GOVERNMENT ACTUARY'S DEPARTMENT

Advice to the Civil Aviation Authority

Q6 airport price control review

Review of pension costs for Gatwick Airport

Date: 24 September 2013

Author: Aidan Smith

Table of Contents

In this version of the report, some information has been redacted for reasons of commercial confidentiality. Redactions are marked with the ✂ symbol.

1 Executive summary

Introduction (Section 2)

1.1 The CAA commissioned the Government Actuary's Department (GAD) to review and update the CAA's initial Q6 pensions analysis and to provide advice on specific pensions issues. This report covers Gatwick Airport.

1.2 At the CAA's request, this report covers Gatwick's defined benefit (DB) scheme only. This is because the main aspects of the CAA's initial proposals that have been queried by the airports are those which affect DB pension costs only, such as the allowance for future DB benefit accruals and the treatment of the DB scheme's deficit. These aspects do not affect defined contribution (DC) pension costs, which depend more directly on the scheme's fixed contribution rates rather than requiring projections of future benefit costs.

1.3 Appendix B includes important notes on the limitations of our analysis and the use of this report. It is important to read the full report, including the notes in Appendix B, before making any decisions, or taking any other actions, on the basis of this report.

General approach (Section 4)

1.4 In my opinion it is reasonable to base Gatwick's pension allowance on its projected cash contributions to the scheme.

1.5 This report considers separately pension contributions to cover future benefit accruals and any adjustments in respect of surplus or deficit. This is because different factors affect these two elements.

1.6 It is reasonable to base Gatwick's pension allowance on its pension scheme's funding approach rather than on a notional or typical basis, subject to a check that excess (or inefficient) short-term pension costs are not being incurred through inappropriate funding methods or assumptions. In my opinion, the funding method and assumptions used for the latest (September 2010) actuarial funding valuation of the Gatwick Pension Plan are not sufficiently out of line with data published by the Pensions Regulator on UK pension schemes' typical funding approaches to warrant any particular concerns in this regard. Therefore, it seems reasonable to use Gatwick's funding valuation approach (including the scheme actuary's calculation of the funding deficit) to set the pensions allowance. There are differences between Heathrow's and Gatwick's funding approaches.

1.7 Gatwick's projected pension costs for the Q6 period, as submitted to the CAA in its business plan, reflect the scheme actuary's interim funding assessment of the Gatwick scheme as at 30 September 2012, except that Gatwick has adjusted the results of the assessment to assume that future salary growth will be [✂]% a year higher than assumed in the scheme actuary's interim funding assessment. In my opinion, the results used to set the pensions allowance should not incorporate this adjustment.

Future service pension costs (Section 5)

1.8 I consider it reasonable for the CAA's pensions allowance to assume efficiency savings in the form of benefit reductions.

1.9 The analysis set out in section 5 indicates that assuming future service costs of around 20-22% of pay for the pensions allowance incorporates a reasonable allowance for efficiency savings in the form of benefit reductions.

1.10 A case could be made for assuming greater benefit reductions than I have assumed.

Past service deficit (Section 6)

1.11 It is reasonable for total pension costs (including contributions to meet the scheme's deficit) to be taken into account for the Q6 review.

1.12 Using the scheme actuary's interim funding update at 30 September 2012 as the baseline for this review, the funding deficit disclosed in that report was £[✂], which is very small in the context of the value of the scheme's assets being £[✂]. The CAA should consider whether to exclude any such allowance on materiality grounds, not as a matter of principle.

1.13 The CAA should consider signalling its approach on pension costs for future price control reviews.

Commutation payment to the BAA Scheme on the sale of Gatwick (Section 7)

1.14 A payment of £104.7 million was made to the BAA Pension Scheme on the sale of Gatwick Airport in 2009 in respect of employees and former employees of Gatwick whose benefits remained in that scheme.

1.15 Considering pension costs in isolation, in my opinion it is reasonable to include the commutation payment in Gatwick's pensions allowance for the reasons given in section 7. I am aware that there are interactions between the commutation payment, the sale price and other aspects of the price control review. The CAA should consider my analysis and conclusions in the context of the price control review as a whole, including the CAA's analysis of the effects of the sale of Gatwick.

1.16 If the commutation payment is to be included in Gatwick's pensions allowance, in my opinion it would be reasonable if the CAA were to decide to include the payment in full. This is because Gatwick Airport has, in effect, eliminated its exposure to funding risk for the relevant liabilities in return for a payment of around 45% of the section 75 debt level.

1.17 In view of the fact that the commutation payment was around 165% of the scheme funding level, spreading the recovery of the commutation payment over a longer period than that which would be applied for 'normal' ongoing funding deficit recovery contributions would protect Gatwick's users from an increase in short-term annual costs.

1.18 I understand that the CAA is considering allowing for the commutation payment through an adjustment to the Regulatory Asset Base (RAB) instead of an explicit allowance. In my opinion this is a reasonable approach on the understanding that, at a high level, the effects of each approach are similar, with users reimbursing the airport for the amount of the payment over a number of years.

2 Introduction

Background

2.1 The Civil Aviation Authority (CAA) is the economic regulator of operators of UK airports. When setting price controls for certain airports, the CAA considers the costs which an efficient company incurs to carry out its functions. Such costs include contributions to pension schemes.

2.2 The next quinquennial airport price control review (Q6) is due to apply from April 2014. The CAA published its initial proposals for Q6 in April 2013.

Objectives of this review

2.3 The CAA commissioned the Government Actuary's Department (GAD) to review and update the CAA's initial Q6 pensions analysis and to provide advice on specific pensions issues for Heathrow, Gatwick and Stansted airports. This report covers Gatwick Airport. The terms of reference for the review are listed in Appendix A.

2.4 The results of this review enable the CAA to understand the factors affecting Gatwick's future cash pension contributions and the extent to which Gatwick's pension funding approach is consistent with that of other UK private sector defined benefit pension schemes. Further, it provides information and advice to enable the CAA to decide an appropriate treatment for pension costs in the Q6 review. It is for the CAA, not GAD, to decide the appropriate treatment for the review.

Information used, limitations and use of this report

2.5 Appendix B lists the information which has been provided to us for our analysis. Appendix B also includes important notes on the limitations of our analysis, and the use of this report by the CAA and third parties. It is important to read the notes in Appendix B before making any decisions, or taking any other actions, on the basis of this report.

Consultation

2.6 A meeting between the CAA, GAD and Gatwick Airport took place on 2 August 2013 to discuss Gatwick's projected pension costs and for Gatwick to explain its views on the CAA's initial Q6 pensions proposals.

2.7 The CAA and Gatwick were shown drafts of this report before it was finalised, for comment and to check factual accuracy. The CAA's and Gatwick's comments have been borne in mind in preparing the final version.

3 Background information

Pension scheme benefits and other background information

3.1 Gatwick's employees are offered membership of the defined-benefit (DB) "Gatwick Airport Pension Plan" (broadly, only for employees who transferred into this scheme from the BAA Pension Scheme in 2009) or a defined-contribution (DC) scheme (for other employees).

3.2 At the CAA's request, this report covers the DB scheme only. This is because the main aspects of the CAA's initial proposals that have been queried by the airports are those which affect DB pension costs only, such as the allowance for future DB benefit accruals and the treatment of the DB scheme's deficit. These aspects do not affect DC pension costs, which depend more directly on the scheme's fixed contribution rates rather than requiring projections of future benefit costs.

3.3 The Gatwick Airport Pension Plan's principal benefits are summarised in Appendix C, together with a comparison with the benefits offered by "typical" UK private sector DB schemes which remain open to future accruals.

3.4 Appendix C also summarises the results of the Gatwick scheme's recent actuarial funding valuations and Gatwick's projected pension scheme contributions from its business plan submitted to the CAA for the Q6 review.

3.5 All amounts in this report are expressed in nominal terms (in other words, they have not been converted into constant prices terms) unless stated otherwise.

Q5 price control

3.6 At the Q5 price control review, based on analysis by GAD, the Competition Commission recommended that the allowance for Gatwick's pension contributions was capped at 20% of pay. This reflected the employer's contribution rate for future service benefits (with no adjustment for any past service surplus or deficit in the scheme) calculated at the BAA Pension Scheme's December 2006 interim funding update. (This was before the sale of Gatwick Airport by BAA.) However, the contribution rate was adjusted approximately to assume that Open Section members have an accrual rate of 60ths (instead of 54ths) and a normal retirement age of 65 (instead of 60).

3.7 The Commission also recommended a downward adjustment to the Regulatory Asset Base (RAB) to adjust for BAA having not paid pension contributions during Q3 despite their inclusion in the Q3 price control allowance.

3.8 As an interim measure, the CAA's allowance for pensions was set at 25% of pay, in line with BAA's proposed cash contributions to the scheme.

4 General approach

Using cash contributions as the basis for price control allowances

4.1 The cost of a defined level of pension benefits is unknown until the last pension scheme member has ceased receiving his or her benefits. Valuing a pension scheme's liabilities (whether to assess contribution requirements or for any other purpose) requires assumptions about the scheme's future experience. The assumptions used must reflect the purpose of the valuation. Different assumptions produce different valuation results.

4.2 The CAA's initial proposals for Q6 base Gatwick's pension allowance on its projected cash contributions to the scheme. In my opinion, this is reasonable for this purpose because:

> It is consistent with the CAA's and the Competition Commission's approaches for the Q5 review, and with the approaches adopted by other economic regulators; and

> In the short-term, Gatwick's pension "costs" represent its contributions to its pension schemes (while recognising that, in the longer-term, it must ensure its DB scheme's liabilities are met regardless of the immediate level of contributions).

4.3 The CAA should note that:

> This is not the only possible approach; and

> As pension schemes must be funded on a prudent basis (in other words, immediate contribution levels must be higher than a "best estimate" of the future pension costs), all else being equal, a surplus would be expected to emerge in the future. In a price control context, this means that future airport users are expected to benefit (through lower future airport charges) at the expense of current users. However, future airport users are exposed to the risk of adverse future experience increasing pension costs (depending on the approach adopted for price controls).

4.4 Appendix D contains further information on pension scheme funding. (Funding refers to the process of setting a pension scheme's cash contribution rates.)

Separation of past service and future service issues

4.5 This report considers separately:

> Pension contributions to cover future benefit accruals (in actuarial valuations, this is often expressed as a percentage of pensionable salaries and referred to as the Standard Contribution Rate or SCR); and

> Any adjustments in respect of the surplus or deficit in respect of benefits that have already been accrued (compared with the assets available to pay those benefits).

4.6 This is because different factors affect these two elements. As an example, Gatwick's pension scheme was established in late 2009 with the intention that sufficient assets were transferred into the scheme to meet its liabilities. Taking into account the schemes' different histories and circumstances, it would be inappropriate either to:

- Provide Gatwick with an allowance for deficit recovery contributions based on Heathrow's pension scheme; or to

- Regard Heathrow's pension scheme deficit as inefficient solely on the grounds that Gatwick's pension scheme has no such deficit.

Review of funding valuation method and assumptions

4.7 The results of actuarial funding valuations depend significantly on the assumptions used. For scheme funding purposes, the assumptions are set by the trustees but must generally be agreed by the sponsoring employer.

4.8 The assumptions used for a particular pension scheme should reflect that scheme's circumstances. There is no "one-size-fits-all" approach. In particular, for a regulated entity, the assumptions should reasonably reflect a strong sponsor covenant.

4.9 For these reasons, and also for simplicity and consistency with previous economic regulatory decisions, it is reasonable to base Gatwick's pension allowance on its pension scheme's funding approach rather than on a notional or typical basis.

4.10 The CAA would be concerned if Gatwick's negotiations with the pension scheme's trustees on funding were weaker than if it were subject to greater competitive pressures. In other words, it is appropriate to check that excess (or inefficient) short-term pension costs are not being incurred through inappropriate funding methods or assumptions. Therefore, before agreeing to base Gatwick's pensions allowance on the Gatwick scheme's future cash contributions, the CAA should assess the reasonableness of its funding approach for this purpose.

4.11 In my opinion, the funding method and assumptions used for the latest (September 2010) actuarial funding valuation of the Gatwick Pension Plan are not sufficiently out of line with data published by the Pensions Regulator on UK pension schemes' typical funding approaches to warrant any particular concerns in this regard. Further details of my analysis and the basis for this conclusion are set out in Appendix E. My review is high-level, in view of the purpose of my advice to the CAA. I have not considered every valuation assumption in detail.

4.12 There are differences between the funding approaches and assumptions used by Heathrow and Gatwick, which the CAA should be aware of, as follows:

> The calculation of Heathrow's future service contributions anticipates in advance the future ageing of the scheme's active members following its closure to new entrants. This produces a higher initial contribution rate than if a different method were used (as Gatwick does), but the differences would be expected to even out over time (as Gatwick's rate would be expected to increase in the future but Heathrow's would not). Both methods are commonly used by closed pension schemes. I have assumed an airport's pensions allowance should reflect whichever method is used for funding by the scheme's trustees, noting that the differences should even out over time.

> There are differences in the assumptions used for Heathrow's and Gatwick's latest funding valuations. Overall, the differences would result in lower immediate contribution rates for Gatwick than Heathrow, if all else were equal. However, any differences would be expected to even out over time, as such assumptions affect the employer's contribution rate to the scheme in the short- to medium-term but do not affect the actual long-term costs of the pension scheme. I have assumed that an airport's pensions allowance should reflect its own funding assumptions for the reasons given above.

Choice of valuation date

4.13 Gatwick's projected pension costs for the Q6 period, as submitted to the CAA in its business plan, reflect the scheme actuary's interim funding assessment of the Gatwick scheme as at 30 September 2012, except that Gatwick has adjusted the results of the assessment to assume that future salary growth will be [✂]% a year higher than assumed in the scheme actuary's interim funding assessment.

4.14 In my opinion, the scheme actuary's interim funding assessment as at 30 September 2012 is an appropriate baseline date for the Q6 review for the reasons given below.

4.15 Funding positions fluctuate over time due to changes in market conditions and other factors. The Gatwick scheme's funding position might change significantly during the Q6 period. At a high level, the amount of pension contributions in the short term does not affect the long-term costs of the pension scheme (assuming the sponsoring employer continues to support the scheme and benefits from any surplus).

4.16 Therefore, it would seem a reasonable aim for the CAA to ensure that the choice of baseline valuation date does not affect the balance of pension costs met by shareholders and airport users in the long-term (although it will affect outcomes during any specific price control period). This could be achieved, for example, by adjusting for any differences between reasonably incurred actual pension contributions and the price control allowances at future price controls (noting that pension contributions are set following schemes' actuarial valuations which are on a different cycle to the quinquennial price control reviews).

4.17 If the CAA adopts such an approach going forward, then the choice of baseline valuation date for the price control has relatively little significance for long-term pension costs (although there are timing effects). There are advantages in using the latest full actuarial valuation for this purpose, as it is consistent with the actual setting of future contribution rates and it represents a more robust assessment of the scheme following a process set out in legislation, whereas an interim funding update does not need to reflect in full all changes since the latest full valuation. However in this case the effective date of the latest full actuarial valuation of the Gatwick scheme (30 September 2010) is 3½ years before the start of the Q6 period, and therefore the use of a more recent interim update can also be considered reasonable.

4.18 When commenting on a draft of this report, Gatwick stated that, in its opinion, basing the pension deficit for the Q6 price control review on the full actuarial valuation at 30 September 2013 “is the only reasonable and rational option”. As far as I am aware, the results of the September 2013 valuation are not expected to be available in time for use in setting the Q6 pensions allowance, so this would not be practical.

4.19 Gatwick’s projected pension costs in its business plan incorporate an adjustment to the assumptions compared with those used for the scheme actuary’s 2012 interim funding update. Gatwick has assumed that future salary growth will be [✂]% a year higher than assumed by the scheme actuary (and as set out in the scheme’s statement of funding principles). In my opinion, the results used to set the pensions allowance should not incorporate this adjustment. This is because:

> In the absence of timing differences, using different assumptions for the price control and the scheme’s actuarial valuation could result in the pensions allowance exceeding the regulated company’s required contributions to its pension scheme; and

> Gatwick has stated that the salary growth assumption it has used ([✂]% a year above RPI price inflation) is based on historic experience. However, Gatwick agreed to the statement of funding principles at the time of the 2010 actuarial valuation which specifies an assumption of [✂]% a year above RPI price inflation. Further, I understand that an assumed rate of salary growth of [✂]% a year above RPI price inflation is inconsistent with the CAA’s decisions for other parts of the price control review.

4.20 Therefore, I have assumed that the pensions allowance will reflect a scheme deficit of £[✂] at 30 September 2012, as taken from the scheme actuary’s interim funding update. Approximate calculations suggest that the employer’s future service contribution rate would be around [✂]% of pay (instead of [✂]% of pay) taking into account market conditions at 30 September 2012 but otherwise reflecting the assumptions used for the 2010 actuarial valuation.

5 Future service pension costs

CAA's initial proposals

5.1 The CAA's initial proposals for Q6 set the allowance for future service defined-benefit pension costs at 20% of pay, broadly in line with the average rate of employer contributions to similarly-sized UK private sector defined-benefit pension schemes from Table 4.2 of the Office for National Statistics' Occupational Pension Schemes Annual Report 2011. A report for the CAA by Hymans Robertson indicated that plausible amendments could be made to the Gatwick Pension Plan in respect of future service which would be consistent with such a future service contribution rate.

Gatwick's comments on the CAA's initial proposals

5.2 Gatwick commented that:

> The comparator contribution rates are out of date and do not reflect more recent changes in economic conditions which serve to increase pension scheme contribution rates; and

> The comparator contribution rates reflect schemes of various sizes and in different industries, which are not reasonable comparators for Gatwick.

Proposed approach

5.3 For the reasons given in section 4, I consider it reasonable to take Gatwick's baseline (current benefits) future service pension costs as being [✂]% of pay, broadly reflecting the scheme actuary's interim funding assessment as at 30 September 2012 with no change to the salary growth assumption. Gatwick's business plan incorporates future service pension costs of [✂]% of pay, due to Gatwick assuming higher salary growth than the 2010 actuarial valuation basis.

5.4 I consider it reasonable for the CAA's pensions allowance to assume efficiency savings in the form of benefit reductions for the following reasons:

> The IDS analysis commissioned by the CAA and Table C.1 in Appendix C illustrate that the Gatwick Pension Plan's benefits are more generous than those provided by typical UK private sector defined-benefit pension schemes;

> I am not aware of any legal barriers preventing any such changes;

> While there is an agreement in place with Trade Unions restricting changes to the pension scheme, that agreement was originally made in the context of the BAA Pension Scheme and permits changes from 1 July 2014 if the preceding actuarial valuation shows a deficit in excess of £250m. The BAA Pension Scheme's funding deficit at the 30 September 2010 actuarial valuation was £275m and interim actuarial reports indicate that the deficit has increased since September 2010; and

> Consistency with Heathrow's business plan and the CAA's proposed pensions allowance for Heathrow which include such savings, noting in particular Gatwick's comment regarding appropriate comparators.

5.5 The CAA's initial proposals referenced a benchmark future service cost of 20% of pay, which broadly reflects the ONS Occupational Pension Schemes Annual Report 2011. While it is reasonable and appropriate to take into account average or typical rates of contributions to UK private sector DB pension schemes, it is also appropriate to consider the limitations of such data.

5.6 One specific issue is that the ONS data reflects market conditions at an earlier date than September 2012. Contribution rates reported in a 2011 survey might reasonably have been set at actuarial valuations with effective dates between 2007 and 2010. Contribution rates for pension schemes generally would have been expected to have increased since then due to changes in economic conditions as well as other factors.

5.7 With these points in mind, I have calculated the likely effect on the Gatwick scheme's future service contribution rate if the scheme's normal retirement age were 65 instead of 60 and the scheme's accrual rate were 60ths instead of 54ths. These hypothetical benefit changes are the same as those considered by the Competition Commission for the Q5 review. They also reflect the two main differences between the Gatwick scheme's benefits and those of other typical schemes as shown in Table C.1 in Appendix C.

5.8 My calculations suggest that, on this basis, the employer's future service contribution rate would reduce to around 20-22% of pay. A rate towards the lower end of this band is appropriate if the CAA agrees that the salary growth assumption should be in line with that used for the 2010 actuarial valuation. A rate towards the higher end of this band would be consistent with Gatwick's future service costs as shown in its business plan of [✂]% of pay. My calculations are approximate, and assume no changes in the basis used to set contribution rates.

5.9 Comparing this analysis with that underlying the Competition Commission's price cap of 20% of pay for the Q5 review:

> My calculations now assume that benefits would be reduced for all members, whereas the previous calculations assumed no changes for Closed Section members. All else being equal, this would give a lower contribution rate now; but

> Changes in market conditions result in a higher contribution rate now, based on market conditions at September 2012, than previously, based on December 2006.

5.10 Comparing this analysis with the CAA's price cap of 25% of pay for the Q5 review:

> The CAA's cap of 25% of pay assumed no reduction in benefits; and

> Changes in market conditions result in a higher contribution rate now, based on market conditions at September 2012, than previously.

5.11 A case could be made for assuming greater benefit reductions than I have assumed above. It is likely that many employers have recently considered, or made, greater reductions in DB scheme benefits than was the case at the Q5 review or are reflected in the 2011 ONS survey data. 2011 ONS survey data will not reflect any changes being considered by, or being made by, employers during or since 2011. However, it is difficult to demonstrate robust, objective evidence of "typical" more recent changes.

5.12 As an example of the extent of changes that could be taken into account, the report for the CAA by Hymans Robertson illustrates that one scenario for a combined set of benefit changes could result in an employer future service contribution rate of 12% of pay (albeit starting from a baseline cost of 31% of pay instead of [✂]% of pay). The Hymans Robertson report also gives some examples of recent benefit changes that have been made by some specific employers.

5.13 When commenting on a draft of this report, Gatwick suggested that any adjustment to the employer's future service costs to assume reductions in benefits should also take into account 'average' funding assumptions. In my opinion, this confuses the pension scheme's ultimate costs (which depends on the level of benefits provided) and short- to medium-term timing issues (the pace of funding). Appendix D contains further information on this. I have assumed that an airport's pensions allowance should reflect its own funding assumptions for the reasons given in section 4.

Augmentation and enhanced early retirement costs

5.14 Airport users should not necessarily meet additional pension costs incurred by the company granting additional benefits over and above the pension scheme's standard terms (for example, benefit augmentations, or enhanced terms on early retirement or redundancy). Gatwick's projected pension costs appear to include no such augmentation or early retirement costs. You may wish to ask Gatwick to confirm this.

6 Past service deficit

CAA's initial proposals

6.1 The CAA indicated that it would need to consider further any allowance for deficit recovery contributions, in particular to consider whether the Gatwick scheme was underfunded in Q5. It stated that, without further evidence, the CAA was not minded to include the costs of the pension deficit in the final proposals.

Gatwick's comments on the CAA's initial proposals

6.2 Gatwick disagreed with the CAA's initial proposals. It noted that its scheme being in deficit is primarily a consequence of uncontrollable external factors (in particular, general economic factors). It stated that there should be consistency between Heathrow and Gatwick with regard to the allowance for deficit recovery contributions.

Whether to include deficit recovery contributions in the pensions allowance

6.3 In general, economic regulators can reasonably adopt one of two approaches to defined-benefit pension schemes' funding risk:

- Users meet the expected cost of benefit accruals (ie the future service contribution rate) but the management of the scheme's liabilities is a matter for the company (and therefore shareholders are exposed to the funding risk);
- Or users meet total pension costs including deficit contributions (and therefore also benefit from any surplus) subject to those costs being efficiently incurred.

6.4 Airport users benefited at the Q5 price control from BAA's pension contribution holiday during Q3. This indicates that, in the past, the second of these approaches has been adopted for airport price control reviews. In the absence of any rationale for, or signalling of, a change in approach, I have assumed it is appropriate for total pension costs (including deficit contributions) to be taken into account for the Q6 review.

Level of the deficit

6.5 As discussed in Section 4, I consider it reasonable to use the scheme actuary's interim funding update at 30 September 2012 as the baseline for this price control review. The funding deficit disclosed in that report was £[✂], which is very small in the context of the value of the scheme's assets being £[✂].

6.6 It is likely that spreading a deficit of £[✂] over an appropriate recovery period (of perhaps 10 to 15 years) would result in annual allowances for pension deficit recovery contributions which are immaterial in the context of the overall price control review. Therefore, the CAA should consider whether to exclude any such allowance on materiality grounds, not as a matter of principle.

6.7 On this basis, I have not considered further the detailed calculation of any allowance for deficit recovery contributions, such as assessing whether the scheme's funding deficit has been reasonably incurred, and the appropriate deficit recovery period. I would be happy to provide further advice on these aspects if required by the CAA.

Future price control reviews

6.8 While not necessary for the Q6 review, the CAA should consider signalling its approach on pension costs for future price control reviews, to ensure that stakeholders are aware of the implications of decisions made during the Q6 period.

6.9 Section 4 commented on the merits of adjusting for differences between reasonably incurred actual pension contributions and the price control allowances at future price control reviews. This would be to ensure that the choice of baseline valuation date for a price control has limited long-term effects on the balance of pension costs met by users and shareholders, and also to ensure consistency of approach between contributions paid just before and just after the relevant cut-off date. The adjustment at the Q5 review for the Q3 pensions holiday is an example of such an approach.

6.10 The CAA could consider options for increasing incentives for Gatwick to manage its pension costs efficiently, such as only taking into account a certain percentage of the pension scheme's deficit at future price control reviews, or signalling that the funding risk in respect of benefit accruals after a certain cut-off date is entirely a matter for the company and its shareholders. Such approaches have been considered or adopted by other economic regulators.

7 Commutation payment to the BAA Pension Scheme on the sale of Gatwick

CAA's initial proposals

7.1 The CAA stated that it would not be appropriate to include the commutation payment in the Q6 settlement, since it was part of the sale of Gatwick and should have been reflected in a lower sale price than had the payment not been made.

Gatwick's comments on the CAA's initial proposals

7.2 Gatwick disagreed with the CAA's initial proposals. It noted that, had Gatwick not made the commutation payment, it would have had additional pension liabilities going forward (with the risk of unexpected future increases in the value of those liabilities), the costs of which it would have sought to recover through price control allowances.

7.3 It disagreed with the view that the commutation payment should not be reflected in the Q6 settlement because of its effect on the sale price, on the grounds that such treatment would be inconsistent with regulatory precedents and with the principles of a Regulatory Asset Base (RAB) assessment.

Background to the commutation payment

7.4 A payment of £104.7 million was made to the BAA Pension Scheme on the sale of Gatwick Airport in 2009, in accordance with an agreement entered into in 2008. In broad terms, this payment was intended to meet the share of the BAA Scheme's deficit relating to employees and former employees of Gatwick whose benefits remained in that scheme, and to compensate for the absence of future ongoing funding support from Gatwick Airport. Having made this payment, Gatwick has no exposure to funding risk in respect of those members' liabilities.

7.5 Employees at the time of the sale were offered the option of transferring their pension rights from the BAA Pension Scheme to the new Gatwick Airport Pension Plan. Most employees elected to transfer their benefits. The commutation payment does not cover those employees. It solely relates to members whose benefits remained in the BAA Scheme (being former Gatwick employees who had left service by the time of the sale, and Gatwick employees at the time of the sale who did not transfer their benefits). As far as I am aware, no party has suggested that any further analysis of the details of the transfer of pension rights from the BAA Scheme to the Gatwick Scheme (including the calculation of the transfer payment and the shortfall payment paid by the purchaser) is relevant for the pensions aspects of this price control review. As a result, the Terms of Reference for this review does not request any such analysis.

7.6 Gatwick did not have to make the commutation payment. If it had not done so, Gatwick would have had to either continue paying contributions to the BAA Pension Scheme to cover its share of any future scheme funding deficits, or arrange for the relevant liabilities to be transferred to the Gatwick Airport Pension Plan. In either case, Gatwick would have been liable for additional pension contributions in the future.

7.7 As far as I am aware, no allowance was made for the sale of Gatwick airport (including the commutation payment) in the Q5 price control review.

Amount of the commutation payment

7.8 The commutation payment of £104.7 million was calculated as the lesser of:

- Gatwick Airport's proportion (24%) of £700 million (a fixed amount specified in Part 5 of the Shared Services Agreement dated 18 August 2008); and

- Gatwick Airport's proportion (24%) of the BAA Pension Scheme's section 75 debt at the date of sale, which was around £1,550 million

    - in both cases reduced to reflect the transfer of liabilities for some employees to the Gatwick Airport Pension Plan – the deduction applied was around £60 million.

(For completeness, there was another term, reflecting the net sale proceeds, but that did not affect the actual calculation so I have omitted it for simplicity.)

7.9 The BAA Pension Scheme's funding deficit (on its ongoing funding basis) was £[✂] at 30 September 2009. For this analysis, I have assumed that the funding deficit at the time of Gatwick's sale in 2009 would have been broadly similar.

7.10 The section 75 debt of around £1,550 million represents the shortfall in the value of the BAA Scheme's assets relative to the estimated cost of securing all the scheme's liabilities with an insurer. In general terms, this can be thought of as the cost of the scheme's benefits if there were no ongoing funding support (or risk).

7.11 I have assumed that the proportion allocated to Gatwick (24%, as shown above) is reasonable. This proportion is as set out in the Part 5 of the Shared Services Agreement dated 18 August 2008. It appears to be of a reasonable order of magnitude, as around 20% of the BAA Pension Scheme's active membership transferred to the Gatwick Airport Pension Plan in 2009, suggesting that Gatwick represented around 20% of BAA's business at the time of the sale. I do not have any data with which to check the calculation of this proportion in more detail.

7.12 Based on the figures above, the commutation payment (having been calculated using the fixed £700 million amount) represented around 165% of an equivalent amount using the BAA Pension Scheme's ongoing funding basis, and around 45% of an equivalent amount using the BAA Pension Scheme's s75 debt.

The treatment of the commutation payment in the pensions allowance

7.13 Considering pension costs in isolation, in my opinion it is reasonable to include the commutation payment in the pensions allowance in principle, for the following reasons:

> The commutation payment did not create any additional liabilities or increase benefits. In effect, it was a contribution to a pension scheme and should be considered consistently with other pension contributions.

> If the commutation payment had not been made, Gatwick would have been required to pay ongoing pension contributions to meet the funding deficit in respect of the relevant liabilities, either to the BAA Scheme or the Gatwick Pension Plan. Assuming such contributions would have been included in the pensions allowance, it would be inconsistent to exclude the commutation payment.

> Heathrow's pensions allowance is less than it would have been had the commutation payment not been made. This is because the commutation payment increased the value of the BAA Scheme's assets, reducing the funding deficit. It would be inconsistent to take credit for this in the calculation of Heathrow's pensions allowance but to exclude it from Gatwick's allowance. In other words, the commutation payment is more about the allocation of pension costs between Heathrow's and Gatwick's users, rather than affecting the total liabilities to be met by users across both airports.

7.14 Assuming the CAA intends to allow for the commutation payment, having considered the issues above, considering pension costs in isolation I consider it reasonable for the commutation payment to be included in Gatwick Airport's pensions allowance rather than Heathrow's because:

> The payment relates to liabilities for employees at Gatwick;

> Had the payment not been made, Gatwick (not Heathrow) would have been liable for additional pension contributions to the BAA Scheme;

> Information provided by Heathrow indicates that the funds to meet the commutation payment were provided by the purchaser of Gatwick; and

> Heathrow has not sought to recover the amount of the commutation payment through its pensions allowance whereas Gatwick is seeking to do so.

7.15 I am aware that there are interactions between the commutation payment and the sale price. There may also be interactions with other aspects of the price control review. Consideration of such aspects is beyond the scope of this review and requires an understanding of the price control review as a whole. The CAA should consider my analysis and conclusions set out above in the context of the price control review as a whole, including the CAA's analysis of the effects of the sale of Gatwick, before deciding the appropriate regulatory treatment.

7.16 If the commutation payment is to be included in Gatwick's pensions allowance, it is necessary to decide whether the full amount of the payment should be included. In my opinion it would be reasonable if the CAA were to decide to include the payment in full. This is because Gatwick Airport has, in effect, eliminated its exposure to funding risk for the relevant liabilities in return for a payment of around 45% of the section 75 debt level (which is usually considered to be the benchmark cost of providing benefits with no ongoing funding risk or obligation).

7.17 Further, if some of the commutation payment were to be excluded from Gatwick's pensions allowance, that could introduce inconsistencies with the determination of Heathrow's pensions allowance, where the full amount of the commutation payment has been taken into account (to the extent that it reduced the BAA Scheme's deficit).

7.18 In view of the fact that the commutation payment was around 165% of the scheme funding level, spreading the recovery of the commutation payment over a longer period than that which would be applied for 'normal' ongoing funding deficit recovery contributions would protect Gatwick's users from an increase in short-term annual costs. Such an approach would also be consistent with the principle of the commutation payment having removed Gatwick's longer-term funding risk (where longer-term, in this context, means beyond the length of a normal recovery period for funding purposes).

7.19 I understand that the CAA is considering allowing for the commutation payment through an adjustment to the Regulatory Asset Base (RAB) instead of an explicit allowance. In my opinion this is a reasonable approach on the understanding that, at a high level, the effects of each approach are similar, with users reimbursing the airport for the amount of the payment over a number of years.

Aidan Smith

Aidan Smith
Fellow of the Institute and Faculty of Actuaries
Government Actuary's Department
24 September 2013

Appendix A – Terms of reference

The objectives of this study are firstly to review and update the CAA's existing airport pension analysis and secondly to provide advice on specific pension issues related to the Q6 price control at Heathrow, Gatwick and Stansted.

The study must undertake several tasks as follows:

> The selection of an appropriate range of companies and organisations for comparison against each airport, taking account of size, industry, ownership and other relevant factors. The selection should take account of the view of stakeholders including the airports and airlines.

> An assessment of the relative cost of each airport's pension scheme relative to comparative benchmarks in terms of employer contribution rates. Separate assessments will be made for Defined Benefit (DB) and Defined Contribution (DC) schemes. This assessment must analyse both historic and forecast pension costs.

> An assessment of the sensitivity of the benchmark analysis to changes in macro-economic factors and demographic assumptions such as life expectancy, interest rates, stock indices, gilt yields and other relevant factors, and an assessment of such changes on the conclusions of the previous benchmark studies.

> An assessment of the portion of any pension deficit attributable to contribution rates above the CAA's pension cost allowance for the Q5 period (equivalent to 25% of salary).

> An assessment of the portion of any pension deficit attributable to contribution rates above the Competition Commission's recommended pension cost allowance for the Q5 period (equivalent to 20% of salary).

> An assessment of the pension costs incurred or avoided by Heathrow and Gatwick that are directly attributable to any commutation payments made following the sale of Gatwick and/or Stansted and /or Edinburgh airports and whether such commutation payments adequately provided for the liabilities incurred or avoided by each airport.

> Provide guidance over the regulatory treatment of deficit and commutation payments in the Q6 settlement taking account of regulatory principles and precedent.

Following initial discussions with the CAA, it was agreed that GAD's review would cover defined-benefit pension costs only. Further, it was agreed that the approach for considering future service pension costs would be that followed in section 5 of this report.

Appendix B – Information used, limitations and use of this report

Information on the Gatwick Airport Pension Plan

> The scheme actuary's actuarial valuation report as at 30 September 2010; and

> The scheme actuary's actuarial reports (funding updates) as at 30 September 2011 and 2012.

Information on the CAA's price control reviews

> The CAA's initial Q6 proposals dated April 2013;

> IDS report: "Benchmarking employment costs, a research report for the CAA" dated March 2013;

> Hymans Robertson note: "Cost of future defined benefits for employees of Gatwick – scenario testing" dated January 2013;

> Gatwick's business plan submission to the CAA, in particular Appendix 7 (Pensions), and supporting data on the projection of pensions costs provided by Gatwick;

> Gatwick's response to the CAA's initial proposals dated June 2013, and supporting data on updated projections of pensions costs provided by Gatwick;

> Information in relation to Gatwick's commutation payment: specifically the "CP amount notice" dated 26 May 2010, Gatwick's paper "Commutation payment" dated August 2013 in response to an information request by GAD and Schedule 5 (Pensions Costs) of the Shared Services Agreement dated 18 August 2008.

Publicly available reference information

> "Heathrow and Gatwick Airports CAA price control proposals", CAA, November 2007.

> "Occupational Pension Scheme Survey, 2011 Annual Report", Office for National Statistics.

> "Regulatory Code of Practice 03: Funding defined benefits", the Pensions Regulator;

> "Scheme funding", the Pensions Regulator, June 2013.

Use of data

1. My analysis is based solely on the information provided to GAD for the purposes of this review and relies on the completeness and accuracy of the information provided. I have not independently calculated or checked the details of any funding calculations. GAD accepts no responsibility for any inaccuracies or omissions due to any errors or omissions in the information provided for this review.

Limitations of GAD's analysis

2. This review considers pension costs. It is recognised that pension arrangements are only one part of overall remuneration packages. The CAA's analysis takes into account other elements of remuneration also.

3. This report compares Gatwick's pension costs and benefits with publicly available information on other UK private sector defined benefit pension schemes. Such comparisons do not take into account factors which affect particular industries, sponsoring employers or pension schemes in isolation, and are provided as a guide only.

4. Pension schemes' benefits, investment strategies and funding approaches should reflect each scheme's particular circumstances. It is beyond the scope of this report to consider all such factors. It is recognised that a "one-size fits all" approach is not appropriate. This review must not be interpreted as advising that a particular approach is necessarily inappropriate.

5. The discussion of appropriate regulatory approaches considers approaches that are reasonable from an actuarial perspective. For the avoidance of doubt, this does not mean that no other approaches would be practical and reasonable. On the contrary, in many cases such decisions are areas where the CAA has to make a pragmatic decision between a choice of reasonable alternatives. I have set out the rationale for my conclusions in this report. It is for the CAA to consider whether it agrees with my conclusions in the overall context of the Q6 review, and to decide on the appropriate regulatory treatment of pensions costs. In doing so, the CAA should consider consistency with other aspects of the price control, which GAD has not considered.

Distribution and publication of this report

6. This report is addressed to the CAA. I am aware that the CAA may make this report available to other parties, including Gatwick. I am aware that the CAA may choose to publish this report in its entirety, or to quote this report in part, subject to confidentiality requirements. GAD reserves the right to review and comment on any document in which the CAA quotes or refers to this report in part.

7. Advice provided by GAD to the CAA is intended solely for the use of the CAA. GAD does not accept any responsibility to third parties who may read this report or extracts from it.

Appendix C – Gatwick Airport Pension Plan – background information

Gatwick Airport Pension Plan - benefits

> The principal benefits provided by the Gatwick Airport Pension Plan are summarised in Table C.1. This table also shows the benefits offered by "typical" UK private sector DB schemes from ONS survey data.[1]

Table C.1: Gatwick Airport Pension Plan benefits

	Gatwick scheme	"Typical" UK scheme
Age at which unreduced benefits are paid (NRA)	60 [1]	65
Earnings definition	LEL offset [2]	No offset
Accrual rate	54ths	60ths
Dependants' pension after death of member	67%	50%
Benefits on ill-health	Enhanced pension	Enhanced pension
Lump sum on retirement	By commutation	By commutation
Member contributions (% of pay)	5% [3]	5%
Pension increases (in payment)	RPI with cap [4]	RPI with cap

Source: "Typical" UK scheme: Occupational Pension Schemes Annual Report 2011 (ONS)

[1] 55 for Fire Service members.

[2] For post-1991 joiners, earnings below the Lower Earnings Limit (LEL, currently £109 a week) do not count for contributions and benefits. There is no LEL offset for pre-1991 joiners.

[3] 6% of pay for pre-1991 joiners. Fire Service members pay an extra 1% of pay, Special Fire Service members pay an extra 1½% of pay.

[4] No cap applies for pre-1991 joiners.

> The comparison with a "typical" UK private sector DB scheme is approximate only. It considers pension benefits in isolation, ignoring industry- or company-specific factors and other elements of the remuneration package. Further, it may not fully reflect recent changes in private sector DB schemes' benefits. 2011 ONS survey data will not reflect any changes being considered by, or being made by, employers during or since 2011. In practice, there is a wide range of different pension scheme designs, so any attempt to list "typical" benefits is a simplification.

[1] "Occupational Pension Schemes Annual Report 2011", Office for National Statistics (ONS), Tables 3.19, 4.2, 5.1, 5.8, 5.14 and Figure 5.13.

Gatwick Airport Pension Plan – actuarial funding valuation reports

> The results of actuarial funding valuations of the scheme are shown in Table C.2:

Table C.2: Gatwick Airport Pension Plan – actuarial funding valuations

30 September	**2010**	2011	2012
Past service			
Assets (£m)	[✂]	[✂]	[✂]
Liabilities (£m)	[✂]	[✂]	[✂]
Surplus (£m)	[✂]	[✂]	[✂]
Funding level [1]	[✂]	[✂]	[✂]
Future service [2]			
Cost of benefits	[✂]	[✂]	[✂]
+ admin expenses	[✂]	[✂]	[✂]
- member conts	[✂]	[✂]	[✂]
Employer rate	[✂]	[✂]	[✂]

Source: scheme actuary's valuation reports provided by Gatwick.

[1] The funding level is the ratio of the value of the assets to the value of the accrued liabilities.

[2] The rates shown are the Standard Contribution Rate, ie the contributions required in respect of future benefit accruals, with no adjustment for past service surplus or deficit, as a % of pay.

[3] The 2011 interim funding update did not report future service contribution rates.

[4] The 2012 interim funding update did not report future service contribution rates. The rates shown in the table are based on the employer rate of [✂]% of pay used in Gatwick's business plan projections. This rate has been calculated using the 2010 valuation assumptions but reflects market conditions at 30 September 2012 and assumes future salary growth [✂]% a year higher than the 2010 valuation assumptions.

[5] Years in bold represent full actuarial funding valuations. Other years are interim updates.

> Taking into account past service surplus or deficit, the agreed employer contributions to the scheme since the 2010 actuarial valuation have been [✂]% of pay, in line with the future service contribution rate reported at the 2010 valuation.

Gatwick Airport Pension Plan – projected pension contributions for Q6

- Gatwick submitted the following projected defined-benefit scheme pension contributions for Q6 to the CAA in its business plan:
    - 2014/15:
        - future service contributions of [✂]% of pay (broadly in line with the current contribution rate of [✂]% of pay).
    - 2015/16 to 2018/19:
        - future service contributions of [✂]% of pay (see Table C.2); and
        - £[✂]m pa deficit recovery contributions (in constant 2013/14 prices terms), which assumes a deficit of £[✂]m is recognised at the September 2013 actuarial valuation and that this is to be repaid (with interest) over 10 years from April 2015. The deficit of £[✂]m was taken as that calculated as at 30 September 2012 but assuming [✂]% a year higher salary growth than in the 2010 valuation assumptions.

Appendix D – Principles of scheme funding and contributions

1. Most UK private sector defined benefit pension schemes are subject to the scheme funding requirements of Part 3 of the Pensions Act 2004.[2] Pension schemes must have a full actuarial valuation carried out at least every three years. The purposes of such an actuarial valuation are:

   > To check whether the pension scheme's assets are sufficient to cover its accrued liabilities (referred to as its *Technical Provisions* in legislation); and

   > To determine the contribution rate payable by the employer going forward.[3]

2. Employers' contribution rates usually comprise two elements:

   > The employer's share of the *Standard Contribution Rate (SCR)*: this is the contribution rate required to meet the expected cost of pension benefits accruing to active members in respect of service in the relevant period (often the next three years), after deducting the members' contribution rate. The higher the members' contribution rate, the lower the employer's share of the SCR.

   > Adjustments for past service surplus or deficit: where an actuarial valuation shows that the scheme's assets are less than required to cover the expected cost of members' benefits which have accrued up to the valuation date, additional *deficiency contributions* are required from the employer to make up the shortfall. Conversely, where the scheme's assets are more than sufficient, the employer's contributions may be reduced, depending on the scheme's rules.

3. The Standard Contribution Rate (SCR) therefore depends on the following three main factors:

   > The level of benefits being provided: the more generous the benefits, the higher the SCR. Also, the lower the members' contribution rate (as specified in the scheme rules), the higher the employer's share of the SCR.

   > The actuarial assumptions used: the more optimistic the assumptions, the lower the expected cost now of providing the defined benefits.[4]

   > The membership profile of the pension scheme: the expected cost of providing a pension depends on age. Differences in age profiles will result in different SCRs.

[2] For further information, please refer to the Pensions Regulator's regulatory code of practice 03, "Funding defined benefits".
[3] The pension scheme's rules usually determine the rate of members' contributions. In a defined benefit scheme, the employer's contributions are usually variable, and depend on the scheme's experience. In other words, given a fixed rate of member contributions, the employer must ensure the scheme has sufficient assets to pay the specified benefits.
[4] Note that, other things being equal, the more optimistic the assumptions used to calculate the SCR, the greater the risk of actual future experience being worse than the assumptions used and hence of a deficit emerging in the pension scheme in the future.

4. The amount of any deficiency contributions depends on the following factors:

    > The scheme's funding position: this depends on the scheme's actual past experience, and also on the assumptions used for the valuation with regard to the scheme's future experience. Past experience affects both the scheme's liabilities (its obligations to pay members' pensions) and the scheme's assets (the fund which has built up from past contributions and the actual investment performance achieved to date).

    > The *recovery period*: in other words, the period over which any shortfall must be met by the employer through additional contributions. For any given deficit, the annual deficiency contribution will be lower the longer the period over which the deficit is to be repaid.

5. Some key points on the scheme funding process are[5]:

    > The assumptions to be adopted for funding purposes are not prescribed in legislation or guidance.

    > Assumptions must be set by the pension scheme trustees, after taking actuarial advice, and they generally must be agreed by the sponsoring employer. Assumptions must reflect the scheme's and the sponsoring employer's specific circumstances, in particular the trustees' view of the sponsoring employer's covenant.

    > When calculating past service liabilities, assumptions must be prudent. The degree of prudence is not defined, and will depend on the scheme's circumstances.

    > The recovery period must also be agreed with the sponsoring employer. The trustees should aim to eliminate any funding shortfall "as quickly as the employer can reasonably afford".[6]

6. A number of assumptions affect the results of an ongoing funding valuation. These include:

    > Financial assumptions: including the discount rate (or equivalently, the assumed rate of return on the scheme's assets), pay increases, price inflation and pension increases.

    > Demographic assumptions: including assumed longevity (allowing for expected future longevity improvements), assumed rates of withdrawal from active service (and whether this is through voluntary withdrawal, ill-health, death or retirement), and the proportion of members in respect of whom dependants' benefits will be paid.

[5] This list is not exhaustive.
[6] Code of practice 03, "Funding defined benefits", the Pensions Regulator (tPR), paragraph 101.

7. Actuarial valuations may be carried out for other purposes, for example to determine pension costs and liabilities for the sponsoring employer's financial statements under FRS17 or IAS19, or to assess the extent to which the pension scheme's assets would be sufficient to buy out the accrued liabilities with an insurer if the scheme were to wind up (referred to as a solvency valuation). Different types of actuarial valuations use different methods and assumptions, as appropriate for the purposes of the valuation.

Ultimate pension costs versus contributions

8. A defined benefit pension scheme's ultimate *cost* depends on three factors:

   > The scheme's benefits (including to what extent members pay for their own benefits);

   > The scheme's investment returns; and

   > Members' experience (for example employees' pay rises, and pensioners' longevity).

9. However, an employer's *contributions* to a pension scheme also depend on the method and assumptions used to calculate the contribution rates (in other words, the assumptions made regarding future investment returns and future experience).

10. The use of more prudent assumptions causes a higher initial contribution rate, but would be more likely to result in a future valuation surplus and hence lower future contribution rates (assuming that surpluses are used to reduce contribution rates rather than to improve members' benefits). Therefore, differences in contribution rates which are caused by different methods and assumptions might, in broad terms, be expected to even themselves out over time (assuming the scheme is ongoing), but raise issues of equity between customers at different times if they are reflected in price limits.

Appendix E – Review of 2010 valuation assumptions

Table E.1: Key assumptions used for the Gatwick scheme 2010 funding valuation

Assumption	Significance	Gatwick assumption	tPR data [1]	Comments
Discount rate	The rate used to discount future cashflows. Results are very sensitive to this assumption. A higher discount rate means lower contributions.	Pre-retirement: gilt yield + [✂]% pa Post-retirement: gilt yield + [✂]% pa	Pre-retirement: gilt yield + 1¾% Post-retirement: gilt yield + ½% pa	Slightly higher discount rates than the tPR data. The strong covenant of a regulated company (and the scheme's relative immaturity) might support a higher rate than for other schemes, but many other factors affect the discount rate. No significant concerns.
Long-term salary growth	Higher assumed salary growth increases the expected level of, and cost of, employees' benefits	RPI+[✂]% pa	(Not available)	Should reflect scheme-specific circumstances. Not significantly out of line with general practice.
Long-term rate of decrease in mortality rates	A higher rate implies pensions will be paid for longer, increasing costs.	[✂]% pa for men, [✂]% pa for women	1.5% pa is typical	Assumes slightly weaker future longevity improvements than the tPR data.
Others				A number of other assumptions affect the valuation results. Reviewed briefly, no significant concerns to raise.

[1] This column shows typical assumptions for UK private sector defined-benefit schemes as shown in "Scheme Funding" published by the Pensions Regulator in June 2013. Values are for "Tranche 6" schemes, which covers scheme valuation dates between 22 Sep 2010 and 21 Sep 2011.