
Rent and Rates	433	463	30	7%
Utilities	421	398	-23	-6%
Maintenance and Equipment	429	490	62	14%
Rail	246	236	-10	-4%
Other	635	652	17	3%
Intragroup Costs	451	668	217	48%
Exceptional	-	28	28	-
SQR Penalties	-	-18	-18	-
Total	3,839	4,120	281	7%

Source: HAL Regulatory Accounts

Airport benchmarking studies

5.30 In order to compare HAL's opex to other airport operators at a top-down level, the CAA has reviewed several pieces of benchmarking evidence including:

- Air Transport Research Society 2011 Airport Benchmarking Report;
- Leigh Fisher 2011 Airport Benchmarking Report;
- Booz Allen 2012 European Airport Benchmarking Report commissioned by HAL; and
- SDG 2012 Stansted Mid-Q Review Report commissioned by the CAA.

5.31 In each of these studies opex per passenger has been used to assess the relative performance of different airport operators. Each study uses the airport operator's financial accounts adjusted to calculate an estimate of 'core' opex costs (accounting for factors such as retail and rail costs at Heathrow). The main findings of these studies are summarised in figure 5.5 below.

Figure 5.5: Summary of opex benchmarking analysis

Study / Airport operator – core opex per pax	ATRS 2009	Leigh Fisher 2009	Booz Allen 2011	SDG 2010
HAL (£)	14.40	13.30	12.30	13.59
Sample Average (£)	7.16	6.00	9.71	8.94
Sample Size	141	50	13	10

Source: CAA Analysis of ARTS, Leigh Fisher, Booz Allen and SDG reports

5.32 Figure 5.5 indicates that HAL's adjusted opex per passenger was estimated to be between £12.30 and £14.40 depending on the study. All four studies indicated that HAL's opex per passenger was high relative to the average of the samples and typically close to the top of the range. Opex per passenger is also identified as higher than several other large hub airports including Hong Kong International, Hartsfield-Jackson Atlanta and Amsterdam Schiphol.

5.33 Caution must be applied to interpreting benchmarking data. There are many differences between airports that are not fully accounted for. HAL has argued that Heathrow is a relatively unique operation, which means that it may be less comparable with many airports included in the samples.

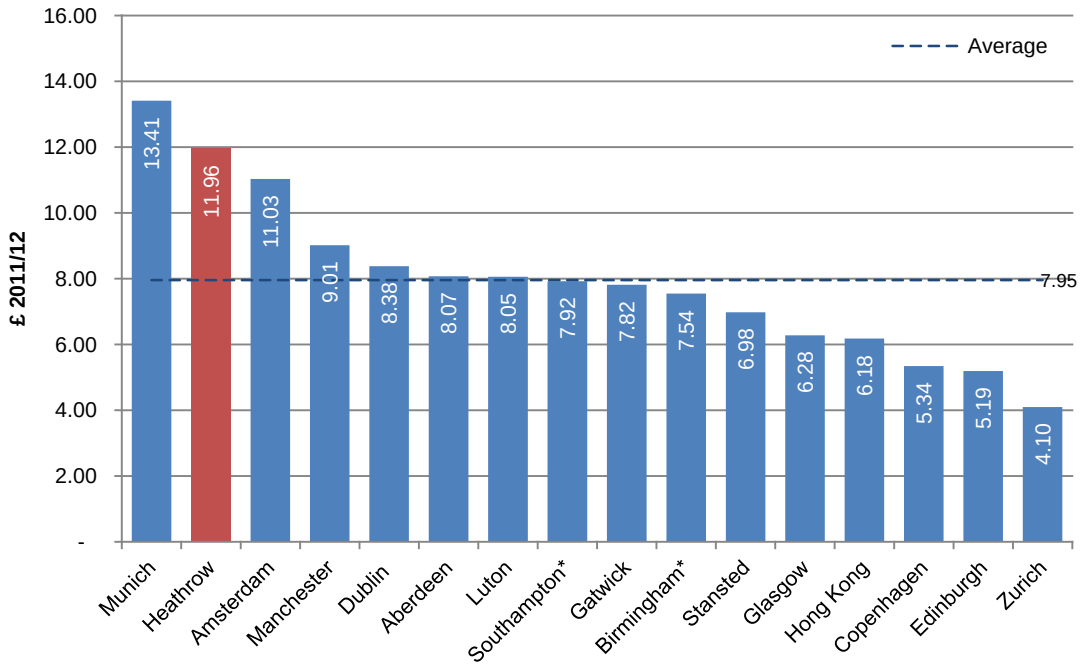
5.34 The Booz Allen benchmarking study commissioned by HAL provides some evidence that long haul and premium passengers require higher levels of opex than other types of passengers. Nevertheless, even taking account of factor costs and 'passenger complexity', the Booz Allen study estimates a residual productivity differential between Heathrow, Amsterdam Schiphol and Gatwick of £1.10 and £0.80 per passenger respectively. Taking the lower and higher figure this would imply a total efficiency gap of between £56 million and £77 million per year. Notwithstanding the caution that needs to be applied in over-interpreting benchmarking data, these studies tend to suggest that there may be scope to improve efficiency at Heathrow beyond the improvements envisaged in HAL's FBP.

CAA airport benchmarking analysis

5.35 Building on the evidence described above, the CAA has undertaken additional analysis of HAL's relative opex performance with relevant comparators. Based on analysis of financial account data, the CAA

has estimated total adjusted opex[30] per passenger for a range of airports, and taking account of differences in exchange rates and general price levels using Purchasing Power Parity (PPP)[31] indices.[32] The benchmarking indicates that adjusted opex per passenger (2011/12) at Heathrow is the second highest of the sample as shown below in figure 5.6.

Figure 5.6: Adjusted opex per passenger with factor cost adjustments



* Denotes figures are based on financial years.

Source: CAA

5.36 Time series analysis indicates that historically, HAL's opex has risen faster than the sample average. In 2000/01, opex per passenger was £0.85 below the sample average. By 2011/12 opex per passenger

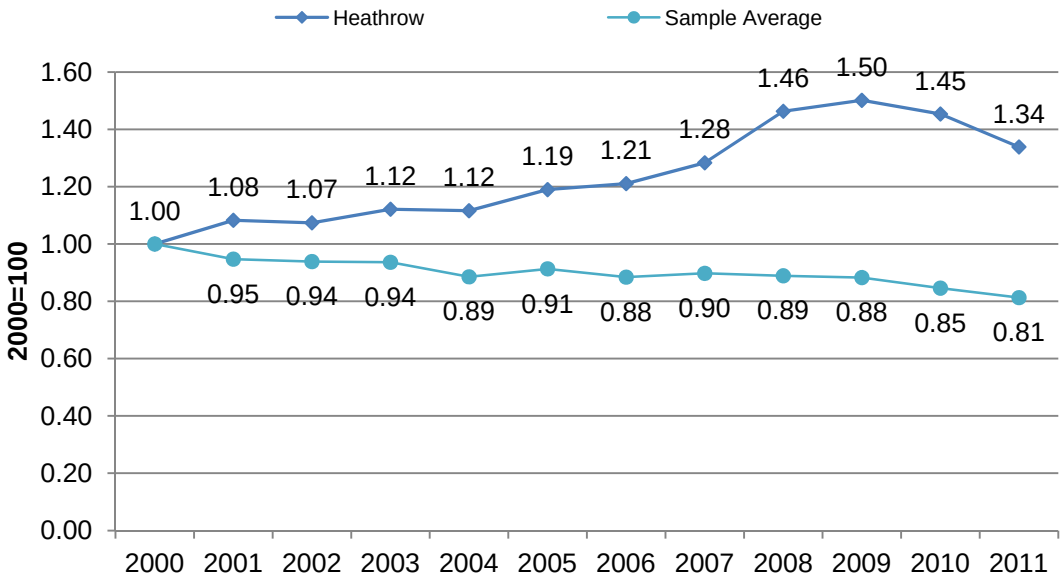
[30] Adjusted opex excludes depreciation, retail, Air Navigation Services (ANS), rail and losses on asset disposals. The metric is intended to provide a simple estimate of the core costs of airport operation. In some cases these costs have been estimated based on airport averages or survey data.

[31] PPP indices estimate the relative price level in different countries and are often used to compare costs in different countries taking account of price levels.

[32] International comparisons are sensitive to different exchange rates and PPP indices.

had risen to £4.00 above this benchmark. Figure 5.7 shows the historical change in HAL's adjusted opex per passenger over time in real terms in comparison with the sample average, indicating a significant divergence especially in the last five years. Over the period, cost per passenger has increased by 34% against an average reduction of 19% for the sample average.

Figure 5.7: Index of adjusted opex per passenger 2000-2011



Source: CAA analysis based on airport account data.

5.37 HAL has suggested that there may be some factors that mean that its opex per passenger is unavoidably higher than other airports such as high passenger satisfaction scores, the high level of long haul and premium passengers, and the airport's location in London, with relatively high levels of land and labour cost.

5.38 It should, however, be noted in relation to the passenger mix that HAL's opex is high compared to several benchmarks that include significant hub airports such as Hong Kong International and Amsterdam Schiphol. Furthermore, the time series index indicates that regardless of the starting point, opex per passenger at HAL has risen significantly faster than at other airports including Amsterdam Schiphol and Hong Kong, which have both reduced costs in real terms

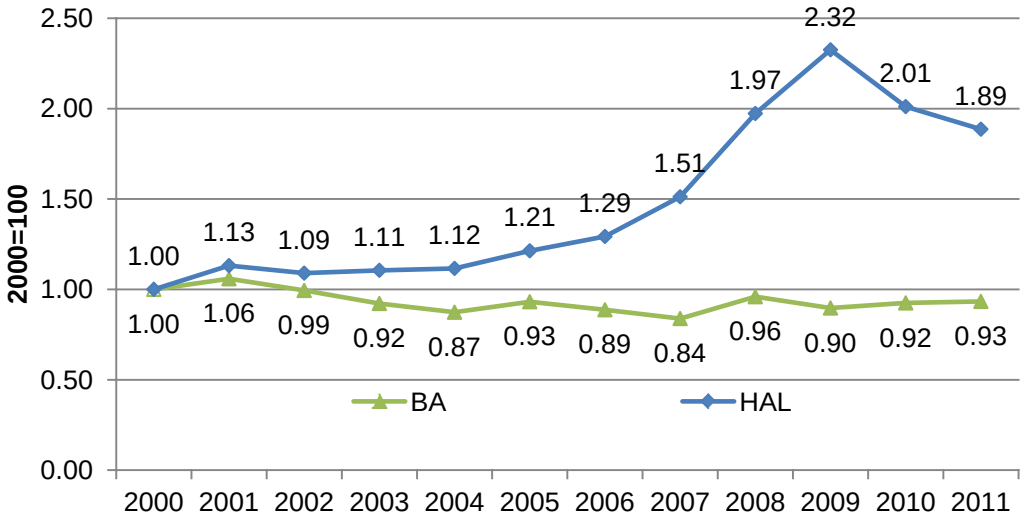
since 2000. Once again, notwithstanding the caution that needs to be applied to the interpretation of benchmarking evidence, the conclusion of this analysis is that HAL's opex would appear relatively high and has also risen faster than other airports.

Comparison with airline opex performance

5.39 To compare HAL's performance with the airlines, the CAA has examined the opex of BA and HAL based on an analysis of total unadjusted opex per passenger for HAL and total opex per Available Seat Kilometre (ASK) for BA.[33]

5.40 On this basis, BA has outperformed HAL with a significant divergence over the past five years (figure 5.8). BA has achieved real terms reductions in opex per passenger of around 7% since 2000.[34] In contrast, HAL's opex per passenger has increased by 89%.

Figure 5.8: Total opex per passenger and ASK index (HAL and BA)



Source: CAA analysis based on financial accounts data.

5.41 Comparison of opex between airlines and airport operators is imperfect as they have very different business models. Whilst BA and HAL operate in the same industry and are subject to a similar range of

[33] ASKs are often used to benchmark the efficiency of airlines.

[34] Fuel costs accounted for over 30% of BA's total opex in 2011. Statistics from the Department for Energy and Climate Change indicate that the cost of heavy fuel oil has increased by over 270% in real terms between 2000 and 2012.

technical security requirements and economic shocks, the operations of the airlines are generally more flexible, enabling a more effective reaction to changes in market conditions through the cancellation of routes or transfer of aircraft etc. Nonetheless, this analysis reinforces the previous comparison with other airports and suggests that opex costs at HAL have risen relatively fast compared to some benchmarks.

Independent consultancy studies commissioned by the CAA

5.42 The CAA commissioned six different independent consultancy studies to examine the opex projections contained in HAL's IBP and FBP.

- **'Employee reward' benchmarking study** undertaken by IDS Thomson Reuters (IDS). This included an analysis of HAL's pay and total reward in comparison with industry benchmarks and an analysis of roster efficiency and absenteeism.
- **'Pension costs' scenario testing** undertaken by IDS and Hymans examining four different DB pension scenarios.
- **Examination of 'Other operating costs' study** covering rent and rates, utilities, ANS, police, rail and other costs, undertaken by SDG.
- **Examination of 'Maintenance and asset renewal costs' study** undertaken by SDG.
- **Examination of 'Central service costs' study** undertaken by Helios.
- **'Scope for future efficiency gains' study** undertaken by Cambridge Economic Policy Associates (CEPA).

5.43 The key findings of each of these studies are summarised in the following sections. The reports are also available on the CAA's website. Each report was prepared following discussions with HAL and the airlines and has had regard to feedback from both on earlier drafts.

Employee reward benchmarking study (IDS and Hymans)

5.44 This study examined levels of employee reward and historical rates of increase at HAL in comparison with the wider economy and benchmarks within the aviation industry. It also examined the levels

of pay of specific job types against equivalents based on skills and job descriptions.

5.45 The study found that HAL's levels of pay settlement have been higher than those in the wider economy since 2005 with the single exception of 2009 when HAL had a pay freeze. In 2012 HAL's average pay settlement was 5.2%, in comparison with an economy wide average of 2.8%.

5.46 IDS found some evidence of 'grade drift' occurring across the different staff groups with a "virtual de-population of the lower grades with only the highest graded staff remaining" in some areas. For example, there are three leading fire fighters for every fire fighter. The most significant movement has been the re-grading of security supervisors to the higher Service Team Leader position.

5.47 IDS's benchmarking of individual job descriptions indicated that, in terms of total reward[35], all jobs at Heathrow (including both pre and post 1997 contracts when contracts were made less generous) were above general market rates, with differences in individual roles ranging from 11% to 58%.

5.48 IDS found that there was some evidence that security rostering processes could be improved through reducing overlaps between early and late shifts, reducing incidences of excess staff capacity and introducing flexible rostering. Overall, IDS concluded that if rates of total cash reward (basic salary, shift, overtime and bonus pay) at Heathrow were brought into line with the benchmark comparisons, staff costs could be reduced by between 10% and 21%.[36]

5.49 Based on the latest data published in HAL's regulatory accounts, in 2011/12 staff costs were £262 million. This implies that if HAL could reduce its staff costs in line with the IDS benchmarks it could reduce costs by between £16 million and £40 million per year by the end of Q6 (accounting for the ✂✂✂ wage cost growth included in the FBP). This does not include any savings that could be achieved

[35] Total reward is defined as all elements of cash payment including basic salary, bonus and shift payments as well as the combined employer cost of pension's defined benefit and defined contribution schemes, and holidays.

[36] On a total reward basis (including pension costs) staff costs at HAL are even further from benchmarks. The CAA estimates that total reward costs are between 33% and 53% higher than benchmarks on average.

through changes to rosters, closer matching of labour supply and demand, staff grading or changes to pension provision.

5.50 The IDS study also examined pension provisions at HAL. It found that the combined DB and DC schemes would require an average contribution rate of 33% of pensionable earnings (40% and 10% for the DB and DC schemes respectively[37]). The study found that this is significantly higher than benchmark rates for DB and DC schemes in the wider economy at 17% and 7% respectively.[38] This variance to benchmarks suggests that there is scope for HAL to reduce its pension costs.

5.51 If HAL was able to reduce pension costs in line with benchmarks, the CAA estimates that opex costs could be reduced by around £77 million over the course of Q6 (✂✂✂✂✂✂✂✂✂✂✂✂✂✂✂✂✂✂✂✂✂✂✂✂✂✂✂).

Pension costs scenario analysis study (IDS and Hymans)

5.52 In order to assess the ability of HAL to achieve the reductions in pension costs described above, IDS and Hymans undertook four scenario tests based on common changes to DB pension schemes. The study did not seek to assess the difficulty of implementing such changes. The scenarios are described in the following points:

- increasing the normal retirement age for all members to 65 - reduction from 40% to 33% of total pensionable earnings;
- using career average earnings rather than final salary in pension provision - reduction from 40% to 31% of total pensionable earnings;
- changing the accrual rate from 54ths to 80ths for all members - reduction from 40% to 26% of pensionable earnings; and
- the combination of all of the above - reduction from 40% to 15% of pensionable earnings.

5.53 Based on HAL's cost projections and planned contribution rates, the

[37] HAL has estimated its contribution rate to be around 33% and 9% for DB and DC schemes respectively.

[38] Based on ONS 2012, Annual Survey of Hours and Earnings, available at http://www.ons.gov.uk/ons/rel/ashe/annual-survey-of-hours-and-earnings-pension-tables/2012-provisional-results/2012-annual-survey-of-hours-and-earnings--summary-of-pensions-results.html.

CAA estimates that these changes could result in potential savings of between £23 million and £83 million over Q6 (not including HAL's £67 million efficiency target). This indicates that the pension efficiency saving highlighted above is likely to be achievable based on one, or a combination of changes to the DB scheme.

Other operating costs study (SDG)

5.54 This study examined HAL's FBP opex projections across several categories including rent and rates, utilities, police and other costs. SDG's findings indicated that there are a number of areas where the cost projections could be reduced based on improved efficiency and/or less cautious forecasts:

- based on comparisons with the last revaluation in 2010, the impact of the rates revaluation in 2017 is likely to have been overestimated;
- HAL may be able to consolidate staff into fewer buildings to reduce rent costs, fully utilising the Compass Centre and other space and vacating Heathrow Point West at the break clause in 2014. This would also reduce rates costs;
- based on terminal benchmarking, Terminal 2 gas costs are likely to have been overestimated; and
- HAL may be able to reduce cleaning costs in line with more efficient benchmarks.

5.55 Overall, SDG concludes that the opex projections in the FBP could be reduced by between £87 million and £97 million over Q6. The upper range is based on more challenging benchmark targets and savings such as reducing staff costs on HEX. Around 70% of the identified efficiencies are related to overly cautious opex forecasts, with the remainder related to 'catch-up' efficiency.

Maintenance and asset renewal study (SDG)

5.56 This study examined the maintenance and asset costs in the FBP, including benchmarking against eight other airports. The study concluded that some efficiency was likely to be possible through improvements to the procurement strategy and a reduction in maintenance costs in line with more efficient benchmarks. Overall the study concludes that HAL's FBP opex projections could be reduced by

between £32 million and £90 million over Q6. The upper range is based on more challenging benchmarks in terms of maintenance cost per terminal area.

Central service costs study (Helios)

5.57 This study examined HAL's central service costs including HR, finance, IT, communications and other functions in relation to benchmark evidence. The final conclusions were not available in time to inform the CAA's initial proposals. The CAA expects to review this issue for its final proposals.

Potential for efficiency study (CEPA)

5.58 This study sought to examine the potential for efficiency gains at Heathrow, Gatwick and Stansted over the Q6 period by examining two factors; first the potential for catch-up efficiency gains between the airports and a notionally efficient competitive operator at the 'frontier' of airport cost performance; and second, the average rate of productivity improvement that such an operator would experience over time. This second factor is widely termed as efficiency 'frontier shift'.

5.59 The study examined HAL's historical opex performance using several different methods including an analysis of labour productivity and Real Unit Operating Expenditure[39] (RUOE) over time in comparison with benchmarks. The study developed several hypothetical company benchmarks to estimate the range of achievable frontier shift targets for future cost projections. This included estimates of benchmark output prices, Total Factor Productivity (TFP) and Labour, Energy, Materials and Services (LEMS) (figure 5.9). Each of these measures and the estimates of actual and benchmark performance are described below.

- **TFP** - a measure of total productivity based on the residual output not explained by inputs of capital and labour.
- **Output Price Indices** - a measure based on TFP and input prices.

[39] RUOE is defined as adjusted opex per passenger, excluding depreciation, retail, rail, ANS and losses on disposable asset costs.

- **Labour Productivity** - defined as passengers per man-year. This metric can be used to estimate changes in productivity related to the use of labour, but can be misleading when considered in isolation as a result of capital substitution. The analysis has been undertaken based on security and non-security costs.
- **LEMS** - a measure of total productivity based on the residual output not explained by inputs of labour, energy, materials and services. This metric takes account of changes to input price inflation.
- **RUOE** - defined as adjusted opex per passenger deflated into a common price base. This metric is widely used by economic regulators to assess efficiency changes as it captures both labour and capital effects. This metric has been estimated for 10 and 15 year periods.

Figure 5.9: Productivity growth and cost trend estimates

Measure	Frontier shift and/or catch-up	HAL	
		Benchmark	Actual
TFP	FS	0.8%	n/a
Adjusted TFP*	FS	0.9% to 1.7%	n/a
LEMS	FS	-0.2%	n/a
Output Price	FS	0.5% to 1.1%	n/a
Labour Productivity	FS+CU	n/a	--3.5%
LEMS Cost	FS	-0.1% to 0.8%	n/a
RUOE (10 years)	FS+CU	-3.6% to 2.6%	-3.0%
RUOE (15 years)		-2.0% to 0.5%	-2.8%
Quality Satisfaction			Above average

* Adjustment for variable capital

Note: Negative RUOE numbers indicate a decline in productivity.

Source: CEPA, Scope for Efficiency Gains at Heathrow, Gatwick and Stansted Airport.

5.60 The study concluded that, based on a comparison of RUOE performance, HAL has some scope for catch-up. CEPA also estimated that, based on the adjusted TFP range, an efficient organisation with a cost structure similar to HAL should expect to see

net frontier efficiency shift of between 0.9% and 1.0%.

5.61 The FBP includes a stretch efficiency target of £138 million over the course of Q6. The CAA estimates that this is equivalent to a frontier shift of 0.87% per year. Although this is close to the low end of the range identified by CEPA, it does imply that there is likely to be scope for further efficiencies equivalent to up to 0.13% per year relative to the FBP.

Summary of consultancy study analysis

5.62 In combination, the evidence from the consultancy studies described above indicates that HAL should be able to reduce opex relative to the projections in the FBP. Based on the upper and lower estimates provided in the consultancy studies and before any consideration of profile or risk, these efficiencies amount to a reduction of between £110 million and £414 million over Q6 relative to the FBP. This does not include any changes to security process efficiency, which is discussed in a later section.

5.63 These issues and the CAA's interpretation of the most appropriate point within the estimated range are discussed below.

Security process efficiency analysis

5.64 During CE, the airlines raised several points regarding security efficiency. These included the significant reductions in peak processing flow rates experienced in recent years, apparently low levels of rostering efficiency, relatively high levels of absenteeism and the potential for security outsourcing to reduce costs at the airport.

Flow Rates

5.65 Peak hour security processing flow rates at Heathrow are typically between 120 and 160 passengers per hour depending on the terminal and time of year. This is significantly below the rates achieved at other airports.

5.66 HAL has said that the differences between flow rates at Heathrow and other airports are largely explained by different types of passenger and airline baggage requirements. For example, Heathrow's largest airline, BA, has a more generous baggage allowance than airlines such as easyJet and Ryanair that operate from Gatwick and Stansted. Heathrow also has a greater proportion of long haul and premium passengers who are likely to carry more items through security. Long

haul passengers may also tend to be less familiar with the security process at Heathrow due to language differences and / or expectations based on different security arrangements in non European countries.

5.67 Flow rates have also declined over recent years. This has increased the number of security staff required to deal with peak period passenger flows, resulting in an increase in security costs at Heathrow.

5.68 HAL has stated that the decrease in flow rates is attributable to increased security requirements and an increase in the level of passengers carrying electronic items such as laptops and tablets, which increase the workload of security staff. The CAA has been provided with some evidence from HAL which tends to suggest that this is an important explanatory variable. However, the CAA understands that some other airports have been able to maintain and increase flow rates despite these same pressures.

Rostering

5.69 The IDS study described above undertook some analysis of security staff rostering efficiency and determined that there may be some inefficiency related to: overlapping rosters; excess staff capacity at some points of the day and a fixed foster pattern system which limits the ability of HAL to flex staff supply in response to changes in demand leading to higher overtime payments. The study concluded that there may be some cost savings from the introduction of more flexible rosters, although this conclusion required further validation.

Potential for outsourcing

5.70 Security outsourcing has been introduced at several European airports, including Birmingham, Copenhagen and Oslo and has been proposed as an option for HAL by the airlines. Outsourced security staff is also used by the AOC to operate baggage security at Heathrow. This is considered by the airlines to be an activity analogous to passenger security in terms of scale, complexity and staff skill.

5.71 Security outsourcing could potentially reduce costs and improve efficiency through enabling a competitive bidding process for at least part of the airport security function. The CAA recognises that

Heathrow, given its size and complexity, may not have a straightforward proposition for outsourcing, especially given the potential for transition risks. On the other hand, airlines have stated that the opening of Terminal 2 may provide an opportunity to trial outsourced security processes.

5.72 It is not for the CAA to dictate to HAL how it organises its operation to service its security functions. The CAA must consider whether further reasonable efficiencies are possible and hence passengers should not be expected to fund inefficiencies through higher airport charges than would otherwise be the case.

5.73 HAL's FBP includes a variety of initiatives to improve security process efficiency over Q6, including projects relating to roster efficiency, absenteeism and flow rates. In total these initiatives equate to a 3.1% per year cost reduction over Q6.

Scale of assumed efficiencies

5.74 The CAA recognises that there is no method for benchmarking HAL's opex efficiency that does not have some imperfections. It is also an area where information asymmetry is high. For this reason, the CAA has sought to challenge HAL's forecasts using a wide range of benchmarks and by commissioning six independent studies. The key conclusion that emerges from this analysis is that HAL could make further efficiency improvements over Q6 compared to its FBP. What is less clear is the precise scale of such additional opex efficiencies or how these should be profiled. Judgement is required from the CAA on both of these issues.

5.75 The various CAA consultancy studies have identified several specific areas where further savings may be possible compared to HAL's FBP. In forming a judgement for an appropriate opex projection in the range identified by its independent consultant studies, the CAA has taken into account a number of factors.

5.76 Some factors point to a fairly assertive stance on the scale of potential efficiencies.

- HAL has seen a relatively high growth in costs compared with other airports.

- Users might expect that shareholders should fund any inefficiency to replicate the discipline that might be expected in a competitive market.
- Given the information asymmetries involved in assessing HAL's opex, this might imply that not all efficiencies can be properly revealed through such third-party analysis and hence the range may underestimate the potential efficiency.

5.77 On the other hand, there are some factors that would argue against being near the top of the range.

- Many of the benchmarks are derived from comparators that may not perfectly take into account all aspects of HAL's operating environment. For example, it has been argued that Heathrow's complexity and high proportion of long haul passengers is likely to be more expensive than airports that do not share these characteristics.
- Some of the top of range efficiencies identified by the CAA's consultants may be very challenging and could potentially have implications for service quality (for example the reduction of staff on the HEX service).
- The CAA's adjustments to the Q6 traffic forecast, albeit very modest, may imply slightly higher opex.
- The need to ensure that any efficiency target is achievable and to provide HAL with a realistic opportunity for outperformance as a regulatory incentive.

5.78 The CAA considers that the balance of arguments suggests that it should adopt an assumption slightly above the mid-point of the range identified by its consultants. Based on this assessment and before the consideration of the profile of the savings, the CAA expects additional savings of £288 million over Q6.

Profile of assumed savings

5.79 As well as the overall scale of efficiency, the CAA has had to consider the practical implications of the changes that are likely to be required by HAL in order to come to a judgement on a reasonable profile of savings (i.e. how quick these are realised by airlines and their passengers). In making this assessment the CAA has considered the

timing associated with each of the identified efficiencies, which can broadly be grouped into three categories:

- overly cautious HAL forecasts identified by the CAA's consultants (accounting for 20% of the efficiency target);
- frontier shift (accounting for 7% of the efficiency target); and
- catch-up efficiency (accounting for 73% of the efficiency target).

5.80 Where HAL has included cost forecasts considered by the CAA's consultants as overly cautious, these have been adjusted without delay. Frontier shift adjustments are also regarded as an ongoing process, which will tend to reduce the costs of a notionally efficient company and which are therefore included in each year of Q6.

5.81 Identified catch-up efficiencies require more consideration as, firstly such changes will often require time to be efficiently implemented, and secondly HAL may face constraints in introducing changes. For example, it may be difficult to achieve reductions in contracted costs beyond holding costs constant in nominal terms.

5.82 Given its historical processes and employment costs, HAL may have to realise efficiencies over time as it will be difficult to reduce costs overnight. Equally, users may expect not to continue to pay for costs that would not be replicated in a competitive environment. To take account of this, the CAA has allowed for a 'glide path' for the implementation of catch-up efficiency, allowing the full range of savings to be implemented progressively over the Q6 period.

5.83 The CAA has set the glide path at 20% per year so that the full range of savings is implemented by the end of Q6. Staff and pension costs have been identified as a catch-up efficiency; however these savings have been treated separately as described below.

Treatment of staff and pension costs

5.84 In the CAA's Q5 November 2007 proposals for Heathrow and Gatwick, the CAA stated that BAA's pension costs should be capped "on the basis of cash contributions to the pension fund each year" but that these should be capped at an appropriate level, to ensure airport users are not disadvantaged by the relative generosity of the scheme. The CAA decided that it would allow a cap of 25% of pensionable pay in cash contributions on average.

5.85 The IDS study estimated that pension costs will be equivalent to 33% of pensionable pay in 2013. This is significantly higher than the 25% cap and comparative benchmarks.

5.86 On the basis that a clear expectation was created by the CAA in Q5, the CAA considers that it would not be appropriate to use a glide path for the full range of identified staff cost efficiencies. Pensions have therefore been capped at benchmark levels from the first year of Q6. The CAA estimates that this will reduce staff costs by around £10 million over the course of Q6 taking account of HAL's existing pension efficiency savings.

5.87 HAL has argued that pension deficit costs should be allowable in the settlement. The CAA will consider further the appropriate level of this allowance based on HAL's relatively high pension costs over Q5 relative to the 25% limit set in Q5.

5.88 Based on the profile applied to catch-up efficiency, the overall efficiency target falls from £288 million to £217 million over Q6. Based on this projection, opex costs will fall by 1.8% per year from 2013/14 to the end of Q6. In comparison, the FBP projection assumes a decline of 0.2% per year. The CAA regards this as a challenging but achievable target for HAL.

CAA initial projections

5.89 The CAA assumes that opex will fall from £1,050 million in 2013/14 to £957 million in 2018/19. It forecasts total cumulative opex over Q6 at £5,017 million, 4.2% lower than the FBP (figure 5.10). Based on these projections, opex per passenger would fall from £15.26 to £13.41. Figure 5.11 sets out the resulting profiling of opex for Q6.

Figure 5.10: Estimates derived from benchmarking studies

CAA April 2013 HAL Projections - Summary Q6				
£m 2011/12 prices	**Total Q6**	**% of FBP***	**CAGR (Q6)**	**Average Opex per Pax**
Passengers (m)	355	n/a	0.4%	
Total FBP	5,234	100%	-0.2%	14.74
CAA Efficiency Estimates	-217	-4.2%		0.61
CAA Opex Forecast	5,017	95.8%	-1.8%	14.12

Source: CAA

* This column shows the size of the number as a proportion of the cumulative opex total for Q6 in the FBP.

The CAGR column shows the rate of average annual growth from the 2013/14 FBP forecast to 2018/19 and can be used to compare the relative rates of growth in the FBP and CAA forecasts.

Figure 5.11: Estimates derived from benchmarking studies

CAA/HAL Opex Projections	Q5					Q5+1	Q6				
£m 2011/12 prices	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19
Passengers (m)	65.9	66.1	66.1	70.1	69.6	68.8	69.5	70.3	71.0	71.8	72.6
Total FBP	1,054	1,083	1,026	1,030	1,042	1,050	1,082	1,050	1,034	1,030	1,038
Profile of CU Efficiency							20%	40%	60%	80%	100%
CAA Efficiency Estimates							-16	-20	-40	-59	-81
CAA Opex Forecast							1,066	1,030	994	970	957
Opex per pax FBP	15.99	16.38	15.53	14.69	14.98	15.26	15.57	14.94	14.56	14.34	14.30
Opex per pax CAA Forecast							15.34	14.61	14.10	13.68	13.41

Source: CAA

CHAPTER 6

Commercial Revenues

6.1 The forecasts for HAL's commercial revenues are an important element of the price control as they are deducted from the regulated revenue requirement under the single till approach. This chapter discusses the outcome of CE, the areas of agreement and disagreement between airlines and airport operator, followed by a discussion of the key issues. The chapter concludes with the CAA's initial projections for commercial revenues to be taken into account in calculating the Q6 price cap.

Constructive Engagement

6.2 The commercial workstream was set up in 2011 as part of the Q6 CE process to specifically focus on the area of commercial revenue. The terms of reference were to:

- provide commercial revenue visibility and understanding;
- establish the range of commercial growth achievable and determine dependencies with capital and solutions and opex;
- gain a mutual understanding of the commercial dynamics of the airport operator and airlines including interdependencies with operational processes, including the identification of areas for potential joint initiatives; and
- assess the impact of the direction of the capital & solutions working group.

6.3 A group of airline and HAL representatives was formed, which included representatives from BA, Air Canada, bmi, AOC and the HAL commercial team. This group met monthly between August 2011 and November 2012, with supplementary sessions held as required.

6.4 The workstream reviewed HAL's commercial revenue from:

- retail concessions – which includes all shops, restaurants and bureaux;

- retail services – which include car parking, car rental, advertising, telecoms and premium services;
- property – including offices, lounges and other commercial uses of land and accommodation in and around the airport; and
- potential opportunities to drive commercial revenue and review of the business cases proposed by HAL's commercial team.

6.5 Financial forecasts were built up from three elements:

- base growth from passenger and economic factors;
- impacts from events and other one-off factors (e.g. Terminal 2 opening, legislation changes such as the introduction of new rules on tobacco display); and
- potential capital investment impacts.

6.6 With some caveats, HAL and the airlines agreed forecasting methodologies and base forecast growth rates for commercial revenue along with commercial opex. The impact of Terminal 2 opening and Terminal 1 closure was also agreed. The workstream further agreed there was commercial potential from more joint working between HAL and the airlines.

6.7 The workstream reviewed the level of incremental growth that could be generated through capital investment and agreed the business cases for each commercial proposal. However, there was not full agreement on which commercial projects should be undertaken in Q6.

6.8 There was a difference of view in relation to capital investment criteria for commercial investments. Airlines considered that projects should be single till positive by the end of Q6. Projects that did not meet this could be considered if the strategic/passenger benefit criterion justified it, though this would not be a purely commercial decision. HAL considered that a focus on a five-year payback would disproportionately de-prioritise projects conducive to long-term commercial growth. Finally, airlines argued that there were other opportunities for growth that had not been fully reflected in HAL's Q6 commercial revenue projections, particularly in relation to car parking and retail/advertising. The airlines therefore wanted more 'stretch' in HAL's projections.

6.9 One significant area of disagreement where judgement is required relates to the impact from the future ban on tobacco advertising that will be mandated by the Tobacco Display Act (TDA) from 2015. This will mean that cigarettes cannot be openly displayed and will have to be kept in a separate room or cupboard. Point of sale displays will be limited to simple price lists with no brand images or other promotions. An impact (size of adjustment) of 40% decline in sales proposed by HAL but was not accepted by airlines (figure 6.1). There was also disagreement on whether a total ban on duty free tobacco in 2018, due to pressure from the World Health Organization (WHO), will actually occur.

Figure 6.1: HAL's and airline views on the impact of the ban on tobacco advertising

Tobacco Display Act impact	
HAL's views	**Airline views**
HAL's estimate of 40% impact is based on the outcome of a trial conducted by World Duty Free (WDF) in a UK regional airport, and the experience of Dublin airport, which had implemented a tobacco display area (non-compliant with UK TDA legislation). Pre-planned tobacco purchases are highest among point-to-point passengers travelling outside the EU and these are arguably the least likely to change buying behaviours on the basis of display changes. Heathrow, with a higher proportion of transfers (compared with Dublin and UK regional airports), and therefore less pre-planning on tobacco purchases, actually has a riskier passenger profile with regard to this legislation. This could result in a more severe impact than the two airports looked at so far. It is also worth noting that the airport is not the only point in the journey that passengers can purchase duty free tobacco and HAL expect on-board duty free sales to benefit from the reduction in airport sales. The TDA will not materially change the way tobacco is sold on aircraft.	The analysis that supports the 40% decline bears little resemblance to the profile at Heathrow. Given Heathrow's passenger profile, and the fact long haul travellers plan their purchase of cigarettes within their journey (rather than impulse buyers) the airline position is that a 40% sales decline is on extreme assumption. The airlines recognise there will be an impact but that this should be thoroughly evaluated to determine the correct decline.

Source: CAA, based on the joint CE report

HAL's January 2013 Business Plan

6.10 In total, HAL projects commercial revenue, including property, to be £2,827 million in Q6 (2011/12 prices). Most of the income is assumed to be 'base' growth in revenue from the existing commercial estate at

Heathrow. This projection is overlaid with 'impacts' (notably the expected adverse effects on revenues of the closure of Terminal 1/opening of Terminal 2, and tobacco legislation), and 'capital overlays' from new projects due for implementation in Q6.

Figure 6.2: Summary of HAL's projections for commercial revenue (2011/12 prices)

Period		**Q5**				**Q6**		
Category	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	Q6 Total
Base growth	529.0	538.5	529.7	539.5	546.8	553.5	559.8	2,729.3
Impacts	0.0	0.0	-1.6	-9.1	-7.6	-8.1	-6.6	-33.0
Capital overlays	0.0	0.0	4.0	22.4	31.3	34.9	38.1	130.8
TOTAL	529.0	538.5	532.2	552.8	570.5	580.4	591.3	2,827.1
YoY%		1.8%	-1.2%	3.9%	3.2%	1.7%	1.9%	

Source: HAL

6.11 BA commissioned consultants, Nyras, to review HAL's IBP. Nyras argued for more stretch in the projections (up to £2,904 million in 2011/12 prices).

Discussion of the key issues

Independent review of HAL's projections

6.12 Although the CAA welcomes the substantive level of consensus between HAL and the airlines arising from the CE process, to help inform its initial proposals it commissioned an independent study by consultants SDG to validate or challenge HAL's projections.

6.13 SDG focused on:

- a review of HAL's commercial revenue performance to date in Q5;
- a review of the areas of disagreement between HAL and the airlines;
- a review of HAL's commercial revenue projections for Q6 as set out in the IBP and FBP; and

- development of independent projections for Q6 (primarily in the form of impacts against HAL's forecasts).

6.14 SDG's findings are based on a mix of data provided by HAL along with that derived from publicly available sources (e.g. benchmarks from airport operator annual reports), insights from discussions with HAL and BA, and views on wider market trends provided by a cross section of retail and parking concessionaires currently operating at Heathrow and representing most of the key commercial product categories.

6.15 SDG has also consulted another airport operator in the UK about the results of trials it undertook to examine the potential impact of the TDA, and analysed data from Dublin Airport Authority plc annual reports to understand the results from similar trials at Dublin.

Q5 performance

6.16 SDG notes that retail revenues (excluding car parking) have experienced strong growth through Q5, growing in real terms at a CAGR of 7.4% per year (or 5.2% on a per passenger basis). Growth has been led by the concessions area (notably in the duty free and airside specialist shops categories) whereas revenue growth in the services sector has been lower with income falling in the advertising category.

6.17 The growth in retail revenues has reflected several ongoing changes (for example passenger mix changes and wider trends in the international market such as the growth of luxury retailing), the effects of new space (notably the addition of Terminal 5 along with significant changes to shop layout such as at the Terminal 3 duty free shop) and potential one-off effects such as the weakness of sterling.

6.18 In contrast, car parking revenue growth has been relatively modest (CAGR 3.3%) reflecting constraints on the size of the potential market (arising from factors such as passenger mix changes and petrol price increases), competition from non-parking modes (e.g. 'kiss and fly') and off-airport providers, and a shift towards lower yield pre-booking of car parking space.

6.19 Property revenues are largely determined by a Guide Prices formula in which several key components (passenger volumes, property price indices) have been impacted by adverse market events during Q5. As

a result Q5 property revenue growth has been flat and has fallen on a per passenger basis. These effects have been partially offset by the late closure of Terminal 2 and the Queens Building (whereby property accommodation continued to generate income for longer than assumed).

6.20 Compared to the Q5 settlement, combined retail and car parking revenues have outperformed the CAA's Q5 projection by 2.2% to the end of 2011/12. Property revenues have outperformed the settlement projection by 1.3%.

Areas of disagreement between HAL and the airlines

6.21 SDG agrees with HAL and the airlines that a decline in tobacco duty free sales is likely to arise as a result of the TDA. However, SDG's discussions with another UK airport operator that undertook trials suggest that the impact is likely to be lower than that advocated by HAL and this view is reinforced by analysis of published results from the Dublin trial.

6.22 In addition, SDG considers that there are potential opportunities to mitigate some of the effects of lost tobacco sales from 2015/16 that may not be fully reflected in HAL's FBP. These could arise from factors such as utilising space for other activities or through the use of contractual negotiations to further develop concession margins.

6.23 SDG has reviewed the case made by HAL that a ban on duty free sales of tobacco will come into effect in 2018/19. SDG's view is that whilst such a ban is likely (as it could be a probable outcome of a WHO-led study that is due to commence at some point in the next few years), the timing of the study, and any subsequent ban, are uncertain. In summary, SDG find no definitive evidence to support HAL's view that this could occur in Q6.

6.24 In relation to the principle of capital investment criteria, SDG has assessed the background supporting the cases for two specific projects. These are the HAL operated terminal 'pay to enter' lounges and a variety of potential property developments around the airport perimeter, with potential aggregate capital investment expenditure in Q6 of £30 million. The former is included in HAL's FBP (SDG has identified a potential stretch to the revenues assumed for this project). For the latter project, SDG considers that the financial case does not appear to be strong.

6.25 SDG agrees with the airlines' view that there may be opportunity for further growth in the areas of advertising and car parking and have identified potential stretch to HAL's FBP forecasts for these product categories. In the case of the former, SDG has identified opportunities for further income from sponsorship, while for car parking, some additional opportunities may be possible from a combination of restructuring of short stay parking tariffs along with growth from pre-book parking categories.

Review of HAL Q6 projections

6.26 SDG has used HAL's traffic forecasts as an input to its projections. Differences against the HAL FBP therefore reflect alternative assumptions about potential growth in revenues per passenger at the individual product category level. Following review of the FBP, SDG considers that HAL's projections for airside specialist shops, catering, bureaux, landside shops and bookshops, car rental and other services are plausible. SDG has noted some potential issues around how the 'traffic shock' assumptions impact on the Guide Prices formula for property but has not advocated an alternative forecast for this area.

6.27 For the duty free category SDG has recommended an alternative, lower, assumption of a 12% decline in revenues from 2015/16 arising from the impacts of the TDA (including some mitigation) along with an assumed ✂✂✂✂ to the existing concession margin through Q6.

6.28 For advertising, SDG has assumed a £2.5 million revenue stretch during Q6 based on additional sponsorship income.

6.29 For car parking an assumption of an £8 million stretch to the FBP projections is recommended based on identification of options for restructuring of short stay prices over and above those envisaged by HAL, and some growth in all pre-book parking categories, supported by marketing.

6.30 For property, SDG has assumed an additional £11.5 million during Q6 based on a combination of further income from re-letting of office voids, recalculation of Guide Prices to reflect most property price indices, and stretch to the revenues deliverable from the enhanced terminal facilities project (included in HAL's FBP).

CAA initial projections

6.31 Based on the assumptions above SDG, has developed the following

full projection of commercial revenues for Q6 (in 2011/12 prices). This results in total commercial revenues of £2,886.2 million for Q6, some 2.1% more than forecast by HAL. The CAA has used these projections for its initial proposals.

Figure 6.3: SDG forecasts for commercial revenues in Q6 (2011/12 prices)

£m	2014/15	2015/16	2016/17	2017/18	2018/19	Q6 Total
Retail	373.5	392.5	408.6	414.4	429.0	2,018.0
Car Parking	65.2	67.4	69.8	73.6	76.1	352.1
Property	100.9	103.7	103.7	103.9	103.8	516.1
Total	539.6	563.7	582.1	591.9	608.9	2,886.2
HAL FBP	532.2	552.8	570.5	580.4	591.3	2,827.1
Difference	7.4	11.0	11.6	11.5	17.6	59.1

Source: SDG

Figure 6.4: SDG Q6 commercial revenue forecasts (£ per passenger, 2011/12 prices)

	2014/15	2015/16	2016/17	2017/18	2018/19
Concessions	4.66	4.74	4.84	4.87	5.00
Services	0.71	0.85	0.92	0.91	0.91
Car Parking	0.94	0.96	0.98	1.03	1.05
Property	1.45	1.48	1.46	1.45	1.43
Total Commercial Revenues	7.76	8.02	8.20	8.24	8.39
Passengers (millions)					
CAA April	70.81	70.74	71.49	72.28	73.09
Total Commercial revenue (£ million)	549.47	567.31	586.22	595.56	613.26

Source: SDG and CAA

CHAPTER 7

Other Charges and Revenues

7.1 This chapter sets out the CAA's initial proposals for other charges and revenues at Heathrow. This is relevant to the calculation of the price cap as the forecast contribution made by other revenues is a component of the single till approach to price regulation. This chapter also discusses the background on the regulation of these charges and revenues as this will change under the Act.

Background to other charges and revenues

7.2 In 1991, the Monopolies and Mergers Commission (the predecessor of the CC) made a public interest finding that HAL provided inadequate information to airlines and other companies based at the airport on a range of charges for facilities and services at the airport.[40] This finding led to the CAA imposing conditions on HAL to provide the CAA and users with information on the detailed costs and other factors HAL took into account when setting these charges.

7.3 The charges were for the following activities:

- check-in desks;
- baggage systems;
- other desks;
- staff car parking;
- staff ID cards;
- fixed electrical ground power (FEGP);
- hydrant refuelling;
- airside parking;

[40] The same finding was also made with respect to Gatwick Airport Limited and Stansted Airport Limited.

- airside licences;
- cable routing;
- maintenance;
- heating and utilities; and
- bus and coach facilities.

7.4 Other revenues includes the following income streams:

- rail income;
- inter-company income; and
- other commercial income.

7.5 Historically, other charges (the Specified Activities) have been referred to as non-regulated (aeronautical) charges. HAL has provided information under the condition for each year since it was imposed.

7.6 In Q5 the CAA accepted HAL's forecasts for these charges on the basis that they had been generated according to the following principles:

- full cost recovery for each of the non-regulated charges to airlines during Q5;
- no offsetting or subsidising of such charges from one source with income from non-regulated charges from another source;
- under-recovery of non-regulated charge revenue against prior projections limited to recovery during the respective year or first subsequent year;
- in recognition of the fact that a number of the services provided, being based upon costs of services provided by outside suppliers to HAL, may inevitably change during the course of Q5, HAL would reflect such changes in its charges to airlines; and
- HAL would provide an annual update of estimates for the costs associated with non-regulated charges to the airlines for the Q5 period, at least three months prior to the commencement of any revised charges.

7.7 For Q6, under the Act, unlike AA86, the charges that the CAA can regulate are not restricted, so it could regulate these charges if it thought this was warranted. Conversely, the CAA could decide not to have a licence condition requiring transparency.

Constructive Engagement

7.8 Other charges were considered by a sub-group of the 'Opex, opex efficiency and other regulated charges' CE workstream. The sub-group agreed that the transparency arrangements should continue through Q6. It also agreed that the principles set out in Q5 should continue for Q6.

7.9 The sub-group did not produce agreed forecasts for revenue from the other charges in Q6, but it did agree the apportionment mechanism for allocated costs. This mechanism includes the principle that annuity and allocated costs should be fixed (subject to RPI) for the duration of Q6, and some changes to the list of costs that should be recovered from the specified services in Q6.

7.10 The sub-group agreed that car parking in the CTA, which is currently included as part of 'airside parking' should no longer be included as the associated costs would no longer be recovered on a cost recovery basis.

7.11 The sub-group also agreed that passengers with reduced mobility (PRM) charges, the provision of common IT infrastructure and HAL's contribution to the funding of the AOC, should be subject to the provisions for other charges.

HAL January 2013 Business Plan

7.12 HAL proposed that the value of the other charges should increase substantially in Q6, primarily due to the inclusion of some Q5 capex (that was previously recovered via aeronautical charges) in the calculations and the impact of Q6 capital projects. HAL said this would result in a proposed 20% increase in other charges in Q6.

7.13 HAL's FBP shows a proposed 25% increase in this revenue in

2014/15, followed by real reductions in revenue in each year of Q6. Overall, proposed revenue per year is higher by around 20% in Q6 than in Q5. HAL's forecasts for other charges and revenues are set out in figure 7.1.

Figure 7.1: Forecast revenue for other charges in Q6 (£m 2011/12 prices)

	2014/15	2015/16	2016/17	2017/18	2018/19	Total
Other revenues	253.0	248.8	240.1	240.7	238.8	1,221.4
Other charges	139.5	137.8	140.8	143.5	143.2	704.8
Total	392.5	386.6	380.9	384.2	382.0	1926.2

Source: HAL FBP[41]

7.14 HAL said that during Q6 it planned to introduce more tariffs that would incentivise best practice across the airport and thus reduce costs overall. HAL saw this as building on the gain share mechanism[42] for cost savings in Q5 that had led to a number of savings and increased scrutiny of cost, and would be continued in Q6.

Discussion of the key issues

7.15 In the CAA's view, the current transparency condition has worked well, reassuring interested parties that these charges are based on appropriate criteria. The CAA considers that it has not imposed an unreasonable burden on HAL.

7.16 The question of whether to continue with the condition has been considered on a number of occasions since 1991, most recently in the CAA's consultation on the continuation of the public interest conditions in Q5+1.[43]

[41] HAL's forecasts include revenue under the following categories: airside licences, check-in/baggage rents income, car park passes, PRM income, electricity – high voltage, electricity – low voltage, fixed ground power, pre-conditioned air, gas income, heating, water and sewerage, waste and recycling/refuse collection, security identity cards, taxi feeder park, bus and coach, apron passes and driver training, common IT and AOC. The CAA is not proposing that all of these categories should be covered by any transparency condition.

[42] This is a mechanism where both HAL and the airlines benefit from unanticipated savings.

[43] 'Extending the current public interest conditions at Heathrow and Gatwick airports – the CAA's decision (April 2011) available on the CAA website at

7.17 Given the lack of complaints in Q5 from users about HAL's other charges, the support for continuing with the transparency condition in the Q5+1 consultation, and the lack of appetite for changes during CE, the CAA proposes to include the condition in HAL's licence.

7.18 The CAA is proposing two changes to the condition to reflect its powers under the Act and other legislation. These changes are:

- to remove from the list of activities check-in desks and baggage facilities and hydrant refuelling as charges for these items are already required to be transparent under the Airports (Groundhandling) Regulations 1997[44]; and
- to remove the requirement to reconcile any differences with the Profit Centre Reports (PCR) supplied to the CAA as this creates an unnecessary additional burden. The CAA can seek further information or clarification if necessary.

7.19 The CAA is not proposing any other changes to either the list of activities covered by the condition or to the particular requirements of the condition. The CAA does not consider that the PRM charge should be added as transparency is already required by Regulation (EC) 1107/2006 concerning the rights of disabled persons and persons with reduced mobility. In its Q5 decision, the CAA said it did not preclude adjusting airport charges in Q6 to take into account increases in other charges in Q5 that had not been adequately justified. In the first four years of Q5 HAL received £734 million in revenue from charges covered by the transparency condition. This compares to forecast revenue of £682 million. The CAA does not have any evidence or complaints from interested parties to suggest that it should consider adjusting the price cap for Q6.

CAA initial projections

7.20 The CAA is proposing to continue to use other charges and revenues as deductions from the single till. It is also proposing to retain the

http://www.caa.co.uk/docs/5/ergdocs/PIConditionsExtensionDecision.pdf

[44] Regulation 16(d) requires that any fee charged for airport installations necessary for suppliers of groundhandling services has to be determined according to 'relevant, objective, transparent and non-discriminatory criteria'.

transparency arrangements for the other charges in Q6 with two exceptions. These are to remove check-in desks, baggage facilities and hydrant refuelling from the services included in the arrangements and to remove the requirement to provide reconciliation with the PCR.

7.21 The CAA proposes using HAL's FBP forecasts (as shown in figure 7.1) for other charges for its calculation of HAL's price cap for Q6.

CHAPTER 8

The Q6 Regulatory Asset Base

8.1 A calculation of the RAB is required in order to derive two important elements of the price cap, the depreciation charge and the WACC charge. This chapter sets out the CAA's analysis of HAL's RAB and hence the depreciation charge to apply in Q6. The WACC is discussed in detail in chapter 9.

8.2 The CAA's Q5 decision set out how the CAA intended to calculate the closing RAB for Q5. Q5 started with the RAB value at the close of Q4, plus or minus movements within Q5 to give a closing RAB value for Q5. No formulae were set out as to how the RAB would be rolled forward for Q5+1, although the Q5 decision provides guidance on the principles. The closing RAB value for Q5+1 is taken as the opening value for Q6.

Constructive Engagement

8.3 Given the consensus between HAL and the airlines on the use of a RAB-based methodology, there was little discussion about the mechanics on how to roll forward the RAB for Q6.

8.4 There was discussion within the capital efficiency workstream on whether an adjustment should be made to the opening RAB to reflect potential inefficiencies in HAL's process for the T3IB project in Q5 (see chapter 13 for details).

HAL's January 2013 Business Plan

8.5 Figure 8.1 sets out HAL's calculation of the reconciliation between the opening Q5 RAB and the opening Q6 RAB.

Figure 8.1: HAL's calculation of its RAB roll forward

£ million	4 years to 31-Mar-12 Audited Actual prices	year to 31-Mar-13 Forecast 2011/12 prices	year to 31-Mar-14 Forecast 2011/12 prices
Opening RAB	9,220	12,523	13,250
Additions	3,320	1,322	1,073
Proceeds from disposals	(3)	-	(4)
Depreciation	(1,853)	(555)	(555)
Indexation	1,432	-	-
Profiling	589	(40)	
Closing RAB	12,705	13,250	13,764
Closing RAB at 31 Mar 2012 in 2011/12 prices	*12,523*		

Source: HAL's regulatory accounts and HAL forecasts.

Discussion of key issues

Deriving the opening RAB for Q6

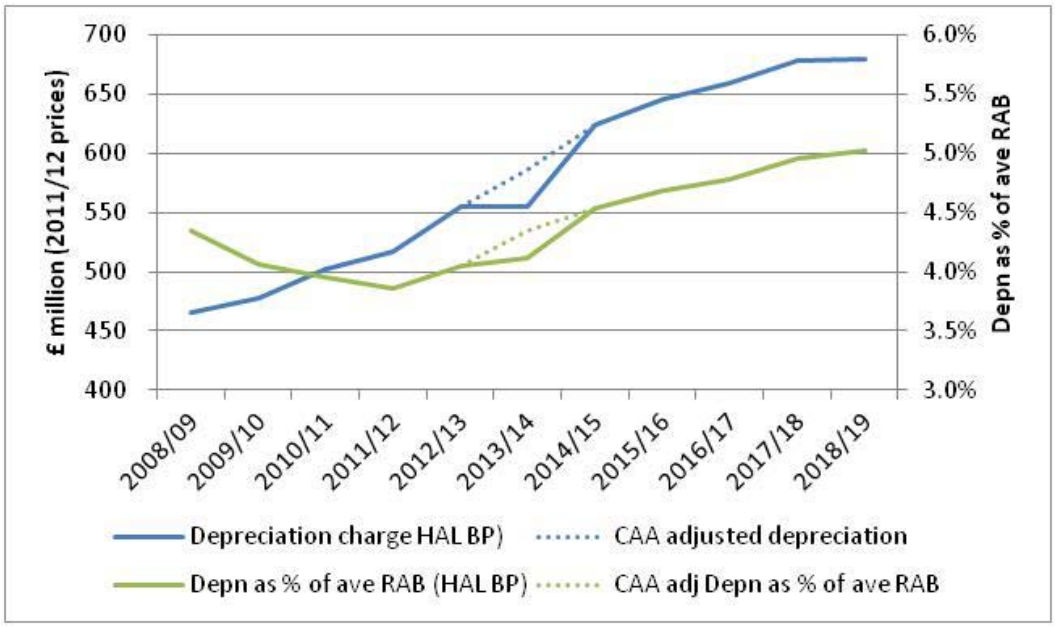
8.6 The CAA has validated HAL's projections for the value of capex spent in Q5. HAL's regulatory accounts, audited by HAL's statutory auditors, set out the value spent on Q5 capex (and proceeds from disposals) for the first four years of Q5. For the final two years this has been estimated by HAL to be £2,395 million. The CAA has verified HAL's inflation indexing calculation. The depreciation charge deducted from the RAB during Q5 is the same as that included in the Q5 decision, plus £555 million for Q5+1.

8.7 Due to the legal framework governing the one year extension of Q5 (Q5+1), there is no set of building blocks that add to the price cap of RPI+7.5% in Q5+1. Furthermore, the CAA's Q5+1 decision did not include a view on the appropriate depreciation to be included in the RAB for that year. HAL's FBP assumes that the appropriate depreciation charge is £555 million (2011/12 prices). This is the same as the charge in the last year of Q5.

8.8 The CAA has reviewed the depreciation charge in its Q5 decision, its Q6 proposals and HAL's FBP. The CAA has taken into account depreciation charges over Q5 and Q6, depreciation as a percentage of the RAB, the annual change in depreciation and the fact that the price cap increased by RPI+7.5% each year during Q5+1. Taking a simple average of these estimates resulted in a depreciation charge of £587 million. When this is plotted next to Q5 and Q6 depreciation, the estimate for Q5+1 appears reasonable (figure 8.2).

8.9 The CAA therefore proposes to reduce HAL's estimate for the opening RAB by £31 million (2011/12 prices) to reflect that its view on Q5+1 depreciation is slightly higher than the estimate provided in HAL's FBP (figure 8.2). In addition, the CAA has reflected in the opening RAB the adjustment from its conclusion of the Q5 capital efficiency assessment (see chapter 13 for details).

Figure 8.2: Depreciation charge in Q5+1



Source: CAA

Figure 8.3: Opening Q6 RAB (CAA adjusted)

£ million (2011/12 prices)	
Forecast closing RAB per HAL's FBP	13,764
CAA adjustment for Q5 capital efficiency	(30)
Q5+1 Depreciation not yet reflected in the numbers	(31)
Adjusted closing Q5 RAB & opening Q6 RAB	13,703

Source: CAA analysis

Calculating the RAB throughout Q6

8.10 Net capex in Q6 is calculated from HAL's forecast capex used in chapter 4 and HAL's forecast for disposals included within its FBP. Depreciation is the mechanism by which the value invested in the business is passed back to investors through its removal from the RAB and addition to allowed revenues.

8.11 Under RAB-based price regulation, the choice of depreciation policy does not affect the value of the business because it only affects the timing of the return. The depreciation policy is, in effect, net present value neutral when considered alongside the return on the RAB. However, the choice of depreciation lives affects the profile of revenues and prices, and matching the depreciation life to the useful economic life of the assets is likely to:

- facilitate the financing of the assets; and
- produce smoother price profiles.

8.12 The depreciation allowance is determined by the overall value of the RAB, and the asset lives and age of the existing assets contained within it. The RAB is reduced annually by an amount equal to the projected annual depreciation allowance. Total regulatory depreciation consists of:

- depreciation of the existing assets, which includes assets which are already part of the Q5 programme; and
- depreciation of the forecast capex in Q6

8.13 HAL's depreciation of existing assets is in line with HAL's regulatory accounts, and HAL's asset lives and depreciation policy are consistent with those in the Q5 determination. The depreciation of new capex for Q6 is calculated on a straight-line depreciation basis. Based on these

assumptions, the forecast for HAL's RAB throughout Q6 is set out in figure 8.4.

Figure 8.4: CAA forecast RAB for Q6

£m (2011/12 prices)	2014/15	2015/16	2016/17	2017/18	2018/19	Total
Opening RAB	13,703	13,738	13,789	13,720	13,633	13,703
Net capex	660	697	591	591	464	3,002
Depreciation	(625)	(646)	(659)	(678)	(680)	(3,288)
Closing RAB	13,738	13,789	13,720	13,633	13,417	13,417
Average RAB	13,720	13,763	13,755	13,677	13,525	n/a

Source: CAA

CAA initial projections

8.14 The CAA's initial projections for the calculation of the opening Q6 RAB, the average RAB within the year, and the depreciation charges to be included within the Q6 price caps are set out in figure 8.4 above. These are very similar to the forecasts for these items made by HAL in its FBP, save for two adjustments to reflect a difference of view on the Q5+1 depreciation charge and the CAA's conclusions on its Q5 capital efficiency assessment (see chapter 13 for details).

CHAPTER 9

Cost of capital

9.1 The WACC is an important component to the calculation of the price cap owing to the need to remunerate past investment represented by the accumulated RAB. It is also important in encouraging continued investment to support the capital programme discussed in chapter 4. This chapter discusses some of the key methodological issues raised by stakeholders, followed by a summary of HAL's FBP and a submission received from BA. Following this, it sets out the results of an independent analysis commissioned by the CAA and concludes with the CAA's initial projections.

Weighted average cost of capital and the capital asset pricing model

9.2 Two key concepts in the estimation of allowed returns are the WACC and the capital asset pricing model (CAPM). In previous regulatory reviews, the allowed returns to be included in price caps for HAL were based on forward-looking estimates of the cost of capital. The cost of capital is a weighted average of two components: the cost of equity (K_e); and the cost of debt (K_d), where the weightings (gearing or g) reflect the relative importance of each type of financing in a notional firm's capital structure.

Equation 1: WACC

$$WACC = g.K_d + (1 - g).K_e$$

9.3 The cost of debt is directly measurable for many firms in the UK economy. The cost of equity, by contrast, cannot be directly observed and instead estimation is based on the returns that are expected to be demanded by a shareholder in exchange for holding shares in HAL. The primary tool that the CAA, other sector regulators and the CC have used when estimating the cost of equity is the CAPM, which relates the cost of equity to the risk-free rate (R_f), the market-wide equity risk premium (ERP) ($R_m - R_f$) where R_m is the expected return

on the market, and a firm-specific measure of investors' exposure to systematic risk (β or beta):

Equation 2: Cost of equity (K_e) under CAPM

$$K_e = R_f + \beta.(R_m - R_f)$$

9.4 Please note: the CAA uses a pre-tax, real WACC in this chapter unless otherwise stated. This approach means that the WACC allowance includes an allowance for corporation tax but excludes an allowance for inflation (instead inflation is included in the RAB). A pre-tax, real WACC is not used by all regulators, so to facilitate discussion a real 'vanilla' WACC has been used in some places. Where this is used it is clearly indicated. The real vanilla WACC excludes the allowance for tax and therefore also facilitates comparisons in the light of different tax rates.

Constructive Engagement

9.5 Although the WACC was not a formal part of CE, the CAA received submissions on methodological issues from HAL and BA and encouraged both sides to exchange their thinking in a transparent manner. No stakeholders advocated a departure from using the CAPM as a basis for calculating the WACC. HAL and BA raised some methodological issues with the application of the CAPM/WACC approach. These were:

- skewness of HAL's returns;
- split cost of capital; and
- indexation of the cost of debt.

Skewness of HAL's returns

9.6 HAL argued that it faced asymmetric risk owing to a combination of factors:

- capacity constraints. HAL considered that there was virtually no scope to ease the capacity constraint in Q6. It is very unlikely that a third runway will be constructed and there is only the remote possibility of mix-mode operations;

- demand shocks. For example, HAL pointed out the recent episodes caused by adverse weather and the volcanic ash cloud;
- competition. This may prevent HAL from charging to the price cap in times of very weak economic conditions, but with no equivalent upside opportunity in better times; and
- 'one-sided' regulatory mechanisms (e.g. the SQR scheme and capital triggers).

9.7 HAL argued that these factors could lead to 'negatively skewed'[45] returns and coskewness[46] in passenger numbers and that financial returns had increased since 2004. HAL referred to a paper[47] which it has commissioned from Professor Ian Cooper of London Business School, which suggested that, due to the capacity constraints at Heathrow, its returns are negatively skewed. Based on this, HAL suggested allowing an additional term in the CAPM, equivalent to an increase in the cost of equity of 100 to 180 basis points (bps), itself equivalent to a 40 to 70 bps increase in the WACC.

9.8 HAL also noted that a paper which it had commissioned from Europe Economics (EE) showed that there was evidence to adjust the CAPM to capture coskewness in the calculation of the cost of equity. However, there were other possible approaches including adjusting the 'traditional' asset beta and an ERP approach. The airlines at

[45] The CAPM assumes that share returns have normal distributions. This distribution is symmetric, with equal chances of the same upside gain and downside loss. Because of this symmetry, risk can be fully described by the standard deviation (or equivalently by the variance). Ian Cooper, on behalf of HAL, argued that when returns are not normally distributed, the CAPM is an incomplete model. Skewness means that the upside potential of a company's shares is different to their downside risk. Positive skewness means that upside potential is greater than downside risk, and negative skewness means that downside risk is greater than upside potential. In particular, Cooper argued when there is significant skewness of returns the standard deviation (and consequently the CAPM beta) is no longer an adequate description of risk. Furthermore, Cooper argued that skewness matters because it affects the desirability of an investment to investors and, hence, the cost of equity.

[46] Estimation of the cost of equity requires an approach that can be applied at the level of the individual share. For this, one needs a measure of coskewness that allows for the diversification of risk in portfolios. The measure that does this is the coskewness of a share with the market. This plays the same role in adjusting the cost of equity for skewness as the beta does in the CAPM.

[47] Professor Ian Cooper, Adjusting Heathrow's cost of capital for skewness, 30 September 2011, available at: http://www.caa.co.uk/docs/5/BAASkewnessReport.pdf

Heathrow did not support HAL's arguments. BA disputed the presence of asymmetric risk because there are upside opportunities that HAL had not taken into account and because the downside risks are capped since Heathrow is a regulated airport operator with SMP. BA argued further that HAL's management should be able to mitigate some downside risks through improvements in cost control and moving to a more flexible cost structure. BA also said that if there were asymmetric risks, HAL would feel these risks to a lesser extent than the airlines. The airlines would feel the first impact of these risks, with lower ticket sales, following which any reduction in revenue which the airport experienced could be significantly reduced to the extent that the airlines took this effect in a reduction in profitability. BA argued that the key issue in estimation of the cost of equity was the lack of market data, which would not be addressed by incorporating coskewness into the model.

Split cost of capital

9.9 BA and the Heathrow airline community, through the LACC, suggested that the CAA consider a split cost of capital. This approach assumes that HAL's RAB is a long-term, relatively risk-free, asset, in contrast to the development of new capital investment and the operation of the airport, which are inherently riskier. The model proposes that the RAB can be fully debt funded and should, therefore, attract a relatively low rate of return. The capital base required to support capex and opex is riskier and should attract the cost of equity.

9.10 In keeping with common regulatory practice, in past reviews, the CAA has adopted a single WACC applied to the RAB (including within period capex) and no additional capital base is required to support opex. Those who support the split cost of capital argue that this may over reward HAL on its RAB and under reward HAL on its capex and opex.

9.11 Neither HAL nor GAL supported the split cost of capital. HAL submitted a paper it commissioned from Professor Ian Cooper that rejected BA's suggestion and noted:

- the split cost of capital approach would not change the cost of capital if there was no change in the regulatory contract. If the regulatory contract does not change the overall amount of risk borne by HAL (the asset beta) should not change since splitting a given amount of risk does not change the overall amount of risk; and
- for the split cost of capital approach to change the overall cost of capital, it would have to be accompanied by changes to the regulatory contract. To reduce the cost of capital, these would have materially to reduce (or eliminate) risk to HAL's RAB without affecting other risks. Indeed, funding the RAB entirely with debt would require all risk to be eliminated. In that case, the change in the cost of capital would come not from the split cost of capital approach itself, but from the change in the regulatory contract.

Indexation of the cost of debt

9.12 BA, through its consultants CEPA, supported the use of a cost of debt index to set the allowed cost of debt. This approach, it argued, had been applied by Ofgem, which used an all-in cost of debt allowance based on a 10-year trailing average of a forward-looking cost of debt index. It noted that this approach also allowed the historically low rates that currently exist to be incorporated while allowing flexibility for the rate to alter as market conditions change.

9.13 HAL had concerns with debt indexation (while not definitively rejecting the idea)

- for risk to be reduced, the CAA would need to provide assurance that, over the course of a number of regulatory reviews, the indexation regime would apply equally in those periods where interest rates were expected to rise, as in those periods where they were expected to fall;
- the CAA would need to take a view that, over the long term, airlines were in a better position to absorb interest rate risk than HAL;
- whether the pass through of the risk associated with the cost of debt (but not equity) could result in an unintended bias towards debt compared to equity financing; and

- there would be a number of significant challenges to the construction of the benchmark index in its contents and whether it would change to reflect HAL's capex requirements.

Discussion of the key issues (I): methodology

9.14 The CAA commissioned two independent reports from PricewaterhouseCoopers (PwC), one on the methodological issues of the split cost of capital and skewness of returns and another report on the calculation of the cost of capital.[48]

Skewness of returns

9.15 PwC's advice to the CAA was that it would be inappropriate to adjust HAL's regulatory cost of equity to reflect skewed risks. PwC's recommendation was based on a number of factors.

- PwC found there was no long-term conclusive evidence on the negative skewness of BAA/HAL's financial returns. PwC's statistical analysis of BAA's returns suggests no skewness over the period 1987 to 2006. The coskewness coefficient for the period 1987 to 2006 was positive, although some sub-periods, including August 2001 to July 2006, were negative.
- Since 2006[49] when BAA delisted, only operational data, such as passenger numbers, were available. Although such data suggested a negative coskewness coefficient, PwC concluded that the robustness of the skewness analysis put forward by HAL based on passenger volumes and ATMs was not proven. For example, passenger volumes (and underlying growth rates) did not represent a solid proxy for equity returns. PwC considered that real economic variables did not reflect present values in the same way as share prices, so there was a lack of consistency between the operational variables and the financial variables used. In addition, while HAL

[48] These are both available from the CAA's website: www.caa.co.uk.

[49] BAA/HAL has suggested that capacity constraints at UK designated airports, particularly Heathrow are a more recent phenomenon and therefore more weight should be attached to the most recent estimate of BAA's coskewness coefficient. However, this is questionable given the volatility of coskewness coefficient estimates and inconsistent with evidence that BAA has operated with capacity constraints for many years.

argued there are theoretical grounds for a strong correlation between passenger numbers and HAL's equity returns, PwC argued that empirical evidence suggested that the explanatory power of such a regression is low.

- Estimates of the coskewness coefficients before 2006 are particularly volatile (and more volatile than other components of the CAPM formula such as the beta). For example, based on the financial data from 1987 to 2006, the coefficient was +0.16 although if the period is divided into four periods of five years it varies from -0.46 to +0.56. This would affect the WACC by between -50 bps and +40 bps. PwC was concerned that it would not be appropriate for the WACC to move around from price control to price control on the basis of a highly volatile estimate of the coskewness coefficient.
- There were a number of practical complications that reduce the robustness of any adjustment for skewed risk. These included the needs (i) to modify the CAPM (by reducing the equity market risk premium if including a separate coskewness risk premium); (ii) to reassess the coskewness risk premium using UK financial market data[50]; (iii) to assess the statistical significance of the coskewness coefficients; and (iv) to assess the effect on other components of the CAPM on incorporating skew. If skew is caused by capacity constraints, those constraints are also likely to reduce the beta estimate.
- Each of these practical implications would require further calculation, estimation and judgement to that required for the basic CAPM. This could undermine the robustness of calculations based on those models because of the lack of evidence against which to sense check the results. Furthermore, it would move the airports sector away from the well established application of the CAPM in regulatory settings.

9.16 Having considered the representations made by HAL and BA, along with the advice from PwC from its own independent study, the CAA is not persuaded that it should make a specific adjustment to uplift HAL's cost of equity to reflect negatively skewed returns. Among other things, it has placed weight on PwC finding no conclusive proof of asymmetric risk and the argument that downside risks can partially be

[50] Currently, the only estimate of the coskewness risk premium is based on US data.

mitigated by HAL. HAL could make its cost base more efficient and flexible. The CAA has also considered that, even if HAL has negatively skewed returns, it is not clear it would materially change the estimated WACC.

Split cost of capital

9.17 PwC recommended that the CAA should not adopt the split cost of capital approach. PwC argued that:

- regulated businesses, such as HAL, are integrated with revenues and risks that cannot be meaningfully split along the lines suggested in the split cost of capital approach. The value of the RAB is closely linked to on-going capex and opex, and in combination makes up the regulated business. Any split to the regulated business would be arbitrary and not reflect meaningful commercial entities;
- the existing regulatory framework does not 'guarantee' HAL's RAB in all possible scenarios[51], and therefore it is unlikely to be risk-free, or even of sufficiently low risk to be 100% debt financed;
- given the relative shares of the RAB and non-RAB components for HAL, the implied cost of equity for the non-RAB business could be very substantial. PwC considered this did not necessarily invalidate the approach, but did make it harder to estimate and benchmark the cost of capital for the non-RAB component; and
- if such a split of the cost of capital was carried out, under the current regulatory framework, it would not change the overall cost of capital or the level of regulated prices. This limits the benefit of such an approach.

9.18 On balance, the CAA considers that, although the split cost of capital may have some academic attractions, it is not persuaded that it should employ it for HAL for Q6. There is a risk that implementing it, without changing the regulatory framework, would not reduce risk but merely apportion it between two theoretical parts of the business. While arguments for a split cost of capital on the basis of market inefficiencies could also be made, the CAA has not received evidence on this matter. The CAA considers that the potential reduction in the

[51] For example, if the competitive environment changed and HAL no longer had SMP.

cost of capital from changing the regulatory contract (for example by eliminating all risk from the RAB) would not benefit passengers. Given the open-ended risk future passengers would adopt here it could be contrary to the passenger interest. The CAA also notes that one of the assumptions of the split cost of capital – that the RAB is completely risk-free – may not always be the case for HAL, especially if it faces stronger competitive constraints in the future. The CAA notes that the split cost of capital has been considered but not subsequently adopted by any of the other UK sector economic regulators such as Ofgem, Ofwat and the CC.

Indexation of the cost of debt (and automatic in period adjustment)

9.19 Indexing the cost of debt automatically adjusts the cost of debt within a control period to equal a benchmark of market rates. Those in favour of indexation have argued that regulators 'aim up' on the cost of debt in the WACC to allow for the possibility that the cost of debt might be higher than expected over the period. The longer the price control period, the greater the uncertainty over future yields and therefore the greater the incentive on the regulator to aim up. Indexing the cost of debt would eliminate the need for aiming up.

9.20 Those who argue against indexing the cost of debt consider that financing is a matter for the company and that the company is best placed to make financing decisions. By introducing a set formula for calculating the cost of debt, the CAA might be incentivising an airport operator to favour debt over equity and/or to match the indexing assumptions.

9.21 In raising its concerns about indexation, HAL noted that there would be difficulties in constructing the appropriate index. In addition, as HAL noted, if the CAA was to index the cost of debt, it would need to commit (as far as it could possibly do so) to taking a similar approach at each subsequent regulatory review. In effect, it would be setting the mechanics for calculating the cost of debt for the foreseeable future. While consistency is important, the WACC also requires judgements to be made and discretion to be exercised, which could be restricted if the CAA commits to a mechanical approach to the cost of debt. On the other hand, BA was supportive of indexation as it removed the incentive on the regulator to aim up, and as BA did not think that indexation would remove HAL's incentive to minimise debt costs.

9.22 Ofgem has chosen to adopt indexation for all its recent regulatory determinations. Ofgem's indexation is a simple trailing 10-year average of yields on A and BBB rated debt. Ofgem noted that there were several reasons for it to use indexation:

- it may benefit users because regulatory decisions have generally lagged the decline in market rates;
- financeability tests may benefit as new debt, financed at efficient rates, would be fully funded in the future regardless of movements in market rates;
- it can reduce uncertainty in light of market conditions that are difficult to interpret; and
- Ofgem's research concluded that there was no convincing evidence that risks would be any greater than under the current approach.

9.23 The CAA's Q5 approach to the calculation of the fixed *ex ante* cost of debt had similar properties to Ofgem's indexation in that it blended a mixture of historical yields with current yields to reflect a notional debt portfolio (albeit the Q5 approach did not adjust the cost of debt within the quinquennium). The historical yields reflect fixed rate debt taken out over a period of time, while the current yields reflect floating rate debt and new debt to be taken out over the forthcoming price control period.

9.24 The CAA notes that the selection of the benchmark is an important consideration. The less closely matched the benchmark is to the actual composition of HAL's debt portfolio[52], the greater the potential for variance and thus, the greater the 'optionality' implied by the chosen benchmark and the scope for arbitrage.

9.25 The longer the regulatory period with a fixed cost of debt (however derived), the greater the potential arbitrage. This could have perverse incentive effects. For example, if a fixed *ex ante* estimate (the CAA's Q5 approach) is used and the market level subsequently falls below the level of the estimate, the regulated entity will have an incentive to 'lock in' the arbitrage profit for the remainder of the period. If large enough, this 'profit' could ensure outperformance of the regulatory

[52] The CAA notes that debt used to finance HAL is also held by other group companies, but for simplicity for this document, the CAA uses the term HAL.

settlement, which may blunt incentives to strive for outperformance of the other cost assumptions. Conversely, if the market moves persistently above the level of the estimate, incentives to outperform other cost assumptions will be sharpened. Ex ante, there is a broadly equal probability of both outcomes, but as the future path of market rates is non-controllable and largely unpredictable (at least beyond the short term), the incentive effects implied by the cost of debt determination are random and may be 'good' or 'bad'.

9.26 All other things being equal, reducing the arbitrage opportunity by adjusting the regulatory cost of debt determination more frequently may, therefore, improve the incentive properties of the regulatory settlement overall. The longer the period for which the determination is made, the greater would be the benefit. In current circumstances, where it might be argued that interest rates are unsustainably low, the risk that future market rates will be different from present rates is likely to be greater than in more stable market conditions.

9.27 In the extreme case, a fixed *ex ante* estimate based on current market rates may increase the risk of financeability issues. Including an uplift in the cost of debt estimate to address the heightened risk will inevitably be arbitrary with unpredictable and potentially perverse incentive effects. Providing for intra-period adjustment may therefore be a better solution.

9.28 Annual adjustments, based on *ex post* estimates derived from a market benchmark on the lines of Ofgem's approach, are one way of doing this, and have the advantage of being automatic, requiring no further regulatory action and thus implying little regulatory risk. An alternative would be the approach used by the Irish regulator in respect of Bord Gais, which provided for an interim adjustment if and when a market benchmark moved outside a pre-determined limit.

9.29 The CAA considers that the arguments for and against indexation are finely balanced. Greater uncertainty over future yields during the price control period (whether that is due to a longer price control period[53] or to increased market uncertainty) would suggest that the benefits of the mechanism might outweigh the costs, with the opposite being likely if uncertainty was low. It is the CAA's intention to explore the issue

[53] The CAA notes that Ofgem's indexation of debt has coincided with its move to an eight-year control period.

further before its final proposals and the CAA would especially welcome feedback from stakeholders on this issue as part of the consultation.

9.30 If the CAA were to introduce indexation of the cost of debt it would expect that the starting value would be within the range for the cost of debt indentified by PwC. Furthermore, the CAA notes that Ofgem's current cost of debt of 2.92% based on its indexation method is within and towards the top end of PwC's range.

Other methodological issues

Real or nominal cost of capital

9.31 The CAA has previously sought views on whether inflation should continue to be included in the RAB (and not in the WACC) or whether there should be a change to including inflation in the WACC (and not in the RAB).[54] The CAA has received no submission in support of a change in its approach. Furthermore, the CAA is aware that, broadly to match the CAA regulatory approach, HAL has issued index-linked debt[55] (meaning that the return for inflation is added to the capital sum and not to the interest payment).[56]

Accounting rate of return

9.32 In Q5, the financial model (shared by HAL, the CC and the CAA) converted the WACC (6.2%) into an accounting rate of return (ARR) (6.014%)[57] to the RAB to take account of the fact that returns could themselves be reinvested during the course of each year, thereby generating the allowed return by the end of the year.

9.33 HAL thought that the ARR was not appropriate and that the CAA should apply the WACC to the average of the opening and closing RAB.

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[54] Review of price regulation at Heathrow, Gatwick and Stansted airports, May 2012, available at: http://www.caa.co.uk/docs/5/Q6PolicyUpdate.pdf

[55] Or financial derivatives which produce a similar effect.

[56] This is also known as 'accretion'.

[57] In Q5 the ARR, derived from the WACC, was applied to the average of the opening and closing RAB to calculate the allowed pre-tax returns.

9.34 The CAA notes that the adjustment is adopted by some, but not all, of the other regulators such as Office of Rail Regulation (ORR), Northern Ireland Utility Regulator, and the CC (in respect of airports and Bristol Water). The CAA understands that Ofgem make a similar adjustment.

9.35 Since the WACC is ultimately a judgement within a plausible range of outcomes, the accounting adjustment may risk importing spurious accuracy. However, the CAA continues to consider that there is an argument for the use of the concept of the accounting rate because returns that are earned throughout the year can be reinvested. It is, therefore, something the CAA expects to take into account when judging where in the range to adopt its initial proposals for the WACC.

Traffic forecast risk

9.36 The WACC captures expected returns. Expected returns are the average returns, and therefore the traffic forecasts need to be the expected (or mean) traffic forecast for the period and include expected shocks (both of a positive and negative nature).

HAL's January 2013 Business Plan

9.37 HAL commissioned EE to prepare a paper giving a WACC calculation. EE estimated HAL's pre-tax real WACC at 7.1%. This compares to a 6.2% WACC used by the CAA and the CC for the Q5 determination.

9.38 Looking at the components of WACC in detail, EE kept some elements the same as, or broadly similar to, Q5. The level of gearing remained at 60% and the level of total market returns (risk-free rate and ERP) stayed at 7%.

9.39 The two elements where EE considered an increase was needed were the cost of debt (4.6% compared to 3.55% for Q5) and the equity beta (1.3 compared to a range of 0.90 to 1.15 for Q5). These increases were partially mitigated by a reduction in HAL's assumed tax rates (21% compared to 28% in Q5).

HAL's estimate of WACC

Risk-free rate

9.40 EE, on behalf of HAL, adopted a risk-free rate of 2%. This was estimated by considering the prospects for economic growth over Q6. EE concluded that a rise in the sustainable growth rate to 2.2 to 2.5% should be correlated with a rise in the risk-free rate from below 1.5% (in line with Ofcom's most recent judgement) to approximately 2.2 to 2.5%. This is broadly in line with the risk-free rate determinations of the early to mid 2000s. EE did not argue that the current risk-free rate is 2%, but that it expected the risk-free rate to rise to 2% (or perhaps even above) by the period relevant to the Q6 price control.

Equity risk premium

9.41 EE adopted an ERP of 5%. This was estimated by taking into account its historical analysis of risk premiums (of investors, 4 to 5%); forward-looking estimates (5 to 7%), surveys (5.3% to 6.0%) and regulatory precedents (top end of the ranges varied between 4.5% and 5.5%). EE's proposed risk premium of 5% assumed that its approach to skewness was accepted. If its approach was rejected, it recommended a risk premium of 6%.

9.42 HAL said it was putting forward a conservative estimate of the total market returns of 7%, comprising a risk-free rate of 2% and an ERP of 5%. It noted recent market trends in both the market returns (upward) and the risk-free rate (downward). It also noted the recent determinations from Ofgem (a market return of 7.25%, comprising the risk-free rate of 2% and an ERP of 5.25%).

Beta

9.43 HAL noted that risk (and required return) can be thought of as dependent on three factors: the volatility of underlying demand; whether the design of the price cap mitigates this risk; and the fixity of the cost base. HAL submitted a report that it commissioned from NERA that showed that HAL was riskier than other regulated companies in the water sector, the energy sector, and NERL. For example, some sectors did not experience as much demand risk (e.g. energy and water) and some sectors had explicit volume sharing mechanisms (e.g. NERL). In addition, HAL argued that it has a high fixed cost base with 80% of opex insensitive to traffic (and

depreciation and the WACC charge are also fixed).

9.44 In respect of historical performance, NERA concluded that HAL had underperformed its WACC in Q4 and Q5 by on average 1.48% per year. All other sectors either outperformed or the underperformance was much lower. However, NERA concluded that it was difficult to assess how these differences in risk translated into differences in the WACC.

9.45 NERA combined its assessment of all these factors and concluded that airports had greater exposure to risk than the other regulated sectors. HAL argued that the implication was that it carried more risk than other regulated companies and that this should be reflected in its beta.

9.46 In deriving an estimate for the equity beta for use in the business plan, HAL used EE's estimate of 1.3. EE employed two approaches;

- it analysed comparator airports (1.3); and
- it estimated a skew-adjusted 'fundamental' beta (1.36).

9.47 EE compared Charles de Gaulle, Frankfurt, Vienna, Zurich and Copenhagen airports to Heathrow across a number of characteristics (passenger numbers, total assets, hub airline, capacity constraints passenger mix and form of regulation). EE concluded that ADP (the owner of Charles de Gaulle, amongst other airports) and Fraport (the owner of Frankfurt amongst other airports) were the best comparators. EE then estimated the betas of ADP and Fraport, adjusted for gearing (using a debt beta[58]) and estimated a range of 1.1 to 1.5 with a midpoint of 1.3.

9.48 Fundamental betas are estimated by using the airport operators' financial performance and assets information as well as a dummy variable to capture the sector. Using this model and adjusting for 60% gearing EE estimated that the 'uncorrected fundamental equity beta' of Heathrow was 1.1.

9.49 Based on an analysis of the skewness of Heathrow's passenger volumes (and those of competitor airports), EE estimated that equity returns at Heathrow should be 1.3 percentage points higher than those of an asset with the market average skewness. With an ERP of

[58] A debt beta measures debt exposure to market (systematic) risk.

5% this implied an uplift to the fundamental beta of 0.26, to produce an equity beta of 1.36.

Cost of equity (and tax)

9.50 Combining these estimates for the risk-free rate, ERP and equity beta, EE estimated a HAL's post tax cost of equity of 8.5%. With a tax rate of 21%, this equates to a pre-tax cost of equity of 10.8%.

Cost of debt

9.51 HAL estimated its cost of debt, including fees, at 4.6%. HAL argued that it was not surprising that the cost of debt had risen compared to Q5, because the period leading up to the Q5 determination was now recognised as one in which risks associated with debt were under-priced. Similarly, it noted that the years 2008 and 2009 were characterised by extreme market conditions and yields were distorted upwards.

9.52 In deriving its estimate of the cost of debt for use in HAL's business plan, EE considered the debt premium over the risk-free rate (2%). EE estimated the debt premium (for BBB+ rating) by assessing spreads on Heathrow Airport Holdings' bonds, comparator airport bonds and UK utility companies bonds. EE's calculations are reproduced in figure 9.1 below.

Figure 9.1: EE basis for its debt premium estimate

Spreads - spot at 30/11/12	Average for all	A+	A-	BBB+	BBB	EE estimate of BBB+
Heathrow Bonds	2.05% (includes A, BBB and BB)	-	1.68%	-	2.79%	2.1% to 2.7%
Airport comparators	1.24% (includes A+ and BBB)	0.91%	-	-	2.61%	2.0% to 2.5%
UK utilities	1.33% (includes A, BBB+ and BBB)	-	1.33%	1.30%	1.64%	1.0% to 1.8%

Source: Europe Economics report, February 2013

9.53 EE concluded that the appropriate range for the debt premium was 2.1% to 2.7% with a midpoint of 2.4% to which fees of 20 bps were

added. (HAL estimated that its actual fees to be in the region of 49 bps to 59 bps.) Combining its debt premium estimate (including fees) with its risk-free rate estimate of 2%, EE proposed a cost of debt of 4.6%.

BA's estimate of WACC

9.54 BA submitted a report it had commissioned from CEPA, which estimated a range for HAL's WACC in the region of 4.5% to 5.5%. BA used a WACC of 4.5% in its estimation of the price cap.[59] BA's CEPA report used the same gearing and tax rate assumptions as HAL. It used a slightly lower total returns estimate (risk-free rate and ERP) of 6.5% to 6.75% compared to HAL (7%). The main differences in the WACC were in the cost of debt where BA estimated a range of 2.5% to 3% compared to HAL's 4.6%; and in the equity beta where CEPA estimated a range of 0.9 to 1.1 compared to HAL's estimate of 1.3.

Risk-free rate

9.55 CEPA used historical evidence on 5, 10 and 20-year index-linked UK government bonds (index-linked gilts – ILGs) as a proxy for the risk-free rate. As a check, it also considered rates on nominal bonds. It noted, however, that the financial crisis and the Bank of England's market interventions meant that recent evidence may not be representative of the true, underlying risk-free rate.

9.56 CEPA considered that the evidence suggests that a rate as low as 1.0% may be justifiable. However, given the considerable uncertainty regarding the underlying risk-free rate, CEPA acknowledged that a rate of 2.0% was also a possibility, and that this would be consistent with regulatory precedent. CEPA's preferred narrow range of 1.5% to 1.75% was in its view a reasonable interpretation of the evidence as a whole.

Equity risk premium

9.57 CEPA estimated the ERP based on the latest figures calculated by Dimson, Marsh and Staunton, although consideration was also given to a Barclays Capital Equity Gilt Study and recent regulatory

[59] In an earlier paper, BA used a pre-tax, real WACC for HAL of 5.8%.

determinations. CEPA's overall view was that a value for the ERP of 5.0% was appropriate, especially given the fall in the risk-free rate, although it acknowledged there is long-term evidence suggesting a rate either above or below this figure. Combining CEPA's estimates for the risk-free rate and ERP produces a total market return of 6.5% to 6.75%. This compares to EE's estimate of 7%.

Beta

9.58 In the absence of a direct estimation of HAL's beta, CEPA selected a broad range of comparators as it thought that evidence from international airport operators alone was not sufficiently robust, and that it was more appropriate to include a broader comparator set including UK-based regulated networks. It noted that this was consistent with the CC's approach to Q5.

9.59 In its view, the two closest airport comparators – based on their status as international hub airports for major airlines – were Frankfurt and Aeroports de Paris. CEPA noted that comparisons with other international airports generally appeared to produce lower beta estimates, although it acknowledged that these were arguably likely to be lower risk than Heathrow.

9.60 Taking into account the CC's previous analysis, CEPA considered that the equity beta was likely to be around one. It noted that this was also in line with an examination of the asset betas for the comparator airports. These were broadly similar to what they were in the lead up to Q5 when the asset beta for Heathrow was estimated as being 0.47 and the consequent equity beta was in the range of 0.9 to 1.1.

9.61 CEPA considered that an estimate as low as 0.9 would be supportable based on recent evidence for a close comparator (Frankfurt), but in its view anything below this would represent a selective interpretation of the available evidence. Equally, it thought that an equity beta estimate above 1.2 would not be consistent with evidence from the two closest available comparators. CEPA concluded that the appropriate range for the equity beta was 0.9 to 1.1. This compares to EE's estimate of 1.3.

Cost of equity (and tax)

9.62 Combining these estimates for the risk-free rate, ERP and equity beta, CEPA estimated a range for HAL's post tax cost of equity of 6% to

7.25%. With a tax rate of 21%, this equated to a pre-tax cost of equity in the range 7.59% to 9.18%.

Cost of debt

9.63 CEPA took two approaches to estimating the cost of debt. It examined the risk-free rate and the debt premium (spread) separately; in addition it estimated the total cost of debt.

9.64 CEPA reviewed a wide range of evidence including spreads over gilts for a range of benchmark indices based on credit ratings, yields on issue as at January 2013 for bonds issued by Heathrow Funding Limited. CEPA compared the spread at issue for Heathrow Funding Limited with the BBB benchmark over gilts at issue and concluded that the spread might indicate a degree of inefficient funding. Using the first approach, CEPA estimated that the debt premium over the risk-free rate was likely to be around 1.5%.

9.65 CEPA's second approach looked at similar benchmarks for total yield from which it deducted inflation. CEPA noted that, based on iBoxx non-financials, data suggested that real spot yields for 10-year+ average A and BBB rated debt were below 2%, while the 10-year average was 3%. Using Bloomberg data for all companies, real spot yields were currently below 1% and the 10-year average was 2.7%.

9.66 CEPA considered two possible debt portfolios (one in which 10% is raised in each of the last 10 years and one based on the proportion of BAA debt taken out over each of the last 10 years). Using this method, CEPA estimated the cost of BBB debt to be in the range 2.88% to 3.02%.

9.67 CEPA combined this information to estimate the cost of debt to be in the region of 2.5% to 3.0%. This compares to EE's estimate of 4.6%. CEPA also noted that there have also been a number of minority sales of equity stakes in HAL since its acquisition by Ferrovial. Its analysis indicated that the sales to the Qatar Investment Authority and the China Investment Corporation were for a premium of about 13% to RAB, while for minority stakes it might typically be expected to sell at a discount to the RAB.

BA's suggested cross-checks on the WACC

9.68 BA set out five tests that it thought the CAA should consider when assessing the appropriate WACC and in particular the cost of equity

element. BA's assessment of these tests led it to conclude that HAL did not require further price increases and it was less risky than the market (i.e. had a beta less than 1).

1. Profit performance: how has the company's gross profitability (EBITDA[60]) grown and what was the maximum reversal of profit in any one year? BA's analysis of HAL's profit performance led it to conclude that the most stressful of economic conditions had revealed it to be a company with low risk. BA supported this argument with extracts from credit rating reports highlighting HAL's financial resilience in challenging economic conditions.

2. Gearing: what do the company's sustained level of gearing, its coverage ratios and its credit rating suggest about the management's and credit providers' view of long-term business risk? BA noted that the combination of what it thought was high gearing and investment grade credit ratings suggested that the gearing in the WACC should be greater than 60% and that the equity beta should be less than 1.

3. Financing: to what extent has the company been able to raise debt and equity finance over the period? BA noted that HAL had raised nearly £8 billion in financing over the past four years, which, it thought, demonstrated the enthusiasm of both equity investors and debt providers.

4. Use of cash: does the company cover its capex through operating cash flow, and has it been able to pay a dividend over the period? BA observed what it thought was a high EBITDA margin translated into a high level of self-funding for the airport.

5. Wider systematic risk: what is the capital intensity and earning volatility of the customers (the airlines that pay the regulated charges), and will any given HAL WACC have wider negative consequences to end users that undermines its intended effect? BA's hypothesis was that HAL price rises magnify risk, rather than merely pass it on.

[60] Earnings before interest, taxes, depreciation and amortisation.

An independent estimate of WACC commissioned by the CAA

9.69 The CAA commissioned PwC to provide an independent assessment on the calculation of HAL's WACC. PwC recommended that the WACC is in the range 4.21% to 5.63% using current market rates for the market returns. PwC checked this by calculating a single point estimate (akin to the midpoint) of the WACC of 4.96% based on using long-term returns for the risk-free rate and ERP.

Market returns

9.70 In estimating market returns and its component parts, PwC reviewed two approaches. The first approach used the current market assessment of returns with some degree of smoothing to reflect underlying returns assessment. The second approach represented its long-term view on the appropriate return expectations.

9.71 PwC noted that the approaches based on both current returns and long-term returns produced implied estimates for total market returns of 6.25% to 6.75% that were not significantly different from the estimates used by the CAA and CC for Q5 (6.6% to 7%) and CEPA's Q6 estimate (6.5% to 6.75%), but slightly below EE's Q6 estimate (7%).

Risk-free rate

9.72 PwC estimated the real risk-free rate both with reference to index-linked and to nominal gilts (adjusted for inflation). It focused on 10 to 15 year maturities, given regulatory focus on yields on similar maturity debt. PwC took account of current market factors (such as flight to quality and Quantitative Easing) by looking at evidence on trends in the forward rates and also by reviewing recent regulatory decisions.

9.73 PwC noted that yields on ILGs have continued to decline and, at the time of its analysis, were below zero for 5 to 15 year maturities. 10-year averages on these gilts are positive and slightly higher (10 to 15 year maturities averaged 1.1%). Forward rates showed some upward trend.

9.74 Evidence on nominal gilts also showed general decline in yields since the onset of the financial crisis. After deducting inflation (2.8%), PwC estimated that current real yields were in the region of 0.1 to 0.9% and

long-term yields in the region of 1.2 to 1.4%. PwC also noted recent regulatory decisions, which included Ofgem (2011 and 2013: 2%), and Ofcom (2011 and 2012: 1.4%).

9.75 Combining all this information, PwC concluded that the appropriate risk-free rate was in the range 0.25 to 0.75% based on current rates and 1.6% for the long-term returns. PwC's preferred approach was to use returns that were based on current market assessment as they represent the financing costs that are likely to apply over the next 5-year period. PwC considered that long-term returns are unlikely to depict the appropriate WACC for a particular time period accurately – allowing firms to benefit from cheaper sources of financing without sharing the benefits with consumers. It used long-term averages as a cross-check.

Equity risk premium

9.76 PwC examined both forward looking and historical evidence. Its choice was shaped by the decision on the risk-free rate under the two different approaches. When looking at current market rates PwC focused on ex-ante (forward looking) estimates for the ERP, whereas, when the risk-free rate is based on historical averages, PwC preferred historical estimates for ERP.

9.77 PwC preferred market based evidence, because the risk-free rate assumption was not clear in survey based evidence. For its ex-ante ERP, PwC used evidence from Credit Suisse and the Dividend Growth Model. This resulted in a range of 5.3% to 6.1%. PwC indicated that 6.0% was the appropriate point estimate. Using current returns, this produces total market returns of 6.25% to 6.75%.

9.78 Using long-term returns, PwC estimated total market returns of 6.6%. PwC based this on evidence from Dimson, Marsh and Stanton, which has a range for the ERP of 3.6% to 5%. PwC used the top of this range together with a risk-free rate of 1.6%.

Beta

9.79 PwC's asset and equity beta estimates were based on review of evidence on trends in evolution of betas across a broad set of airport comparators since the Q5 determination. PwC considered that this evidence suggested there has not been a fundamental change in the risk profile of HAL since CAA's last determination.

9.80 Moreover, PwC considered that there was evidence to suggest that the impact of the financial crisis concentrated on the financial sector with the average equity betas in that sector markedly increasing over time. At the same time, 'non-financials' (including airports), became safer as they are considered to be less risky investments compared to 'financials'.

9.81 Overall, PwC concluded that the asset beta estimate assumed by the CAA at the time of the Q5 decision continues to be appropriate and relevant in the context of estimating the WACC for Q6. As noted above, PwC recommended that the CAA should not adjust the WACC for skewness for Heathrow in Q6.

Cost of equity (and tax)

9.82 Combining these estimates for the risk-free rate, ERP and equity beta, PwC estimated a post tax cost of equity based on current implied market rates of between 5.65% and 7.65%. When long-term returns were considered this produced a real, post tax cost of equity of 6.73%.

9.83 PwC used a tax rate of 20.2% to translate the post tax cost of equity into a pre-tax cost of equity. PwC's estimates of the appropriate tax rate reflected the Chancellor's statements in the 2012 and 2013 Budgets that the tax rate would be 21% in 2014/15 and 20% thereafter.

Cost of debt

9.84 PwC estimated the real cost of debt as an equally weighted average of new and existing (fixed rate) debt. The cost of new debt was estimated with reference to yields on benchmark indices with ratings comparable to target investment grade rating considered appropriate by the CAA in Q5 (BBB+/A-) and evidence on yields on traded debt for the designated airports as well as broader evidence on regulated utilities. For existing embedded debt, PwC reviewed evidence on yield to maturity at issuance for debt issued by BAA and HAL. Nominal yields were converted into real yields using assumptions on expected inflation.

9.85 PwC noted nominal yields on 10 and 15 year maturity A and BBB rated benchmark indices increased significantly during the financial crisis, but have since declined to 3.8% and 4.4% respectively. PwC

translated this nominal[61] spot rate into a real spot rate of 1.0% to 1.6%. PwC incorporated a forward looking adjustment (0.5%) based on the forward yields on government bonds and suggested a range of 1.6% to 2.2%.

9.86 Examining traded yields on HAL and GAL bonds, PwC estimated a blended average spot rate and incorporated a forward looking adjustment to suggest a cost of debt in the range 1.4% to 2.2%. Based on estimated yield to maturity at the time of issuance for HAL and GAL bonds and for other utilities (which were lower than for airport operators), PwC estimated a real cost of debt to be in the range 2.5% to 3.5%.

9.87 PwC combined these estimates for new (or floating rate) debt and historical fixed rate debt in equal proportions, with a 15 bps assumption for fees to give a cost of debt of 2.3% to 3.0%. As a scenario, PwC also used the actual ratio of outstanding debt and a forecast for new debt and concluded that it did not materially affect its cost of debt estimate. PwC noted that this was lower than previous regulatory precedents, reflecting the downward movement in bond yields since the Q5 determination. PwC's range overlapped that of CEPA (2.6% to 3.0%) but was below EE's estimate of 4.6%.

Summary of HAL's, BA's and PwC's estimates

9.88 Figure 9.2 sets out how the difference in approaches between HAL, BA and PwC result in different ranges for the WACC in Q6.

[61] Using an inflation assumption of 2.8%

Figure 9.2: Summary of WACC estimates

	CAA/CC Q5	HAL	BA	PwC	
		Europe Economics	CEPA	Current market rates	Long-term returns
Gearing	60%	60%	60%	60%	60%
Pre-tax cost of debt	3.55%	4.6%	2.5 -3.0%	2.3 - 3.0%	2.65%
Risk-free rate	2.5%	2%	1.5 - 1.75%	0.25 - 0.75%	1.6%
Equity risk premium	2.5 – 4.5%	5%	5.0%	6.0%	5.0%
Asset beta (number)	0.42 – 0.52	-	-	0.42 – 0.52	0.47
Equity beta (number)	0.90 – 1.15	1.3	0.9-1.1	0.9 – 1.15	1.03
Post tax cost of equity	4.75 – 7.68%	8.5%	6.0-7.25%	5.65 – 7.65%	6.73%
Tax rate	28%	21%	21%	20.2%	20.2%
Pre-tax cost of equity	6.60 – 10.66%	10.8%	7.59 - 9.18%	7.08 – 9.59%	8.43%
Pre-tax WACC range	4.77 – 6.39%	-	4.5 - 5.5%	4.21 – 5.63%	-
Pre-tax point estimate	6.2% (6.01%)*	7.1%	-	-	4.96%
Vanilla WACC range	4.03%- 5.2%	-	3.9 – 4.7%	3.64 - 4.86%	-
Vanilla point estimate	5.06% (4.94%)*	6.16%	-	-	4.28%

* The headline WACC for Q5 was 6.2%. However, it was the ARR of 6.01% that was the rate applied to the RAB in calculating the price cap. The 'vanilla' equivalents were a Q5 vanilla WACC of 5.05% and a Q5 vanilla ARR of 4.94%.

Source: CAA

Summary of recent regulatory decisions

9.89 The CAA has reviewed recent decisions by UK economic regulators (figure 9.3). Estimates for the point estimate pre-tax cost of debt range from 2.92% to 3.6%, noting that the more recent determinations are towards the low end of this range. This compares to 4.6% for EE, 2.5% to 3% for CEPA and 2.35% to 3% for PwC. Estimates for market returns range from 6.4% to 7.25%. This compares to 7% for HAL, 6.5% to 6.75% for CEPA and 6.2% to 6.75% for PwC.

Figure 9.3: Summary of recent regulatory decisions

	CAA	Ofcom[62]	Ofcom	Ofcom	Ofgem	Ofgem	Ofgem	Ofgem	Ofwat	ORR
	NATS	Open reach[63]	Rest of BT[64]	MCT	Elec Dist	Elec trans	Gas trans	Gas dist	Water	Network rail
Control period	**2011-14**		**Feb 2013**	**Feb 2011**	**2010-15**	**2013-21**	**2013-21**	**2013-21**	**2010-15**	**2009-14**
Gearing	60%	32%	32%	30%	65%	55%/60%	62.5%	65%	57.5%	
Pre-tax cost of debt	3.6%	3.0%	3.0%	3.0%	3.4%	2.92%	2.92%	2.92%	3.6%	
Risk-free rate	1.75%	1.4%	1.4%	1.5%	2%	2%	2%	2%	2%	
Equity risk premium	5.25%	5%	5%	5%	5.25%	5.25%	5.25%	5.25%	5.4%	
Equity beta (number)	1.35	0.90	1.13	0.76	0.9	0.9-0.95	0.9-0.95	0.9-0.95	0.9	
Post tax cost of equity	8.8%	5.8%	7.0%	5.3%	6.7%	7%	6.8%	6.7%	7.1%	
Real vanilla WACC	5.7%	4.9%	5.7%	4.6%	4.7%	4.55 - 4.8%	4.4%	4.2%	5.1%	4.75%

Source: CAA analysis

[62] Ofcom sets a nominal cost of capital.

[63] This is Ofcom's current view (February 2013) on the appropriate WACC for Local Loop Unbundling and WLA. It might differ from its most recent decision.

[64] This is Ofcom's current view (February 2013) on the appropriate WACC for Wholesale Broadband access and Lease Lines Charge Control.

9.90 Due to differences in the treatment of tax in price caps across regulators, a vanilla WACC has been presented. A vanilla WACC is the pre-tax cost of debt and the post tax cost of equity. A vanilla WACC based on inputs from calculations conducted by EE, CEPA and PwC would result in WACCs of 6.16%, 3.9% to 4.7% and 3.6% to 4.9%, respectively. This compares to the Q5 decision of 5.06%.

Discussion of the key issues (II): estimating WACC

Total market returns

9.91 Although there are differences between PwC, HAL and CEPA's estimates for the risk-free rate and ERP, these on the whole are offsetting. Consistent with the CC's Q5 recommendations and the CAA's Q5 decision and NERL CP3 (RP1) decision, a market return (risk-free rate plus the ERP) in the region of 6% to 7% appears appropriate. At the top of its range, PwC's estimate is 6.75% (= 0.75% + 6%) while HAL's estimate is 7% (= 2% + 5%) and CEPA's estimate at the top of its range is 6.75% (= 1.75% + 5%). The slight difference in the market return is further eroded when an equity beta greater than one is used to produce the cost of equity.

9.92 The CAA notes that PwC's assessment of the risk-free rate and ERP considers and then concludes that current market returns are not significantly different to long-run market returns. The CAA notes that it does not need to form a view on whether market returns are 'mean reverting' because PwC's estimates of market returns from its two methods (current and long run), do not differ significantly. Nevertheless, the CAA notes that PwC adopts a higher ERP than EE and CEPA at 6% (compared to 5%). With an equity beta slightly greater than one, a higher ERP (for the same given market return) will lead to a slightly higher cost of equity.

Risk

9.93 NERA raised several points that sought to explain why, in its view, HAL was riskier than other regulated companies. The CAA concurs that demand risk is one of the main systematic risks facing HAL, although this effect is in part dampened by airlines responding to weakening demand conditions by cutting yields in the short run to maintain load factors and by the CAA re-setting the price cap every

five years. The CAA, however, also notes that merely reviewing HAL's actual performance compared to forecast for the past two control periods conflates forecasting accuracy issues with systematic traffic risk.

9.94 The CAA notes that it is important to differentiate between systematic risk and non-systematic risk.[65] Only systematic risk should be considered in a CAPM framework and non-systematic risk can be taken into account in the gearing and cost of debt assumptions. Many of the risks that NERA raised would appear to be non-systematic in nature. Furthermore, NERA's analysis of the variability of HAL's cash flows will give an indication of combined systematic and non-systematic risk, but not an indication of the relative magnitude of each.

9.95 The CAA acknowledges that free cash flow metrics are an important measure for credit rating agencies. The CAA has met with the three main agencies and has, in chapter 10, undertaken a financeability assessment. The CAA has adopted an approach to the cost of debt that considers the appropriate gearing level for the risks (systematic and non-systematic) and is consistent with the credit rating assumption used in the estimation of the cost of debt. The CAA therefore considers that it has in place a mechanism for incorporating the appropriate non-systematic risks in the WACC through the credit rating assumption (which is reflected in the gearing and cost of debt assumptions).

9.96 The CAA notes that, if business risk were as high as suggested by NERA and EE, a company would be likely to choose a relatively low level of gearing, so that financial risk would not exacerbate the high business risk. However, since the Ferrovial takeover, HAL has maintained a high level of gearing: most recently 82% (September 2012). One possible explanation is that this does not appear to be the action of a company that regards itself as facing high business risk.[66]

[65] Systematic risk is the risk inherent to the entire market. It is also known as un-diversifiable risk or market risk and is unavoidable. A well diversified investor can avoid non-systematic (or idiosyncratic) risk and, therefore, when considering the risk of an investment is only concerned with the investments exposure to systematic risk.

[66] The term business risk is used here to include all risk other than financial (gearing) risk. Business risk therefore includes non-systematic risk. While it is possible that the company considers that it has high systematic risk and low non-systematic risk, the CAA notes a possible

9.97 EE presented an analysis of passenger numbers that suggested that between 1992 and 2012 Heathrow was affected by 30 positive and 29 negative shocks. However, since 2007 only 2 positive and 15 negative shocks have occurred. This, EE suggested, showed that Heathrow was much riskier on the downside with little upside opportunity.

9.98 EE set out a number of events since the CAA's Q5 decision, including the economic recession, air passenger duty (APD) which was increased in November 2010 to £12 for short haul and £170 for long haul passengers, volcanic ash in April 2010, BA cabin crew strikes and longer term factors such as the increased awareness of the chance of pandemics and terrorist attacks. With the exception of the economic recession, most of these events are substantially non-systematic in nature and therefore should not be taken into account in the CAPM. Investors in airport operators would expect economic recessions to happen and would also expect that some might be deep and prolonged. The recent recession would lead to a change in investors' views of risk if its occurrence told investors something new about how Heathrow is affected by such recessions.

9.99 The CAA notes the credit rating agencies' assessments of the business risk of Heathrow. For example, S&P[67] stated:

"As a result of our analysis, we still consider the business risk score as "excellent". We now consider this independent from any further asset sale. Our business risk score is mainly driven by the competitive position of Heathrow as one of the biggest hubs in the world, by both traffic and retail revenue. Revenues have proved relatively resilient in the midst of a major period of economic stress. Heathrow also demonstrates a high and increasing EBITDA margin and tested regulatory framework."

9.100 Similarly, Fitch[68] considered Heathrow to fit the profile of "larger or more essential assets [that] have in most cases demonstrated stronger resistance to economic downturns". The CAA draws two conclusions from this analysis. First, that HAL's exposure to

contradiction between systematic risk so high as suggested by EE and NERA and the combined risk (including non-systematic risk) being low enough so as to support actual gearing in excess of 80%. Another possible explanation is that equity investors consider they do face high risk and are seeking to protect themselves by transferring business risk to bondholders.

[67] Transaction Update Transaction Update: BAA Funding Ltd (16 September 2011).

[68] Fitch Ratings BAA(SH) plc and BAA Funding Ltd (23 August 2012).

systematic risk does not appear to have changed materially during Q5. Second, that HAL appears to be resilient to the systematic and non-systemic risks that its business has faced over Q5, despite the financial risks created by its actual gearing. As noted above, HAL and its owners have been able to raise a significant amount of debt and sell two minority equity stakes which value HAL at more than its RAB.

Beta[69]

9.101 PwC estimated that HAL's equity beta is unchanged from the Q5 determination (0.90 to 1.15). CEPA reached a similar view (its estimate was 0.9 to 1.1) and noted that, if anything, HAL's equity beta might have declined since Q5. HAL estimated that its equity beta had increased significantly to 1.3 reflecting its assessment of the underlying risk factors facing Heathrow.

9.102 The CAA notes the lack of available direct recent market evidence about HAL's equity beta. There are various indirect methods including proxies such as the performance of other airport operators and HAL's actual experience in the market (sale of equity stakes and its ability to raise debt). The former analysis is best suited to assessing the WACC rather than a point estimate of the equity beta and is discussed below. In respect of the latter, the quantum (over £6 billion since 2008) and frequency of HAL's debt issues led the CAA to concur broadly with BA's observation that that this might be considered a positive endorsement of the low risk nature of Heathrow.

9.103 Whilst the airport comparators show a mixed performance since the Q5 decision, the top end of the range of PwC's estimate of HAL's asset beta (0.52) is well within the range of comparators. Given the strong demand and capacity constraints at Heathrow, the top end of the range is also consistent with the risk of Heathrow compared to the comparator airports.

9.104 EE's estimate of the beta was supported by its estimate of Fraport and ADP's betas. While these appear to be the listed airport operators which are most similar to HAL, these are airport groups, and the beta reflects the average beta of all airports and other businesses in the group. For example, Fraport owns or operates airports in Germany

[69] The equity beta represents how risking the equity of HAL is in relation to the market generally. The asset beta adjusts the equity beta to the effects of financial gearing.

and around the world as well as a groundhandling business. Similarly, ADP owns or operates airports in France and around the world. In the Q5 review, both the CAA and the CC disaggregated BAA's asset beta[70] of 0.52 into Heathrow (0.47) Gatwick (0.52), Stansted (0.61) and the rest of BAA (0.61). The precise relationship between Frankfurt's beta and Fraport's beta and between Charles de Gaulle's beta and ADP's beta will depend on the size and risk of the two comparator airports relative to the other airports and businesses within their respective groups. EE did not disaggregate ADP and Fraport's betas nor suggest whether it would expect Charles de Gaulle or Frankfurt to be more or less risk than the group to which it belongs. The CAA has not attempted to disaggregate the group betas, but notes that Fraport and Charles de Gaulle, because of their hub statuses, might be lower risk than the average of the group to which they belong.

9.105 This does not mean however, that these comparisons have no value. The CAA notes that, in considering how the comparator betas have moved over a period of time, PwC's analysis to a large extent neutralises the disaggregation issues, and PwC is able to conclude that the evidence supports the Q5 beta estimates.

9.106 The CAA notes that EE calculated Fraport's and ADP's equity betas over 2 years and 5 years at 60% gearing, with the two year estimates (1.07 to 1.15) being lower than the five year estimates (1.28 and 1.51). This supports PwC's views that, whilst the financial crisis may have increased airport operators' betas for a period of time, they have since dropped back towards previous levels.

9.107 EE's second approach was to estimate a fundamental beta using company financial data. The CAA welcomes alternative forms of estimating betas but, consistent with the CC's and the CAA's Q5 analyses, the CAA considers that greater weight should be placed on market data where investors are placing money at risk rather than regression models which attempt to capture than risks through financial ratios. That said, the CAA notes EE's fundamental equity beta before the uplift for skewness was 1.1.

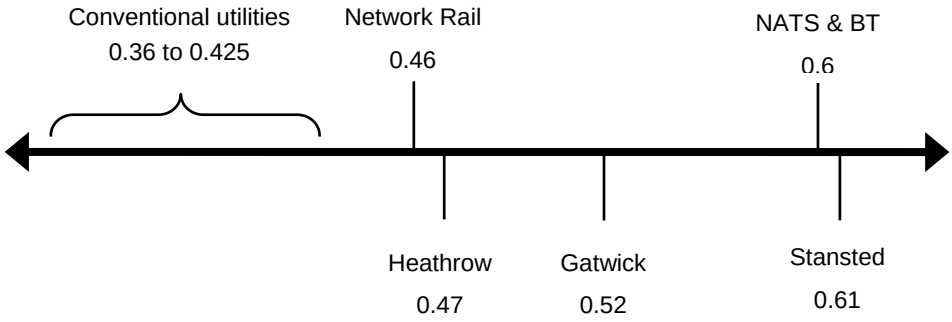
9.108 The CAA also notes that other regulated company equity betas have shown a general pattern of decline over the past few years. For

[70] BAA plc owned 7 UK airports at the time of its delisting.

example, CEPA's analysis indicated that recent estimates of equity betas for National Grid, SSE, United Utilities Severn Trent and Pennon all show lower 1-year equity betas than 5-year equity betas. CEPA estimates that the betas for these companies range from 0.5 to 1.0 at 60% gearing. Finally, the CAA notes that the market equity beta (i.e. the average of all assets) is 1. At the market level of gearing of approximately 30%, this equates to an asset beta of 0.72.

9.109 The CAA concludes that the evidence suggests that there has been little material change in HAL's risk and therefore its equity beta is of a similar value (0.9 to 1.15) to Q5. This is supported by PwC's analysis and CEPA's analysis which suggests that there is no discernible trend in the market data derived betas for European Airports, and the closest comparators ADP and Fraport which suggest that Charles de Gaulle and Frankfurt's betas are consistent with the PwC's estimate of HAL's beta. Figure 9.4 compares this judgement to the assessments made of asset betas in other periodic reviews carried out since 2007.

Figure 9.4 Diagrammatic presentation of recent regulatory decisions and CAA's Q6 proposals



Source CAA

9.110 This figure seems to contain a logical hierarchy of risk. The CAA takes this to be a useful corroboration of its assessment.

Cost of equity (and tax)

9.111 To convert the post tax cost of equity into a pre-tax cost of equity, PwC used an average tax rate (20.2%) reflecting the 2013 Budget while HAL and CEPA used the expected tax rate announced by the Chancellor in the 2012 Budget (21%). The CAA notes that, while there will always be uncertainty with respect to future tax rates, the Chancellor has reduced the corporation tax rate in line with, or by

more, than he has previously signalled. The CAA will review the appropriate tax rate in line with any further information released by the government in the run up to setting final proposals. The CAA will consider the appropriateness of an adjustment mechanism if warranted by short-term uncertainty at the time of its decision.

Cost of debt

9.112 In addition to the betas, the other big difference in the estimate of the WACC between HAL and PwC is the estimate of the cost of debt. PwC recommended a figure in the range of 2.3% to 3.0% while HAL suggested 4.6%. CEPA's analysis (2.5% to 3%) supported PwC's estimate. The Q5 decision was 3.55%. These differences arise for two reasons, the interpretation of market evidence on bond yields and the estimation of the appropriate allowance for fees.

9.113 The CAA notes from PwC's report the clear, but gradual, reduction in yields on benchmark bonds since the financial crisis of 2009. The spot rate and 6-month average is now in the region of 4% to 5% for A and BBB (nominal rates, i.e. including the allowance for inflation). Yields on debt issued by HAL and GAL have been slightly higher and generally in the range 4% to 6%, while utility issued debt is slightly cheaper and in the range 3.4% to 5%. Focusing on the top of the range, and blending the estimates to reflect the average cost of debt for a notional portfolio built up over a period of time, PwC's estimate of a real cost of debt of 3% (after deduction inflation of 2.8% and including fees of 0.15%). PwC's range appears appropriate for the CAA's initial proposals. In contrast HAL's estimate of 4.6% appears somewhat high.

9.114 PwC considered that it was appropriate to include fees of 15 bps in the cost of debt. This is lower than EE's estimate (20 bps) and substantially lower than HAL's estimate of its actual fees (50 bps to 60 bps). The CAA considers PwC's estimate (15 bps) is appropriate because:

- it is consistent with the simple notional debt portfolio assumed in the estimates of the WACC rather than with HAL's actual, complex structured finance;

- HAL's estimate of the cost of maintaining a debt capital markets platform for borrowers similar to itself (c32-38bps) which includes new issue premia, bond issue book runner, ancillary fees and expenses, which are taken into account by PwC in its estimate of the yield on bonds at issue;
- HAL's estimate of the cost for any business maintaining the liquidity necessary to fulfil its going concern requirements includes the cost of committed, undrawn facilities required to maintain liquidity (c17-20bps). The CAA considers that this cost does not need to be included as the CAA is not proposing to use an adjustment to reduce the WACC for an ARR; and
- it is consistent with other regulatory decisions where fees have been explicitly stated. These include Bristol Water (CC, 10 bps), Stansted Airport Q5 (CAA/CC 10 bps), Heathrow and Gatwick Airports Q5 (CAA/CC 15 bps) and the Northern Ireland Utility Regulator (15 bps).

9.115 PwC considered that fees of 20 bps were appropriate to include in the cost of debt for GAL and STAL (20 bps). These were 5 bps higher than its estimate for HAL (15 bps) to reflect the smaller issuance size blocks for GAL and STAL.

9.116 EE's approach to calculating the cost of debt estimates current corporate bond spreads over treasury gilts and adds this to its estimate of the risk-free rate. The CAA notes that EE has not presented the calculation of the bond spread and therefore it is not possible to verify the consistency between its treasury gilts yields and risk-free rate assumptions.

9.117 Figure 9.5 compares the CAA's overall cost of debt calculation to estimates made in other recent periodic reviews. This shows that cost of debt assumptions have been reducing over time. The figure shows that the CAA's judgement in these initial proposals is consistent with the overall trend in regulatory decisions during recent years.

Figure 9.5: Regulator determinations since 2008

Regulator, sector	Date	Allowed cost of debt (%)
CAA, Heathrow	2008	3.55
Ofwat, water and sewerage	2009	3.6
Ofgem, electricity distribution networks	2009	3.6
CAA, NATS	2010	3.6
Ofcom, Openreach	2011	3.4
Ofgem, energy networks	2012	2.9
Ofcom, Openreach	2013	3.0
CAA, Heathrow	2013	2.3 - 3

Source: CAA analysis

Gearing

9.118 Assumptions about gearing affect the weightings of the cost of debt and cost of equity components of the WACC. They are also important inputs to the calculation of the costs of debt and equity themselves. All other things being equal, a higher level of gearing will increase the risk to both debt and equity holders, causing them to demand a higher return in exchange for making capital available.

9.119 Consistent other sector regulators, the CC recommended, and the CAA set, the airport operators' Q5 WACC in line with notional levels of gearing consistent with maintaining a solid investment-grade credit rating. The CAA and other regulators consider that a notional, rather than an actual, capital structure is an appropriate assumption. The company is best placed to take decisions about what is the appropriate financing structure because it takes the benefits and should bear the costs of those decisions.

9.120 HAL's actual capital structure is complex and includes charges (security) over the assets and financial ratio covenants. Debt has been raised predominantly in sterling but also in US dollars and Euros. Debt interest is a mixture of fixed, floating and index-linked. Furthermore, HAL has taken out various interest rate, cross-currency and index-linked hedges.

9.121 Bank debt is held and bonds have been issued by various group companies. Such debt is structured into Class A (senior debt), Class B (junior debt) and subordinated debt, with gearing ratios of 67%, 78%

and 82% at September 2012, and credit ratings of A-, BBB and BB+/Ba3, respectively. This suggests that gearing for a solid investment grade rating in a covenanted secured debt structure is in the region of 70 to 75% for HAL. The CAA has considered whether the 60% gearing assumption for the Q5 WACC remains appropriate for Q6, and whether the CAA should assume credit enhancements such as security or a structure with different tranches of debt in its notional capital structure.

9.122 In considering these issues, the CAA has had to consider both the consequences of setting a figure too low and of setting one too high. On the one hand, using an unrealistically low gearing figure would result in higher price caps than are necessary and benefit shareholders at the expense of users. This suggests that the gearing assumption for HAL should be no lower than 60% if the benefits of financial efficiency and innovation are passed through to users. On the other hand, an overly aggressive assumed gearing figure might leave HAL with returns and cash flows that are too low to support the notional levels of gearing. This makes it imperative that the price control package as a whole is financeable. In performing its duties, the CAA must have regard to the need to secure that the licence holder is able to finance its provision of airport operation services in the area for which the licence is granted.

9.123 The work that the CAA has carried out in this regard, described in chapter 10, suggests that the CAA ought to be quite cautious about assuming that the airport operators could sustain gearing of 70% while maintaining a solid investment-grade credit rating. Overall, the CAA's judgement is that the WACC calculations should be based on a gearing figure of 60%. This is lower, and may well turn out to be lower over Q6, than the debt-to-RAB ratio that HAL is able to achieve. The CAA nevertheless considers the choice of a relatively conservative figure to be prudent given the uncertainties that surround the rating process. It is a step towards ensuring that, if the airport operator maintains the assumed gearing, it will find the package of price control recommendations to be financeable.[71]

9.124 Furthermore, unlike the CAPM, the gearing assumption takes into

[71] The CAA has considered the financeability of the notionally financed airport and not HAL's and/or related financing companies' actual current or planned financing.

account non-systematic risks. And although there is some apparent inconsistency between the presentation of risks by HAL's advisers and its actual gearing level (as noted above), the CAA considers that a prudent gearing assumption will enable the airport to continue to be resilient to the shocks of the nature that EE and NERA have suggested that it faces.

9.125 The CAA's view that gearing of 60% is appropriate for HAL compares to Ofgem's recent decisions for energy companies (55% to 65%), and Ofwat's 2009 price controls (57.5%) for water companies. It is, however higher than telecoms (wholesale broadband access: 50% and mobile call termination: 30%), but the CAA considers that this is consistent with the risk differential between the sectors.

Setting the WACC for the CAA's initial proposals

9.126 PwC estimated that the WACC was in the range of 4.21% to 5.63%. CEPA estimated it to be in the range 4.5% to 5.5%. These estimates are below the Q5 WACC of 6.2%. HAL estimated the WACC to be 7.1%. Had the Q6 Corporation Tax rate (20.2%) been used in the calculation of the Q5 WACC, it would have been approximately 0.4% lower at 5.8%. Therefore, all other things being equal, one would expect a reduction in the WACC.

9.127 The CAA has examined the sale of equity stakes in HAL's parent company. While it is not possible to precisely estimate the value of HAL from this (and therefore the WACC), estimates suggest that the value in excess of the RAB at the time is in the region of 5% to 15%. The CAA would expect a small premium to the RAB to reflect HAL's incentive to outperform the price control assumptions. The lower end of the range of the premium over the RAB would suggest that the Q5 WACC is broadly correct (once the reduction in corporation tax had been taken into account).[72] The top end of the range would suggest that the Q5 WACC might be marginally high. This evidence is informative, but given the difficulty with estimating, the CAA is cautious of an overly formulaic approach to its interpretation.

[72] The Q5 ARR (i.e. the rate actually applied to the RAB in the price cap) was 6.01%, less the effect of the reduction in tax (0.42%) equates to a rate of 5.6%.

9.128 The CAA has also taken into account that, unlike for Q5, for Q6 it has set traffic forecasts that take into account demand shocks. Other things being equal, this should reduce the risk to the business. Furthermore, the new licensing framework enables the CAA to revisit the settlement within the period if traffic assumptions prove significantly out of line with the forecast. The CAA also notes that its proposals in relation to capital efficiency (see chapter 13) may have the net effect of reducing some risks borne by HAL's shareholders.

9.129 Given the uncertainties in WACC estimates, the CAA considered the cost of setting an allowed WACC that was too high or too low in the range identified by PwC. If the WACC is set too high, HAL's shareholders may be over rewarded (but not substantially so if it remains in the plausible range) and users may pay more than they should. If the WACC is set too low, there may be underinvestment or potentially costly financial distress. Both outcomes have impacts on passengers. Too high a WACC will tend to increase prices. Too low a WACC may tend to discourage investment in building modern terminals and in airport operations that enhance the passenger experience.

9.130 Given the significance to passengers of timely investment at Heathrow, the CAA has given weight to the cost of setting the allowed WACC too low. The CAA considers that it is in the interests of future passengers that HAL carries through its Q6 investment programme, a large share of which is essential asset renewals and maintenance. Another large element relates to improving airfield resilience to cope better with changes in airlines fleet mix towards larger aircraft such as A380s. This investment is also needed to help HAL cope better with operating close to full capacity. The CAA therefore considers that the passenger impact is greater if the investment is not made, than if the WACC is slightly high. Moreover, it is difficult for a regulator to reduce the risks of underinvestment within a regulatory period.[73] This can lead to deteriorating service quality over time.

9.131 As noted earlier, returns can be reinvested during the course of each year, thereby themselves generating an additional return by the end of the year. This suggests that, to earn the WACC, the actual rate to be

[73] It is equally difficult to redress within the period a price cap which is higher than it should otherwise be.

applied to the RAB is approximately 10 bps to 15 bps lower. In Q5 the CAA applied the ARR to the RAB. In Q6 the CAA is proposing to apply the WACC to the RAB, but to take into account the concept of the ARR in selecting a point in the WACC range.

9.132 Taking all these factors into account, the CAA's initial proposals for the HAL are that it should be towards, but not at, the top of PwC's recommended range. The CAA's proposed WACC is 5.35% pre-tax real and this represents the 80th percentile of PwC's range and is 28 bps from the upper end of its range. This position in the range is very similar to the CC's Q5 recommendations and the CAA's decision on the rate that is applied to the RAB which equated to the 77th percentile in the range and was 38 bps from the top of the range. The CAA has reviewed recent regulatory decisions and notes that point estimates were between the 50th and 100th percentile of the range from which they were chosen.

9.133 The CAA has compared its initial proposals for HAL's WACC with its Q5 decision by comparing the top of the ranges. This shows that, compared to Q5, if the effect of reduced tax rates is set aside, the CAA has lowered the WACC by 33 bps. This has to be seen in the context of significantly lower debt costs since 2007 when Q5 was set.

9.134 Although it has not quantified the impact on WACC, the CAA notes that an ability to revisit the price control within period if traffic is significantly at variance to its forecasts would, other things being equal, lower risk and hence the WACC. The CAA will continue to monitor all aspects of the WACC before developing its final proposals in October 2013.

9.135 The difference with the WACC used for Q5 (6.2%) can be accounted for by lower Corporation Tax (-0.42%), lower cost of debt (-0.33%) and other adjustments, which predominantly reflect the fact that returns themselves can be reinvested (-0.10%). This last adjustment was made during Q5 (where its value was -0.19%) but it was not taken into account until after the headline WACC of 6.2% was derived. For transparency purposes, this adjustment has been taken into account in the headline WACC for Q6. The like-for-like comparison with Q5 is 6.01% to 5.35%.

Figure 9.6: Comparison of Q5 decision and Q6 initial proposals

		%
Q5 WACC decision		**6.20**
Reduction in Corporation Tax		(0.42)
Reduction in cost of debt		(0.33)
Net change in the market return and its mix		(0.01)
Other adjustments[74]		(0.09)
Q6 initial proposals		**5.35**

Source CAA analysis

9.136 The vanilla WACC is a useful way of comparing across sectors (if the tax treatment differs) and across time (when the tax rate differs). The CAA's initial proposals equate to a vanilla WACC of approximately 4.62% for HAL. Compared to recent regulatory decisions this is:

- slightly less than ORR for Network Rail, although this determination was made in 2009;
- slightly less than Ofgem for electricity distribution (2010). It is higher than gas distribution (2013), gas transmission (2013) and National Grid electricity transmission (2013);
- slightly more than Ofcom's decision on mobile call terminations and slightly less than Ofcom's current view on BT Openreach and less than the rest of BT; and
- less than Ofwat for the water companies, although the last water determination was in 2009.

9.137 The CAA will review relevant proposals and decisions by other regulators, including the CC, before making its final proposals.

CAA initial projections

9.138 The CAA has applied a rate of 5.35% to a simple average of HAL's opening and closing RAB in the year. The resulting contribution towards the calculation of Q6 price caps is in the region of £724 to £736 million per year (figure 9.7).

[74] This includes the adjustment for an ARR referred to in paragraph 9.131.

Figure 9.7: WACC charge included within the initial projections for HAL's Q6 price cap

£m 2011/12 prices	2014/15	2015/16	2016/17	2017/18	2018/19	Total
Average RAB	13,720	13,763	13,755	13,677	13,525	n/a
Allowed return	734	736	736	732	724	3,662

Source: CAA

CHAPTER 10

Calculation of a Q6 Price Cap and Financeability

10.1 This chapter brings together the 'building block' components discussed in the previous chapters and calculates the CAA's initial proposals for the maximum limits for aeronautical charges for HAL for Q6.

Discussion of the key issues (I) – deriving a Q6 price cap

10.2 Figure 10.1 sets out the CAA's initial proposals for the calculation of the RAB for Q6 and associated depreciation and allowed returns.

Figure 10.1: CAA's initial proposals for the RAB

£m (2011/12 prices)	2014/15	2015/16	2016/17	2017/18	2018/19	Total
Opening RAB	13,703	13,738	13,789	13,720	13,633	13,703
Net capex	660	697	591	591	464	3,002
Depreciation	(625)	(646)	(659)	(678)	(680)	(3,288)
Closing RAB	13,738	13,789	13,720	13,633	13,417	13,417
Average RAB	13,720	13,763	13,755	13,677	13,525	n/a
Allowed return	734	736	736	732	724	3,662

Source: CAA calculations

10.3 Figure 10.2 includes the depreciation and WACC charges calculated in figure 10.1 alongside all the other building blocks required to calculate the Q6 price caps.

Figure 10.2: Components of a price cap

£million 2011/12 prices	2014/15	2015/16	2016/17	2017/18	2018/19	Total
Operating costs	1,066	1,030	994	970	957	5,017
Depreciation	625	646	659	678	680	3,288
Cost of capital	734	736	736	732	724	3,662
Total revenue requirement	2,424	2,412	2,389	2,381	2,361	11,966
Commercial revenues	(549)	(567)	(586)	(596)	(613)	(2,912)
Other regulated charges	(253)	(249)	(240)	(241)	(239)	(1,221)
Other income	(139)	(138)	(141)	(143)	(143)	(705)
Net revenue requirement	**1,482**	**1,458**	**1,422**	**1,401**	**1,365**	**7,128**
Passengers	70.8	70.7	71.5	72.3	73.1	358
Yield per pax (unprofiled)	**20.93**	**20.61**	**19.88**	**19.38**	**18.68**	**n/a**

Source: CAA

10.4 In previous price control reviews, the CAA has smoothed the yield per passenger to avoid unnecessary fluctuations and to simplify the price control. Such smoothing or profiling is done in a net present value-neutral manner, i.e. the net present value (NPV) of the net revenue requirement is the same under both unprofiled and profiled prices. The CAA considers that a significant difference between the profiled and unprofiled prices can lead to a short-term mismatch between revenues and costs and thus create liquidity issues for the HAL. These issues can have implications for the financeability assessment.

10.5 If the resulting yield per passenger in figure 10.2 is smoothed across the Q6 period, it equates to a price change of no more than RPI-1.3%[75] per year (figures 10.3 and 10.4). This compares to HAL's FBP of RPI+5.9% and BA's proposed RPI-9.8%[76].

10.6 Under the CAA's initial proposals, prices (in 2011/12 price base) are expected to be £19.34 in 2018/19, which is 29.1% lower than HAL's FBP and 54% higher than BA's position paper. Furthermore, the price

[75] In the formula RPI±X, RPI is the change in the index and can be negative or positive.

[76] BA's January 2013 position paper stated a price reduction of between RPI-4% and RPI-5% based on a provisional WACC of 5.8%. BA revised its proposal based on new evidence from CEPA, which suggested a WACC of 4.5% to 5.5%. BA updated its position to RPI-9.8% based on a WACC of 4.5%.

by the end of Q6 would be 6.6% lower than the price in Q5+1 (2011/12 price base).

Figure 10.3: Yield per passenger

£ 2011/12	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19
Unprofiled yield per pax	20.71	20.93	20.61	19.88	19.38	18.68
Year-on-year change		1.1%	-1.6%	-3.5%	-2.5%	-3.6%
Smoothed yield per pax	20.71	20.50	20.25	19.92	19.59	19.34
Year-on-year change		-1.0%	-1.2%	-1.6%	-1.7%	-1.3%
Smoothed with opening year adjustment (Po) yield per pax	20.71	21.70	20.79	19.83	18.91	18.11
Year-on-year change		4.8%	-4.2%	-4.6%	-4.6%	-4.2%

Source: CAA analysis

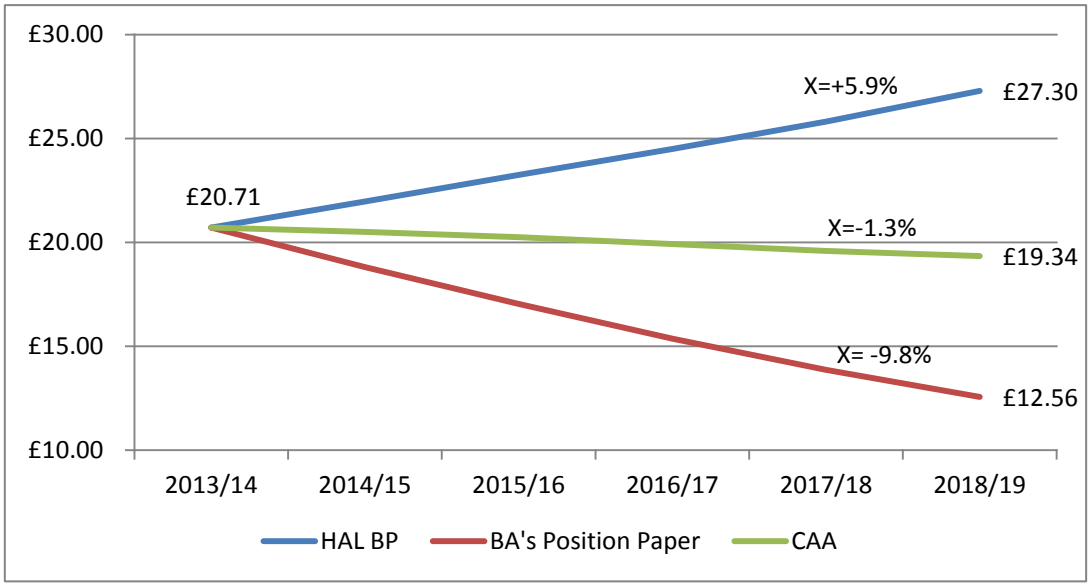
Note: The CAA has used the inflation forecast from Oxford Economics and assumed a long-run inflation rate of 3%.

10.7 The X in the formula RPI±X is not the same as the year-on-year change in the real price cap for two reasons.[77] In this document, where an X has been quoted it is the X to be used in a RPI+X formula, and is a constant value over the quinquennium. The profiles (in this case no profiling and a constant X) give the same expected net present value of the revenue requirement (at the regulatory WACC), and the airport is not expected to gain or lose from the CAA's choice

[77] In simple terms the price cap formulae in previous years has been $P_2 = P_1.(\Delta RPI+X+1)$, where P_1 is the price in year 1, P_2 is the price in year 2, ΔRPI is the change in the value of the retail prices index and X captures the 'change'. However, this formula, where X is a constant does not give a smooth year-on-year change in real prices. A constant change in real prices is $P_2 = P_1.(1+\Delta RPI).(1+Y)$, where Y is the constant change. It can be seen that, for the same change in prices X and Y are related but not equal. (X=Y where ΔRPI=0, ΔRPI = ∞, or P2 = P1. (1+ΔRPI)). This means that if the formula $P_2 = P_1.(\Delta RPI+X+1)$ is used and X is to be the same in each year of the quinquennium then the annual year-on-year change in real prices will not necessary equally X and furthermore will be different in each year. However, the average year-on-year change (Y) will approximate to X. The RPI used in the price cap formula is the index as at 31 August each year, while the CAA's modelling uses average index for the year ending/ended 31 March each year. So, if forecast inflation based on these slightly different time periods is different, then even using $P_2 = P_1.(1+\Delta RPI_{AUG}).(1+Y)$ will give a price change in real prices (year ending/ended 31 March) which is not equal to Y.

of profile.

Figure 10.4: Yield per passenger (smoothed)



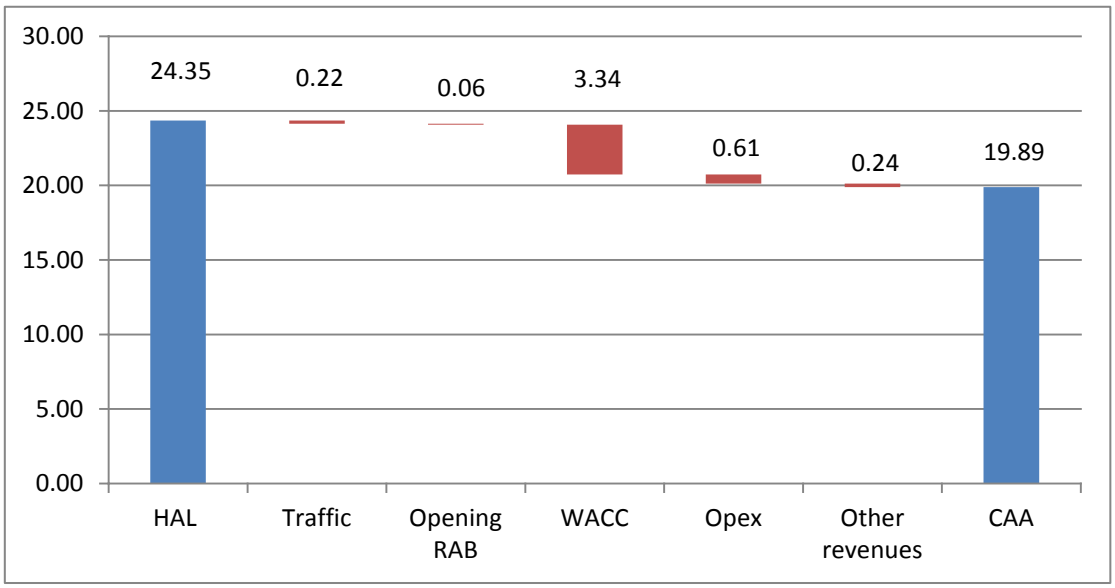
Source: CAA

10.8 Figures 10.5 and 10.6 show how the CAA's initial proposals compare to HAL's views and the views of the airlines by comparing a simple average of the yield in each of the five years. This shows that the main differences in the resulting price profiles arise from different assumptions for opex and the WACC, with smaller, differences arising from the differences in traffic forecasts, the value of the opening RAB, net retail revenues and other revenues.

10.9 The largest variance between the CAA and HAL is due to the WACC. However, this impact reflects the fact HAL in its FBP used a WACC of 7.1%, a 109 bps increase on the Q5 determination.[78] As discussed in chapter 9, after taking into account the removal of the accounting adjustment, the CAA's Q6 initial proposals for WACC is 66 bps lower than the Q5 determinations. This difference is largely driven by reductions in tax rates and debt costs compared to Q5.

[78] The headline WACC in the Q5 decision was 6.2%. However, in Q5 this was translated into an ARR of 6.014%, which was then applied to the average RAB.

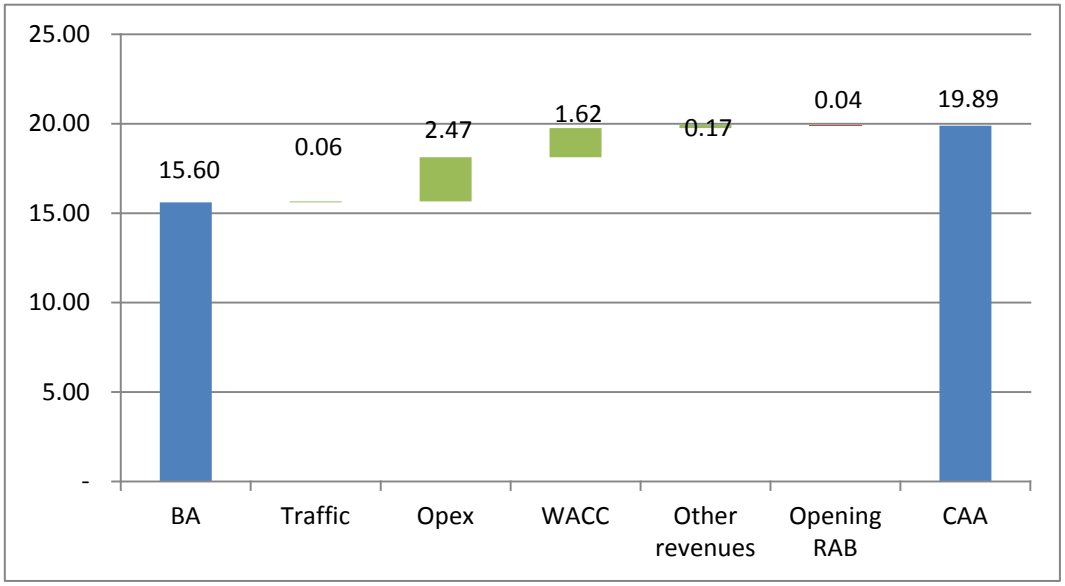
Figure 10.5: Average yield per passenger - HAL compared to CAA



Source: CAA

10.10 The comparison of BA with CAA shows how BA's more aggressive assumptions for opex and WACC would contribute towards a significant reduction in the average yield.

Figure 10.6: Average yield per passenger - BA compared to CAA

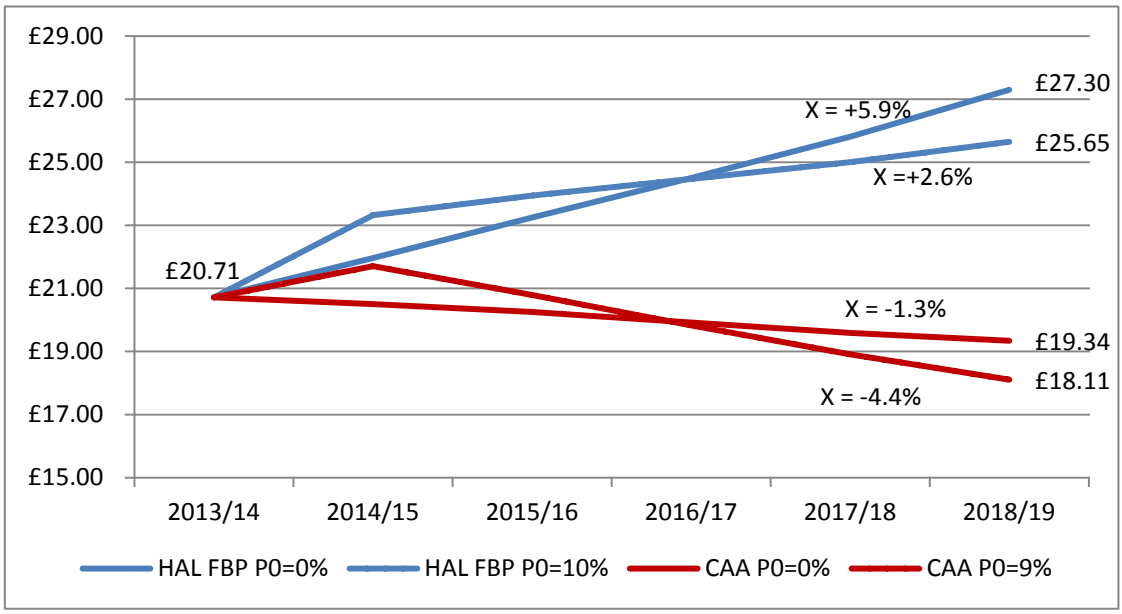


Source: CAA

10.11 The CAA notes that HAL has floated the idea of increasing prices in year 1 of Q6 and then keeping prices relatively flat throughout the period. Provided this is done in an NPV neutral manner the CAA is

comfortable about such price profiling but would welcome feedback from HAL and the airlines before forming a firmer position.

Figure 10.7: Yield per passenger (with and without opening year Po adjustment)

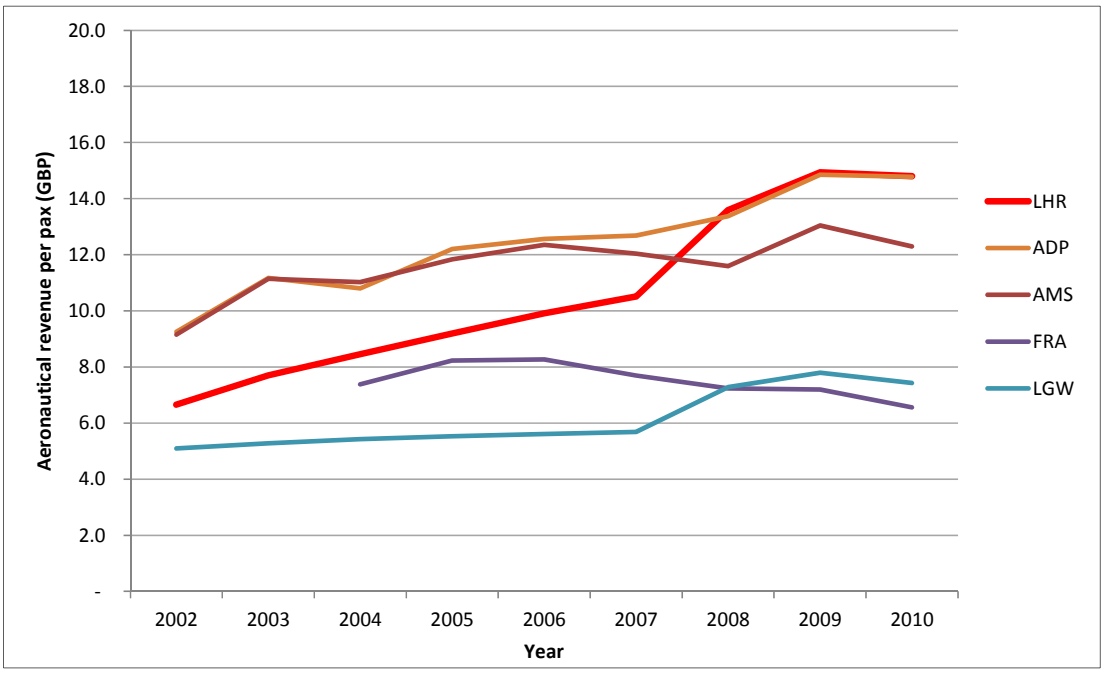


Source: CAA

10.12 HAL suggested a Po (i.e. year 1) adjustment of an increase of 10%, followed by a change of RPI+2.6% in each subsequent year. HAL considered that the additional 10% reflects the re-setting of traffic forecasts. The CAA applied the same methodology and calculated that, in 2011/12 (the latest available year), traffic was approximately 9% below Q5 forecasts. The CAA calculated that the effect would be RPI+4.6% in the first year (being an uplift of 9% to reflect traffic partially offset by lower building blocks of 4.4%), followed by a change of RPI-4.4% in each subsequent year of Q6.

10.13 As mentioned in Chapter 5 above, the CAA has conducted a comparison of HAL's aeronautical revenue per passenger with that at other airports. A chart from that study is reproduced as Figure 10.8 below. As it shows that Heathrow is the most expensive airport in the sample (though equal with Charles de Gaulle airport in Paris), a real terms reduction of 1.3% per annum in revenue does not appear excessive.

Figure 10.8: Aeronautical revenue per passenger for the Heathrow comparator basket



Source: CAA

Discussion of the key issues (II) - financeability

10.14 In addition to proposing maximum levels of airport charges, the CAA has assessed the financeability of its Q6 initial proposals. The CAA has a duty to ensure that licence holders, such as HAL, can finance their provision of airport operation services when it comes to the exercise of the CAA's functions such as setting price caps. This cannot override the CAA's primary duty. However, the CAA considers that setting a price control condition that is aligned with an efficient operator being able to finance its business is consistent with, and is not in conflict with, present and future passengers' interests or with the need to promote efficiency and economy.

10.15 The CAA therefore considers it appropriate to establish whether the Q6 initial proposals would enable an efficient HAL to finance its operations, including its capex programme, in Q6 on reasonable terms in the banking and capital markets through some combination of debt and equity.

Maintaining solid investment grade credit

10.16 A key assumption in determining the appropriate level of gearing in the CAA's estimation of the WACC is that HAL should be able to obtain and maintain a solid (sometimes known as 'comfortable') investment grade rating at an assumed gearing level of 60%. A solid investment grade rating is interpreted as in the region of BBB/BBB+ (using Standard & Poor's and Fitch Ratings Limited's terminology) and Baa2/Baa1 (using Moody's Investor Service terminology). This is a couple of 'notches' above the bottom of investment grade of BBB– or Baa3. The aim of the financeability assessment is for HAL to be in a position to absorb reasonable unanticipated downside risk and still retain an investment grade credit rating.

10.17 The CAA has gathered evidence directly from three credit rating agencies: Fitch Ratings Limited, Moody's Investor Service and Standard & Poor's (S&P). In determining a credit rating, an agency typically considers both qualitative evidence (e.g. business risk and corporate governance) and quantitative evidence (e.g. financial risk and credit ratios). In forming a view on the business risk of an airport operator, an agency will consider, among other things:

a) the competitive position of the airport compared with airports owned by competitors, which in turn may include:

   i) location (catchment area, local transport links); and

   ii) customer airlines and the passenger mix, (hub airlines, alliances, destinations of those airlines);

b) the regulatory regime, and in particular the rigour and predictability of the regime;

c) the diversity of the airports owned or operated by the company[79]; and

d) charges (for example landing, passenger and security charges).

10.18 Compared to other airports, Heathrow would appear to have a very

[79] The CAA considers the airports on a standalone basis, so while this factor might be important for the credit rating agencies, the CAA's analysis ignores other airport in the same corporate group of companies.

strong position from a credit perspective. Heathrow is the world's busiest airport and one of Europe's main hubs for full service airlines. It has a very strong market position owing to excess demand and has a favourable location near London, good transport links, and attractive catchment area. Heathrow is the hub airport for BA, which is a member of oneworld, one of the world's three global airline alliances. Heathrow has also proven more resilient to economic slowdowns than other major UK airports.

10.19 The CAA's initial proposals for Q6, do not propose fundamental changes to the form of regulation for HAL, and hence is not expected to weaken the credit strength of HAL. If anything, the ability of a licensing regime to revisit the price control if key assumptions such as traffic are significantly at odds with the forecast, could be a credit strength.

10.20 Before 28 February 2013, BAA SP Limited was the holding company that owned Heathrow and Stansted. Heathrow accounted for 92% of BAA SP's EBITDA and Stansted accounted for 8%. BAA had been required to sell Stansted following a ruling originally made by the CC in March 2009. Manchester Airports Group bought Stansted from BAA and the sale was completed on 28th February 2013. Based on discussions with the credit rating agencies, the CAA does not expect the sale of Stansted to significantly deteriorate HAL's credit profile.

10.21 One of the key assumptions of the CAA's financeability assessment is that the CAA's price review will not affect HAL's business risk; therefore, the CAA assumes that the regulatory risk of HAL is unchanged from credit rating agencies' current views. However, the CAA recognises that the proposed building blocks of the price cap could affect HAL's financial risk.

10.22 In forming a view on the financial risk of a business it is rating, an agency may consider matters such as:

a) historical and forecast financial performance, including:

i) cash flow and profitability;

ii) revenue diversity and stability;

iii) liquidity and financial flexibility;

iv) capital structure of the company (including gearing);

v) covenants and security including securitisation; and

b) financial policy and strategy of management (including merger and acquisition activity, dividend policy, etc).

10.23 The rating agencies place different emphasis on the various ratios. Some of the agencies also differ in their benchmarks (e.g. the value the ratio needs to be for a certain credit rating).

CAA analysis of credit ratios

10.24 The CAA has considered whether the forecast performance of HAL under the CAA's Q6 initial proposals is consistent with a solid investment grade based on assumed gearing of 60% and has considered six ratios used by the various agencies.[80]

a) interest cover; [81]

b) funds from operations (FFO[82]) interest cover; [83]

c) post-maintenance interest cover ratio (PMICR); [84]

d) adjusted interest cover (adjusted ICR); [85]

e) FFO to debt; [86] and

f) regulatory asset ratio (RAR[87] or gearing) (debt divided by RAB).

10.25 The CAA has used a separate section in HAL's financial model, which was created to provide illustrative calculations of the above financial

[80] These ratios and some of the terms used in them do not have agreed definitions.

[81] ICR = (EBITDA – tax paid – 2% of total RAB)/interest paid. Nb: the rating agencies using this metric assume that 2% of total RAB is required to maintain the regulatory assets.

[82] FFO= Net income from continuing operations adding back depreciation, amortisation, deferred income taxes and other non-cash items, less any changes to operating components of working capital.

[83] FFO/interest expense = FFO (as above) + gross interest paid on debt/gross interest expense on debt.

[84] PMICR = (EBITDA – corporation tax paid – regulatory depreciation)/interest paid.

[85] Adjusted ICR is FFO + interest expense – regulatory depreciation + profiling adjustment divided by interest expense.

[86] FFO/net debt, where FFO is as defined above and net debt = closing RAB x gearing ratio.

[87] RAR = debt less cash and authorised Investments/total RAB.

ratios. These are set out in nominal terms[88] as this tends to be the basis used by rating agencies. The CAA has undertaken the analysis on the basis of the notional capital structure consistent with the CAA's cost of capital proposals in chapter 9. This assumes:

a) a constant gearing level of 60%, with the level of dividends being the balancing item used to keep gearing at this level;[89]

b) a nominal cost of debt of 5.7%;

c) index-linked debt making up 35%[90] of the total debt balance; and

d) a cost of index-linked debt of 2.9%.[91]

10.26 The CAA has had to make some additional assumptions and adjustments in order to derive the financial ratios in figure 10.9. Based on these results, the CAA considers that a notionally financed and efficient HAL would be likely to achieve and maintain a solid investment grade credit rating.

[88] In contrast, the rest of the HAL model used for the price control was specified in real terms.

[89] The CAA relaxed this assumption and after allowing for a modest dividend yield, gearing was in the range of 56% to 60%.

[90] Ofgem assumes 25 per cent of each net work company's debt is index-linked. Fitch considers that by the end of 2011 about 65 per cent of BAA (SP)'s net debt exposure was in the form of index-linked debt or hedged using index-linked swaps. In the Q5 price control review, the CAA assumes that the proportion of index-linked debt is 25 per cent. Taking in to account all the available evidence, the CAA takes the conservative point of 35% in the range of 25% to 65%. Fitch Ratings, '*BAA (SH) plc and BAA Funding Limited - Full ratings report*', 23 August 2012, p. 7.

[91] The cost of index-linked debt of 2.9% is consistent with the top of the range of PwC's recommendation (excluding fees). The nominal cost of debt includes inflation of 2.8%.

Figure 10.9: CAA financial ratios for HAL in Q6

Key financial ratios: benchmarks and calculations					
Key financial ratios	Benchmark		CAA (Q6)		
	Moody's (Baa2)	Fitch (BBB+)	Average	Min	Max
PMICR		1.5 - 1.6	1.5	1.5	1.6
ICR	1.4 -1.6	n/a	2.5	2.4	2.7
RAR - Net debt/RAB	68% - 75%	n/a	60%	60%	60%
Other financial ratios					
FFO interest coverage	2.25 - 3.0	n/a	2.7	2.6	2.8
FFO to net debt	6-10%	n/a	15%	15%	16%

Source: CAA analysis

10.27 The CAA notes that its ratio analysis suggests that the notionally financed airport operator would meet a solid investment grade credit rating. It also considers that its conclusions are not sensitive to changes in the underlying assumptions noted above. The CAA has used HAL's financial model to calculate the Q6 price cap proposals and analyse price cap profiling and financeability.

10.28 The CAA's Q6 price cap calculations have been internally audited. The CAA will undertake an external audit prior to the development of its final proposals.

CAA initial proposals

10.29 The CAA proposes to set a price cap equivalent to a maximum increase[92] in average airport charges of RPI-1.3% per year. The CAA considers that an efficient HAL should be able to finance these proposals and retain a solid investment grade credit rating.

[92] Or decrease, in the event that RPI is less than 1.3%.

CHAPTER 11

Regulatory Incentives - Service Quality

11.1 This chapter contains the CAA's initial proposals for incentives attached to HAL's delivery of service quality. It first sets out the agreements reached during CE, followed by HAL's proposals in its FBP. The CAA's own assessment of service quality in Q6 is discussed and this chapter concludes with the CAA's initial proposals for Q6.

Background – the development of regulatory incentives

11.2 The SQR scheme was introduced by the CAA in Q4 to identify the service standards that airlines could expect from HAL in return for the regulated charges they paid. Where performance falls below certain pre-determined standards, HAL is liable to repay a portion of the charges levied to the airlines. This recognises that HAL may cut service quality rather than striving to make genuine efficiency improvements in responding to price cap incentives. For a similar reason, other economic regulators also tend to set minimum service quality standards as part of their price control determinations.

11.3 The current SQR scheme captures five areas of HAL's service quality. All contain a number of specific sub-elements (except for the aerodrome congestion term (ACT)).

- Passenger satisfaction - with metrics taken from HAL's Quality of Service Monitor (QSM) survey and covering the four elements of flight information, cleanliness, wayfinding, and departure lounge seating availability.
- Security queue times - with metrics based on queue times for central search, transfer search, staff search and control posts.
- Passenger operational elements - with metrics based on the availability of passenger sensitive equipment (PSE), track transit systems, and arrivals reclaim (baggage carousels).

- Airline operational elements - with metrics covering pier service, stands, jetties, FEGP, pre-conditioned air (PCA), and stand entry guidance. Metrics are generally based on the availability of these elements.
- An ACT.

11.4 For each of these elements, the CAA sets a standard for HAL to meet. Generally, the elements are split by terminal to encourage HAL to ensure a consistent service quality across terminals and to discourage HAL from putting airlines in one or more terminals at a disadvantage. The standards have been subject to financial incentives. For Q5, the total amount of HAL revenue at risk per year was approximately 7%, spread across the various elements as described above.

11.5 HAL also has the opportunity to earn bonuses where certain elements outperform the CAA's targets. The elements on which bonuses can be generated are a subset of the full suite of elements. The maximum aggregate bonus HAL can earn per year in Q5 is just over 2%. Figure 11.1 shows the total rebates paid out by HAL and bonuses received by HAL during Q5 as at December 2012.

Figure 11.1: Rebates paid and bonuses earned by HAL in Q5

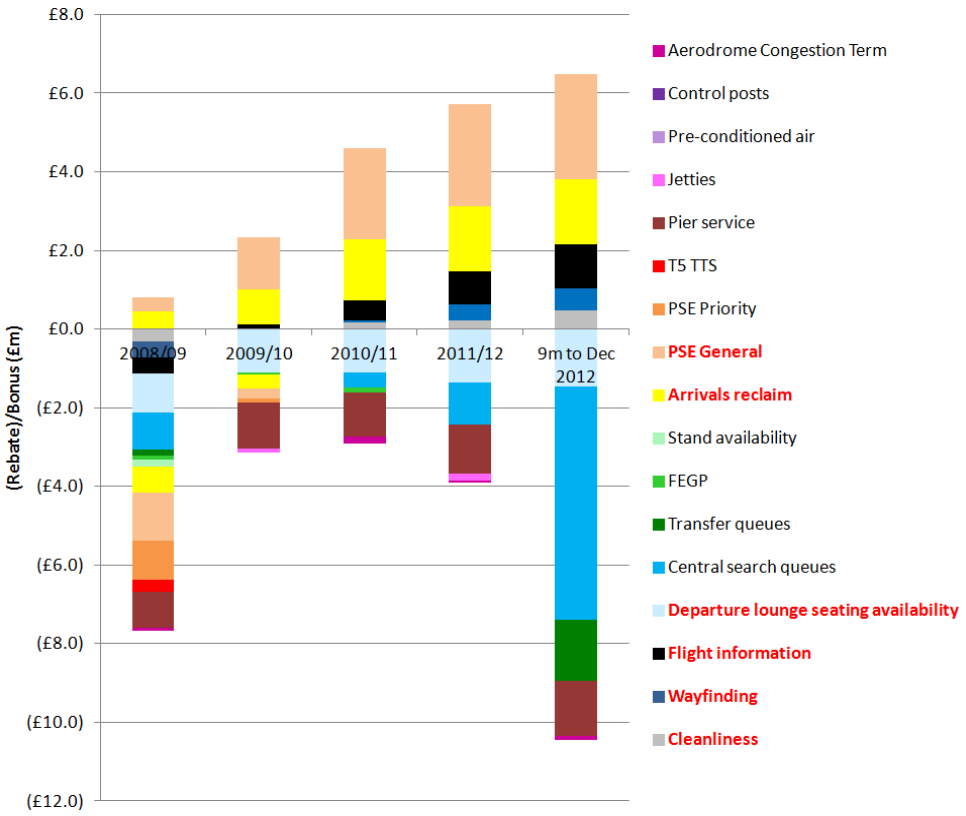
	Total airport charges (£m)	Rebates (£m)	Rebates as % of airport charges	Bonuses (£m)	Bonuses as % of airport charges
2008/09	886.8	£7.7	0.87%	£0.8	0.09%
2009/10	955.4	£3.1	0.32%	£2.3	0.24%
2010/11	997.5	£2.9	0.29%	£4.6	0.46%
2011/12	1,178.6	£3.9	0.33%	£5.7	0.48%
Apr 12 – Dec12		£10.4		£6.5	

Source: HAL

11.6 A breakdown of the total rebates and bonuses (figure 11.2) helps to show HAL's comparative strengths and weaknesses in performance during Q5.

- The number of service standards generating rebates has reduced over Q5, despite the level of overall rebate rising from 2010/11. The increases in rebate arise from HAL's recent security queue underperformance. The magnitude of the rebate is proportional to the number of passengers in the terminal experiencing the underperformance. For example, a failure to meet the standard in Terminal 5 leads to a larger rebate than a failure to meet the standard in Terminal 1 owing to there being more passengers affected.
- Bonuses earned by HAL have also increased over Q5. The largest bonuses have been earned from the standards related to PSE (general)[93] and arrivals reclaim (baggage carousels).

Figure 11.2: Q5 SQR and bonus performance



Note: Elements labelled in red are eligible for bonus payments

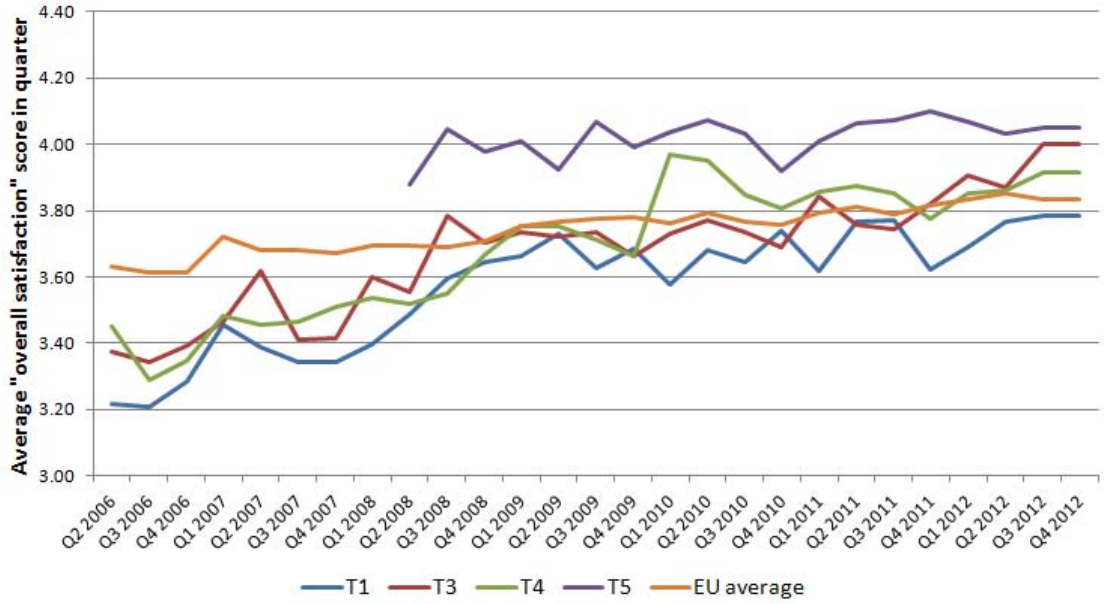
Source: HAL

[93] PSE (general) includes lifts, escalators, and moving walkways; PSE (priority) is a subset of these assets, agreed locally for each terminal between the airport and Terminal AOC and notified to the CAA in writing from time to time.

11.7 HAL takes part in the global ASQ[94] survey, whereby passengers are surveyed on a monthly basis to find out about their satisfaction with various airport processes. As part of this, passengers are asked about their satisfaction with their overall experience at the airport.

11.8 The survey consists of c.1,750 departing passengers per month at Heathrow, Historical results, as shown in figure 11.3, indicate that HAL's average performance in terms of overall passenger satisfaction has steadily improved over recent years, but that Terminal 5 consistently outperforms the other terminals. HAL has a strong commitment to continuous improvement and captures this in its vision statement "by making every journey better".

Figure 11.3: Passenger satisfaction with airport (ASQ survey results)



Source: HAL

Constructive Engagement

11.9 CE's service quality workstream focused on maintaining or improving the service experienced by passengers in line with the agreed vision, service propositions and passenger principles for the airport. The

[94] ASQ is an international customer satisfaction survey of over 200 airports, conducted locally, but overseen by consultants DKMA on behalf of Airports Council International.

CAA attended the majority of the service quality CE meetings, and informed the debate with its independent research of passenger priorities, in line with its new primary duty. To inform its understanding of passengers' interests, the working group made use of several other sources of information, including:

- HAL's passenger research and complaints data;
- airlines' own passenger research and customer insights, shared bilaterally with both HAL and with the CAA; and
- input from the Passenger Services Sub-Committee of the Heathrow Airport Consultative Committee (PSSC-HACC).[95]

11.10 The main agreement reached between HAL and the airlines was that the SQR scheme for Q6 should be based on the Q5 SQR scheme, retaining many of the existing standards. HAL and the airlines considered this was in the interest of passengers given the Q5 scheme has supported an improved focus on quality by HAL, and both HAL and the airlines were keen to lock in this performance and improve upon it in a few areas. Both HAL and the airlines also agreed with the importance of a consistent service delivery baseline across the terminals.

11.11 Despite agreeing to retain the broad framework of the Q5 SQR, HAL and the airlines did record a number of disagreements on some of the detail. These are explained below, along with the CAA's initial proposals.

HAL's January 2013 Business Plan

11.12 HAL's FBP proposes to develop the Q5 SQR in various ways, and reflects a number of HAL's proposals as set out in the CE report (not all of which were agreed with the airlines). The most significant changes from the Q5 SQR being:

- moving a number of elements from the SQR into a 'Service Charter' between HAL and the airlines;

[95] Heathrow Airport Consultative Committee is an advisory body constituted by HAL in respect of Heathrow in accordance with section 35 of the Civil Aviation Act 1982 (as amended by AA86).

- reporting performance of third parties such as UK Border Force (UKBF), airlines and groundhandling agents;
- removal of certain elements from measurement entirely; and
- development of the security queues standard.

11.13 The most significant development in HAL's FBP, compared with the Q5 SQR, relates to the standards around direct and transfer passenger security queuing. HAL's proposal harmonises the standards for both groups of passengers, with the FBP proposing a standard of 99% of queue time measurements taken at 15 minute intervals recording a queue time under 10 minutes.

11.14 Alongside these proposed changes in the security service standard, HAL's FBP sets out changes in the construction of the metric. In summary, these are:

- moving to a per passenger-based metric (subject to measurement technology available);
- setting a QSM (passenger satisfaction) score of 4.0 to be used in combination with the objective measurement of queue times; and
- using some form of 'sliding scale' for rebates rather than a 'knife-edge' approach.

Discussion of key issues (I) – SQR methodology

Independent validation of CE output

11.15 As set out in its May 2012 Q6 Policy Update document, the CAA has, alongside CE, endeavoured to independently identify the key passenger priorities for airport operation services at Heathrow.

11.16 The steps the CAA has taken to validate passenger priorities at Heathrow included:

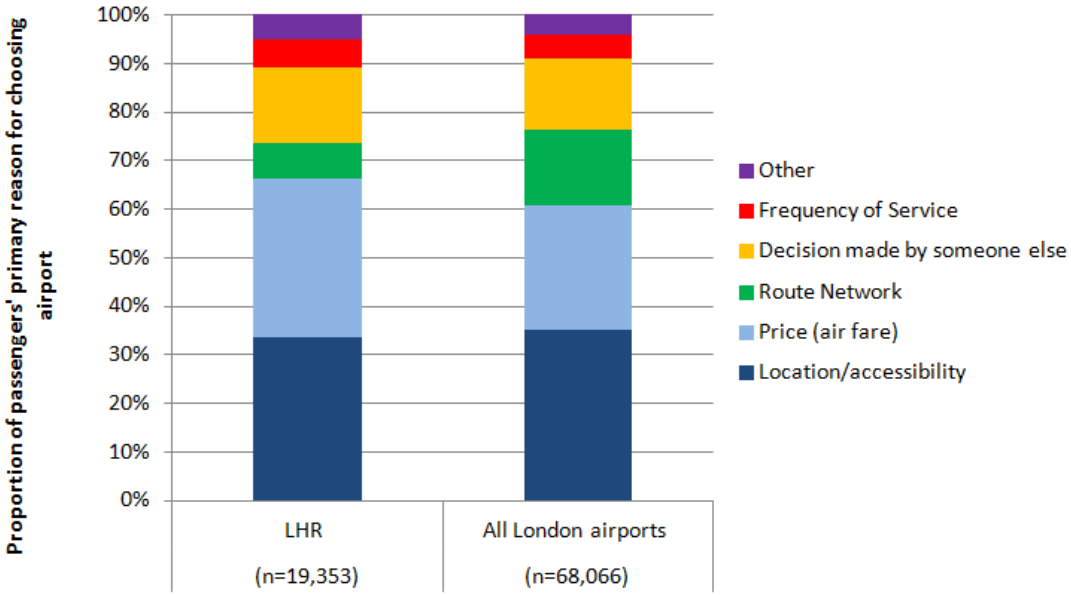
- an initial review of all existing passenger research in mid-2012 to identify key themes and any gaps where further evidence would be useful;
- use of the CAA's passenger satisfaction data and complaints data;

- primary research conducted by the CAA into passengers' airport experience;
- validating the CAA's passenger insights with research held by HAL and the airlines; and
- sharing the research findings with the CAA's Consumer Panel for scrutiny.

11.17 The key messages to emerge from the CAA's independent review included the following.

- HAL's service quality in relation to its airport operation services is not a key driver behind (terminating) passengers' choice of airport – it sits significantly below the location/accessibility of the airport, the price of the flight, and the airline route network. Only around 5% of passengers cite other reasons (including "prefer airport"), see figure 11.4.
- At the airport, the overriding concern for departing passengers is that they depart on time (for the arriving passenger, leaving the airport promptly upon arrival is the priority). HAL provides a number of airport operation services direct to airlines that are important to airlines' on-time performance, but the passenger themselves may not be aware of them, such as the availability of stands, FEGP, PCA, etc.

Figure 11.4: Drivers of airport choice



Notes:

1. Responses to the question, "Why did you choose to fly from this airport today?"

2. London airports = Heathrow, Gatwick, Stansted, Luton, London City.

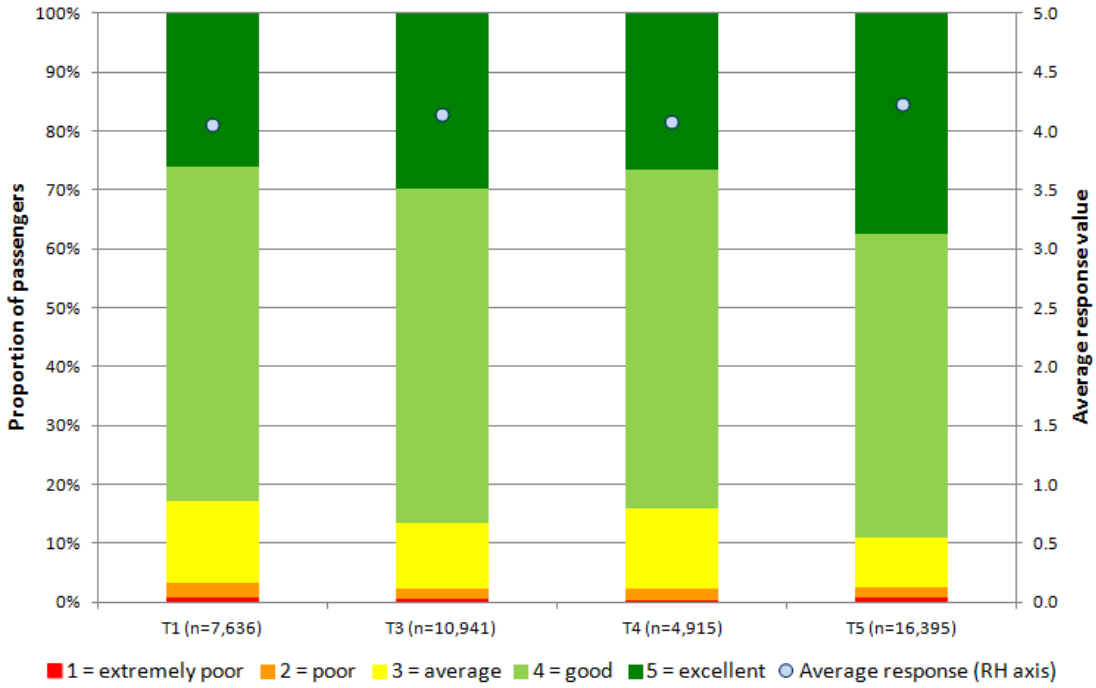
3. Terminating passengers only, excludes connectors.

Source: CAA Passenger Survey, provisional results 2012

11.18 In July 2012, the CAA added a question to its ongoing Passenger Survey that asked passengers to rate their overall experience in the airport terminal. This collected nearly 40,000 responses from Heathrow in 2012. The findings split by terminal are shown in figure 11.5.[96] The provisional results for the second half of 2012 indicate that the majority of passengers rate their airport experience as “good” or “excellent” (with a noticeably larger proportion of passengers in Terminal 5 responding “excellent” than in other terminals).

[96] This question will continue to be asked and over time will become a useful dataset that will enable stakeholders to identify trends in passenger satisfaction.

Figure 11.5: Passenger satisfaction at Heathrow, 2012



Note: Responses to the question, "How would you rate your overall experience in the airport terminal today?"

Source: CAA Passenger Survey, provisional results 2012.

11.19 The CAA carried out a further one-off survey in winter 2012/13 (Q6 research) at the regulated airports to collect more evidence on the relative experiences of passengers arriving, connecting and departing. This survey took place at the airport (i.e. during the passenger journey) and differed from the CAA's standard passenger survey in that:

- arriving passengers were also targeted;
- passengers were asked open-ended questions about any sources of dissatisfaction to allow for recording of qualitative data; and
- passengers were asked about perceived and acceptable queue times for various processes.

11.20 Over 1,500 passengers were interviewed at Heathrow, and the key findings from this research included the following:

- although still high, the lowest level of satisfaction was recorded amongst connecting passengers;

- across all processes covered (check-in, security, baggage reclaim, immigration), the majority of passengers had a perceived queue time that was quicker than that which they deemed to be reasonable. The lowest of these proportions was for security queue times for transfer passengers; and
- there was no evidence to suggest a need for significant improvement in the overall passenger experience for Q6.

11.21 Discussion with HAL and the airlines into their own research insights indicated a broad consistency with the results above.

11.22 Although such research is informative, the CAA acknowledges the limitations of drawing strong inferences. Whilst due to the nature of the airlines operating at Heathrow, the range of potential passenger interests may be somewhat narrower than at other airports with more diversified airline business models, the CAA is mindful of the heterogeneity of passenger needs and preferences. Even the same person may have different requirements depending on the nature of the journey they are on. There is a practical challenge in attempting to trade-off the interests of different groups to define a coherent single 'passenger interest', including the interests of present and future passengers.

11.23 Notwithstanding these practical difficulties, the CAA considers that the independent validation it has conducted of the CE outputs does tend to suggest there are some consistent indications around passenger priorities. In terms of service quality incentives for Q6, the CAA considers that its research supports the following broad themes:

- passengers are reasonably satisfied with Heathrow's airport operation services and there is not a clear mandate for regulatory incentives to further significantly drive up quality thresholds across the airport if this adds material costs, especially when seen in the context of passenger views on airline fares/affordability;
- there is, however, variation across the Heathrow terminals and hence a need to maintain a broadly consistent baseline of quality across the airport to avoid inadvertently disadvantaging particular airlines; and

- given passengers' clear priority around on-time performance, there is support for focusing expenditure and improvements on efficiency and resilience of the airport (i.e. that passengers are able to arrive/depart as planned).

CAA Consumer Panel feedback

11.24 The Consumer Panel agreed that the CAA's overall approach to understanding passengers' interests for the purposes of HAL's price cap, through both CE and the use of passenger research, was robust. The Consumer Panel considered that, in the delivery of airport operation services at Heathrow, there is generally a reasonable alignment of airline and passengers' interests. However, there are areas where this may not necessarily hold which the Consumer Panel asked the CAA to consider further (for example passenger welfare in times of disruption).

11.25 In terms of the CAA's review of research, the Consumer Panel agreed there is evidence to suggest that on average, current service quality is generally satisfactory, but the Consumer Panel encouraged the CAA to consider different passenger sub-groups in its survey work (for example PRMs).

11.26 The CAA's Q6 research was augmented with over 130 qualitative interviews of the over-65s at the regulated airports. These interviews gave the CAA assurance that their views on the airport experience were consistent with those of the wider population. HAL has carried out regular survey work since August 2010 focused on better understanding the needs of PRMs. The CAA has not seen, and is not aware of, any evidence to suggest its Q6 proposals, or HAL's capex plan will have a detrimental impact on passengers of reduced mobility or other vulnerable groups.

11.27 The Consumer Panel noted the importance of performance specifically in times of disruption, and encouraged the CAA to consider how this might be targeted. The CAA is responding in its development of licence conditions on HAL relating to operational resilience (see chapter 12) as well as considering how it can develop its future passenger research.

11.28 The Consumer Panel broadly supported the development of the Q5 SQR as the basis for service quality regulation in Q6. The Consumer Panel felt that the targeted use of bonuses was not necessarily

inappropriate and suggested the CAA consider some flexibility in the elements which they applied to. The Consumer Panel suggested the use of reputational incentives as well as financial incentives, and suggested the CAA look at whether there are some metrics where publication and monitoring of performance would act as a sufficient incentive without the need for a rebate/bonus. With this is mind, the CAA has proposed the publication of a measure of passenger satisfaction with security at the airport, to augment the queue time measurement which carries a rebate (see below).

Purpose of the SQR - relevance of the Public Interest finding

11.29 The airlines' view is that the SQR was introduced to address the CC's public interest finding in Q4.[97] This identified that the level of charges at the airport were not explicitly related to the quality of service provided and hence airlines could face detriment if HAL chose to cut service rather than make genuine efficiencies. There were also a number of shortcomings identified in HAL's performance on service quality, for example in relation to security queues.

11.30 HAL's view is that given the improvements it has made in service quality during Q5, the CC public interest finding in Q5[98] is no longer relevant.

11.31 Since the introduction of the Act, the purpose of the SQR is no longer to provide a remedy for a CC public interest finding. However, under the Act (section 18), HAL's licence may include "conditions as the CAA considers necessary or expedient having regard to the risk that the holder of the licence may engage in conduct that amounts to an abuse of substantial market power….".

11.32 The CAA considers that, where there is evidence of SMP, an abuse could relate to high prices or poor service quality. Given the CAA's views on HAL's degree of market power, the CAA considers it appropriate for its pursuit of its primary duty to ensure that passengers

[97] Competition Commission, BAA plc: a report on the economic regulation of the London airports companies (Heathrow Airport Ltd, Gatwick Airport Ltd and Stansted Airport Ltd), Novermber 2002, paragraphs 1.18-1.19, available at: http://www.caa.co.uk/docs/5/ergdocs/ccreportbaa/chapter1.pdf

[98] Competition Commission: BAA plc: A report on the economic regulation of the London airports companies (Heathrow Airport Ltd and Gatwick Airport Ltd), September 2007, Appendix L, available at: http://www.caa.co.uk/ default.aspx?catid=5&pageid=8779

continue to have protection from both high prices and poor quality, notwithstanding the improvements made by HAL in Q5.

Rebates

11.33 Both HAL and the airlines agree that the total amount of airport charges at risk of rebate is at broadly the right level at 7% per year. However, the airlines' view is conditional on the removal of possible bonuses. The CAA proposes to maintain the maximum rebate level at 7% of airport charges across the terminals, albeit with potentially different weightings of rebates within the terminals where different services are provided (e.g. PCA, track-transit).

11.34 The current rebates are 'knife-edge' rather than 'sliding scale'. To support a focus by HAL on continuous improvement, the CAA sees merit in a sliding scale approach, especially if per passenger metrics are adopted for security queues. However, amongst other factors, this must be balanced with the added complexity this would introduce. For the purpose of the initial proposals, the CAA has maintained a similar approach to Q5. However, it intends to consider the merits of a sliding scale approach further before it publishes its final proposals and invites stakeholders' comments in that respect.

Bonuses

11.35 Bonuses were introduced by the CAA in Q5 as an incentive to encourage HAL to make ongoing service quality improvements, but particularly focused on bringing up the performance in the worst performing terminals. The amount HAL has earned in bonuses during Q5 has increased throughout the period as its performance has improved in the targeted areas. During CE, the PSSC-HACC noted its support for bonus payments to HAL where there were significant permanent improvements in quality.

11.36 Bonuses are currently available on six elements in the SQR (these are the four passenger satisfaction elements of departure lounge seating availability, cleanliness, wayfinding and flight information; PSE (general), and arrivals reclaim (baggage carousels)). The bonuses take the form of increased airport charges to the airlines if service levels exceed the target standard across all terminals in the airport. Therefore, bonuses cannot be earned if one or more terminals do not meet the standard. This was designed to encourage a common minimum baseline across all terminals. Bonuses take the form of a

sliding scale up to a limit on the relevant metric.

11.37 HAL considers that bonuses should be available on further elements within the SQR. Airlines do not generally consider that bonuses should be paid.

11.38 The CAA considers that bonuses are useful in incentivising HAL's performance and avoiding a simple punitive regime. Given its research findings described above, the CAA does not consider there are strong reasons to depart from the level of bonuses that were agreed for Q5, i.e. up to 2.24% of revenue per year. Although there is an argument for reducing the level of bonuses, owing to the high levels of satisfaction experienced by passengers on average; there is also an argument for retaining bonuses to ensure consistent delivery of quality across the terminals.

11.39 The CAA proposes to make the following changes, which leads to a slightly different allocation of the total potential bonus compared with Q5.

- The CAA proposes to remove bonuses in Q6 on the asset availability measures of PSE (general) and arrivals reclaim (baggage carousels). Both of these measures have a Q5 target of 99% time availability, which HAL is able to attain. The CAA does not consider that bonuses are appropriate to incentivise even higher levels of service delivery, given that the potential costs that could be involved in a standard approaching 100% could exceed the benefits which passengers might derive.
- Where the QSM passenger satisfaction measures are currently performing at varying levels across the terminals, the CAA considers that the use of bonuses help provide HAL with an ongoing incentive to attain a common minimum baseline standard across all terminals.

11.40 The effect of removing bonuses from the two elements above is to reduce the bonus pot from 2.24% to 1.44%. The CAA has not reallocated this bonus potential to other elements, but has a number of options. It could reallocate it to the security standards, once performance achieved exceeds, for example, 99% of passengers processed within 5 minutes for both central and transfer search. Alternatively, it could apply this bonus potential to other elements or

remove it entirely (perhaps by making an equivalent reduction in the level of rebates available to result in a similar balance in the package of incentives to Q5). The CAA would welcome views on this issue in reaching a firm view. There may also be merit in using this extra bonus potential in more flexible ways (see below).

11.41 The CAA considers the operational resilience of the airport to be a key area of performance for the airport operator. However, the CAA considers that at this stage it is not a suitable area for deploying potential SQR bonuses as performance would not be dependent on a change in the level of service quality delivered, but rather a change in the circumstances under which it was delivered. To allow scope for bonuses to be earned for "business as usual" performance in times where this might be difficult to achieve for reasons outside of the airport's control would require developing new metrics around the circumstances impacting performance rather than performance itself. The CAA would welcome views from stakeholders on whether it ought to consider linking financial incentives (bonuses) to operational resilience in the future.

Flexibility in the allocation of bonuses and rebates

11.42 For the purposes of the CAA's initial proposals, the CAA has fixed the allocation of bonuses and rebates for the five-year period. However, the CAA sees merit in having the ability to adjust the allocation of bonuses and rebates within the price control period to reflect changing passenger priorities. This is something that is possible with the new licensing framework which allows for the licence to include provisions to make modifications in specified circumstances. The CAA is keen to understand how stakeholders could envisage this approach working whilst respecting the need for regulatory certainty and avoiding unnecessary complexity, and whether they consider it to be in passengers' interests. For example, the licence could provide for modifications to be made where HAL, a representative proportion of the airlines and the CAA agree to the changes. There could also be scope for the CAA to direct changes if one party did not agree.

11.43 Another approach would be for the CAA to redeploy the bonuses removed from the two elements discussed above, and place into a discretionary pot that could be allocated by the CAA for enhancements in HAL's performance that are revealed as necessary after the price control is set, instead of allocating them to the new

security standards.

Definitions

11.44 Part of the CE discussions focused on clarifying both parties' understanding of wording used in the current SQR scheme. This brought out a specific disagreement on interpretation of the phrase "time available", which was used in Q5 for a number of asset measures (figure 11.6).

11.45 The airlines consider that "time available" should mean that an element is "available for use as intended and at the time required". This gives rise to two issues. First, where an asset may be available (e.g. a passenger lift), but is not useable (e.g. due to building works). Currently this is dealt with under the Exclusions Policy[99] in the Q5 SQR.

11.46 The second issue, which is more complex, is that the airlines' interpretation potentially links a number of SQR elements together (for example, a jetty may be operational, but if the stand is out of use, the jetty is no longer "available for use" by the airline).

11.47 In order to avoid being penalised twice for the failure of a single SQR element, HAL argues that each asset must be considered independently of the others. The elements that this relates to are: FEGP, arrivals baggage reclaim, stands, jetties, PCA and stand entry guidance.

Figure 11.6: Views on definitions

	HAL	Airlines
Serviceable	Serviceable and available for use, independent of any other element	Working as required in order to be used for the purpose intended
Available	Serviceable and available for use, independent of any other element	Available for use as intended and at the time required
Useable	Serviceable and available for use, independent of any other element	Able to be used for the purpose intended

Source: CAA

11.48 The CAA's considers that for practical reasons the elements of the

[99] Paragraph H.14 of Annex H to Economic Regulation of Heathrow and Gatwick Airports 2008-2013, CAA Decision.

SQR must be treated separately. Otherwise, the independencies will affect the levels of risk attached to failure adding impractical complexity to the target setting. Thus, the CAA's initial proposal is to support HAL's proposal that asset availability should be defined as "available for use, independent of any other element".

Discussion of key issues (II) – SQR standards

A. Passenger satisfaction standards

Removal/retention of standards

11.49 HAL proposes the removal of two of the four QSM standards from the SQR - departure lounge seating availability and flight information. The airlines argue for retention of all four of the current standards.

11.50 Given that during Q5 significant rebates have been paid out due to underperformance of the departure lounge seating availability measure in Terminal 3, and performance has not consistently over time reached the target set across all terminals, the CAA does not consider it to be in passengers' interests to remove this measure from the SQR.

11.51 The flight information standard is based on passenger satisfaction levels with the flight information displays within the airport. This measure has performed consistently above the CAA's standard for some time. The CAA has given consideration to the views of the CAA's Consumer Panel and the indications from passenger research regarding the importance of information to passengers (especially during times of disruption).[100]

11.52 The CAA also notes the that during CE, the PSCC-HACC acknowledged the advances that had been made by the airport community in providing consistent information to passengers regardless of source, which they felt was particularly beneficial in

[100] SHM, Issues facing passengers during the snow disruption, final report, April 2011, available at: http://www.caa.co.uk/docs/5/CAA%20Issues%20facing%20passengers%20during%20the%20snow%20disruption%20FINAL.pdf

times of disruption.

11.53 On balance, the CAA considers that given the importance of ensuring good quality information to passengers, it should retain the flight information standard within the SQR for Q6.

Service level (standards)

11.54 The airlines wish to increase standards in areas where they argue HAL is already outperforming the Q5 standards. However, HAL identifies that not all the metrics considered are currently performing above the Q5 standards and there would be cost implications to increasing the standards beyond current performance levels. Figure 11.7 shows the current standards and performance, and HAL's and airlines' proposals made in CE.

Figure 11.7: HAL and airlines' proposals for QSM elements

	Q5 standard	Dec 2012 performance	Airlines' proposal for Q6	HAL's proposal for Q6
Departure lounge seating availability	3.8	T1 – 4.1 T3 – 3.8 T4 – 4.2 T5 – 4.0	4.1	Remove from SQR
Cleanliness	3.9	T1 – 4.1 T3 – 4.0 T4 – 4.1 T5 – 4.2	4.1	3.9 (with bonus level increased to 4.2)
Wayfinding	4.0	T1 – 4.1 T3 – 4.1 T4 – 4.2 T5 – 4.2	4.15	4.0 (with bonus level increased to 4.2)
Flight information	4.2	T1 – 4.3 T3 – 4.4 T4 – 4.3 T5 – 4.4	4.3	Remove from SQR

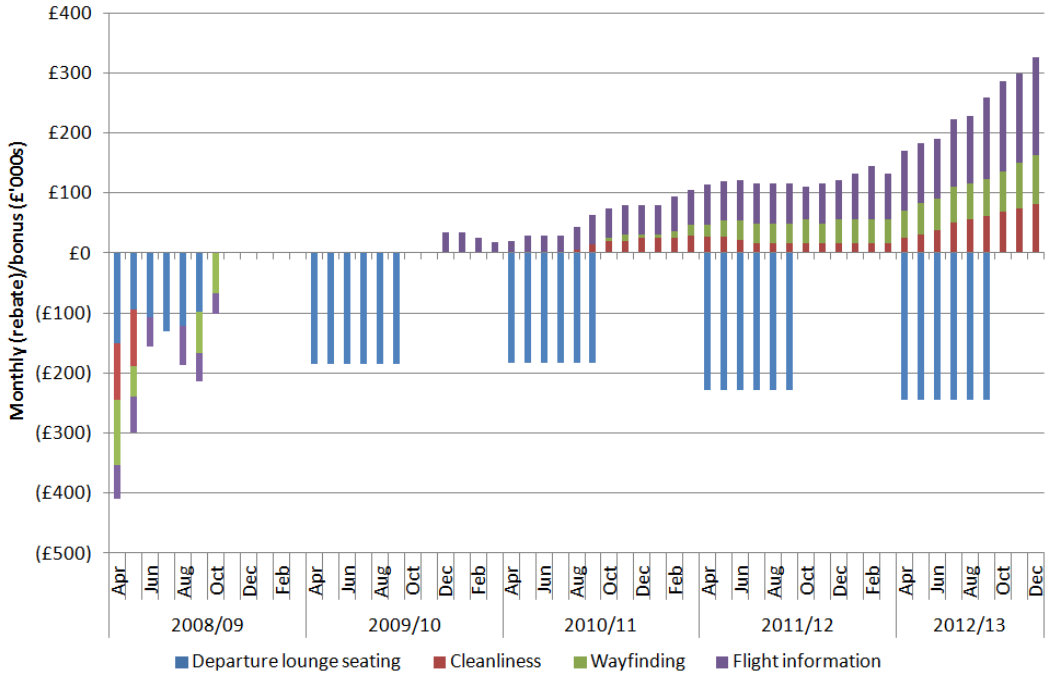
Source: CE report, HAL

11.55 The performance against standard has been variable across the

terminals for the four QSM measures included in the Q5 SQR. This makes it difficult to effectively capture the improvements in service quality whilst maintaining equivalent standards across the terminals.

11.56 HAL's performance improved in Q5 - at the start of Q5 it was paying rebates on all four standards, but (as at December 2012) HAL has earned bonuses in all areas other than departure lounge seating availability (figure 11.8).[101] HAL's performance in this area has been affected by its performance in Terminal 3 (figure 11.9).

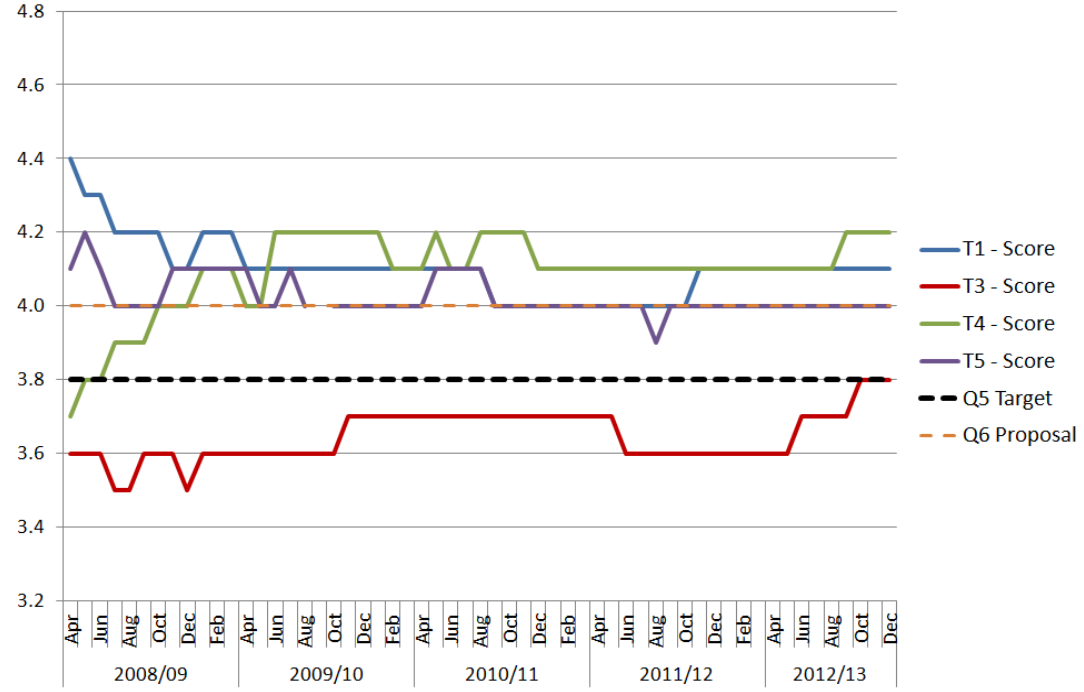
Figure 11.8: HAL Q5 performance on the four QSM elements



Source: HAL

[101] Note that rebates are only paid for the first 6 months of a regulatory year, even if performance remains below target.

Figure 11.9: Q5 Departure lounge seating availability by terminal



Source: HAL

11.57 The CAA proposes to set standards that aim to balance 'locking in' HAL's recent improvements to ensure passengers continue to experience the current level of service quality; whilst encouraging a more consistent baseline standard across the terminals. The CAA's initial proposals (which will also apply to Terminal 2 when opened) are summarised in figure 11.10.

11.58 Given its research findings, the CAA does not consider it appropriate that HAL should be rewarded with immediate bonuses or penalised with immediate rebates. Hence, it proposes to introduce a 'dead band' above the target before bonuses can be earned. Rebates will continue to be paid for performance within terminals lower than the standard.

11.59 The CAA proposes to retain its approach of HAL not benefiting from bonuses unless all the terminals meet the standard. In addition, the CAA proposes to retain the sliding scale nature of bonuses within an upper and lower performance limit. The upper limit has been retained from Q5, with the exception of flight information, which has been raised. The maximum annual bonus also remains as per Q5 at 0.36% of annual revenue, giving a total potential rebate of 1.44% of annual

revenue for all four elements.

11.60 The standards are lower than those proposed by the airlines, on the basis that there is no clear evidence of passenger dissatisfaction across the airport. By placing standards too high, there is a risk that the airport operator will be incentivised to spend money on improving service to a level over and above that which passengers are willing to pay for. The lower level for bonuses is set at the level for the current best performing terminal (except for departure lounge seating availability).

11.61 The upper limit for the bonuses has been set such that the range for each element is 0.3 (apart from departure lounge seating availability). This is generally a smaller range than it is in Q5, and thus allows for a larger bonus for each 0.01 increase in the performance of the QSM scores above the lower limit. This reflects the increased difficulty in achieving these higher levels of performance, and to a degree offsets the removal of bonuses from the asset availability measures of PSE (general) and arrivals reclaim (baggage carousels).

Figure 11.10: CAA initial proposals for the four QSM standards

			CAA Q6 initial proposals				
Element	**Q5 standard**	**Dec 2012 actual**	**Q6 standard**	**Max annual rebate**	**Bonus level - lower limit**	**Bonus level - upper limit**	**Max annual bonus**
Departure lounge seating availability	3.8	T1 – 4.1 T3 – 3.8 T4 – 4.2 T5 – 4.0	3.8	0.36%	4.1	4.5	0.36%
Cleanliness	3.9	T1 – 4.1 T3 – 4.0 T4 – 4.1 T5 – 4.2	4.0	0.36%	4.2	4.5	0.36%
Wayfinding	4.0	T1 – 4.1 T3 – 4.1 T4 – 4.2 T5 – 4.2	4.1	0.36%	4.2	4.5	0.36%
Flight information	4.2	T1 – 4.3 T3 – 4.4 T4 – 4.3 T5 – 4.4	4.3	0.36%	4.4	4.7	0.36%

Source: CAA, HAL, service quality performance reporting

11.62 It should be noted that HAL is planning to review the structure of the QSM survey in the near future and this will potentially impact the level of the scores achieved. The Q6 targets may need to be calibrated to the Q5 measures if there is evidence of a step-change in the scores recorded.

B. Security related standards

Central security and transfer search

11.63 Both HAL and the airlines are agreed on a preference for moving to measurement at a per passenger level rather than using a single

queue time sample from each 15 minute time period. The CAA welcomes this approach on the basis that it supports a more consistent and reliable commitment to all passengers, whilst simplifying the current standards.

11.64 Whilst both parties agreed that ultimately a move towards a fully automated per passenger measure is desirable, such a metric would require an automated measurement system in each terminal. At present, the technology to allow for this is not installed, nor are costs included in the FBP for such automation. The CAA recognises that even using an automated system, measurements made will likely be on a sampled basis rather than 100% of passengers.

11.65 The CAA proposes to set the standard on an estimated per passenger basis. To acknowledge that an automated solution has yet to be planned for implementation in Q6, the CAA proposes that interim measurements will be achieved through a sample of passengers more representative of the population by time of day. This measure will aim to reflect the variability of passenger throughput and better estimate the performance per passenger. For example, a possible metric might be based on queue times measured once every 15 minutes with results weighted differently by peak and off-peak hours. The exact metric will be subject to agreement between the airport and terminal AOCs.

11.66 The airlines proposed harmonised but materially higher standards for central and transfer search than in Q5, moving from a measure of 95% of 15 minute measurements within 5 minutes' queue time, to 95% of passengers within 5 minutes.

11.67 HAL has proposed a harmonised standard of 99% of 15 minute measurements within 10 minutes' queue time. HAL's FBP indicates that the proposal is broadly equivalent to 99% of passengers passing through security within 10 minutes. HAL considers this proposal is opex and capex neutral, as compared with Q5.

11.68 HAL considers a queue up to 10 minutes to be satisfactory to the majority of passengers. These views are consistent with the CAA Q6 research, which indicated that only c.12% of direct passengers thought a reasonable queue time at security should be 5 minutes or less, compared with c.43% who thought it should be 10 minutes or less. The results were similar for connecting passengers.

11.69 Whilst moving away from a 5 minute queue time target for direct search, this proposal increases the current standard in two ways - first by moving to a per passenger measure rather than a 'time slice' measure, and second, by increasing the proportion of transfer passengers targeted from 95% to 99%. It therefore helps focus on the 'tail' of the distribution, increasing the proportion of passengers covered by the metric.

11.70 A further area of disagreement between HAL and the airlines was around the use of subjective measures to augment the objective measurement of HAL's performance in security processing. HAL was keen to blend objective and subjective measures in the standard. Whereas the airlines were concerned that the subjective measures could be influenced by many things unrelated to HAL's actual performance.

11.71 The CAA agrees that for security queue rebate purposes, an objective measure for security performance is preferable where it is available. However, the CAA acknowledges the importance of passenger satisfaction with passing through security, so it proposes the inclusion of this measure from the QSM survey to be reported alongside the other passenger satisfaction measures, but not subject to financial incentives.

Staff search

11.72 Whilst under the definitions in the Act, staff search may not necessarily fall under "airport operation services", the CAA considers this process to be essential to on-time performance of airline services, and hence it is in passengers' interests to continue to incentivise the service quality of this element.

11.73 The airlines proposed an improvement over the Q5 standard, moving from 95% of 15 minute measurements within 10 minutes to 95% of 15 minute measurements within 5 minutes. The airlines considered there should be a restriction such that staff search could not be closed during operational hours.

11.74 HAL proposed that standards should be maintained as in Q5, but with a bonus for performance over 97% of 15 minute measurements within 10 minutes.

11.75 The CAA has not seen evidence that there would be an increase in

passenger benefit commensurate with the cost of providing a higher level of service in staff search, and thus does not propose to increase the standard or to introduce a bonus in this area. Thus, the CAA proposes to keep the standard as it is in Q5 (with 95% of 15 minute measurements within 10 minutes).

11.76 The CAA proposes that rebates allocated to staff search remain in line with Q5. The CAA seeks views as to whether there should be a restriction that staff search must remain open during operational hours.

Control posts

11.77 Whilst under the definitions in the Act, control posts may not necessarily fall under "airport operation services", the CAA considers this process to be essential to on-time performance of airline services, and hence it is in the passengers' interest to continue to incentivise the service quality of this element.

11.78 The airlines have proposed an improvement in the standard from 95% of vehicles within 15 minutes to 95% of vehicles within 10 minutes. The airlines also felt that the performance of the control posts should be disaggregated to ensure consistent performance.

11.79 HAL proposed the standard remains at that agreed for Q5+1 of 95% of vehicles within 15 minutes, with the performance averaged across all the control posts. The CAA has not seen evidence that there would be an increase in passenger benefit commensurate with the cost of providing a higher level of service at the control posts, and proposes to keep the standard at 95% of vehicles within 15 minutes.

11.80 In order to ensure consistent service delivery, the CAA proposes to amend the metric so that it applies to each group of control posts separately. The groups are defined as:

- CTA = CP5, CP8;
- Cargo = CP10, CP10a, CP25a;
- Eastside = CP14, CP16;
- Terminal 5 = CP18, CP19, CP20; and
- Southside = CP24.

11.81 The CAA proposes that rebates allocated to control posts remain in line with Q5.Any safety and security requirements must take primacy over meeting these proposed targets and the CAA is considering whether to include clarification of this in the Licence.

C. Airline operational standards

Pier service

11.82 HAL proposed that this element is removed from the SQR and replaced with amended measures for jetty availability and stand availability for pier-served stands only. At the time of the CE report, the airlines were still considering this proposal.

11.83 The CAA considers that the purpose of the SQR is to incentivise the provision of essential services across the airport. Thus it does not consider it appropriate to remove the measure of non-pier served stand availability from the SQR. The CAA proposes to retain the Q5 standards subject to exceptions to be agreed by HAL and the AOC to reflect operational issues.[102]

Pre-conditioned air

11.84 During Q5, the performance of PCA was monitored and reported, but it had no financial incentives attached to it. HAL and the airlines agree that PCA, where it is available should have a SQR attached. There was disagreement over the standard and the metric, as well as whether it should sit within the SQR or as part of a voluntary service charter.

11.85 Given PCA is only available on the pier-served stands at Terminal 5, and pier 6 at Terminal 3, there is an argument that as it is not consistent with the principle of terminal equivalence it should not be included within the SQR. Nevertheless, it is an important service where it is provided. Weighing up these considerations, the CAA proposes to include it within the SQR for those terminals it applies to, but through reweighting other standards, rather than increasing the overall rebate available in those terminals.

[102] The CAA is currently reviewing a dispute between HAL and BA on pier service standards in Q5. The CAA may review its initial proposals in this area following the conclusion of this dispute.

Other airline operational measures

11.86 For the following elements: stands, jetties, FEGP, and stand entry guidance; the CAA proposes to retain these elements as per Q5 but reweight the allocation of rebates slightly to reflect the (new) financial incentivisation of PCA in the relevant terminals.

D. Passenger operational standards

11.87 With the exception of the removal of bonuses from PSE (general) as discussed above, the CAA proposes to retain the Q5 financial incentives on these elements.

11.88 The allocation of the rebate is adjusted in Terminal 5 to allow for the inclusion of the availability of the track transit system.

E. Aerodrome Congestion standard

11.89 HAL and the airlines agreed that the ACT[103] was an area for further discussion. The Q5 rebate is a maximum of £100,000 per 'event', up to a maximum of 1% of airport charges per year. During Q5, there have been only a few months where rebates have been generated, and the level of rebate is below the 1% cap (figure 11.11).

Figure 11.11: Aerodrome congestion term rebates in Q5

Year	ACT rebate paid
2008/09	£76,000
2009/10	-
2010/11	£195,000
2011/12	£54,000
2012/13 (9m to Dec 2012)	£103,000

Source: HAL

11.90 Given the importance passengers place on on-time performance, the CAA considers this an important element of the SQR, and it should

[103] Details of the formulation and definitions used in the Aerodrome Congestion Term are set out in paragraphs H.22 - H.34 in Annex H to Economic Regulation of Heathrow and Gatwick Airports 2008-2013, CAA Decision, available at: http://www.caa.co.uk/docs/5/ergdocs/heathrowgatwickdecision_mar08.pdf

continue to be incentivised. Although there have only been a few months where rebates have been generated, when this occurs it is possible for passengers to experience considerable detriment. The CAA proposes to retain this element of the SQR in line with the Q5 standard.

Other service quality issues

Disagreements on measurement issues

11.91 There is disagreement as to the calculation of the performance metrics used for the QSM and pier service elements of the SQR. At present, performance is based on moving annual averages. The airlines would prefer to move to monthly measures, on the basis that they are more reflective of the actual service quality experienced by passengers, and that good performance (over and above an acceptable baseline) in one month should not compensate for poor performance (below the baseline) in another.

11.92 HAL identifies that a change in the methodology would lead to a change in the variability of the reported measures, and thus would affect the probability of failing to meet targets and associated risk of HAL paying rebates.

11.93 A move to a monthly measure would have an impact on the sampling error of the estimate due to the reduced sample size. This is turn makes the measure 'riskier' as it becomes more volatile, increasing the chances of generating rebates or bonuses. Further, the use of a moving annual average removes the impact of seasonality from the measures. For these reasons, the CAA proposes that the current moving annual average measure for the QSM and pier service elements of the SQR should be retained.

11.94 A further disagreement related to the QSM measurements is over the number of decimal places reported for rebate calculations. The airlines propose two decimal places; HAL argues for retention of one decimal place.

11.95 The precision of the QSM measures for rebates and bonuses needs to be rationalised to address an asymmetry evident in Q5 which arose from rebates being based on measures calculated to one decimal place, but bonuses to two decimal places. This had the effect of creating an effective reduction in the targets set. For example, if the

target was 4.0, 3.95 would not generate a rebate, but 4.01 would generate a bonus.

11.96 The CAA proposes that the QSM measures are reported to two decimal places (both on the website and in the terminal), and also for the purposes of rebate and bonus calculation.

Publication of results under the SQR scheme

11.97 The CAA considers that transparency of information provides an important non-financial incentive in the area of airport service quality.

11.98 The CAA Q5 decision required HAL to "publish monthly, from April 2008, via a readily accessible part of its website, its performance against the specified service standards and details of the specified rebates paid and payable in respect of each terminal and for each category of service". The CAA proposes to maintain this requirement for Q6, alongside further requirements as follows to publish details of bonuses earned by HAL:

- on a monthly basis, identify those services by terminal where performance will lead to inclusion within the bonus calculation, with an estimate thereof; and
- within two months of the regulatory year end to publish the full detail of the final bonus calculation for the year, disaggregating by month and element.

11.99 The CAA considers that the information published within the terminal building should be a limited subset of the measures in order to help focus passenger attention. The CAA proposes the inclusion of the monthly target and performance of the following measures (to two decimal places), to be published within four weeks of the month end:

- departure lounge seating availability;
- cleanliness;
- wayfinding;
- flight information; and
- security (performance as per the moving annual average QSM score and the objective queue time metric).

11.100 The posters should give clear directions to passengers as to where

they can find the full performance publication on the website, and instructions as to how passengers can provide feedback to HAL.

Using the SQR to reflect performance of third parties

11.101 HAL's FBP suggests reporting performance (with no targets or financial incentives) of the following:

- UKBF;
- companies providing baggage services; and
- airline punctuality.

11.102 The airlines disagree that HAL should report third-party performance and that the SQR should only relate to HAL as the regulated company.

11.103 The CAA sees merit, outside of the SQR, in HAL aiding transparency for passengers and other stakeholders by publishing information related to third parties operating at Heathrow. The CAA welcomes this initiative especially if HAL and relevant third parties can develop it voluntarily in passengers' interests (although the CAA does not rule out using HAL's licence for this purpose - see chapter 12 on operation resilience).

11.104 The CAA is currently considering whether it should use more formal powers to require the publication of information in passengers' interests. Under section 83 of the Act, the CAA has a duty to publish information which "it considers appropriate for the purpose of assisting users of air transport services to compare … services and facilities provided at a civil airport in the United Kingdom". The CAA's powers in this regard are subject to it consulting upon and publishing a policy, in which the CAA must have regard to the principle that the benefits of publishing information should outweigh any adverse effects. The CAA is currently developing its policy in this area and expects to consult on this in May 2013.

HAL service charter with airlines

11.105 HAL proposes that only those elements of the SQR related to the passenger perception (QSM) measures, central and transfer security should remain in the SQR scheme for Q6, with the other elements transferred to a separate, commercially negotiated service charter. The airlines do not believe that HAL's proposal is either viable or

appropriate.

11.106 The CAA sees merit in developing more mature commercially driven governance vehicles for some airport operator/airline transactions, reflecting what is commonly seen at competitive airports. However, in the short term, and especially given the CAA's views on HAL's SMP, the CAA does not consider it is in passengers' interests to remove large elements of the current service quality protection to a voluntary service charter. This is not to say that other issues that arise should not be considered for inclusion in a service charter between HAL and the airlines or that elements that are currently within the SQR should not be moved to a voluntary charter in Q7 if performance in Q6 is satisfactory. The CAA would welcome collaborative efforts in this direction in the course of Q6.

CAA initial proposals

11.107 Broadly speaking, the CAA proposes to retain the Q5 SQR and use it as the framework for the Q6 service quality regulatory incentives. The CAA proposes this on the basis that it has been largely agreed between HAL and the airlines and is consistent with the CAA's independent validation of passenger priorities and research.

11.108 Within this broad framework, the CAA proposes to make the following key changes:

- harmonisation of security queue standards for direct and transfer search;
- publication of a passenger satisfaction measure on security; and
- a reduction in the number of performance measures published in the terminal building to aid communication of performance with passengers.

11.109 Appendix A summarises the CAA's initial proposals for service quality standards. Each area of service quality has the same aggregated rebate across its elements by terminal, but there are specific allocations by terminal to account for PCA and the track transit systems where appropriate. Terminal 2 has been treated as per Terminal 5 pending discussions with HAL and the airlines.

11.110 The total rebate by terminal is 6% of airport charges. The overall cap on the ACT is 1% of airport charges.

11.111 The CAA is also proposing to include a provision in the licence condition that would allow for modifications to be made quickly where the relevant parties agree.

CHAPTER 12

Regulatory Incentives - Operational Resilience

12.1 This chapter sets out why the CAA considers that an operational resilience licence condition is needed to require HAL to develop a more collaborative and better planned approach to dealing with disruption and looking after the interests of passengers and cargo owners at such times. This chapter discusses what such a licence condition would require and how it would work. This issue was not a feature of CE, but the CAA has, alongside CE, been in discussions with HAL, airlines and other stakeholders about how regulation could help to strengthen the prospects for operational resilience and passenger interests in the event of service disruption.

Discussion of key issues

What do we mean by operational resilience?

12.2 Passengers and cargo owners can experience detriment at times of operational disruption, caused for whatever reason, such as reduction in runway capacity due to bad weather, a disruption in the supply of aircraft fuel or closure of terminals for security reasons, power cuts or strikes. Disruption leads to delays and cancellations causing uncertainty and, in some cases, distress to passengers.

12.3 Heathrow is perhaps more susceptible to these problems than other airports as it operates at the margin of full capacity. This means that it is far less able to spread the impact of disruption across the day. As London's major hub airport with a large number of international carriers there are a greater number of stakeholders to coordinate. That and the large proportion of transiting passengers mean that there may be fewer options for accommodating those who have been delayed.

12.4 The CAA's licensing approach for operational resilience is not about reducing or removing disruption. There may be safety or security reasons why delay is unavoidable and there is on-going work on operational freedoms to find better ways to manage the capacity

constraints during such times. Rather, the CAA would like to explore how it can use the licence to ensure that disruption is managed and mitigated to improve outcomes for passengers.

12.5 Besides HAL, there are many other parties involved in avoiding disruption and airlines already have obligations regarding passenger welfare and compensation or onward travel under the EU denied boarding regulations (EC 261).[104] HAL also has health and safety responsibilities to people using its facilities and, as the operator of those facilities used by all other stakeholders, has a key role in coordinating the response to disruption.

Rationale for regulation

12.6 In bringing forward the Act, the government was keen to ensure that the CAA had a regulatory toolkit to tackle this issue. In its policy statement introducing the Bill[105], the government noted that the regulator lacks the ability to respond in real time to events – be they ash, snow or anything else – as they emerge.

12.7 The government's intention was that "the reforms would give the CAA stronger and more flexible powers to respond to important passenger issues. The CAA could impose licence conditions which better target these issues, such as a general licence condition requiring acceptance of a code of practice relating to operational resilience (which could include resilience against severe weather) if the CAA considered it appropriate".

12.8 This follows work the government led in 2008, after nation-wide flooding, to ensure operational resilience and preparedness across each sector in the UK. Airport operators were already classified as "Category 2 responders" under the Civil Contingencies Act 2004, meaning that they have to contribute to their local council's resilience plans. However, that Act does not require them to prepare their own resilience plans. The 2008 flood resilience work did not focus on airports as no airport had been affected. A follow up government

[104] Regulation (EC) No 261/2004 of the European Parliament and of the Council of 11 February 2004 establishing common rules on compensation and assistance to passengers in the event of denied boarding and of cancellation or long delay of flights, and repealing Regulation (EEC) No 295/91.

[105] Draft Civil Aviation Bill, November 2011, available at: https://www.gov.uk/government/publications/draft-civil-aviation-bill.

guidance document[106] noted that "the engagement levels from the aviation sector are expected to be higher once the all-hazards approach begins in March 2010 (addressing storms/gales and heavy snow/low temperatures)".

12.9 Heavy snow falls in 2009 and 2010 and airspace closures due to the Icelandic ash cloud in 2010 exposed the weaknesses in planning for disruption at some airports and a lack of cooperation within the industry in general. This led to critical media coverage of the distress caused to passengers. Several reports[107], including the CAA's own Winter Resilience report, made recommendations to improve the passengers' experience, such as developing contingency plans and getting better cross-industry cooperation to mitigate and manage disruption.

12.10 Over the last couple of years, the CAA has worked with HAL and the airlines at Heathrow to achieve improvements to their snow plans and welfare plans. The CAA has also been working to improve information to passengers through its transparency programme.

12.11 In 2011, the government's South East Airport Taskforce (SEAT) commissioned the CAA to lead a technical subgroup, the Airport Performance Facilitation Group (APFG) to take these recommendations forward through the development of bespoke passenger charters at Heathrow, Gatwick and Stansted.[108]

12.12 The management of disruptive incidents and how passengers are

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[106] Cabinet Office, Interim guidance to the regulated sectors, March 2010, available at https://www.gov.uk/resilience-in-society-infrastructure-communities-and-businesses

[107] CAA – Aviation's response to major disruption http://www.caa.co.uk/docs/5/CAA%20review%20of%20snow%20disruption%20-%20Final%20Report%20-%20WEB%20VERSION%20_2_.pdf

"The Independent Review of Winter Resilience" – http://transportwinterresilience.independent.gov.uk/

"The Heathrow Winter Resilience Enquiry" http://www.baa.com/assets/Internet/BAA%20Airports/Downloads/Static%20files/BeggReport220311_BAA.pdf

Transport Select Committee 13th report: *Keeping the UK moving: The impact on transport of the winter weather in December 2010* *http://webarchive.nationalarchives.gov.uk/20111014014059/http://transportwinterresilience.independent.gov.uk/*

[108] Reports and minutes of APFG meetings can be found at http://www.caa.co.uk/apfg

treated relies on a large number of different organisations, each with their own commercial interests and legal obligations. This has made it difficult to reach consensus. The CAA's report on the work undertaken through the APFG[109] in December 2012 noted that, so far, the three major London airport operators (HAL, GAL and STAL) have worked on developing these charters with their stakeholders, but progress has been slow and there is more that could be done.

12.13 The CAA considers that a collaborative approach with proactive airport leadership is essential to coordinating the response to disruption, both for resolving the causes and for looking after passengers. By proactive leadership, the CAA means that HAL must take responsibility and be able to encourage and require certain activities and behaviours from others without cutting across existing obligations. HAL, as the operator of the airport facilities, is best placed to take on this role and to coordinate the response through resilience plans, underpinned by good day-to-day collaborative working.

12.14 The issue for the CAA is whether the prospects for improving HAL's performance in this area - and furthering the interests of passengers - will be improved by including obligations or incentives within its licence that comes into effect from April 2014.

12.15 The CAA considers that the prospects for HAL's performance and the pace of progress on this issue, and thereby the benefits to users, will be enhanced by clarifying the CAA's expectations in a licence condition. Clear, enforceable accountability may help to enhance HAL's focus in this area and strengthen its ability to orchestrate airport wide collaboration with other relevant parties such as airlines, groundhandlers, etc.

12.16 This will, in part, formalise what HAL is already doing, but with greater accountability to its end users through the CAA, thereby incentivising continuing improvements. The CAA is mindful, however, that this should not cut across effective and largely voluntary arrangements that already work among the various organisations on this issue. Nor should it be at a level of prescription that blurs the boundaries between HAL's accountability for the efficient operation of the airport

[109] The CAA's Progress report for the Minister of State on the APFG, November 2012, available at http://www.caa.co.uk/default.aspx?catid=589&pagetype=90&pageid=14206

and the CAA's regulatory role.

12.17 A licence condition can also help drive improvements where passengers lack sufficient information to make an informed choice, or where there are system-wide issues that individual airlines cannot address. In particular, having procedures in place for day-to-day business continuity planning will ensure that the right relationships are in place and there is proper knowledge of the risks, accountabilities and responsibilities already in place when disruption occurs. Passengers should benefit from better management of the incident, better information about their journeys and improved welfare arrangements.

12.18 In developing the draft licence condition, the CAA has been mindful that it should not duplicate or contradict other obligations under national or international law, especially safety or security requirements. In particular, the licence condition must not put HAL into a position where it must choose between breaching its licence and breaching its safety or security obligations. The licence should not oblige HAL to interfere with airline/customer relations and should not conflict with or duplicate with the airlines' own responsibilities, for example, under EC 261.

12.19 The EU is currently reviewing both the Groundhandling Directive[110] and EC 261, and in both cases is considering including a requirement for airport operators to have contingency plans. These negotiations are likely to take some time to resolve but could mean that a licence condition either becomes the vehicle for implementation or becomes redundant. This, coupled with the complex and evolving nature of industry relationships, means that this condition is likely to evolve over time.

12.20 HAL has already made good progress in developing plans but it is important that these are kept maintained and updated in the future and that HAL is accountable for them. The CAA therefore does not consider that a licence obligation will impose unnecessary burdens, and any additional costs will be outweighed by the benefit to passengers and cargo owners. A licence condition will also enable the CAA to pursue its duty to further the interests of passengers with

[110] Council Directive 96/67/EC of 15 October 1996 on access to the ground handling market at Community airports.

respect to the continuity of airport operation services.

12.21 The CAA notes that the issue of operational resilience has some parallels in other regulated sectors.

- Gas transporters must provide enough pipeline capacity to meet demand in a 1 in 20 year winter.
- The National Grid must maintain and efficient, coordinated and economical system of electricity transmission.
- In telecoms, the provider must take all necessary steps to maintain a proper and efficient network, with the fullest possible availability of the network and services provided in the event of catastrophic failure or force majeure.
- The Royal Mail is required to develop a contingency plan and to review it every two years.
- Network Rail does not have a specific resilience condition but it is required through its price control to provide a specified level of performance where Network Rail must plan for the risk of adverse conditions.
- The NERL licence also includes a requirement to provide core services and to maintain its assets, business and personnel so that it can carry out its activities.

Principles upon which to base the licence condition

An overarching focus on user outcomes

12.22 The draft licence condition sets a high level outcome requirement for HAL to secure the availability and continuity of airport operation services to further the interests of passengers and cargo owners so far as is reasonably practicable, taking into account all relevant circumstances. This means that it is clear that responsibility and accountability for performance rests with HAL. The licence will make it clear that merely complying with more detailed obligations relating to planning and consultation (as set out below) will not be considered as sufficient if there is evidence of HAL underperforming in a way that causes detriment to passengers.

12.23 However, in assessing this evidence, the CAA may take into account other factors such as the extent to which other parties contributed to

or were culpable for that failure, or whether a best practice airport operator should reasonably have been expected to have planned for or managed the situation better.

Effective resilience planning

12.24 The CAA expects HAL to develop and use resilience plans in collaboration with relevant parties. These plans should clarify respective roles and responsibilities and set out more clearly the commitments on all sides to underpin the interactions. The Heathrow resilience plan should be tailored to the particular needs of the airport, giving HAL the flexibility to manage its operations effectively, whilst reducing the risk that it will put licence compliance over the interests of passengers or safety.

12.25 The CAA has given consideration to its role. It does not consider that it should approve HAL's resilience plans as such as this may lead to a blurring of accountability between the two organisations. It is for HAL to ensure that its performance meets its obligations and for the CAA to ensure that HAL is held to account for this. Nevertheless, the CAA considers that it should reserve a right to issue guidance (and revise it from time to time) on what should be included in such resilience plans.

12.26 The resilience planning work so far has concentrated on closure of one or more runways due to bad weather or volcanic ash. However, disruption can also be caused by a loss of terminal facilities or key staff, or loss of services from a key supplier such as fuel or electricity. The CAA considers that resilience plans should address these and other possibilities. For example, this might cover such issues as plans for the operational response to snow, security alerts, loss of a key supplier, strikes or cyber attack and plans for disseminating information and providing a 'backstop' level of passenger welfare where the airlines are slow or unable to do so.[111]

12.27 The CAA considers that in order for resilience plans to work effectively within the high-pressure environment created by disruption, they must be underpinned by solid day-to-day working relations, possibly through the development of formal business continuity models. The

[111] The CAA will need to discuss with HAL and other stakeholders how the costs of this can be recovered. The CAA's initial view is that efficient costs incurred by HAL would be recoverable through airport charges.

government's guidance on resilience[112] states that "business continuity management must be regarded as an integral part of an organisation's normal on-going management processes". Therefore, the requirement goes wider than times of disruption and the CAA would expect HAL to maintain clear working arrangements with relevant parties. In addition to issuing guidance, the CAA considers that it should retain a right to be able to require HAL to review and revise the plan if it considered that the plan is likely to fall short of meeting the high level outcome or has been found wanting following practical experience.

12.28 The licence obliges HAL to develop the plan and only HAL will be subject to any enforcement action by the CAA against the licence provisions. Therefore, the plan should primarily concentrate on those activities over which HAL has control, but it can also set out where any activities rely on other stakeholders.

12.29 Any investigation by the CAA into failures by HAL to meet the high level outcome is likely to look at the actions of all the relevant parties involved. However, enforcement action under the HAL licence would be aimed only at those elements over which HAL had control, taking into account the extent to which it had followed its plan or any reasons for diversion from it.

Effective cooperation and collaboration with relevant parties

12.30 The CAA considers that the HAL resilience plan obligation should be complemented by a requirement on HAL, so far as is reasonably practicable, to get relevant parties to collaborate and cooperate in both planning for, and dealing with, disruption. This obligation would require HAL to facilitate a governance forum for such relevant parties or their representatives and, so far as is reasonably practicable, to encourage those parties to participate in HAL's resilience plans and to develop and implement their own, complementary, plans.

12.31 HAL has other obligations outside the licence relating to the health and safety of people using its property and facilities. The CAA considers that it is proportionate and in the interests of passengers and cargo owners that HAL is able to take reasonable steps to ensure

[112] Cabinet Office, Resilience in society: infrastructure, communities and business, February 2013, available at: https://www.gov.uk/resilience-in-society-infrastructure-communities-and-businesses

that other stakeholders providing services at the airport should not take actions (or omit to take any action that they are obliged to do under national or international law) that will have an adverse impact on HAL's obligations in this area.

12.32 The CAA therefore proposes that the HAL licence will require it to develop, in collaboration with stakeholders, 'rules of conduct' that it requires airlines and groundhandlers using the airport to follow. These could be set out in its conditions of use, building on the existing welfare plans, and in the groundhandlers' licences.

12.33 To ensure that all parties are informed of the issues and plans outlined above, HAL must consult in a clear and transparent manner. The CAA recognises the limitations on HAL's ability to require engagement with its consultations and collaborative forum and notes that many parties rely on the relevant Terminal AOC to deal with many, but not all, issues. The CAA considers that HAL should be able to accept the response from the Terminal AOC as representative of all relevant stakeholders unless an individual stakeholder has submitted a separate response. HAL has already a published consultation policy that fits this proposal but the CAA will consider whether to include a condition that makes this clear and requires consultation on any changes to HAL's policy.

12.34 The CAA considers that the licence should require HAL to collaborate with 'relevant parties' in developing its plans and coordinating a response to disruption. The CAA considers that relevant parties should include airlines, groundhandlers and NATS as these are directly involved in providing services to passengers and cargo owners or are responsible for the movement of aircraft at the airport. HAL should also seek to ensure, through its contractual arrangements, that key suppliers such as fuel and energy suppliers, retailers, car park operators and hotels have their own adequate resilience plans. The list of relevant parties is not exhaustive and may include others with an interest in Heathrow.

12.35 The CAA considers that it is possible that some parties may not be classed by HAL as relevant parties given their specific roles and their alternative arrangements for dealing with disruption. For example, surface access providers, local councils and the police already liaise through the local council's plans under the Civil Contingencies Act. However, HAL should understand those parties' requirements in so far

as they impact on airport operation services. HAL should also provide advice to those parties on the airport's operational requirements during disruption to inform the development of those parties' own plans.

Effective dissemination of information

12.36 To ensure that the interests of passengers are at the core of any response to disruption, the CAA considers that there should be an obligation relating to providing information to relevant parties and to passengers so far as is reasonably practicable. This would require HAL to disseminate operational information to its stakeholders during disruption so that they are better able to plan and coordinate their own responses.

12.37 HAL should make relevant information available to passengers about its own operations during disruption and, as far as it can, to pass on information about airlines' operations at such times. This would give passengers a central point of information, alongside the airlines' own channels, so they can make informed decisions about their options.

12.38 The CAA considers that the licence could also be used in the future to require HAL to publish performance information relating to disruption, including those activities undertaken by third parties (such as baggage performance and check-in queue times). This may give passengers the information they need to make informed choices and may lead to improvements in service quality by all parties. The CAA may consider this as it develops this condition or may take it forward separately as part of the programme of work it is developing on how it will use its information powers in the Act.

CAA's initial proposals

12.39 The CAA considers that the HAL licence should contain a number of requirements to help strengthen its approach to managing and mitigating the effects on passengers from operational disruption, however caused. These include:

- an overarching responsibility to ensure, so far as reasonably practicable, the availability and continuity of airport operation services to further the interests of passengers and cargo owners;

- to consult on, develop and maintain plans setting out how it will do this, in line with any guidance issued by the CAA;
- facilitate a governance forum to foster a more cooperative and collaborative approach to managing disruption;
- develop 'rules of conduct' for other operators using the airport facilities to follow, during disruption; and
- provide information relevant to other service providers and passengers so far as possible to help them plan their response to disruption.

12.40 The CAA is also considering whether to include a requirement to publish performance information at the airport to allow passengers to make better informed choices.

12.41 This will help the CAA pursue its duty to further the interests of passengers with regard to the continuity of airport operation services. A draft of this licence condition is contained in Appendix B.

CHAPTER 13

Regulatory Incentives - Capital Efficiency

13.1 This chapter contains the CAA's initial proposals for the regulatory framework around HAL's capex for Q6, including the financial incentives attached to the timely and efficient delivery of capex projects. It sets out the agreements reached during CE, the proposals of HAL in its FBP and the CAA's own assessment of the issues. The chapter also sets out the CAA's assessment of HAL's capital efficiency in Q5 and opening RAB allowance for Q6 before concluding with the CAA's Q6 initial proposals.

Constructive Engagement

13.2 The aim of the capital efficiency workstream was to "Optimise the use of capital to create valued benefits, making Heathrow successful for all through visible and measurable improvements". The workstream identified a number of key topics, developed a structured work plan, and evaluated and understood key workstream interdependencies. Recognising that key interdependencies also existed with the capital and solutions CE workstream, the capital efficiency group made sure progress was shared with this other workstream. The work placed a particular focus on a number of topics, which HAL and the airlines perceived to be key areas where relative improvements to existing processes and mechanisms could be achieved. To document the content and output of CE a Q6 Capital Efficiency Handbook was produced. This is a live document that will develop beyond CE up to the commencement of Q6.

13.3 Early discussions identified the importance in fully understanding the lessons learnt from Q5. On 4th July 2012 the CAA hosted a capital incentivisation workshop with the aim of understanding the positions of HAL and the airlines fully.

Core and development capex

13.4 A key lesson from Q5 learned by HAL, the airlines and the CAA was that forcing all capital projects to be agreed at the time of the price

review for the next five or six years did not reflect the dynamic nature of the industry and the need for flexibility in the capital investment plan (CIP). With references made to the CAA's 2011 Setting the Scene for Q6 document, HAL presented a concept of designating appropriate proportions of Q6 capex as 'fixed' or 'flexible'. The former designation would represent firm investment commitments at the start of the Q6 price control where the scope and cost estimate was reasonably certain. The latter would enable projects to be included over the Q6 price control period that were currently not sufficiently scoped or costed.

13.5 HAL and the airlines subsequently agreed on the benefits of a two-tiered approach to capex for Q6, and re-named the two types of investment 'core' and 'development'. The parties made good progress in agreeing the key principles including the method for remunerating development capex in a more flexible way than previously. Specifically:

- the CAA would set an initial capex envelope for Q6 comprising a fixed allowance for core capex and an indicative allowance for development capex;
- cost allowances for individual development projects would be fixed within period; and
- the total allowance within the price cap calculation for development capex would also be revised within period, so that HAL is only remunerated for work that is actually carried out.

Incentivisation

13.6 HAL and the airlines agreed that HAL should take the risk of over or under-spending in Q6 against the CAA's total core capex allowance. However, efficiently incurred investment would subsequently be included in the Q7 RAB at its actual cost. Once specific projects transition to core at Gateway 3, they too would be treated as core capex and subjected to the same risk allocation and incentives.

Triggers

13.7 HAL and the airlines agreed that triggers should once again be placed around 'Key Projects'. Triggers would initially be set for core capex, but would subsequently be applied to other projects that move during the period from development to core. It was agreed that there were

lessons to take from disputes around triggers during Q5, especially in relation to the definition of milestones.

13.8 Airlines proposed that the CAA's Q5 policy of setting trigger dates at a three-month lag to the dates in HAL's project plans should not continue in Q6. Airlines noted that, where capex is not subject to triggers, HAL can make profit by back loading actual capex beyond the timescales that the CAA assumes when setting capex allowances. To address this, the airlines proposed that HAL should not be allowed to make cash flow gains by delaying projects. In other words, HAL should be "intertemporally indifferent" as to when it carries out its capex.

Independent fund surveyor

13.9 HAL and airlines agreed to create the role of an Independent Fund Surveyor (IFS) – effectively a framework panel of independent experts – to provide an ongoing assessment of the reasonableness of all major decisions made on key projects and to give a real-time opinion that capital is being used effectively to deliver the outcomes of the project's business case. A jointly agreed draft overview of services was produced, subject to the successful finalisation of IFS terms and conditions, evaluation criteria, selection process and engagement before the end of December 2012.

HAL January 2013 Business Plan

13.10 HAL's FBP in the main reflected the positions reached during CE.

Discussion of the key issues

13.11 The CAA welcomes the progress which HAL and the airlines have made to develop a more sophisticated approach to capital efficiency. The CAA has carefully considered the arguments advanced by both sides in bilateral and trilateral meetings. The CAA has also taken into account the lessons learned from Q5 as identified by its independent review undertaken by Currie and Brown (C&B) in 2011 and by a more recent review the CAA commissioned by Alan Stratford & Associates

(ASA) work.[113]

A more flexible approach: core and development capex

13.12 The CAA agrees that HAL and the airlines would benefit from greater flexibility around capex. At the same time, the CAA considers that it is vital that HAL is held to fixed cost allowances and has strong incentives to deliver projects efficiently and on time. The discussions between HAL and the airlines show that these concepts need not be incompatible. This should allow HAL greater flexibility around a portion of projected Q6 capex, while putting in place a process to govern the use of this allowance and holding HAL to account for delivery of projects once there is agreement on the ways in which money is to be spent. The CAA considers that it ought to be possible thereby to obtain more assurance for passengers that the right investments are made for the most efficient price.

13.13 The CAA therefore supports the proposal that HAL's Q6 capex allowance should be split into two components:

- core – containing fixed-price allowances for a basket of specified projects that HAL has been able to take through Gateway 3 in its internal project development process prior to the CAA's Q6 final proposals; and
- development – containing an indicative sum of money for planned but not yet committed capex projects.

Core capex – budgeting

13.14 HAL and the airlines reached broad agreement during CE that Q6 allowances for core capex projects should be set in line with current P50 cost estimates. In simple terms, this means that there would be an equal likelihood that actual costs in Q6 will turn out to be lower or higher than forecast. The CAA agrees that this is a fair basis for remunerating investments that HAL has had an opportunity to take through its project development process.

Core capex – triggers

13.15 HAL by this stage in the development of its core projects also has a good understanding of likely timetable. It is important that there are incentives on HAL to deliver to that timetable and not to delay

[113] This report is available from the CAA's website: www.caa.co.uk

investments and the consequent benefits that flow to airlines and ultimately their passengers.

13.16 In previous regulatory settlements, the CAA has put trigger mechanisms into the price cap formula. These mechanisms automatically reduce HAL's charges if specified project milestones are not achieved by specified dates. The size of the penalty has typically been set so that HAL loses the financial return (i.e. the cost of capital allowance) on projects where deadlines have been missed. This return is then restored when milestones are finally achieved.

13.17 There is broad agreement that similar incentives should again be put in place in Q6. However, both HAL and airlines have suggested to the CAA that the design of the trigger mechanism can be improved. The CAA agrees that some refinements would be beneficial, especially if triggers are to be applied upfront only to core capex, which, by definition, is the collection of projects that have the best developed costings and timetables.

13.18 The changes that the CAA proposes are as follows.

- Milestone definition – the experience in Q5 has been that it was not always possible to establish objectively whether project milestones had been achieved. The clear lesson is that Q6 milestones must be defined more tightly so that there cannot be any dispute about whether trigger payments are activated.
- Three-month lag – Q5 milestones were set at a lag of three months after the relevant dates in HAL's project plans. The flexibility that this gave HAL was justifiable in previous price controls because the triggers were applied to projects that were at various stages of development. In this review, triggers should only be fixed at the outset for core capex. This suggests to the CAA that it is unnecessary and inappropriate to continue with the practice of placing triggers at a lag of three months from intended delivery dates. It would seem much more in keeping with the nature of core capex to hold HAL to its proposed deadlines as well as its proposed costs.

- Ceiling – the CAA does not propose to place a pre-determined ceiling on the proportion of capex that will be covered by triggers. Instead, the CAA sees no reason in principle why triggers should not be applied to the maximum extent that it is feasible to define milestones, beneficial to users to incentivise HAL to deliver to agreed timelines, and practical to administer the process. This needs to be balanced with increasing complexity and the regulatory burden. The CAA expects to review this balance before its final proposals.

Core capex – efficiency incentives

13.19 The costs of a project can turn out to be different from original estimates. In such circumstances, it is conventional regulatory practice to wait for a period of time after the completion of a project before adjusting the RAB and the price cap to reflect the actual cost incurred. This lag means that the regulated company takes the consequences of under- or over-spending for a number of years (because the capex allowance within the RAB and the price cap allowance reflects estimated rather than actual cost) before the under- or over-spend passes through to charges.

13.20 The CAA proposes to retain this framework of risk allocation and incentives in Q6. The CAA has historically adjusted the RAB for aggregate under- and over-spending in a symmetrical way. The CAA proposes to continue with this approach in Q6, with the proviso that HAL will not be able to recoup from airlines demonstrable waste and inefficiency.

13.21 The CAA would expect, in future, when looking at efficiency/inefficiency, to look at differences between actual and projected spend at an aggregate portfolio level so that HAL can offset lower than expected costs on some projects against higher than expected costs on other projects. It will fall ultimately to the CAA to determine whether any outturn over-spend in Q6 is incurred efficiently or inefficiently. The CAA would expect to be informed in its assessment by the views of airlines, and by work carried out by the proposed IFS and other consultants.

13.22 The historical approach to calculating RAB adjustments has been to compare allowed and actual capex spend in each individual year. Any 'unders' and 'overs' are then taken out of the RAB on 1 April at the

start of the new regulatory period.

13.23 The airlines have pointed out that this approach means that HAL profits from delay to projects that are not subject to triggers. As an example of this, if HAL were to under-spend by £100 million in year 1 of a control period and defer the £100 million of expenditure to year 5, the airport operator would earn four years' worth of return on investment that had not in fact been carried out. At the end of the control period, there would not be a net under-spend and there would be no need for a RAB adjustment. HAL would therefore keep the benefit it obtained.

13.24 The airlines have argued that the apparent reward for delay to investment should be eliminated in Q6. The CAA agrees that this would be a desirable refinement to the regulatory framework. There are several ways in which this could be achieved. One approach would be to amend the calculation of net over-/under-spend within a control period so that the relevant amount includes any financing costs (i.e. the cost of capital) that the airport operator saves by delaying investment. In the example above, an under-spend of £100 million in year 1 matched and offset by £100 million of over-spend in year 5 would not sum to zero in NPV terms. If the CAA were to adjust the RAB so that the NPV of the under-spending over five years comes off the RAB at the start of Q7, the CAA would effectively eliminate the financial benefit of delay.

13.25 An alternative approach would be to defer some adjustments to the RAB so that under- and over-recoveries are corrected gradually during Q7 rather than in one go at the start of the period. The CAA notes that it has sometimes been regulatory practice in other sectors to make RAB adjustments with a rolling five-year lag. In the illustrative example, this would mean that HAL would keep the benefit if its initial under-spending for five years before the RAB is adjusted down by £100 million at the start of Q7, but would also suffer the cost of its over-spending in year 5 for five years until the RAB is adjusted upwards by £100 million in year 5 of Q7. The net impact would be zero such that HAL no longer has an incentive to delay expenditure.

13.26 The CAA’s present view is that either of these options might be a useful addition to the regulatory framework. The CAA's current leaning is towards the first approach - i.e. adjusting the RAB by the NPV of under- or over- spending - on the grounds that it preserves the

rewards for true efficiency at broadly the same level as Q5, whereas a switch to a rolling five-year adjustment mechanism is a higher-powered incentive with greater risk and higher rewards/penalties.

Development capex - budgeting

13.27 The initial Q6 allowance for development capex would, by definition, be an indicative amount. It is, however, necessary to give some thought to what this amount should be so as to ensure that HAL's charges are not initially set unreasonably high or unreasonably low and, hence, are not subjected to unduly large corrections within the five-year period.

13.28 HAL currently has a list of projects for Q6 that are not yet sufficiently developed to be included in core capex. The proposition from both HAL and the airlines has been that the CAA should make an indicative allowance these works at their current P80 costings. The choice of P80 rather than P50 reflects uncertainty around cost in the early stages of the development of a project and an expectation that expenditure estimates will naturally change as investments progress through HAL's costing and appraisal process. A P80 allowance may therefore be a fair or central estimate for projects at an early stage of development, whereas a P50 estimate might give an unreasonably low costing.

13.29 The CAA is broadly content to proceed on the basis suggested by HAL and the airlines.

Development capex – flexibility

13.30 The CAA proposes to insert a mechanism into the price cap formula which will permit the allowance for development capex to flex in real time over the course of the five-year period. The freedom that this offers is not unbounded. The inclusion of new development projects in Q6 by HAL will require consultation with airlines and either the approval of airlines or of the CAA, following HAL's consultation. Airlines also have an ability suggest investments to HAL for inclusion. This, in effect, replicates the disciplines that HAL is subject to at the time of a price review to ensure that it cannot either shun or take on new capex unilaterally. At the point where approval is given, the relevant amount of capex will move from the development budget to the core budget. From then onwards, it will be as if the capex had been identified as core all along. More detail on the governance

arrangements is discussed below.

13.31 HAL has suggested in its FBP that adjustments to the price cap should be made annually if planned development capex for the year ahead has changed and is now higher or lower than the CAA's allowance development capex in that year. As an illustrative example of this approach, if the CAA were to provide originally for £200 million of development capex in year 2 of Q6, but HAL made new fixed price commitments for new capex totalling only £100 million by 31 August 2014, there would be a downward adjustment to the originally determined value of the year 2 price cap. The scale of the adjustment would be of the magnitude required to put charges at the level that they would have been had the CAA known the correct year 2 amount from the outset. The same process would operate again before the start of years 3 to 5.

13.32 The CAA proposes that the adjustment mechanism would work symmetrically so that there would be an upward adjustment to the price cap if investment commitments sum to more than the CAA's original allowance.

Development capex – efficiency incentives

13.33 The efficiency incentives around development capex should be comparable to the incentives around core capex. At the point where capex moves from the development budget to core capex, a cost allowance for that work will be fixed and HAL will take risk around over- and under-spending. The scale of those rewards and penalties will be dependent on the choice of RAB adjustment mechanism and whether the CAA makes a one-off adjustment for actual spend at the start of Q7 or a rolling adjustment with a continuous five-year lag, as set out above.

13.34 The CAA notes that the real-time award of cost allowances within the five-year control period imposes less risk on HAL than the current five-year fixed price settlement. In part, this is because estimation risk is much lower when HAL only has to commit to a fixed price once it has got a project through Gateway 3 in its internal project development process. But it should also be recognised that HAL is exposed to much less in the way of macroeconomic risk if it has the opportunity to update both its programme of work and its costings in light of new information that emerges over the course of the five-year period. This

is likely to be a benefit to shareholders in reducing risk (see chapter 9 for more detail on the cost of capital).

Development capex – triggers

13.35 The CE process produced agreement that triggers should be placed on development capex at the point where a fixed cost allowance is agreed (i.e. Gateway 3 in HAL's internal project development process). The mechanism would be identical to the triggers around core capex, which the CAA has indicated above should be anchored to objectively assessable milestones and no longer incorporate an automatic three-month lag.

13.36 The CAA will need in designing its price cap formula to accommodate the setting of triggers on a rolling basis within the five-year period. The CAA considers that the best way of giving the necessary flexibility is to provide in HAL's licence for the CAA to specify new triggers, including amounts, dates and milestones, by serving notice under the licence. In order to minimise perceptions of regulatory risk, the licence can specify that the CAA's ability to introduce new triggers is constrained to expenditure and projects that have been agreed by HAL and airline users under the governance arrangements described below.

Governance

13.37 The handbook agreed as part of CE gives an initial overview of the proposed governance arrangements for capital in Q6. The handbook states that:

- all of HAL's existing information provision and consultation obligations will roll forward into Q6;
- existing stakeholder engagement forums will change to meet the requirements of the Q6 plan;
- in particular, the CIP working group will evolve into a Financial Assurance Board (FAB) to give joint airline-airport operator oversight to the roll-out of the capital programme;
- the FAB will maintain a 'development pipeline log' to keep track of all ideas for development Q6 capex;

- decisions about the allocation of development funding to specific capex projects will be reviewed by the FAB, including the setting of cost allowances and the design of trigger arrangements; and
- the FAB will also review the progress of all core capex and discuss necessary changes to plans.

13.38 The CAA considers this to be a helpful starting point and looks forward to receiving more detailed proposals on these matters in due course.

13.39 The key outstanding issue from the CAA's perspective is the question of whether the FAB reviews proposed additions and changes to Q6 investment or whether the FAB approves proposed additions and changes. This is not made explicit in the handbook.

13.40 The CAA in particular will explore whether it having a role or sanction in the movement of funding between development and core budgets is an appropriate and proportionate mechanism to certain risks that might arise - for example the movement of funding from development to core by HAL in response to delivery pressures.

13.41 The CAA considers that where airlines are being asked to pay more than they otherwise would or receive less benefit, such a decision should be subject to consultation with the airlines and either their approval and/or the approval of the CAA. The CAA also sees merit in ensuring airlines are adequately consulted on HAL's plans to utilise funding for development capex, set itself cost allowances and design trigger mechanisms.

13.42 The CAA wants to avoid its approach to these issues becoming an unnecessary administrative burden for it, HAL and the airlines. For example, the CAA does not consider annual reviews of the capital budget would meet this criterion.

13.43 The CAA has had two options for dealing with this suggested by stakeholders.

- The first option is to put HAL on notice now that the CAA reserves the right to exclude from the Q7 RAB any capex that has been taken forward in the face of airline/user opposition or at a cost which causes concern to airlines/users or without adequate triggers. In this approach, lack of support would not necessarily disqualify expenditure from inclusion in the RAB, but the CAA would need to be convinced that it was in the interests of users for HAL to proceed in the way that it did. The CAA's assessment would inevitably be backward-looking and take place after the money has been spent.
- The second option is to require HAL to obtain airline sign-off for projects, costings and triggers in advance of the work being carried out, or otherwise submit projects to the CAA for regulatory determination. Where airline approval is obtained, the CAA might expect to include the agreed cost in the Q7 RAB without further investigation. Where approval is not forthcoming, the CAA could be the decision maker, thus bringing forward the assessment of user interests, efficiency and timetable to take place before a project begins. The challenges under this second approach include defining what airline sign-off means – e.g. is it the unanimous approval of the FAB, a majority approval, or some other threshold of support – and making a CAA determination an absolute last resort.

13.44 The CAA is presently minded that the second approach option offers a better balance for all stakeholders, but it will reflect on this further in light of stakeholder feedback. The CAA is keen to adopt an approach in this area that sees its role only as a backstop and placing the emphasis on HAL/airline engagement.

Independent Fund Surveyor

13.45 HAL and the airlines have jointly proposed that there should be an IFS panel to review the efficiency with which HAL plans and delivers its capital investments.

13.46 The rationale is two-fold:

- the IFS would give airlines greater visibility of HAL's efficiency and therefore improve airlines' ability to engage effectively with HAL on capex delivery; and
- in reviewing expenditure in real-time, the information produced by the IFS will more usefully inform the CAA's end-of-period assessment of overall efficiency compared to the current process of *ex post* review.

13.47 The IFS's work would include the processes being followed, the assumptions being made and the overall appreciation of the risks being managed at the project planning stage and the on-the-ground efficiency of expenditure at delivery.

13.48 The CAA agrees with these observations and supports the appointment of the IFS. The CAA proposes to make an allowance for the costs of the IFS within its Q6 opex projections once these are known.

13.49 The CAA notes and agrees with the proposal that the IFS should be appointed jointly by HAL and the AOC (or other representative body as appropriate) and it should have a duty of care towards HAL, the airlines and the CAA.

Q5 Capital Efficiency

Review of Q5 Capital efficiency

13.50 In its 2008 Q5 decision the CAA set out its criteria for assessing capital efficiency during Q5 to be applied during both the mid-Q review and the Q6 review. The tests as set out in the Regulatory Policy Statement (Annex E.47 of the Economic Regulation of Heathrow and Gatwick Airports 2008 - 2013 - CAA Decision) were: (i) best practice management; and (ii) effective consultation with airlines in line with the Annex G of the Economic Regulation of Heathrow and Gatwick Airports 2008 - 2013 - CAA Decision protocol. The CAA also set out the basis for conducting the mid-Q review which would consider BAA's progress on a number of specific issues including cost benchmarks, risk allowances and the progress towards management of certain risks at a portfolio rather than project level. In reaching its judgement for Q5 the CAA has considered the performance of HAL in relation to

these criteria.

13.51 In 2010 the CAA appointed C&B to carry out a mid-Q assessment of capital efficiency and consultation at the airport. In summary C&B concluded that shortcomings in the pre-Q5 planning process had impacted on the robustness of the development strategy in the first two years; the airport operator had developed a comprehensive process for managing risk at project and portfolio level; further work was required in the approach to benchmarking against external reference points; and there was insufficient clarity on the treatment of inflation. In respect of consultation C&B found that HAL generally conformed to the requirements of Annex G.

13.52 Towards the end of 2012 the CAA appointed ASA to provide for Q5 a transparent assessment of capital efficiency at Heathrow taking into account the criteria established by the CAA for Q5 and the conclusions of C&B at the mid-Q review. In particular ASA was requested to examine seven specific projects and consider the findings of the Riley consulting report relating to T3IB provided to the CAA by the airlines. ASA conducted three stakeholder workshops at the airport including a presentation of their draft report.

13.53 ASA's principal finding is that most projects generally progressed well in terms of budget and schedule. The inefficiencies identified were primarily around a failure of the procurement process to adequately demonstrate value for money; multiple problems encountered in T3IB; and one minor issue with Terminal 5C. Inefficiencies in this context are where a failure of process or poor judgement or use of resources occurred which was primarily due to HAL decision-making rather than exogenous factors. ASA estimated these inefficiencies at £29.6 million in outturn prices (figure 13.1).

Figure 13.1: ASA's estimate of inefficient costs incurred in Q5

Activity	Nominal prices
Procurement	(£million)
T3IB	4.5
PT5 TBS	3.3
Associated add-on costs	1.3
Sub-total	**9.1**
T5C	1.0
T3IB (excl Procurement)	
Pause 1	9.0
Pause 2	6.0
Load file errors	1.5
Poor cost estimating	2.0
Staff turnover	1.0
Sub-total	**19.5**
Total	**29.6**

Source: ASA

13.54 In addition the airlines provided material to ASA on other alleged forms of inefficiencies. This material was provided late in January 2013 and ASA has not been able to undertake any form of quality assurance of the material provided or comment on the general validity of such claims in the context of its report. However, the alleged additional inefficiencies claimed by the airlines are primarily around extra capital and operating costs arising from the delays to T3IB and incurred primarily in Terminal 3 and building 139.

CAA Assessment

13.55 HAL introduced a P50 approach to capital projects during Q5. Although the CAA broadly supports this approach to capital efficiency (as it is likely to result in a lower total cost to the benefit of users), it did not establish a P50 approach at the start of Q5 and in fact gave

HAL high project specific risk allowances (more than would have been applicable under P50). For this reason, for Q5 the CAA considers that it is important to assess the efficiency of individual major projects such as T3IB as well as reviewing capital efficiency on a portfolio basis.

13.56 The findings of the Riley report and the detailed review conducted by ASA were that T3IB had a number of serious shortcomings, and that on a reasonably conservative basis, there was a capital inefficiency incurred of £19.5 million. The CAA also notes ASA's finding that a further capital inefficiency of £10.1 million was incurred in Q5 due mainly to procurement inefficiencies. The overall figure of £29.6 million is significantly less than the c. £70-80 million that the airlines contend was inefficient expenditure. As noted by ASA, the difference is mainly due to a change in a security standard which is outside HAL's control and consequential costs incurred by airlines as a result of project delays. When assessed against the criteria set out in the Q5 regulatory settlement the CAA does not regard these as being inefficient capex. Furthermore, in Q5, airlines effectively received compensation for project delays through the capital trigger regime. Therefore, the CAA proposes to adopt the ASA findings and disallow an amount of £29.6 million (£30 million in 2011/12 prices) from the opening Q6 RAB.

CAA's initial proposals

13.57 The CAA welcomes the progress made by HAL and the airlines to suggest improvements for capital efficiency in Q6. The CAA supports a number of initiatives for the regulatory framework including:

- the split between core and development capex for Q6;
- the principle that the allowance for core capex shall be based on the P50 cost estimates and development capex based on P80 cost estimates for individual projects;
- the continuation of the use of trigger mechanisms to incentivise timely delivery of capex;
- the principle that there should be an indicative allowance for development capex within the CAA's Q6 price cap calculation, but with an adjustment mechanism so that charges reflect real-time

capex plans for each year of the control period;

- the application of financial incentives and trigger mechanisms to projects that move from development to core within Q6;
- the broad outline of proposed governance arrangements (albeit recognising that further work is required to develop the detail); and
- the appointment of the IFS with the cost included within the Q6 settlement.

13.58 The CAA requires triggers to be positioned in line with the delivery dates in HAL's project plans.

13.59 The CAA proposes to disallow an amount of £30 million (2011/12 prices) from the Q6 opening RAB to take account of capex inefficiently incurred during Q5.

13.60 The CAA is seeking views on:

- proposals to make HAL indifferent to the timing with which it carries out core capex;
- the design of governance arrangements around approvals for projects funded via development capex before work takes place;
- whether a licence condition should be included to mandate competitive tendering of large projects; and
- how it should assess capital efficiency in Q6.

CHAPTER 14

Other Price Control Issues

14.1 This chapter discusses a number of other issues relevant to the CAA's initial proposals for Q6. It includes the approach to safeguarding assets, the security cost pass through mechanism, opex incentive mechanisms and inflation indices.

Safeguarded assets

14.2 In discussions with airlines, the CAA was encouraged to consider different ways of rewarding 'safeguarded' assets. Safeguarded assets are created as part of a larger capex programme when it makes economic and construction sense to build an asset (or the space for an asset) for future use. ASA identified five assets safeguarded in Q5 with a value in excess of £5 million. In total these are valued at £276 million, of which the largest items were Terminal 2B baggage basement (£104 million) and Terminal 2B track transit system station box (£86 million). In addition, there are safeguarded assets in Terminal 5 which were added to the RAB in Q4. The Q6 capex plan does not include significant new safeguarded assets.

14.3 The current approach is to include such assets in the RAB, but not depreciate them. This has two consequences. The costs are borne by both current and future users while only future users will receive any benefit.

14.4 The CAA aims to avoid, and Heathrow stakeholders agree, that it should aim to avoid, retrospective adjustments to the treatment of assets in the RAB. The CAA considers that if any change is to be made to the treatment of safeguarded assets then it should be prospective only[114].

14.5 The current approach provides a real return on the assets, adds inflation to the assets and does not depreciate them until they are in

[114] In this case, prospective could mean safeguarded assets created in Q6 or thereafter, or could mean assets created as part of projects which commenced in Q6 or thereafter.

use. Current users pay the finance costs (the real WACC), while future users (those that use the assets) pay for the asset including the increase in value because of inflation. The current approach in effect means that users bear the risk of stranded assets.

14.6 An alternative could be for HAL to invest in safeguarded assets at its own risk. If the assets ever came into use, they could be transferred into the RAB and valued at original cost, plus inflation plus a cost of capital (higher than the WACC used in the price cap to reflect the stranding risk borne by the airport operator).

14.7 These two approaches are not mutually exclusive. Where airlines agree with safeguarding an asset and are willing to take the stranding risk, the current approach could apply. Where airlines did not agree, or it was agreed that HAL should bear the stranding risk then the alternative approach could be followed.

14.8 The CAA proposes to retain the existing approach but welcomes further discussion on this issue, especially if there is support for an alternative approach.

Security cost claim mechanism (the S-factor)

14.9 The risks arising from future security requirements are subject to relatively wide bounds of uncertainty. Rather than deal with this uncertainty by making conservative (i.e. high) estimates of future security costs in the base case for setting the price cap, it seems more reasonable for both users and HAL to pass through more of the actual variances in costs as they arise.

14.10 The Q5 price control design included a pass through mechanism within the control period for security cost increases (or reductions) resulting from a security standard tighter (or looser) than that assumed by the CAA in setting the price cap. The pass through was set to 90% of the cost increase (or reduction) above the given dead band (£16.5 million).

14.11 There has not been significant discussion of this issue in the Q6 discussions thus far. The CAA's initial views are that:

- the security cost claim mechanism should be retained for Q6; and

- a pass through rate of 90% and a dead band of £20 million (increased to reflect inflation) seems appropriate.

Rolling opex efficiency incentive mechanisms

14.12 In other sectors, such as the CAA's economic regulation of NERL, a mechanism to increase the incentive on regulated companies to make opex savings has been introduced. Such mechanisms give the regulated company greater incentive to make savings because it is allowed to keep those savings for a longer period (i.e. into the subsequent control period). The mechanism can also equalise the incentive to make efficiencies in each year of the control period. This mechanism is generally known as a rolling opex incentive mechanism. The CAA floated this idea earlier in the Q6 review and invited stakeholder feedback.

14.13 The CAA notes that HAL's actual opex has been greater than that assumed in the Q5 decision. This might suggest that current incentives are not sufficient for it to make efficiency savings in excess of those assumed. Alternatively, this might be due to the inherent uncertainty in forecasting opex at airports, especially an airport such as Heathrow, which has been undergoing significant development.

14.14 The CAA notes that an airport's commercial revenues are significantly greater than for NERL, and therefore opex could increase or reduce significantly during a control period due to changes in commercial activity rather than underlying opex and opex efficiency.

14.15 Rolling opex incentive mechanisms also have drawbacks. They introduce complexity and, once sufficient value is ascribed to them to alter management behaviour, they are open to accounting judgement, changes in the application of accounting policy and/or changes in the policies themselves.

14.16 Given that little progress has been made during CE on opex efficiency incentives, the CAA's initial view is not to introduce such mechanism.

Traffic risk sharing

14.17 The CAA floated at an earlier part of the review whether there was merit in introducing a traffic risk sharing mechanism. The CAA has introduced such a mechanism for its regulation of NERL. HAL did not model this concept, preferring to consider traffic risk through the medium of the traffic forecasts and the WACC. Given this lack of support for the concept and the parties' preference to handle traffic risk using alternative mechanisms, the CAA has not decided to pursue this concept for its initial proposals.

Within period traffic mix forecast correction (K) factor

14.18 HAL sets its structure of charges so that it expects to earn a revenue yield per passenger equal to, or less than, the price cap (permitted yield). In setting its structure of charges, HAL has to forecast traffic mix (for example, the share of domestic and international passengers who are subject to different charges, or the number of passengers per aircraft). Such mix cannot always be accurately forecast. The actual yield in a year is only precisely known at the end of the year, when charges for the next year have been set. Over- or under-recovery of the permitted yield (in total) is currently subject to a correction factor applied two years later.

14.19 In Q5 the correction mechanism allowed for financing costs. Claims for previous under-recoveries were uplifted by the Treasury Bill rate, while repayments for previous over-recoveries were uplifted by the Treasury Bill rate plus 3%. The purpose of the asymmetric finance costs was to give HAL a disincentive to over-recover deliberately.

14.20 The CAA has not received any submissions that suggest a change to the Q5 approach, and therefore the CAA's initial proposal is for this mechanism to continue in Q6.

Inflation

14.21 Inflation has two functions in the price control design:

- to provide investors in HAL with an allowance to cover the erosionary effects of inflation on their investment return (the RAB is indexed each year for this purpose); and
- to avoid the need to forecast inflation, building blocks are modelled in real prices (i.e. excluding inflation) and the price cap is expressed as RPI±X%.

14.22 The two uses of inflation are independent of each other. Therefore, it is not necessary to use the same measure of inflation for both. Nevertheless, in previous control periods, RPI inflation has been used for both.

14.23 Investors require a return for inflation and in the current regulatory design this is included by indexing the RAB each year. An alternative would be to include inflation in the cost of capital. The measure of inflation that should be used is the same measure implicitly used in deriving the real cost of capital. Financial markets currently use RPI - for example ILGs are indexed to RPI, and the CAA's estimate of the cost of capital is based on market data and thus also implicitly assumes RPI inflation. It would therefore appear that RPI inflation is the appropriate measure of inflation for indexing the RAB during Q6.

14.24 The inflation measure used in the price cap should be the relevant inflation measure for the cost base. For example, if wages were thought to keep up with RPI inflation then it would be the appropriate measure of inflation for the price cap. The CAA notes that, while previously RPI was the measure of inflation most used, there has been a slow but gradual move towards CPI in some instances. The CAA considers that its initial proposals should be to retain RPI for indexing the price cap in the RPI±X% formula.

14.25 The CAA considers that linking both the RAB and the price cap to inflation substantially reduces HAL's exposure to inflation risk.[115] There is a risk that the Office for National Statistics (ONS) changes the definitions of some or all of the price indices during Q6. Without fettering the CAA's discretion, the CAA considers that the risk of a change in indices' definitions should be borne by HAL and it would bear the gain or loss arising from any changes in the definition during Q6. For the avoidance of doubt, HAL has, in previous control periods,

[115] Inflation risk is the risk that actual inflation turns out to be different to what was expected.

been exposed to this risk and the ONS makes frequent, relatively minor, changes to the definitions. Therefore, the CAA considers that no additional or explicit cost of capital allowance is required.

Non-passenger flights

14.26 A separate condition for non-passenger aircraft was introduced in Q4, and retained for Q5, in order not to disincentivise HAL from accommodating non-passenger flights. Before the introduction of the separate condition, the mathematics of the revenue per passenger price control condition led to the perverse effect that if HAL priced up to the cap it received no additional revenue from non-passenger carrying flights. The condition removed this oddity, and required charges for non-passenger aircraft to be no more than the charges for an equivalent passenger carrying flight.

14.27 The CAA's initial proposal is to retain this condition. The CAA has not received any representations on the matter.

CAA initial proposals

14.28 The CAA proposes to retain its approach to safeguard assets, variances in security costs, the 'K' factor, inflation indices and non-passenger flights. The CAA does not propose to introduce new measures to provide for a rolling opex incentive mechanism or for an explicit traffic risk sharing mechanism.

CHAPTER 15

A Licence for HAL

15.1 Earlier chapters of this consultation document have discussed the proposed licence conditions relating to price control, service quality requirements, and operational resilience. The Act requires the CAA to include provisions relating to the revocation of the licence and explicitly allows the CAA to include conditions relating to the payment of its fees, as well as any other conditions that it considers are needed having regard to its duties. This chapter sets out what conditions the CAA considers would be necessary at this stage and why they are required. In particular, it sets out the CAA's current views on the development of financial resilience licence conditions.

15.2 These potential licence conditions were not a feature of CE but, in January 2012, the CAA published an indicative licence to assist with and inform the passage of the Civil Aviation Bill through Parliament. This included a number of draft conditions that the CAA considered would be necessary. Since then, the CAA has discussed those draft conditions with HAL and other stakeholders.

15.3 The latest draft of the HAL licence is attached as Appendix B to this document. The CAA will discuss this in more detail with stakeholders over the summer, with a view to issuing its final proposals for the licence alongside its final proposals for the price control and service quality.

15.4 The CAA intends to develop a licence that is fit for purpose for the start of the new price control period from 1 April 2014. However, it is likely that the licence will evolve over time, as has been the case in other regulated sectors. In considering licence obligations, the CAA will have regard to the principles of Better Regulation as set out in section 1(3) and (4) of the Act.

15.5 The sections below discuss the main aspects of the current HAL draft licence. The CAA has drawn on extensive benchmarking with the licensing approaches adopted by other UK economic regulators and with the equivalent licence of NERL, which is administered by the CAA.

Part I: Scope and interpretation of the licence

15.6 This part of the draft licence is largely unchanged from that published by the CAA in January 2012 in the indicative licence. It specifies the airport operator, and as required by the Act, the airport area for which the licence is granted and the relevant airport. It should be noted that section 21(1)(f) of the Act allows the CAA to include licence conditions relating to activities carried on outside the licence area.

15.7 A person is the operator of an airport area if he has overall responsibility for the management of it. Where there is more than one operator using an airport area and it is not clear which one has overall responsibility for it, section 10 of the Act allows the CAA to make a determination for the purposes of the Act. The person subject to the determination may appeal against it to the CAT.

15.8 The CAA will determine the airport area for which the licence is granted based on those areas where the operator has overall control of the area and has market power in that area. The CAA will base this determination on the definition of 'airport' in the Act and will consider whether HAL has overall responsibility for the management of the areas or facilities listed in line with the matters listed in section 9(4) of the Act. These matters are the types and quality of the services that may be provided in those areas, and the prices charged, and access to and development of the area. The CAA will then apply the MPT to determine whether the operator has, or is likely to acquire, SMP.

15.9 This part also specifies when the licence comes into force. This must be at least 6 weeks after the date on which the notice of the licence grant was published. The licence will come into force on 1 April 2014 so that the new price control condition will take effect on the day immediately after the current price control ends. The licence continues in force until it is revoked by the CAA in accordance with the provisions included within it and in accordance with the procedures in section 48[116] of the Act. The licence is not transferable.

15.10 Finally, this part of the licence sets out how the licence should be interpreted and includes definitions that are used throughout the licence.

[116] Section 48 requires the CAA to give notice of its intention to revoke the licence to allow the licence holder to make representations.

Part II: Conditions on fees and revocation

Payment of CAA fees condition

15.11 In common with other regulated sectors, the Act allows the CAA to require the licence holder to pay charges to the CAA in respect of its functions under Chapter 1 of the Act. The Act also allows the CAA to require the payment of charges determined under a scheme or regulations made under section 11 of the Civil Aviation Act 1982 (the 1982 Act). Therefore, Condition 1 of the draft licence refers to the scheme already operated by the CAA under the 1982 Act. This is consistent with the approach taken in the January 2012 indicative licence.

15.12 The current CAA charging scheme sets a monthly charge based on the number of passengers arriving at the airport (apart from those arriving and departing on the same aircraft as part of the same journey). The CAA normally amends the charges on an annual basis following a consultation with interested stakeholders. The current scheme of charges for 2013/14 can be found in the CAA's Official Record Series 5.

15.13 Under the Act the CAA can require payment of the charges on the grant of the licence and whilst it continues in force. Under the charging scheme referred to in Condition 1, changes to the charges normally take place on 1 April each year. The CAA considers that the payment of charges should begin when the licence comes into effect.

15.14 In common with other regulated sectors, the payment of fees condition would be enforceable using civil sanctions as well as the enforcement powers in the Act.

Licence revocation condition

15.15 The Act requires the CAA to include, within the licence, provision relating to the circumstances in which the licence may be revoked and specifying that the licence can only be revoked in accordance with the procedures set out in section 48 of the Act. The process in section 48 of the Act requires the CAA first to notify HAL of its intention to revoke the licence at least 30 days before issuing a revocation notice in order to give HAL the opportunity to make representations. If the CAA then wishes to continue and revoke HAL's licence, it must issue, and publish, a revocation notice that cannot take effect for at least 30

days. HAL, and any other person, has the right to appeal to the CAT against a decision to revoke the licence or against the date on which the revocation takes effect. An appeal suspends the effect of the notice until the appeal is decided or withdrawn.

15.16 The draft licence condition lists a number of circumstances in which the CAA could revoke the licence. These are consistent with revocation conditions in licences in other regulated sectors.

15.17 Many of the circumstances refer to situations where a licence is no longer required, such as if HAL requests or agrees that the licence should be revoked, or if it ceases to be the operator of all the licence area. It may also be revoked if, following a subsequent market power determination, the CAA determines that the licence area is no longer a dominant area or the airport is no longer a dominant airport and, if the determination is appealed, the CAT agrees.

15.18 Other circumstances relate to unacceptable behaviour by HAL where lack of compliance with regulatory requirements cannot be resolved through any other channel.

15.19 The draft condition provides for the licence to be revoked if HAL fails to comply with an enforcement order or with a confirmed urgent enforcement order to the satisfaction of the CAA or if it fails to pay a penalty imposed by the CAA. Revocation would be the ultimate sanction in the overall compliance and enforcement regime that would typically be used only when all other approaches had failed to secure compliance. Although this might result in the closure of the airport, the nature of the non-compliance may be so serious that such action is in the overall interests of passengers and cargo owners.

15.20 HAL has some additional protections before the CAA can consider revocation in these cases. Section 47 of the Act allows it to appeal to the CAT against an order or a penalty on the grounds that the decision was based on an error of fact, was wrong in law or an error was made in the exercise of discretion. The draft licence condition includes an additional check in that, after any appeal against an enforcement order or penalty is determined, the CAA must, by notice, give HAL at least 3 months to rectify the failure to comply with the order before issuing a revocation notice.

15.21 In addition, the draft condition also includes failure to comply with

relevant orders made under the Competition Act 1998 or the Enterprise Act 2002 as a reason for revoking the licence. The CAA has concurrent competition law powers and must assess, at each stage of enforcement, whether it would be better to use its Competition Act 1998 powers instead of a power under the Act. It is therefore proportionate that the competition enforcement route has the same ultimate sanction as the route in the Act. Again, the CAA considers that this should typically only be used when all other approaches had failed to secure compliance.

15.22 Failure to pay the CAA's charges required under Condition 1 of the draft licence would also be grounds for revocation to protect the integrity of the regulatory regime. Again, this would typically only be considered when all other avenues, either under the Act or through the Courts, had been exhausted.

15.23 Finally, the CAA could revoke the licence if it had penalised HAL for knowingly or recklessly providing false or misleading information[117] or if HAL had intentionally altered, suppressed or destroyed a document it was required to produce by the CAA in a notice issued under the Act.

15.24 Some licences in other regulated sectors include provisions allowing the regulator the discretion to revoke the licence due to insolvency of the regulated business. The CAA is considering whether this is necessary for HAL. It welcomes views on whether it would be in the interests of passengers and cargo owners to include this option. In the event of insolvency, the CAA considers that it would most likely be in the interests of any receiver and in the interests of passengers to keep the airport open and running.

Part III: Price control conditions

15.25 These conditions will reflect the CAA's decisions on the price control, set out in previous sections of this document. The draft licence does not contain these conditions at this stage but they will be developed in the lead up to the CAA issuing its final proposals.

[117] In accordance with a licence condition; in response to a notice issued by the CAA under the Act to provide information; or if the licence holder knows the CAA will use the information to carry out its functions under Chapter 1 of the Act.

15.26 There were several public interest conditions included in the Q5 determination for HAL that reflected previous adverse findings by the CC. Aside from the conditions on the transparency of charges for certain other services and the SQR scheme, the CAA does not consider that maintaining the other conditions in Q6 would be consistent with its statutory duties, in particular, in relation to Better Regulation principles, or with its new duties as regards regulatory burdens. Under AA86, the CAA was constrained in removing public interest conditions once they had been imposed. Those constraints no longer apply.

Provision of information desks

15.27 Following a complaint by BA in relation to Terminal 4, in 1996 the Monopolies and Mergers Commission (predecessor to the CC) found that HAL had acted against the public interest by refusing to allow information desks in airside departure lounges in a position acceptable to airlines, other than at rents which reflected commercial income forgone. The CAA imposed a condition on the airport operator so that at least one information desk would be provided airside in each terminal at a location selected after consultation with airlines at a charge equal to the standard rate for information desks elsewhere in the airport.

15.28 This particular issue appears to have been a one-off incident. The CAA considers that advances in technology have provided new sources of information since 1996, so that the provision of a manned desk in each terminal may not be the most appropriate way of providing information to passengers. Instead, information available on smartphones, or via social media or on interactive screens may become the normal way by which passengers obtain information.

15.29 As the public interest finding was about only one incident in 1996, the CAA does not consider that it would be proportionate to impose a licence condition to protect against the risk of a similar incident occurring in the future. There is also a risk that such a condition might inhibit innovation in the ways of providing information to passengers. Nevertheless, the CAA is keen for HAL to ensure that, in the context of operational resilience and service disruption, it has effective ways of ensuring passengers receive timely, useful and appropriate information (see chapter 12).

Restriction of use of agency staff

15.30 Following a complaint, in 1996 the Monopolies and Mergers Commission found that HAL had acted against the public interest by limiting the number of agency staff that could be employed by companies at the airport. The CAA imposed a condition on the airport operator prohibiting such restrictions. For similar reasons as for information desks above, the CAA considers that it is no longer appropriate or proportionate to impose a licence condition just in case a similar incident occurs in the future.

Part IV: Service quality conditions

15.31 This part of the licence will contain a condition to give effect to the CAA's decisions on the SQR scheme. The draft licence does not contain these conditions at this stage but they will be developed in the lead up to the CAA issuing its final proposals.

15.32 The CAA has also proposed a condition to give effect to its policy on strengthening HAL's approach to operational resilience. The CAA would like to make it clear that meeting the operational resilience requirements in the (economic) licence should not come at the expense of HAL meeting its safety obligations under its separate aerodrome licence issued under the Air Navigation Order.

Part V: Financial conditions

Regulatory accounts condition

15.33 The CAA intends to combine the current regulatory accounts process with other financial reporting information provided by HAL. This will be put into effect by introducing a licence condition that requires HAL to produce audited regulatory accounts in accordance with Regulatory Accounting Guidelines.

15.34 Given there already exists a fully functioning process in place, capturing this in the licence is unlikely to create additional material costs and may give the opportunity for streamlining the process.

Financial resilience condition

15.35 The government has been keen for the CAA to consider whether the licence could be used to strengthen the financial resilience of airport operators, in line with the approaches commonly seen in other regulated sectors. The Act does not, however, contain specific duties to introduce financial resilience provisions per se. Nevertheless, these are permitted by the Act, should the CAA consider that doing so would further its duties.

15.36 In pursuing its primary duty towards passengers and cargo owners, the CAA must have regard to, amongst other things:

- the need to secure that the airport operator is able to finance its provision of airport operation services in its licensed airport area; and
- the need to promote economy and efficiency.

The CAA's assessment

15.37 Most other regulated companies have 'ring fence' provisions in their licences that restrict the types of activities they can conduct and place limitations on the way that they set up their financial arrangements. Such licence conditions are designed to minimise the risk of financial distress and consequent adverse impact on end users.

15.38 The CAA is mindful that its evaluation of the pros and cons of introducing similar ring fencing provisions needs to recognise that HAL has previously put in place a highly complex financing structure. As things stand today, certain of the arrangements that HAL is using are not compatible with a complete suite of typical ring fencing conditions seen in other regulated industries' licences.

15.39 For example, HAL's asset base is charged to secure the debt obligations and lenders have already made it clear that they would not surrender their existing security rights. So the typical conditions prohibiting granting security over assets[118], restrictions on disposal of

[118] Security over assets. This type of licence condition prohibits the licensee from offering its assets as security, because there is a risk that in the event of default the lenders will have control over crucial assets that might not then be available for the provision of services. However, in asset rich businesses such as airports, lenders tend to take significant comfort from having some control over the cash generating assets, and a credit enhancement such as this reduces lenders' risk and reduces the cost of debt. A licence condition that prohibits the granting of security over

assets[119], or the prohibition of cross guarantees would immediately be a 'trigger event' and, if unresolved, risk putting HAL in breach of the licence and/or its financial arrangements.

15.40 The government recognised the conflict between a full regulatory ring fence and existing banking covenants. It reached a policy position that a financial ring fence should be introduced to the extent that it did not cut across existing financial arrangements in place when the Act was commenced.

15.41 If the CAA were to introduce, but derogate, financial resilience conditions, such derogations would have significant legal protection, as there are additional tests in the Act for the removal of such derogations or the activation of 'dormant' conditions in respect of financial resilience.

15.42 HAL thought that the imposition of financial resilience conditions would be a new departure in the airports sector. It stated that the absence of such conditions had not caused any obvious passenger detriment in the past and that HAL was already very financially secure. HAL thought that there were good reasons to consider carefully whether such conditions would be necessary or appropriate under the new regime.

15.43 The CAA notes HAL's historical perspective and its views on its current financial security. The CAA is looking forward and, although the past can be a useful guide, the CAA notes that the most

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the assets would be in conflict with HAL's current financial arrangements, and therefore an introduction of such a requirement could lead to a re-pricing of debt or possibly even a complete re-financing of all HAL's borrowings. The CAA considers that this would not be in the interest of users at the present time.

[119] Restrictions over disposal of assets. This type of condition places restrictions on the licensee's ability to dispose of assets, and its purpose is to ensure that there remains a 'complete' business capable of providing services. While this condition does not explicitly conflict with the current financial arrangements restrictions imposed by the CAA on the disposal of assets could frustrate the ability to exercise that security. The incentive is likely to be, in both benign times and financial distress, for HAL to retain an asset that is crucial to supply the market in which it has market power. If HAL were to sell an asset in the airport area to another entity, that entity could be subject to a licence (subject to the CAA's assessment of market power). The CAA therefore considers that it is not appropriate to place restrictions on the disposal of assets in the licence at the present time because this could cut across existing financial arrangements, and, in any case, it considers there are sufficient safeguards in place.

appropriate time to introduce resilience conditions is in benign times, not during a period of financial distress.

15.44 There is, in the CAA's view, a reasonable argument supporting the inclusion of the standard ring fence restrictions in HAL's licence. For example, financial distress could cause detriment to passengers' interests in both the short and the longer term. The economics of an airport whose operator has SMP may suggest that, even in time of financial distress, the airport is likely to remain open because it is likely to generate a positive cash flow. However, there could be a temporary closure[120], for example, while an administrator resolves legal and operational issues. Financial distress may also lead to reduced expenditure at the airport with implications for future service quality.

15.45 A change to HAL's financial structure that would be consistent with the requirements of the licence conditions seen in other regulated sectors could require a complete re-financing of existing debt. The costs and risks of this might be passed on to passengers. Re-financing HAL's current debt (approximately £12 billion) to be compliant with ring fence conditions would likely have two categories of costs:

- transaction costs from redeeming existing financing and issuing new finance[121]; and
- on-going higher cost of debt in the absence of credit enhancements (such as security).

15.46 While the choice of financial structure is not binary, the CAA understands that most of the covenants and characteristics of HAL's current debt structure are not severable from the rest. Therefore, the CAA has considered the implications of introducing:

- a full ring fence; or
- a ring fence comprising only those elements that do not cut across existing financial arrangements; or

[120] To place the risk of airport closure in perspective, we are unaware of any occasions in which Heathrow has closed because of financial distress compared to the relatively more frequent closures due to adverse weather conditions.

[121] The incremental transaction cost might be lower if it coincides with re-financing for other purposes (say on a change of ownership, or when a large amount of debt reaches maturity.

- no financial ring fencing conditions at all.

15.47 As noted above, although there are benefits to users of a full ring fence, given the costs identified, the CAA concludes that it is likely to be in passengers' interests that any ring-fencing provisions do not cut across HAL's current financial conditions.

15.48 The CAA notes that the Act provides two additional safeguards before derogations can be removed, namely that there must be a material change in circumstances and that the benefits must outweigh the costs.

15.49 The CAA considers that, for airports such as Heathrow, which consistently generates considerable amounts of cash, the interests of users and the providers of debt finance are substantially aligned. Both want a financial structure that incorporates debt (and reduces the WACC) but not so much that it is insufficiently resilient to downside risk. They will both want Heathrow to remain open even in times of severe financial distress: from the financiers' perspective, the best use of an airport whose operator has SMP is for the airport to remain open and generate cash.

15.50 The CAA does not think that it is necessary to impose the full suite of ring fence conditions, since the incremental benefits to users could be significantly outweighed by the incremental costs. The HAL debt covenants already form a 'contractual ring fence', albeit one to which the CAA is not party. It is not clear that licence-based restrictions are necessary where lenders have similar safeguards in place to protect their investment (for example, through minimum credit rating requirements, etc).

15.51 HAL noted that its financing arrangements include an extensive covenant package designed to shield creditors from a deterioration in their financial position by putting in place dividend lock-ups and other protections if ratings, cash flow or gearing triggers are breached. Even in extreme downside cases, HAL stated that it would not expect default levels to be breached. In addition, there are currently covenants that restrict the type of business that it can undertake.

15.52 The CAA considers that if it is to gain comfort from HAL's contractual ring fence, it would need to be informed if there were changes that subsequently reduced this level of comfort. The CAA proposes that if

it is to rely on the contractual ring fence it would introduce a licence condition that would require HAL to notify the CAA of any relevant changes. HAL thought that if there was such an obligation that it should be to notify the CAA after the event. The CAA is mindful that such an approach might unnecessarily restrict the range of options available to the CAA. The CAA's initial proposal is for the CAA to be notified before the changes come into effect.

15.53 An alternative approach could be for the CAA to introduce a full ring fence into HAL's licence but to derogate those aspects that cut across HAL's existing financial arrangements (effectively making the conditions 'dormant' until new financing structures are introduced). The benefit of this is that they would provide greater certainty and clarity by setting out the restrictions on HAL's future financial arrangements.

15.54 It is not clear, however, how long these conditions would remain dormant, or indeed if they would ever be used. For example, HAL has bonds that will not be redeemed for many years. There is also a risk that the drafting of any dormant conditions was not fit for purpose when they were finally needed. This might mean that such conditions would have to be amended through the licence modification process. The CAA proposes instead to rely on the licence modification process in the Act if additional restrictions are needed.

15.55 By permitting HAL to leave in place arrangements which would otherwise not comply with the standard regulatory ring fence, the CAA will not be able to secure the financial resilience that regulated companies in other sectors exhibit. It can, however, ensure that HAL does not take additional actions which might further jeopardise the airport operator's financial position. These are set out below.

Restrictions on business activities

15.56 The CAA sees merit in proposing a restriction on business activities that would prohibit HAL from undertaking unrelated activities and placing the regulated business at risk.[122] While the Act defines an airport area, the definition is for a different purpose and is much narrower than the activities undertaken at an airport. A modern passenger airport carries out other commercial activities such as

[122] Other group companies may undertake whatever activities they wish.

retail, car parks, property rentals, transport interchange as well as its aeronautical activities. Furthermore, at a geographically constrained airport, some of these activities might not be located at the airport itself.

15.57 The CAA therefore proposes to set the restriction quite widely to cover 'the business activities of Heathrow Airport'. This will allow HAL to carry out commercial activities at Heathrow that another operator would be able to undertake at a competitive airport. Although this definition appears loose, it does prohibit HAL from operating another airport or undertaking an unrelated activity.

15.58 At the margin, the CAA is concerned that this might be against passengers' interests and prohibit HAL from using part of its land and property for an unrelated purpose. For example, the airport operator could be prevented from renting out spare office space to a business completely unrelated to aviation and including the income in the single till to reduce charges to users. At a congested airport, as Heathrow currently is, this may be relatively low risk. However, to mitigate this risk, the CAA considers that there may be merit in this condition including a *de minimis* qualification and/or the provision for the CAA to grant exemptions.

Certificate of adequate resources

15.59 This is a requirement on the company directors to certify annually to the CAA that it expects to have (or not to have) adequate resources (including financial, staff and other resources) to continue to operate for the following 24 months. The company must also tell the CAA as soon as possible if the directors become aware of reasons why the most recent certificate may longer hold true. This obligation may give the CAA early warning of potential problems so that where possible and appropriate the CAA can consider further measures.

15.60 In discussions with HAL, several concerns were raised around the administrative and monitoring costs being significantly greater than any benefit. The CAA, however, considers that this requirement can be designed so as to minimise the administrative burden.

15.61 HAL noted that the auditors provide an independent 'going concern' opinion on the accounts of the company and that this should be sufficient for the CAA's purposes. Although the CAA takes some comfort from this, it is unlikely to be sufficient and hence the CAA

considers that the certificate of resources has merit. For example, the CAA notes that audit opinions are usually for a period of 12 months from the balance sheet date and it does not often take into account more than financial resources.

Parent undertaking

15.62 This type of licence condition places an obligation on HAL to obtain a legally binding undertaking from its ultimate parent company/ies (or controller/s) not to do anything that would put the licensee in breach of the licence. The CAA sees merit is requiring it for the HAL licence.

Continuity of service plan

15.63 While the CAA's view is that if an airport operator has market power then the economic incentives are for the airport to remain open during financial distress as it is significantly cash generative, there is a risk that it might close or experience service disruption whilst operational or legal issues relating to that financial distress are resolved. The CAA considers that this risk could be reduced if HAL has in place a continuity of service plan. Such a plan would enable the new management or an administrator to understand and respond to the major issues, which could threaten the temporary closure.

15.64 The CAA notes that requirements on regulated companies to hold plans in the event of financial distress have been adopted in other sectors. For example, in May 2012, the Financial Services Authority (FSA) made 'recovery and resolution' plans (living wills) mandatory for financial institutions.

15.65 The CAA has included a condition in the draft HAL licence requiring it to develop and maintain a continuity of service plan.

Minimum credit rating

15.66 This type of licence condition places a requirement on the licensee to use its best endeavours to maintain an investment grade credit rating. It is most effective when it applies to the rating of an issuer (i.e. the licensee) rather than the issuance (i.e. the debt).

15.67 The structured nature of HAL's financing means that different classes of debt have different credit ratings and therefore there is no issuer rating. For example, the issuances have ratings that range from A- to Ba3. Some of HAL's debt has a sub-investment grade rating, therefore it would not be possible, without cutting across the existing

financing, to introduce an obligation requiring any rated debt to maintain an investment grade.

15.68 As an alternative, it could be possible to introduce a requirement that a specific issuance or class of debt maintains an investment grade rating. However, this precise requirement is already a covenant in the current financial arrangements, so introducing it as a licence condition merely repeats it. The CAA does not consider that such duplication is necessary.

Prohibitions on cross guarantees

15.69 The purpose of a prohibition on cross guarantees is to avoid 'risk bridges' from unregulated businesses to the regulated business. HAL already has cross guarantees between it and other group finance companies and, therefore, any blanket prohibition would be in conflict with the current financial arrangements.

15.70 There are two options:

- no prohibitions or restrictions on cross guarantees or similar obligations in the licence; or
- a prohibition on cross guarantees, except for those that currently exist (this could be defined by the companies or by current financial arrangements).

15.71 The benefit of the second approach is that no new cross guarantees can be given and therefore no new risk bridges can be created. The disadvantage of this is that it is likely to be complex and, therefore, may require significant monitoring. There could also be a significant risk of non-compliance if one of the cross obligations is overlooked. However, any changes to cross guarantees will require the CAA to examine whether or not it is, in substance, a 'new' obligation or merely a 'minor technical' change. The CAA is concerned that this could create a significant burden on the licensee and significant costs for all parties concerned which would ultimately be borne by users and increased uncertainty as to licence compliance. It would also involve the CAA in HAL's actual financing at a level of detail rarely seen in economic regulation, and therefore inconsistent with the CAA's position that actual financing is a matter for the company (for example, the CAA uses a simplified notional financial structure for calculating the WACC).

15.72 The CAA considers that these disadvantages are likely to outweigh the benefits. The initial proposals for the licence therefore do not include a prohibition against the granting of any further cross guarantees, although the CAA would especially welcome feedback on this issue.

Costs and benefits of the CAA's initial proposals

15.73 HAL stated that if the CAA intended to impose financial resilience conditions it would expect to see a compelling case, justified by a cost/benefit analysis which quantifies the imposition of the conditions and shows a clear net benefit to passengers, to justify departing from current practice.

15.74 The CAA is mindful of introducing and administrating such a package of measures in a cost effective manner. It agrees with HAL that the potential benefits for users should outweigh the costs. However, it is mindful that HAL's approach on quantifying the benefits and costs may not be possible to a high level of confidence (or at least risks a spurious level of precision) and hence a qualitative assessment may be more pragmatic and appropriate. The CAA considers that the draft licence conditions in respect of restriction on activities and parent company undertakings will have minimal costs of introduction and administration and, therefore, the benefits as set out in this chapter are likely to be substantially in excess of costs.

15.75 The annual certificate of adequate resources will impose some costs on HAL, although these can be reduced if the timing is aligned with the airport operator's annual reporting. The CAA considers that these costs will be more than outweighed by the benefit of the early warning on potential resource issues and the 'no surprises' culture that will facilitate CAA's proportionate and appropriate regulation.

15.76 The continuity of service plan, in both its preparation and its review, is likely to create costs for HAL. However, these costs can be reduced if the plan builds on and complements existing plans and procedures, including the operational resilience requirements in the licence. Given the significant costs associated with service disruption for HAL, for passengers, the benefits of a plan are expected to be significantly higher than the cost of preparing the plan.

15.77 The CAA therefore only proposes to include the following elements of the standard financial ring fence in HAL's licence (figure 15.1). Draft

conditions are included in the draft licence contained within Appendix B. The CAA will continue to engage with HAL and other stakeholders following publication of its initial proposals with a view to refining its proposals for its final proposals in October 2013.

Figure 15.1: Summary of initial proposals for financial resilience ring fencing

	Is the typical form consistent with HAL's existing financial arrangements?	Could it be re-drafted to avoid a conflict with HAL's financial arrangements?	Are benefits to passengers expected to outweigh the costs?	Included in CAA initial proposals?
Prohibition on the granting of security	No	No	No	No
Prohibition on the disposal of assets without CAA approval	No	No	No	No
Restriction on business activities	Yes	-	Yes	Yes
Prohibition on granting of cross default guarantees	No	Yes, but could be very complex	No, costs may outweigh benefits	No
Parent company undertakings	Yes	-	Yes	Yes
Credit rating requirement	No	Yes, but could be very complex	No, incremental benefits low	No
Certificate of adequacy of resources	Yes	-	Yes	Yes
Continuity of service plan	Yes	-	Yes	Yes
Report changes in contractual ring fence	Yes	-	Yes	Yes

Source: CAA

Part VI: Other licence conditions

15.78 The CAA considers there may be merit in considering other licence conditions for HAL. The CAA will need to exercise judgement over those issues that are pursued for the initial licence from April 2014

and those issues that can be considered after that date.

15.79 The issues that the CAA will consider further are listed in the next paragraphs. It should be noted that this list is not exhaustive and that the CAA may decide not to pursue certain issues upon further consideration. As such, the draft licence does not contain draft conditions at this stage.

15.80 A provision, possibly in the interpretation section, stating that in meeting the licence conditions, the licensee should not breach any other legal obligations for example in relation to safety or security requirements. This may be required to ensure that the licensee does not consider there is a choice between breaching the licence and breaching those other requirements.

15.81 A provision to reopen the price control within the regulatory period.

- The CAA notes that some regulators, such as Ofwat, have specific conditions relating to the conditions under which they will reopen the price settlement within the regulatory period. Some others do not have such specific conditions but may make reference to their approach in a regulatory policy statement.
- The CAA recognises that it is important that it does not undermine the incentive properties of the price control settlement. Therefore, the CAA considers that any reopening of the price control should only be in extreme circumstances. Some regulators specify exactly how the price control will change for a change in another variable (for example the NERL licence includes a specific risk sharing mechanism for traffic being different to forecast).
- The CAA welcomes feedback from stakeholders on both the principle of specifying a reopening condition and the form which such a condition should take.

15.82 A mechanism to adjust the SQR scheme within the regulatory period. HAL and the airlines may negotiate changes to the levels and rebates. There will, therefore, need to be a mechanism to allow for this either specified in the licence or else through the licence modification processes.

15.83 Consultation protocol. The CAA will need to consider whether the licence should seek to contain a condition akin to the present Annex G

of the CAA's price control determination for Q5. This would set out the CAA's expectations on how HAL will consult airlines on various matters.

15.84 A best value/competitive tendering requirement. Mindful of the findings from its Q5 capex efficiency review, the CAA will consider whether giving HAL a licence obligation to secure best value from major capital investments would be in passengers' interests.

15.85 Complaints handling. The CAA would like to consider whether the licence should contain clear requirements on HAL in relation to how it deals with passenger complaints.

15.86 Revocation. In addition to the reasons for licence revocation set out above, the CAA considers there may be merit in including a discretionary provision that would enable the CAA to revoke the licence in the event that the licensee becomes insolvent. This is commonly seen in licences for other regulated companies.

15.87 Non-discrimination conditions. The CAA may need to consider whether the licence should contain any conditions which require a form of non-discrimination. The CAA notes that it has dealt with several recent cases of discrimination under section 41 of AA86, which will be repealed by the Act by April 2014. If the CAA pursues this, it will need to avoid duplication or cutting across existing obligations such as those in the ACR or the Competition Act 1998.

CAA initial proposals

15.88 The CAA proposes to establish a licence for HAL to take effect from 1 April 2014 (contained in Appendix B). This draft licence sets out a number of requirements. Some are simply to make the licence work (such as the conditions on fees and revocation). Others give effect to the CAA's policies with regard to price controls, service quality regulation, operational resilience and financial resilience. Overall, the CAA considers that the benefits of these conditions for passengers will outweigh the costs. There are a number of other potential issues the CAA could consider on which it also invites feedback, such as reopeners for the price control and the SQR scheme, a consultation protocol, complaints handling and non-discrimination.

APPENDIX A

Summary of CAA proposals for service quality standards and rebates during Q6

A1 Unless specified otherwise, definitions apply throughout this appendix as set out in Annex H of the Economic Regulation of Heathrow and Gatwick Airports 2008 - 2013 - CAA Decision, and any subsequent amendments, reflecting current operation of financial incentives in Q5.

i) Passenger satisfaction measures (bonuses and publication in terminal also apply)

Terminals 1, 2, 3, 4, 5								
	Element	**Metric**	**Standard**	**Rebate: annual max Q5 (T5)**	**Rebate: annual max proposal Q6**	**Bonus level**	**Changes from Q5**	**Publication in terminal**
1	Departure lounge seating availability	QSM scores – moving annual average	3.9	0.36%	0.36%	4.1	Varying increases in standards for both rebates and bonuses from Q5	Yes – as Q5
2	Cleanliness		4.1	0.36%	0.36%	4.3		Yes – as Q5
3	Wayfinding		4.1	0.36%	0.36%	4.3		Yes – as Q5

Terminals 1, 2, 3, 4, 5								
4	Flight information		4.3	0.36%	0.36%	4.5	Note forthcoming changes to QSM survey	Yes – as Q5
5	Security		4.0	0	0	4.4	New element for publication	Yes - new
	Total			**1.44%**	**1.44%**			

ii) Security

Terminals 1, 2, 3, 4, 5							
	Element	**Metric**	**Standard**	**Rebate: annual max Q5 (T5)**	**Rebate: annual max proposal Q6**	**Changes from Q5**	**Publication in terminal**
6	Central search	x% of pax < y mins	99% pax < 10 mins	0.7698%	1.00%	New formulation of metric Focus on 99% rather than a 2-level standard	Yes - as Q5

Terminals 1, 2, 3, 4, 5							
7	Transfer search	x% of pax < y mins	99% pax < 10 mins	0.3353%	0.50%	Harmonised with central search Improvement in service level from Q5 New formulation of metric	Yes - as Q5
8	Staff search	x% of 15 min measurements < y mins	95% of 15 min measurements < 10 mins	0.3353%	0.38%	No change - views sought on operational hours	N/A
9	Control posts	x% of vehicles < y mins	95% of vehicles < 15 mins at each control post group (as defined in section 11)	0.3846%	0.38%	Disaggregation across airport of performance	N/A
	Total			**1.825%**	**2.26%**		

iii) Passenger operational measures

							Terminal 5 only
	Element	**Metric**	**Standard**	**Rebate: annual max Q5 (T5)**	**Rebate: annual max proposal Q6**	**Changes from Q5**	**Publication in terminal**
10	Passenger-sensitive equipment (general)	% time available	99%	0.4002%	0.25%	Bonus removed	Remove
11	Passenger-sensitive equipment (priority)	% time available	99%	0.3018%	0.25%	Unchanged	Remove
12	Track transit system	% time 1 car available	99%	0.3353%	0.30%	Unchanged	Remove
		% time 2 cars available	97%			Unchanged	Remove
13	Arrivals reclaim (baggage carousels)	% time available	99%	0.4002%	0.25%	Unchanged	Remove
	Total			**1.4375%**	**1.05%**		

Terminals 1, 2, 3, 4							
	Element	**Metric**	**Standard**	**Rebate: annual max Q5 (T1, T3, T4)**	**Rebate: annual max proposal Q6**	**Changes from Q5**	**Publication in terminal**
10	Passenger-sensitive equipment (general)	% time available	99%	0.4002%	0.35%	Bonus removed	Remove
11	Passenger-sensitive equipment (priority)	% time available	99%	0.3498%	0.35%	Unchanged	Remove
12							Intentionally omitted
13	Arrivals reclaim (baggage carousels)	% time available	99%	0.4002%	0.35%	Bonus removed	Remove
	Total			**1.1500%**	**1.05%**		

iv) Airline operational measures

Terminals 2, 3, 5							
	Element	**Metric**	**Standard**	**Rebate: annual max Q5 (T5)**	**Rebate: annual max proposal Q6**	**Changes from Q5**	**Publication in terminal**
14	Stands	% time available	99%	0.2682%	0.2%	Unchanged	N/A
15	Jetties	% time available	99%	0.2682%	0.2%		N/A
16	Pier service	Moving annual average % passengers served	Subject to exceptions to be agreed by HAL and the AOC	0.3018%	0.25%		Remove
17	FEGP	% time available	99%	0.2012%	0.15%	Unchanged	N/A
18	PCA	% time available	98%	0.000%	0.2%	Introduction of rebate	N/A
19	Stand entry guidance	% time available	99%	0.2862%	0.25%	Unchanged	N/A
	Total			**1.326%**	**1.25%**		

Terminals 1, 4							
	Element	**Metric**	**Standard**	**Rebate: annual max Q5 (T1, T3,T4)**	**Rebate: annual max proposal Q6**	**Changes from Q5**	**Publication in terminal**
14	Stands	% time available	99%	0.3102%	0.25%	Unchanged	N/A
15	Jetties	% time available	99%	0.3102%	0.25%		N/A
16	Pier service	Moving annual average % passengers served	Subject to exceptions to be agreed by HAL and the AOC	0.3498%	0.30%		Remove
17	FEGP	% time available	99%	0.2298%	0.20%	Unchanged	N/A
18							Intentionally omitted
19	Stand entry guidance	% time available	99%	0.3102%	0.25%	Unchanged	N/A
	Total			**1.510%**	**1.25%**		

v) Aerodrome congestion term

	Element	Metric	Standard	Rebate: annual max Q5	Rebate: proposal Q6	Changes from Q5	Publication in terminal
20	ACT	As per Q5	As per Q5	1.0%	1.0%	Unchanged	N/A

Summary of CAA proposals for SQR scheme during Q6 - rebate by category

		Q5 decision				Q6 proposal
		T1	T3	T4	T5	All terminals
i	Passenger satisfaction measures	1.44%	1.44%	1.44%	1.44%	**1.44%**
ii	Security	1.825%	1.825%	1.825%	1.825%	**2.26%**
iii	Passenger operational measures	1.150%	1.150%	1.150%	1.4375%	**1.05%**
Iv	Airline operational measures	1.510%	1.510%	1.510%	1.326%	**1.25%**
V	ACT	1.0%	1.0%	1.0%	1.0%	**1.0%**
	Total	**6.925%**	**6.925%**	**6.925%**	**7.0285%**	**7.0%**

APPENDIX B

Heathrow Airport Limited Licence (April 2013 draft)

PART I: Scope and interpretation of the Licence

Licensed Operator

1. Licensed Operator means Heathrow Airport Limited ("the Licensee").

Airport Area

2. The Airport is Heathrow Airport (London).

3. The Airport Area is [to be determined following the market power assessment]

4. Specifically, the Airport Area [includes/excludes]:

    a) xxx

Licence duration

5. This Licence shall come into force on 1 April 2014 and shall continue in force until revoked in accordance with Condition 2 of this Licence.

Interpretation of the Licence

6. Unless specifically defined within this Licence or in the Act or the context otherwise requires, words and expressions used in the Conditions shall be construed as if they were an Act of Parliament and the Interpretation Act 1978 applied to them. References to an enactment shall include any statutory modification or re-enactment thereof after the date of the coming into effect of this Licence.

7. Any word or expression defined for the purposes of any provision of Part I of the Act shall, unless the contrary intention appears, have the same meaning when used in the Conditions.

8. Any reference to a numbered Condition or Schedule is a reference to the Condition or Schedule bearing that number in this Licence, and any reference to a paragraph is a reference to the paragraph bearing that number in the Condition or Schedule in which the reference occurs.

9. In construing the provisions of this Licence, the heading or title of any Condition, Schedule or paragraph shall be disregarded.

10. Where the Licensee is required to perform any obligation by a specified date or within a specified period and has failed so to perform, such obligation shall continue to be binding and enforceable after the specified date or after expiry of the specified period, but without prejudice to any rights or remedies available against the Licensee under the Act or this Licence by reason of the Licensee's failure to perform by that date or within the period.

11. The provisions of sections 74 and 75 of the Act shall apply for the purposes of the publication or sending of any document pursuant to this Licence.

Definitions

12. In this Licence:

a) the Act means the Civil Aviation Act 2012

b) the CAA means the Civil Aviation Authority

PART II: Conditions on fees and revocation

Condition 1: Payment of fees

1. The Licensee shall pay to the CAA such charges and at such times as are determined under a scheme made under section 11 of the Civil Aviation Act 1982 in respect of the carrying out of the CAA's functions under Chapter I of the Act.

Condition 2: Licence revocation

1. The CAA may revoke this Licence in any of the following circumstances and only in accordance with the process set out in section 48 of the Act.

    a) If the Licensee requests or otherwise agrees in writing with the CAA that the Licence should be revoked.

    b) If:

        i) the Licensee ceases to be the operator of any part of the Airport Area; or

        ii) the Airport Area ceases to be a dominant area located at a dominant airport (or part of such an area) and does not include all or part of such an area.

    c) If the Licensee fails:

        i) to comply with an enforcement order (within the meaning of section 33 of the Act) or an urgent enforcement order (within the meaning of section 35 which has been confirmed under section 36), and (in either case) such a failure is not rectified to the satisfaction of the CAA within three months after the CAA has given notice in writing of such failure to the Licensee, provided that no such notice shall be given by the CAA before the expiration of the period within which an appeal under section 47 could be brought in relation to the validity or terms of an order or the CAA's finding or determination upon which it is based, or before the proceedings relating to any such appeal are finally determined; or

        ii) to pay any penalty (within the meaning of sections 39, 40, 51 or 52 of the Act) where:

1. the Licensee has failed to pay the penalty by the due date for any such payment; and
2. such payment is not made to the CAA within three months after the CAA has given notice in writing of such failure to the Licensee, provided that no such notice shall be given by the CAA before the expiration of the period within which an appeal under sections 47 or 55 could be brought in relation to the imposition of a penalty, the timing of the payment of the penalty, the amount of the penalty or before proceedings relating to any such appeal are determined.

d) If the Licensee fails to comply with:

i) an order made by the court under section 34 of the Competition Act 1998;

ii) an order made by the relevant authority under sections 158 or 160 of the Enterprise Act 2002;

iii) an order made by the Competition Commission under sections 76, 81, 83, 84 or 161 of the Enterprise Act 2002; or

iv) an order made by the Secretary of State under sections 66, 147, 160 or 161 of the Enterprise Act 2002.

e) If any amount payable under Condition 1 of this Licence is unpaid three months after it becomes due and such a failure is not rectified to the satisfaction of the CAA within three months after the CAA has given notice in writing of such failure to the Licensee; or

f) If the conduct of the Licensee has resulted in a penalty imposed by the CAA under section 52(1) or 52(3) of the Act, provided that no such notice shall be given by the CAA before the expiration of the period within which an appeal under section 55 could be brought in relation to the imposition of a penalty, the timing of the payment of the penalty, the amount of the penalty or before proceedings relating to any such appeal are determined.

PART III: The price control conditions

Condition 3: Price Control

Further information to follow

Condition 4: Charges for other services

1. By [31 December 2014] and by [31 December] in each subsequent year the Licensee shall inform the CAA of the system used by it to allocate costs to the specified facilities. The Licensee shall make any amendments to its cost allocation system if so requested by CAA by [31 March] prior to each charging year commencing on [1 April].

2. By [31 December 2014] and by [31 December] in each subsequent year the Licensee shall provide to the CAA statements of actual costs and revenues in respect of each of the specified facilities in Condition [4.]8 for the year ending the previous [31 March].

3. By [31 March] each year, the Licensee shall provide to the CAA and to users of the specified facilities or their representatives prior to implementing any price changes a statement of the pricing principles for each item charged including the assumptions and relevant cost information adequate to verify that the charges derive from the application of the pricing principles.

4. Where charges for the specified facilities are not established in relation to cost the Licensee shall provide to the CAA and to users of the specified facilities or their representatives a statement of the principles on the basis of which the charges have been set with full background information as to the calculation of such charges including statements of any comparables used.

5. Where in respect of any year forecast revenue for any of the specified facilities differs from that forecast for the purposes of the price control review for the period [1 April 2014] to [31 March 2019] (as specified by the CAA), the Licensee shall provide to the CAA and to users of the specified facilities or their representatives detailed reasons for the differences.

6. This Condition 4 shall continue until [31 March 2019] unless, before that date, it is modified or withdrawn.

Definitions

7. In this Condition 4 the specified facilities are: desk licences (other than check-in desks), staff car parking, staff ID cards, fixed electrical ground power, airside parking, airside licences, cable routing, maintenance, heating and utility services and facilities for bus and coach operators.

PART IV: Service quality conditions

Condition 5: Service quality levels and rebates

Further information to follow

Condition 6: Operational Resilience

1. The purpose is to secure the availability and continuity of airport operation services, particularly in times of disruption, to further the interests of users of air transport services in accordance with best practice and in a timely, efficient and economical manner.

2. The Licensee shall achieve the purpose so far as is reasonably practicable having regard to all relevant circumstances.

3. The following obligations in this Condition 6 are without prejudice to the generality of Condition 6.2 and compliance with the following obligations shall not necessarily be treated in itself as sufficient to secure compliance with Condition [6.]2. In fulfilling these obligations the Licensee shall at all times comply with Condition [6.]2.

Resilience plans

4. By [1 October 2014] the Licensee shall publish one or more plan(s) or other documents setting out the principles, policies and processes by which it will comply with Condition 6.2.

5. As a minimum, the plan(s) should include those elements set out in any relevant guidance issued by the CAA as revised from time to time.

6. In particular the plan(s) must include details on how the Licensee, in cooperation with providers of air transport services using the Airport, will seek to ensure the welfare of passengers during disruption.

7. Prior to publishing any plans or other documents under Condition 6.4 the Licensee shall consult all relevant parties on those plans or documents.

8. The Licensee shall allow a reasonable tome for relevant parties to respond to any consultation issued under Condition [6.]7

9. The Licensee shall, from time to time or when so directed by the CAA, review and, if necessary and following consultation, revise any plans or other documents published under Condition 6.4 so that they may better comply with Condition 6.2.

10. No revision of any guidance under Condition [6.]5 or direction under Condition 6.9 shall have effect unless the CAA has first consulted the Licensee and any relevant parties.

Coordination and cooperation

11. The Licensee shall so far as is reasonably practicable coordinate and cooperate with all relevant parties at the airport to meet the requirements of Condition 6.2.

12. The Licensee shall set up and facilitate a committee of relevant parties or organisations representing those relevant parties. All relevant parties shall have the right to be on this committee or, if they so wish, to be represented on it by an organisation appointed to that effect.

13. As operations coordinator, the Licensee shall develop rules of conduct for providers of air transport services and groundhandlers to follow particularly during disruption. The rules of conduct should be set out in the Conditions of Use and the Groundhandling arrangements and must comply with the following principles:

    a) they shall be applied in a proportionate manner to the various providers of air transport services and suppliers of groundhandling services; and

    b) they shall relate to the purpose in Condition 6.1;

14. The Licensee shall, so far as reasonably practicable, take steps to ensure that providers of air transport services and groundhandlers comply with the rules of conduct.

Provision of information

15. In the event of service disruption however caused the Licensee shall so far as is reasonably practicable:

    a) coordinate the communication of operational information, conditions and decisions to relevant parties;

    b) provide, or ensure the provision of timely, accurate and clear information about its operations to, and adequate communication with, users of air transport services; and

    c) provide clear and relevant information to users of air transport services including, but not limited to, information about their relevant rights under the denied boarding regulations during disruption.

Definitions

16. In this Condition 6

    a) Conditions of Use means the Heathrow Airport Conditions of Use including Airport Charges, as reviewed and issued by the Licensee on an annual basis.

    b) The denied boarding regulations means Regulation (EC) 261/2004 of the European Parliament and of the Council of 11 February 2004 establishing common rules on compensation and assistance to passengers in the event of denied boarding and of cancellation or long delay of flights, and repealing Regulation (EEC) No 295/91.

    c) Relevant parties means those providing a service to users of air transport services at the airport including providers of air transport services, groundhandlers, the provider of aerodrome air navigation services, fuel and energy suppliers and the Border Agency.

    d) Groundhandling arrangements means the licences issued by the Licensee setting out the requirements for groundhandling companies at the Airport.

PART V: Financial conditions

Condition 7: Regulatory accounting requirements

1. This Condition applies for the purpose of making available, in a form and to a standard reasonably satisfactory to the CAA, such audited regulatory accounting information as will, in furtherance of the requirements of this Licence:

    a) enable the CAA and providers and users of air transport services to assess on a consistent basis the financial position of the Licensee and the financial performance of provision of airport operation services and associated services provided in connection with the airport to which the Licence relates;

    b) assist the CAA and providers and users of air transport services to assess performance against the assumptions underlying any price control Conditions in the Licence; and

    c) inform future price control reviews.

2. The Licensee shall keep and, so far as it is able, procure that any related undertaking keeps the accounting records required by the Companies Act 2006 to keep in such form as is necessary to enable the Licensee to comply with this Condition and the Regulatory Accounting Guidelines.

3. The Licensee shall prepare on a consistent basis from the accounting records referred to in Condition [7.]2, in respect of the financial year commencing on [ ] and each subsequent financial year, regulatory accounts in conformity with the Regulatory Accounting Guidelines for the time being in force in accordance with this Condition. The first financial year of the Licensee shall run from [ ] to [ ], and thereafter each financial year of the Licensee shall run from [ ] to the following [ ] unless otherwise agreed with the CAA.

4. The Regulatory Accounting Guidelines prepared pursuant to Condition [7.]6 shall, without limitation:

    a) provide that, except so far as the CAA reasonably considers otherwise, the regulatory accounts shall be prepared in accordance with applicable law and International Financial Reporting Standards (IFRS) as adopted by the EU from time to time; and

b) state the accounting policies to be adopted.

5. The Licensee shall:

a) procure, in respect of the regulatory accounts prepared in accordance with Condition 7.3 in respect of a financial year, a report by the Auditors addressed to the CAA stating whether in their opinion those accounts including accompanying commentary on performance have been properly prepared in accordance with this Condition and the Regulatory Accounting Guidelines and on that basis fairly present the financial position and the financial performance of the Licensee;

b) deliver to the CAA the Auditors' report referred to in sub-paragraph (a) and the regulatory accounts referred to in Condition [7.]3 as soon as reasonably practicable, and in any event not later than six months after the end of the financial year to which they relate; and

c) arrange for copies of the regulatory accounts and Auditors' report referred to in Conditions 7.5(a) and (b), respectively, to be made publicly available and, so far as reasonably practicable, to do so when the annual statutory accounts of the Licensee are made available.

6. In this Condition 7 Regulatory Accounting Guidelines means the guidelines, published by the CAA so as to fulfil the purpose set out in Condition [7.]1], which govern the format and content of such regulatory accounts and the basis on which they are to be prepared as from time to time amended by the CAA.

Condition 8: Financial Resilience

Certificate of adequacy of resources

1. The Licensee shall at all times act in a manner calculated to secure that it has available to it sufficient resources including (without limitation) financial, management and staff resources, to enable it to comply with its obligations under this Licence.

2. The Licensee shall submit a certificate addressed to the CAA, approved by a resolution of the board of directors of the Licensee and signed by a director of the Licensee pursuant to that resolution. Such certificate shall be submitted within four months of the end of the

Licensee's financial year. Each certificate shall be in one of the following forms:

a) "After making enquiries based on systems and processes established by the Licensee appropriate to the purpose, the directors of the Licensee have a reasonable expectation that the Licensee will have available to it, after taking into account in particular (but without limitation) any dividend or other distribution which might reasonably be expected to be declared or paid, any amounts of principal and interest due under any loan facilities and any actual or contingent risks which could reasonably be material to their consideration, sufficient financial and other resources and financial and operational facilities to enable the Licensee to comply with its obligations under its Licence to which the Licensee is aware or could reasonably be expected to make itself aware it is or will be subject for a period of two years from the date of this certificate."

b) "After making enquiries based on systems and processes established by the Licensee appropriate to the purpose, the directors of the Licensee have a reasonable expectation, subject to what is said below, that the Licensee will have available to it, after taking into account in particular (but without limitation) any dividend or other distribution which might reasonably be expected to be declared or paid, any amounts of principal and interest due under any loan facilities, and any actual or contingent risks which could reasonably be material to their consideration, sufficient financial and other resources and financial and operational facilities to enable the Licensee to comply with its obligations and under its Licence to which the Licensee is aware or could reasonably be expected to make itself aware it is or will be subject for a period of two years from the date of this certificate. However, they would like to draw attention to the following factors which may cast doubt on the ability of the Licensee to comply with its obligations under such Licence for that period……."

c) "In the opinion of the directors of the Licensee, the Licensee will not have available to it sufficient financial or other resources and financial and operational facilities to comply

with its obligations under its Licence of which the Licensee is aware or of which it could reasonably be expected to make itself aware or to which it will be subject for a period of two years from the date of this certificate."

3. The Licensee shall inform the CAA in writing as soon as practicable if the directors of the Licensee become aware of any circumstance which causes them no longer to have the reasonable expectation expressed in the then most recent certificate given under Condition [8.]2(a) or (b).

4. The Licensee shall obtain and submit to the CAA with each certificate provided under Condition [8.]2 a report prepared by its Auditors stating whether or not the Auditors are aware of any inconsistencies between, on the one hand, that certificate and the statement submitted with it and, on the other hand, any information which they obtained during their audit of the relevant year end accounts of the Licensee.

Restriction on activities

5. The Licensee shall not, and shall procure that its subsidiary undertakings shall not, conduct any business or carry on any activity other than:

   a) the Permitted Business; and/or

   b) any other business or activity for which the CAA has given its written consent for the purposes of this Condition, such consent not to be unreasonably withheld or delayed.

6. For the purpose of this Condition, "Permitted Business" means:

   a) any and all business undertaken by the Licensee and its subsidiary undertakings as at [1 April 2014];

   b) to the extent that it falls outside Condition 8.[x], the business of owning, operating and developing the airport and associated facilities by the Licensee and its subsidiary undertakings (including, without limitation, any and all airport operation services, provision of facilities for and connected with aeronautical activities including retail, car parks, advertising and surface access and the infrastructure development thereof); and

c) any other business, provided always that the average of any expenses incurred in connection with such businesses during any one financial year is not more than 2 % of the value of the RAB at the start of the financial year.

Parent company undertakings

7. The Licensee shall procure from each Covenantor a legally enforceable undertaking in favour of the Licensee in the form specified by the CAA that that Covenantor will:

a) refrain from any action, and procure that every subsidiary of the Covenantor (other than the Licensee and its subsidiaries) will refrain from any action, which would then be likely to cause the Licensee to breach any of its obligations under this Licence;

b) promptly upon request by the CAA (specifying the information required) provide to the CAA (with a copy to the Licensee) information of which they are aware and which the CAA reasonably considers necessary in order to enable the Licensee to comply with this Licence.

8. Such undertaking shall be obtained within seven days of the company or other person in question becoming a Covenantor and shall remain in force for so long as the Licensee remains the holder of this Licence and the Covenantor remains a Covenantor.

9. The Licensee shall:

a) deliver to the CAA, within seven days of obtaining the undertaking required by Condition [8.]8, a copy of such undertaking;

b) inform the CAA as soon as practicable in writing if the directors of the Licensee become aware that the undertaking has ceased to be legally enforceable or that its terms have been breached; and

c) comply with any direction from the CAA to enforce any such undertaking.

Change to contractual ring fence

10. The Licensee shall not amend, vary, supplement or modify or concur in the amendment, variation, supplementation or modification of any of the finance documents in respect of credit rating requirements (whether in each case in the form of a written instrument, agreement or document or otherwise) (a "Variation") unless it has given prior written notice thereof to the CAA. The Licensee shall, as soon as reasonably practicable:

    a) notify the CAA of the possibility of any such Variation; and

    b) provide a summary of the executed change.

11. The provisions of this Condition shall not apply to any administrative or procedural Variation.

Definition

12. In this Condition 8 the Covenantor means a company or other person which is at any time an ultimate holding company of the Licensee.

Condition 9: Continuity of service plan

1. The purpose of the continuity of service plan shall be to describe in detail the legal, regulatory, operational and financial information that an administrator, receiver, new management or similar could reasonably be expected to require in order for it to efficiently carry out its functions and to remain compliant with its aerodrome licence.

2. The Licensee shall prepare and at all times maintain a continuity of service plan fulfilling the requirements of Condition [9.]1.

3. The continuity of service plan prepared under Condition [9.] 2 shall be submitted to the CAA as follows:

    a) the first continuity of service plan shall be submitted as soon as practicable, and in any event not later than [1 October 2014];

    b) subsequent continuity of service plans within [ ] business days of the CAA's written request.

4. The form, scope and level of detail of the plan referred to in this Condition shall be approved by the CAA, (such approval not to be unreasonably withheld or delayed).

5. At least every 12 months the Licensee shall review the appropriateness of its continuity of service plan and submit to the CAA a certificate addressed to the CAA, approved by a resolution of the board of directors of the Licensee and signed by a director of the Licensee pursuant to that resolution. Such certificate shall be submitted [within four months] of the end of the Licensee's financial year in the following form:

"The Licensee has reviewed its continuity of service plan. In the opinion of the directors of the Licensee the continuity of service plan is fit for purpose and complies with its obligations under its Licence.

APPENDIX C

List of terms

Abbreviation	
AA86	Airports Act 1986
ACT	Aerodrome Congestion Term
adjusted ICR	adjusted Interest Cover
ANS	Air Navigation Services
AOC	Airline Operators Committee
APD	Air Passenger Duty
APFG	Airport Performance Facilitation Group
ARR	Accounting Rate of Return
ASA	Alan Stratford & Associates
ASK	Available Seat Kilometre
ASQ	Airport Service Quality
ATMs	Air Traffic movements
BA	British Airways
bps	basis points
C&B	Currie and Brown
CAGR	Compound Annual Growth Rates
capex	capital expenditure
CAPM	Capital Asset Pricing Model
CAT	Competition Appeal Tribunal
CC	Competition Commission

Abbreviation	
CE	Constructive Engagement
CEPA	Cambridge Economic Policy Associates
CTA	Central Terminal Area
DB	Defined Benefit
DC	Defined Contribution
DfT	Department for Transport
EE	Europe Economics
ERP	Equity Risk Premium
FAB	Financial Assurance Board
FBP	Full Business Plan
FEGP	Fixed Electrical Ground Power
FFO	Funds From Operations
FSA	Financial Services Authority
GAL	Gatwick Airport Limited
HAL	Heathrow Airport Limited
Heathrow	Heathrow Airport
HEX	Heathrow Express
IBP	Initial Business Plan
IDS	IDS Thomson Reuters
IFS	Independent Fund Surveyor
ILGs	Index-Linked Gilts
JST	Joint Steering Team
LACC	London Airline Consultative Committee
LEMS	Labour, Energy, Materials and Services

Abbreviation	
MPD	Market Power Determination
MPT	Market Power Test
NERL	NATS (En Route) plc
NPV	Net Present Value
NSL	NATS Services Limited
ONS	Office for National Statistics
opex	operating expenditure
ORR	Office of Rail Regulation
PCA	Pre-Conditioned Air
PCR	Profit Centre Reports
PMICR	Post-Maintenance Interest Cover Ratio
PPP	Purchasing Power Parity
PRM	Passengers with Reduced Mobility
PRT	Passenger Rapid Transit
PSE	Passenger Sensitive Equipment
PSSC-HACC	Passenger Services Sub-Committee of the Heathrow Airport Consultative Committee
PwC	PricewaterhouseCoopers
Q5/Q5+1	Fifth Quinquennium
Q6	Sixth Quinquennium
QSM	Quality of Service Monitor
RAB	Regulatory Asset Base
RAR	Regulatory Asset Ratio
RPI	Retail Price Index
RUOE	Real Unit Operating Expenditure

Abbreviation	
SDG	Steer Davis Gleave
SEAT	South East Airport Taskforce
SMP	Substantial Market Power
SQR	Service Quality Rebate
T3IB	Terminal 3 Integrated Baggage
TDA	Tobacco Display Act
TFP	Total Factor Productivity
the 1982 Act	Civil Aviation Act 1982
the Act	Civil Aviation Act 2012
the airlines	the airlines operating at Heathrow
UKBF	UK Border Force
WACC	Weighted Average Cost of Capital
WDF	World Duty Free