

Review of Determination on Maximum Levels of Airport Charges and Report

Commission Paper CP2/2004

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DETERMINATION

1 AMENDED DETERMINATION

1.1 Definitions

In this Determination unless the context otherwise requires:

“airport authority” means the person owning, whether in whole or in part, or managing, either alone or jointly with another person the airports to which this determination applies by virtue of the application of section 31 of the Aviation Regulation Act, 2001;

“airport charges” means

- (a) charges levied in respect of the landing, parking or taking off of aircraft at an aerodrome including charges for air bridge usage but excluding charges in respect of air navigation and aeronautical communications services levied under section 43 of the Act of 1993.
- (b) Charges levied in respect of the arrival at or departure from an airport by air of passengers, or
- (c) Charges levied in respect of the transportation by air of cargo, to or from an airport.

“average revenue per passenger” means the revenue from airport charges divided by the total number of passengers;

“off-peak times” means for all days from 1 October to 31 March inclusive (“winter months”)

0000 – 0744

1545 – 1744

2100 – 2359

for all days from 1 April to 30 September inclusive (“summer months”)

0000 – 0559

0800 – 0859

1500 – 1629

1915 – 2059

2130 – 2359

all times local.

“passenger using” means a passenger embarking or disembarking an aircraft;

“services supplied in connection with the transportation by air of cargo” excludes, for the avoidance of doubt, services supplied in respect of the landing, parking or taking off of cargo aircraft at an aerodrome;

Other defined words, phrases or formulae shall have the meaning assigned to them where indicated, which meaning shall apply to the part of the determination in which such words, phrases or formulae are defined.

1.2 Regulatory Period 24 September to 31 December 2003

- (a) The airport authority shall ensure that, for the regulatory period 24 September to 31 December 2003, the average revenue per passenger yielded by way of airport charges levied at Dublin, Shannon and Cork airports shall not exceed:

$$Y_{Q4:03}^{Art} = \text{€}6.16$$

where

$Y_{Q4:03}^{Art}$ is the maximum average revenue per passenger using Dublin, Shannon or Cork airport in the regulatory period 24 September to 31 December 2003.

- (b) In the regulatory period 24 September to 31 December 2003, the airport authority shall not levy an airport charge in respect of services supplied in connection with the transportation by air of cargo to or from Dublin, Shannon or Cork airport that exceeds:

$$C_{Q4:03}^{Art} = \text{€}12.83$$

where

$C_{Q4:03}^{Art}$ is the maximum charge per tonne that can be levied in respect of services supplied in connection with the transportation by air of cargo to or from Dublin, Shannon or Cork airport during the regulatory period 24 September to 31 December 2003.

The setting of this maximum charge does not constitute approval of charges in respect of cargo handling under the European Communities (Access to the Groundhandling Market at Community Airports) Regulations, 1998 (S.I. No. 505 of 1998).

- (c) The airport authority shall ensure that, for the regulatory period 24 September to 31 December 2003, the average revenue per passenger yielded by way of airport charges levied at Dublin Airport shall not exceed:

$$Y_{Q4:03}^{Dub} = €4.98$$

where

$Y_{Q4:03}^{Dub}$ is the maximum average revenue per passenger using Dublin Airport in the regulatory period 24 September to 31 December 2003.

- (d) The airport authority shall ensure that, for the regulatory period 24 September to 31 December 2003, the charges levied in respect of the landing and take off of aircraft during daily off-peak times at Dublin Airport shall, in respect of the aircraft specified in the aircraft categorisation in Schedule 1, not exceed the maxima stated below to apply to the aircraft in question and, in respect of aircraft which are not currently specified in the aircraft categorisation in Schedule 1, shall apply the maxima set out for the applicable aircraft cost category having implemented the procedures for the categorisation of aircraft not currently classified set out in subsection 5.7 of CP2/2002.

$$ACC_{Q4:03}^1 : TL_{Q4:03}^1 = €0.27$$

$$ACC_{Q4:03}^2 : TL_{Q4:03}^2 = €0.86$$

$$ACC_{Q4:03}^3 : TL_{Q4:03}^3 = €1.34$$

$$ACC_{Q4:03}^4 : TL_{Q4:03}^4 = €2.08$$

$$ACC_{Q4:03}^5 : TL_{Q4:03}^5 = €2.89$$

where

$ACC_{Q4:03}^i$ denotes the aircraft cost categories $i = 1, \dots, 5$ as set out in Schedule 1;

$TL_{Q4:03}^i$ are the maximum charges per tonne per aircraft movement during off-peak times to be levied at Dublin Airport during the regulatory period 24 September to 31 December 2003 in respect of the five aircraft cost categories $i = 1, \dots, 5$.

1.3 Regulatory Period 1 January to 31 December 2004

- (a) The airport authority shall ensure that, for the regulatory period 1 January to 31 December 2004, the average revenue per passenger yielded by way of airport charges levied at Dublin, Shannon and Cork airports shall not exceed:

$$Y_{04}^{Art} = \text{€}8.02$$

where

Y_{04}^{Art} is the maximum average revenue per passenger using Dublin, Shannon or Cork airport in the regulatory period 1 January to 31 December 2004.

- (b) In the regulatory period 1 January to 31 December 2004, the airport authority shall not levy an airport charge in respect of services supplied in connection with the transportation by air of cargo to or from Dublin, Shannon or Cork airport that exceeds:

$$C_{04}^{Art} = \text{€}13.45$$

where

C_{04}^{Art} is the maximum charge per tonne that can be levied in respect of services supplied in connection with the transportation by air of cargo to or from Dublin, Shannon or Cork airport during the regulatory period 1 January to 31 December 2004;

The setting of this maximum charge does not constitute approval of charges in respect of cargo handling under the European Communities (Access to the Groundhandling Market at Community Airports) Regulations, 1998 (S.I. No. 505 of 1998).

- (c) The airport authority shall ensure that, for the regulatory period 1 January to 31 December 2004, the average revenue per passenger yielded by way of airport charges levied at Dublin Airport shall not exceed:

$$Y_{04}^{Dub} = \text{€}5.29$$

where

Y_{04}^{Dub} is the maximum average revenue per passenger using Dublin Airport in the regulatory period 1 January to 31 December 2004.

- (d) The airport authority shall ensure for the regulatory period 1 January to 31 December 2004, that the charges levied in respect of the landing and take off of aircraft during daily off-peak times at Dublin Airport shall, in respect of the aircraft specified in the aircraft categorisation list in Schedule 1, not exceed the maxima stated below and in respect of aircraft which are not currently specified in Schedule 1, shall ensure that the maxima set out for the applicable aircraft cost category is correctly applied, having implemented the procedures for the categorisation of aircraft not currently classified set out in subsection 5.7 of CP2/2002.

$$ACC_{04}^1 : TL_{04}^1 = €0.27$$

$$ACC_{04}^2 : TL_{04}^2 = €0.86$$

$$ACC_{04}^3 : TL_{04}^3 = €1.34$$

$$ACC_{04}^4 : TL_{04}^4 = €2.08$$

$$ACC_{04}^5 : TL_{04}^5 = €2.89$$

where

ACC_{04}^i denote the aircraft cost categories $i = 1, \dots, 5$ as set out in Schedule 1;

TL_{04}^i are the maximum charges per tonne per aircraft movement during off-peak times to be levied at Dublin Airport during the regulatory period 1 January to 31 December 2004 in respect of the five aircraft cost categories $i = 1, \dots, 5$.

1.4 Regulatory Period 1 January to 31 December 2005

- (a) The airport authority shall ensure that, for the regulatory period 1 January to 31 December 2005, the average revenue per passenger yielded by way of airport charges levied at Dublin, Shannon and Cork airports shall not exceed:

$$Y_{05}^{Art} = YU_{05}^{Art} + W_{Q4:03/04}^{Art} + K_{Q4:03/04}^{Art}$$

where

$$YU_{05}^{Art} = YU_{04}^{Art} \left(1 + \frac{\Delta CPI_{04} - X_{05}^{Art}}{100} \right)$$

$$YU_{04}^{Art} = Y_{04}^{Art} - W_{02/03}^{Art} - K_{02/03}^{Art} = €8.02 - €0.15 - €1.41 = €6.46$$

ΔCPI_{04} is the percentage change (whether of a positive or negative value) in the Consumer Price Index between that published in October 2003 and October 2004.

$$X_{05}^{Art} = 2.9$$

$W_{Q4:03/04}^{Art}$ is the difference between the Commission for Aviation Regulation's actual costs and expenses and budgeted costs and expenses, both expressed on a per passenger basis, recoverable through airport charges levied at Dublin, Shannon and Cork airports during the period 24 September 2003 to 31 December 2004.

$K_{Q4:03/04}^{Art}$ is the correction per passenger to be made in the regulatory period 1 January to 31 December 2005, which is derived from the following formula:

$$\frac{99}{365} \left(Y_{Q4:03}^{Art} - Y_{Q4:03}^{*Art} \right) \left[1 + \frac{I_{Q4:03}}{100} \right]^{99/365} \left[1 + \frac{I_{04}}{100} \right] + \left(Y_{04}^{Art} - Y_{04}^{*Art} \right) \left[1 + \frac{I_{04}}{100} \right],$$

in which

$Y_{Q4:03}^{*Art}$ is the actual average revenue per passenger from airport charges levied at Dublin, Shannon and Cork airports in the regulatory period 24 September to 31 December 2003;

Y_{04}^{*Art} is the actual average revenue per passenger from airport charges levied at Dublin, Shannon and Cork airports in the regulatory period 1 January to 31 December 2004;

$I_{Q4:03}$ is the average of the rate (expressed as an annual percentage interest rate) on three-month commercial paper issued between October 2003 and December 2003 by the National Treasury Management Agency (NTMA);

I_{04} is the average of the rate (expressed as an annual percentage interest rate) on three-month commercial paper issued between December 2003 and November 2004 by the National Treasury Management Agency (NTMA).

- (b) In the regulatory period 1 January to 31 December 2005, the airport authority shall not levy an airport charge in respect of services supplied in connection with the transportation by air of cargo to or from Dublin, Shannon or Cork airport that exceeds:

$$C_{05}^{Art} = C_{04}^{Art} \left(1 + \frac{\Delta CPI_{04} - X_{05}^{Art}}{100} \right)$$

where

C_{05}^{Art} is the maximum charge per tonne that can be levied in respect of services supplied in connection with the transportation by air of cargo to or from Dublin, Shannon or Cork airport during the regulatory period 1 January to 31 December 2005.

The setting of this maximum charge does not constitute approval of charges in respect of cargo handling under the European Communities (Access to the Groundhandling Market at Community Airports) Regulations, 1998 (S.I. No. 505 of 1998).

- (c) The airport authority shall ensure that, for the regulatory period 1 January to 31 December 2005, the average revenue per passenger yielded by way of airport charges levied at Dublin Airport shall not exceed:

$$Y_{05}^{Dub} = YU_{05}^{Dub} + W_{Q4:03/04}^{Dub} + K_{Q4:03/04}^{Dub}$$

where

$$YU_{05}^{Dub} = YU_{04}^{Dub} \left(1 + \frac{\Delta CPI_{04} - X_{05}^{Dub}}{100} \right)$$

$$YU_{04}^{Dub} = Y_{04}^{Dub} - (W_{02/03}^{Dub} - K_{02/03}^{Dub}) = €5.29 - (€0.15 - €0.06) = €5.20$$

$$X_{05}^{Dub} = 3.7$$

$W_{Q4:03/04}^{Dub}$ is the difference between the Commission for Aviation Regulation's actual costs and expenses and budgeted costs and expenses, both expressed on a per passenger basis, recoverable through airport charges levied at Dublin Airport during the period 24 September 2003 to 31 December 2004.

$K_{Q4:03/04}^{Dub}$ is the correction per passenger to be made in the regulatory year 1 January to 31 December 2005, which is derived from the following formula:

$$\frac{99}{365} (Y_{Q4:03}^{Dub} - Y_{Q4:03}^{*Dub}) \left[1 + \frac{I_{Q4:03}}{100} \right]^{99/365} \left[1 + \frac{I_{04}}{100} \right] + (Y_{04}^{Dub} - Y_{04}^{*Dub}) \left[1 + \frac{I_{04}}{100} \right],$$

in which

$Y_{Q4:03}^{*Dub}$ is the actual average revenue per passenger from airport charges levied at Dublin Airport in the regulatory period 24 September to 31 December 2003;

Y_{04}^{*Dub} is the actual average revenue per passenger from airport charges levied at Dublin Airport in the regulatory period 1 January to 31 December 2004.

- (d) The airport authority shall ensure for the regulatory period 1 January to 31 December 2005, that the charges levied in

respect of the landing and take off of aircraft during daily off-peak times at Dublin Airport shall, in respect of the aircraft specified in the aircraft categorisation list in Schedule 2, not exceed the maxima stated below and, in respect of aircraft which are not currently specified in the aircraft categorisation in Schedule 2, shall ensure that the maxima set out for the applicable aircraft category is correctly applied, having implemented the procedures for the categorisation of aircraft not currently classified set out in subsection 1.6 below.

$$C^1 : L_{05}^1 = €2.52$$

$$C^2 : L_{05}^2 = €17.82$$

$$C^3 : L_{05}^3 = €51.31$$

$$C^4 : L_{05}^4 = €119.46$$

$$C^5 : L_{05}^5 = €183.49$$

$$C^6 : L_{05}^6 = €228.69$$

$$C^7 : L_{05}^7 = €318.52$$

$$C^8 : L_{05}^8 = €556.50$$

where

C^i denote the aircraft cost categories $i = 1, \dots, 8$ as set out in Schedule 2;

L_{05}^i are the maximum charges per aircraft movement during off-peak times to be levied at Dublin Airport during the regulatory period 1 January to 31 December 2005 in respect of the eight aircraft categories $i = 1, \dots, 8$.

1.5 Regulatory Period 1 January to 23 September 2006

- (a) The airport authority shall ensure that, for the regulatory period 1 January to 23 September 2006, the average revenue per passenger yielded by way of airport charges levied at Dublin, Shannon and Cork airports shall not exceed:

$$Y_{06}^{Art} = YU_{06}^{Art} + \frac{365}{266}(W_{05}^{Art} + K_{05}^{Art})$$

where

$$YU_{06}^{Art} = YU_{05}^{Art} \left(1 + \frac{\Delta CPI_{05} - X_{06}^{Art}}{100} \right)$$

ΔCPI_{05} is the percentage change (whether of a positive or negative value) in the Consumer Price Index between that published in October 2004 and October 2005.

$$X_{06}^{Art} = 2.9$$

W_{05}^{Art} is the difference between the Commission for Aviation Regulation's actual costs and expenses and budgeted costs and expenses, both expressed on a per passenger basis, recoverable through airport charges levied at Dublin, Shannon and Cork airports during the period 1 January to 31 December 2005.

K_{05}^{Art} is the correction per passenger to be made in the regulatory period 1 January to 31 December 2006, which is derived from the following formula:

$$\left(Y_{05}^{Art} - Y_{05}^{*Art} \right) \left[1 + \frac{I_{05}}{100} \right],$$

in which

Y_{05}^{*Art} is the actual average revenue per passenger from airport charges levied at Dublin, Shannon and Cork airports in the regulatory period 1 January to 31 December 2005;

I_{05} is the average of the rate (expressed as an annual percentage interest rate) on three-month commercial paper issued between December 2004 and November 2005 by the National Treasury Management Agency (NTMA).

- (b) In the regulatory period 1 January to 31 December 2006, the airport authority shall not levy an airport charge in respect of services supplied in connection with the transportation by air of cargo to or from Dublin, Shannon or Cork airport that exceeds:

$$C_{06}^{Art} = C_{05}^{Art} \left(1 + \frac{\Delta CPI_{05} - X_{06}^{Art}}{100} \right)$$

where

C_{06}^{Art} is the maximum charge per tonne that can be levied in respect of services supplied in connection with the transportation by air of cargo to or from Dublin, Shannon or Cork airport during the regulatory period 1 January to 23 September 2006.

The setting of this maximum charge does not constitute approval of charges in respect of cargo handling under the European Communities (Access to the Groundhandling Market at Community Airports) Regulations, 1998 (S.I. No. 505 of 1998).

- (c) The airport authority shall ensure that, for the regulatory period 1 January to 23 September 2006, the average revenue per passenger yielded by way of airport charges levied at Dublin Airport shall not exceed:

$$Y_{06}^{Dub} = YU_{06}^{Dub} + \frac{365}{266} (W_{05}^{Dub} + K_{05}^{Dub})$$

where

$$YU_{06}^{Dub} = YU_{05}^{Dub} \left(1 + \frac{\Delta CPI_{05} - X_{06}^{Dub}}{100} \right)$$

$$X_{06}^{Dub} = 3.7$$

W_{05}^{Dub} is the difference between the Commission for Aviation Regulation's actual costs and expenses and budgeted costs and expenses, both expressed on a per passenger basis, recoverable through airport charges levied at Dublin Airport during the period 1 January to 31 December 2005.

K_{05}^{Dub} is the correction per passenger to be made in the regulatory period 1 January to 31 December 2006, which is derived from the following formula:

$$\left(Y_{05}^{Dub} - Y_{05}^{*Dub} \right) \left[1 + \frac{I_{05}}{100} \right],$$

in which

Y_{05}^{*Dub} is the actual average revenue per passenger from airport charges levied at Dublin Airport in the regulatory period 1 January to 31 December 2005.

- (d) The airport authority shall ensure for the regulatory period 1 January to 23 September 2006, that the charges levied in respect of the landing and take off of aircraft during daily off-peak times at Dublin Airport shall, in respect of the aircraft specified in the aircraft categorisation list in Schedule 2, not exceed the maxima stated below and, in respect of aircraft which are not currently specified in Schedule 2, shall ensure that the maxima set out for the applicable aircraft category is correctly applied having implemented the procedures for the categorisation of aircraft not currently classified set out in subsection 1.6 below.

$$C^i : L_{06}^i = L_{05}^i \left(1 + \frac{\Delta CPI_{05}}{100} \right)$$

where

C^i denote the aircraft categories $i=1,\dots,8$ as set out in Schedule 2;

L_{06}^i are the maximum charges per aircraft movement during off-peak times to be levied at Dublin Airport during the regulatory period 1 January to 23 September 2006 in respect of the eight aircraft categories $i=1,\dots,8$.

1.6 Classification of Aircraft not Currently Classified

For the purposes of compliance with paragraphs 1.4(d) and 1.5(d) of this Revised Determination, the airport authority shall classify aircraft that are not listed in Schedule 2 into one of the eight aircraft categories $i = 1, \dots, 8$ using the Aircraft Classification Number (ACN) ranges provided in the table below. The relevant ACN range has, in each case, a corresponding aircraft category.

Aircraft Category	A.C.N. Range
1	0-30
2	31-40
3	41-50
4	51-60
5	61-65
6	66-70
7	71-80
8	> 81

Schedule 1

Category 1					Category 2		Category 3		Category 4	Category 5
AN24	B737500	B75723N	CRJ	RJ85	A300	A320200	A330	B767200	A321	B727
ATP	B737505	B75727B	D328	SAAB2000	A300203	A320211	A330200	B767204	A321131	B727256
ATR42	B737529	B75728A	D328110	SF34	A300600	A320212	A330243	B767300	A321132	B727276
ATR42300	B737530	B7572Q8	DC9	SH36	A300B4	A320214	A330301	B767304E	A321200	
ATR72	B737548	B7572T7	DC941	SH360	A310	A320231	AN12	B767332	A321211	
B717	B73755S	BA11	DC951	SH360100	A310300	A320232	B747	B7673Q8	A321231	
B737	B7375K5	BA11501	DC980	TU134	A310304	DC862F	B747128	L1011	A340312	
B737200	B7375L9	BA11510	DC982	TU154	A319	MD80	B747200	L10111	B777	
B737222	B737600	BA11523	DC983	TU154B	A319100	MD81	B747400	L101114	DC10	
B737229	B737683	BA11530	DC987	TU154M	A319111	MD82	B767	L1011385	DC1030	
B7372YF	B737700	BA146300	DH8		A319112	MD83			MD11	
B737300	B7377AK	BA41	DHC7		A319114	MD87			MD90	
B737329	B7377L9	BA46200	DHC8		A320	MD87H			MD9030	
B737330	B737800	BA46300	E110							
B73733A	B73785H	BAE146	EMB110							
B73736	B73785P	BAE14610	EMB145							
B737382	B73786N	BAE14620	F100							
B7373S3	B737883	BAE14630	F50							
B7373Y5	B7378K2	BAE146RJ	F70							
B7373YO	B7378Q8	BAEATP	FK100							
B737400	B757	BAEJ41	FK50							
B737429	B757200	BAERJ85	FK70							
B737448	B757217	CL60	L610							
B73746B	B757224	CL600	PA23							
B7374Q8	B757236	CL6002B	PA31							
B7374YO	B75723A	CL65	RJ100							

Schedule 2

Category 1					Category 2
B222	DO82	LR55	F27, FK27	CRJ	R100
BN2	FA3, SW3	DC3	EMB135	CL600, CL65, CRJ/-100	RJ100
C172	SK76	LR60	AN24	CVLT	IL76
C208	SW4, SWM	SAAB340B, SF34	AN26	F70, FK70	BA11530
C404	BE9	SH33	F50, FK50	G4	TU154
C406	C500	SH36	EMB145	DC6	L188
C421	C550	AN72	TU134	BAE14620	B737-200
PA23	E110, EMB110	D328	ATR72	BAE146, RJ	C130, L382
PA28	B190	DA20	ATP	BAE14630	B737-500
PA31	BE19	ATR42	F900	BAERJ85	B737-600
PA34	JS31	DHC8311	SAAB2000, SB20	F100, FK100	B757-200
PN68	BA41	DH8, DHC8	CL604		
BE20	LJ45	BAE748, HS748	AN12		
Category 3	Category 4	Category 5	Category 6	Category 7	Category 8
B737-300	A330-200	DC10	A300B4	B747-300	B767-400
B757-300	B727100	A330	DC8	B747-200	MD11
A319	A321		A300, -600	A340	B777-200
MD87	MD83		B767	B747-400	B777
A320	A330-301		B767-300	L1011	
B737-400	B727200		B747		
B757	B747SP				
MD80, -81	B767-200				
B737-700	A310				
MD82					
DC9					
MD88					
B737-800					
MD90					

2 EXPLANATORY MEMORANDUM

The following provides details of and the rationale for the revisions to the Determination.

2.1 "Off-peak times"

For administrative ease and in order to create consistency between the Commission's work and the work practices of the industry, the "winter months" and "summer months" for the purposes of the sub-cap on off-peak landing and take off charges at Dublin Airport have been aligned with airline scheduling seasons. Therefore, the winter months are 1 October to 31 March instead of 1 November to 30 April and the summer months are 1 April to 30 September instead of 1 May to 31 October.

2.2 The Price Cap Formula in the Varied Determination

The price cap in the first year of a Determination is stated as a nominal monetary amount. Call this Y_1 . In subsequent years, the cap is calculated according to a formula. The formula for the year 2 cap, Y_2 , is:

$$Y_2 = Y_1 \left(1 + \frac{\Delta CPI - X}{100} \right) + W_1 - K_1 \quad (1)$$

where

$$K_1 = (Y_1^* - Y_1) \left[1 + \frac{I}{100} \right].$$

The price cap in years subsequent to the first is, therefore, the sum of three terms.

The first, $Y_1 \left(1 + \frac{\Delta CPI - X}{100} \right)$, adjusts the previous year's cap for inflation and

the X-factor, the latter giving the required real change in prices. The second, W_1 , is the difference between the Commission's actual and budgeted costs – recoverable through airport charges – expressed on a per passenger basis.

The third, $K_1 = (Y_1^* - Y_1) \left[1 + \frac{I}{100} \right]$, is the correction factor and is the difference

between the per passenger yield outturn for year 1, Y_1^* , and the year 1 maximum. That difference is subject to interest, I , to reflect the opportunity cost to Aer Rianta (in the case of an under-collection) or to the airlines (in the case of an over-collection) of deviations from the price cap.

2.3 A Minor Amendment

Note that re-expressing the correction factor as

$$K_1 = (Y_1 - Y_1^*) \left[1 + \frac{I}{100} \right]$$

allows the year 2 cap to be expressed as

$$Y_2 = Y_1 \left(1 + \frac{\Delta CPI - X}{100} \right) + W_1 + K_1 \quad (2)$$

The sign on K_1 is now positive in equation (2), as opposed to negative in equation (1) above. This change has no purpose other than to eliminate a potential source of confusion.

2.4 The Operation of the Correction Factor: Algebraic Expressions

To illustrate how the price cap formulae – as expressed in the Varied Determination – were specified in such a way as to double-count corrections from previous regulatory periods¹, we make some simplifying assumptions. These are:

$$\Delta CPI = X$$

$$W_1 = 0$$

$$I = 0$$

Equation (2) above – the formula for the year 2 price cap – is thereby simplified as follows:

$$Y_2 = Y_1 + K_1 .$$

In other words, the cap for year 2 is the sum of the cap for year 1 and the correction factor capturing the extent of over- or under-collection of revenues in year 1.

¹ As explained in section 5.1 of Commission Paper CP4/2003

To see the double counting of the corrections, we write out the progression of price caps over the 5-year period of regulation:

$$\begin{aligned}
 \text{Year 1:} & \quad Y_1 \\
 \text{Year 2:} & \quad Y_2 = Y_1 + K_1 \\
 \text{Year 3:} & \quad Y_3 = Y_2 + K_2 \\
 \text{Year 4:} & \quad Y_4 = Y_3 + K_3 \\
 \text{Year 5:} & \quad Y_5 = Y_4 + K_4
 \end{aligned}$$

Double counting is not a problem in year 2 because it is the first year for which a correction term applied. However, using substitution for the Y_s , the caps for years 3 to 5 can be re-written as follows:

$$\begin{aligned}
 \text{Year 3:} & \quad Y_3 = Y_1 + K_1 + K_2 \\
 \text{Year 4:} & \quad Y_4 = Y_1 + K_1 + K_2 + K_3 \\
 \text{Year 5:} & \quad Y_5 = Y_1 + K_1 + K_2 + K_3 + K_4 .
 \end{aligned}$$

As can be seen, Aer Rianta is allowed to collect the year 1 under-collection in year 2, but also in years 3, 4 and 5. Similarly, the year 2 under-collection is allowed in year 3, but also in years 4 and 5, and the year 3 under-collection is allowed in year 4 but also in year 5.

The problem of double-counting of corrections can be addressed by ensuring that under-collection in any one year should only be reflected by an allowance in the price cap of the subsequent year, but not thereafter. Therefore, the price cap in year 3 is found by subtracting the year 1 under-collection from the year 2 cap and adding the year 2 under-collection. The progression of price caps can be re-written as:

$$\begin{aligned}
 \text{Year 1:} & \quad Y_1 \\
 \text{Year 2:} & \quad Y_2 = Y_1 + K_1 \\
 \text{Year 3:} & \quad Y_3 = (Y_2 - K_1) + K_2 \\
 \text{Year 4:} & \quad Y_4 = (Y_3 - K_2) + K_3 \\
 \text{Year 5:} & \quad Y_5 = (Y_4 - K_3) + K_4
 \end{aligned}$$

Using the same process of substitution, the caps for years 3 to 5 can be re-written as follows:

$$\text{Year 3:} \quad Y_3 = Y_1 + K_2$$

$$\text{Year 4:} \quad Y_4 = Y_1 + K_3$$

$$\text{Year 5:} \quad Y_5 = Y_1 + K_4.$$

In this way, under-collection in any year results in a one-off adjustment in the subsequent year's price cap. Note also that

$$K_2 = Y_2 - Y_2^* = (Y_1 + K_1) - Y_2^*$$

so that if Aer Rianta fails to recover the year 1 under-collection in its entirety in year 2, the remainder is rolled forward into year 3 through the year 2 correction factor. The same applies in subsequent years.

Relaxing the simplifying assumptions above and noting that the principles that apply to the K-term also apply to the W-term, results in the following progression of price caps:

$$\text{Year 1:} \quad Y_1$$

$$\text{Year 2:} \quad Y_2 = Y_1 \left(1 + \frac{\Delta CPI_1 - X_2}{100} \right) + W_1 + K_1$$

$$\text{Year 3:} \quad Y_3 = (Y_2 - W_1 - K_1) \left(1 + \frac{\Delta CPI_2 - X_3}{100} \right) + W_2 + K_2$$

$$\text{Year 4:} \quad Y_4 = (Y_3 - W_2 - K_2) \left(1 + \frac{\Delta CPI_3 - X_4}{100} \right) + W_3 + K_3$$

$$\text{Year 5:} \quad Y_5 = (Y_4 - W_3 - K_3) \left(1 + \frac{\Delta CPI_4 - X_5}{100} \right) + W_4 + K_4$$

This amounts to a separation between the component of the formula that rolls forward the previous period's price cap - adjusting for the X-factor and inflation - and the component of the formula providing the correction terms. Denoting the former "YU" (for "unadjusted" Y), the modified set of formulae can be written, in general terms, as follows:

$$Y_t = YU_t + W_{t-1} + K_{t-1}$$

where

$$YU_t = YU_{t-1} \left(1 + \frac{\Delta CPI_{t-1} - X_t}{100} \right)$$

and

$$K_{t-1} = (Y_{t-1} - Y_{t-1}^*) \left[1 + \frac{I_{t-1}}{100} \right]$$

The YU term for a particular regulatory period (t) is calculated by rolling forward the previous period's (t-1) YU term and adjusting for inflation and the X-factor.

2.5 The Operation of the Correction Factor: Numerical Examples

Using this notation, we provide some numerical examples to illustrate the operation of the previous formulae and how the revised specification addresses the double counting of corrections. In the first example, we re-introduce the simplifying assumptions that $\Delta CPI = X$, $W = 0$ and $I = 0$, as well as introduce a new one, that the volume of passengers is one in each year.

Table 2.1 shows the workings of the pre-Review formulae with no under-collection. Aer Rianta prices up to the cap every year, making $Y_t = Y_t^*$ and, therefore, $K_{t-1} = 0$ for all t (that is, in all years). Given the assumptions, $Y_5^* = 5$ (not shown in table) and the company earns total revenue (equal to $\sum_t Y_t^*$) of €25 over five years.

Table 2.1

Price Cap Formulae pre-Review - no under collection					
Regulatory Year	2001/02	2002/03	2003/04	2004/05	2005/06
t	1	2	3	4	5
Y_{t-1}		5	5	5	5
CPI_{t-1}		-	-	-	-
X_t		-	-	-	-
$Y_{t-1} \left(1 + \frac{\Delta CPI_{t-1} - X_t}{100} \right)$		5	5	5	5
W_{t-1}		-	-	-	-
Y_{t-1}^*		5	5	5	5
I_{t-1}		-	-	-	-
K_{t-1}		-	-	-	-
Y_t	5	5	5	5	5

Table 2.2 shows the workings of the pre-Review formulae with a €1 under-collection in year 1. In each subsequent year, Aer Rianta prices up to the cap. Having priced up to the cap in year 2, Aer Rianta will have recovered the €1 under-collection from year 1. However, the cap for year 3 is defined with reference to the adjusted year 2 cap, which includes the allowance for the year 1 under-collection that has already been recovered.

Table 2.2

Price Cap Formulae pre-Review - €1 under collection in year 1					
Regulatory Year	2001/02	2002/03	2003/04	2004/05	2005/06
t	1	2	3	4	5
Y_{t-1}		5	6	6	6
CPI_{t-1}		-	-	-	-
X_t		-	-	-	-
$Y_{t-1} \left(1 + \frac{\Delta CPI_{t-1} - X_t}{100} \right)$		5	6	6	6
W_{t-1}		-	-	-	-
Y_{t-1}^*		4	6	6	6
I_{t-1}		-	-	-	-
K_{t-1}		1	-	-	-
Y_t	5	6	6	6	6

Given the assumptions, $Y_5^* = 6$ and Aer Rianta earns €28 over the five years. The difference in revenue of €3 is the year 1 under-collection, which should only have been recovered in year 2, accumulated over years 3, 4 and 5 of the Determination.

Table 2.3 shows the workings of the post-Review formulae with no under-collection. The outcome is no different to the pre-Review formulae, a total revenue to Aer Rianta of €25.

Table 2.3

Price Cap Formulae post-Review - no under-collection					
Regulatory Year	2001/02	2002/03	2003/04	2004/05	2005/06
t	1	2	3	4	5
YU_{t-1}		5	5	5	5
CPI_{t-1}		-	-	-	-
X_t		-	-	-	-
YU_t		5	5	5	5
W_{t-1}		-	-	-	-
Y_{t-1}^*		5	5	5	5
I_{t-1}		-	-	-	-
K_{t-1}		-	-	-	-
Y_t	5	5	5	5	5

Table 2.4 shows the workings of the post-Review formulae with a €1 under-collection in year 1. Pricing up to the cap in year 2, Aer Rianta will have recovered the €1 under-collection from year 1. However, the cap for year 3 is defined with reference to the unadjusted year 2 cap, which excludes the allowance for the year 1 under-collection that has already been recovered. Total revenue over the 5 years is €25.

Table 2.4

Price Cap Formulae post-Review - €1 under-collection in year 1					
Regulatory Year	2001/02	2002/03	2003/04	2004/05	2005/06
t	1	2	3	4	5
YU_{t-1}		5	5	5	5
CPI_{t-1}		-	-	-	-
X_t		-	-	-	-
YU_t		5	5	5	5
W_{t-1}		-	-	-	-
Y_{t-1}^*		4	6	5	5
I_{t-1}		-	-	-	-
K_{t-1}		1	-	-	-
Y_t	5	6	5	5	5

2.6 The Operation of the Correction Factor: Actual Values

Tables 2.5 and 2.6 below show the workings of the pre- and post-Review formulae for the overall cap on Aer Rianta. Given the starting cap of €6.09, there is a €0.50 under-collection in year 1 (over €0.51 including interest). The resulting cap for year 2 is €6.69.

Table 2.5

Price Cap Formulae pre-Review					
Regulatory Year	2001/02	2002/03	2003/04	2004/05	2005/06
t	1	2	3	4	5
Y_{t-1}		6.09	6.69	8.25	-
CPI_{t-1}		4.2	3.1	-	-
X_t		3.1	3.1	-	-
$Y_{t-1} \left(1 + \frac{\Delta CPI_{t-1} - X_t}{100} \right)$		6.157	6.69	-	-
W_{t-1}		0.02	0.15	-	-
Y_{t-1}^*		5.59	5.31	-	-
I_{t-1}		3.18	2.17	-	-
K_{t-1}		0.516	1.41	-	-
Y_t	6.09	6.69	8.25	-	-

Notice how in table 2.5, the amount of €6.69 (which includes the allowance for the year 1 under-collection) is rolled forward into the cap for the third year, while in table 6, the amount of €6.157 (which excludes the allowance for the year 1 under-collection) is rolled forward. The resulting difference between the caps as calculated by the pre- (€8.25) and post-Review (€7.72) formulae is €0.53 per passenger.

Table 2.6

Price Cap Formulae post-Review					
Regulatory Year	2001/02	2002/03	2003/04	2004/05	2005/06
t	1	2	3	4	5
YU_{t-1}		6.09	6.16	6.16	-
CPI_{t-1}		4.2	3.1	-	-
X_t		3.1	3.1	-	-
YU_t		6.157	6.16	-	-
W_{t-1}		0.02	0.15	-	-
Y_{t-1}^*		5.59	5.31	-	-
I_{t-1}		3.18	2.17	-	-
K_{t-1}		0.516	1.41	-	-
Y_t	6.09	6.69	7.72	-	-

2.7 Changes to the Timing of the Regulatory Year

As proposed in CP4/2003, the basis of the regulatory year has been changed to coincide exactly with the calendar year, which is also the timeline of Aer Rianta's accounting year. A number of changes were necessary to facilitate this transition. The principal change involves the termination of the 2003/04 regulatory period on 31 December 2003, which runs for 99 days from 24 September 2003, in order to align the subsequent regulatory years with the calendar year. The modifications to the price cap formulae required to facilitate this transition are outlined for the individual regulatory periods in what follows.

However, note first that the retrospective adjustments arising from the commercial consequences of 9/11 (i.e., higher security costs) and from the matters of information and computation that were the subject of the Review (i.e., RAB and depreciation, tax, Opex and commercial revenue projections

and the method of computation of the X-factor) resulted in a revised year 1 company price cap of €6.09 and a revised X-factor for regulatory years 2 and 3 of 3.1%. These were calculated directly from the financial model underpinning the original price cap Determination. Similarly, the revised year 1 Dublin cap was €5.16 with an X-factor of 5.4% for regulatory years 2 and 3.

2.7.1 Regulatory Period 24 September to 31 December 2003

The overall Aer Rianta price cap, $Y_{Q4:03}^{Art} = €6.16$, is the average revenue yield per passenger for the (original) third regulatory year. It is derived from the revised year 1 cap of €6.09, the revised X-factors and the regulatory formula. The Dublin Airport price cap for this 99 day regulatory period, $Y_{Q4:03}^{Dub} = €4.98$, was calculated on the same basis. Note that both price caps exclude any over- or under-collection from the first two regulatory years, which are instead carried forward into calendar year 2004.

The cargo sub-cap, $C_{Q4:03}^{Art} = €12.83$, is that for the (original) third regulatory year. It was calculated using the starting year 1 sub-cap of €12.69, the revised company X-factor and the regulatory formula.

The sub-cap on off-peak landing and take off charges at Dublin Airport consists of the maxima for the (original) third regulatory year. The procedures for the classification of aircraft not already classified for the purposes of the sub-cap are those set out in subsection 5.7 of CP2/2002.

2.7.2 Regulatory Period 1 January to 31 December 2004

The Aer Rianta price cap $Y_{04}^{Art} = €8.02$ consists of a re-based unadjusted cap of €6.46 and the cumulative under collection of revenues (through the K and W terms) for the two-year period to 23 September 2003. The former was calculated directly from the revised financial model taking account of the prospective adjustments arising from the commercial consequences of 9/11 (i.e., revised traffic forecasts and higher security costs) and from the matters of information and computation that were the subject of the review (i.e., RAB

and depreciation, tax, Opex and commercial revenue projections and the method of computation of the X-factor). The cumulative under-collection of revenues was calculated using the revised year 1 cap, Aer Rianta's actual per passenger revenue yields for the first two regulatory years and the regulatory formula. The Dublin Airport price cap $Y_{04}^{Dub} = €5.29$ likewise consists of a re-based unadjusted cap of €5.20 and the cumulative net under-collection of revenues from the first two regulatory years.

The cargo sub-cap $C_{04}^{Art} = €13.45$ was calculated by re-basing the value for the last quarter of 2003 ($C_{Q4:03}^{Art} = €12.83$) using the percentage difference between the value of the unadjusted overall Aer Rianta cap for the last quarter of 2003 (€6.16) and the value for calendar year 2004 (€6.46), that is, 4.87%.

The sub-cap on off-peak landing and take off charges at Dublin Airport consists of the maxima for the (original) third regulatory year. It has been decided however that the commencement date of the landing based off-peak charge should be 1 January 2005, to allow preparation by Aer Rianta and the airlines. Under normal circumstances, the existing charges would be uplifted as an allowance for inflation in the last quarter of 2004. However, existing charges are double inflated for the period July 2001 to September 2002 (as pointed out in the Addendum to CP4/2003). This is because the charges for the first regulatory year were based on costs from Aer Rianta's 2000 General Ledger and inflated for:

- 1 January to 30 September 2001; and
- 1 October to 30 September 2002.

Meanwhile, the application of the formula for the purposes of rolling forward these charges required an adjustment for inflation over the period July 2001 to July 2002 (at the end of regulatory year 1) and over the period July 2002 to July 2003 (at the end of regulatory year 2). The reversal of this double-inflation (for a period of 15 months) would likely outweigh the required inflation adjustment for the last 3 months of 2004, thereby resulting in lower maximum charges for a regulatory period that has already commenced. The Commission has, therefore, decided to leave the charges unchanged for this period for the sake of regulatory certainty.

2.7.3 Regulatory Period 1 January to 31 December 2005

The Aer Rianta and Dublin Airport price caps for the regulatory period 1 January to 31 December 2005 roll forward the unadjusted price cap from the previous period (i.e., $YU_{04} = €6.46$) according to:

1. the revised X-factors for the calendar year, that is, $X_{05}^{Art} = 2.9$ and $X_{05}^{Dub} = 3.7$; and
2. the percentage change in the Consumer Price Index between that published in October 2003 and October 2004, that is, ΔCPI_{04} .

The 2005 price caps include correction factors $W_{Q4:03/04}$ for differences between the Commission's actual and budgeted expenditures and $K_{Q4:03/04}$ for under- or over-recovery by Aer Rianta. Each of the K terms (one for Aer Rianta and one for Dublin) has two components:

1. for the period 24 September to 31 December 2003, that is,

$$\frac{99}{365} (Y_{Q4:03} - Y_{Q4:03}^*) \left[1 + \frac{I_{Q4:03}}{100} \right]^{99/365} \left[1 + \frac{I_{04}}{100} \right]; \text{ and}$$

2. for the period 1 January to 31 December 2004, that is,

$$(Y_{04} - Y_{04}^*) \left[1 + \frac{I_{04}}{100} \right].$$

The first component is scaled down to take account of the difference between the number of days across which the under- or over-recovery would take place (the 99 days from 24 September to 31 December 2003) and the number of days over which the error correction allowance would be applied (the 365 days in the calendar year 2005).

The interest rate adjustment applicable to the first component is calculated by compounding the value twice rather than once, to reflect interest payments over both the initial 99 days of the Q4 2003 price cap and then the full year 2004 price cap. First it is compounded to reflect the interest due over the 99-day period at the end of 2003 (using average rates on three-month commercial paper issued between October and December 2003), and then it is compounded to reflect interest due over the full-year period of 2004

(using average rates on three-month commercial paper issued between December 2003 and November 2004).

The interest rate applicable to the second component is defined as the average of the rate (expressed as an annual percentage interest rate) on three-month commercial paper issued between December 2003 and November 2004. Being applied to calendar year 2005, this is analogous to the treatment in the previous formulae where an October to October regulatory period required an average interest rate across the previous October to September period (i.e., approximately the previous regulatory year), subject to the constraint that the data be the latest available interest rate at the time the cap is calculated by the Commission. In other words, a cap starting 1 January 2005 would need to be computed in December 2004, and would thus draw on interest rates data in the year to November 2004. As in the previous Determination, no interest rate adjustment is made to take account of any delay in collection of differences between the Commission's actual and budgeted expenditures, i.e., the W -term.

The cargo sub-cap for the regulatory period 1 January to 31 December 2005 rolls forward the sub-cap from the previous period $C_{04}^{Art} = €13.45$ according to the revised X -factor that applies to the overall Aer Rianta price cap, that is, $X_{05}^{Art} = 2.9$, and the percentage change in the Consumer Price Index between that published in October 2003 and October 2004, that is, ΔCPI_{04} .

2.7.4 Regulatory Period 1 January 2006 to end of price control period

The Aer Rianta and Dublin Airport price caps for the regulatory period 1 January to 23 September 2006 roll forward the unadjusted price cap from the previous period (i.e., YU_{05}) according to:

1. the X -factors $X_{05}^{Art} = 2.9$ and $X_{05}^{Dub} = 3.7$; and
2. the percentage change in the Consumer Price Index between that published in October 2004 and October 2005, that is, ΔCPI_{05} .

The correction factors W_{05} and K_{05} account for, respectively, differences between the Commission's actual and budgeted expenditures and under- (or

over-) recovery by Aer Rianta during 2005. However, both are scaled up in the formula to take account of the difference between the number of days across which the under- or over-recovery would take place (the 365 days of 2005) and the number of days over which the correction allowance would be applied (the 266 days from 1 January to 23 September 2006).

THE REPORT ON THE DETERMINATION

3 FOREWARD

I am very pleased on behalf of the Commission for Aviation Regulation, to present this report on the outcome of the Review of the Determination on the Maximum levels of Airport Charges ("Report"). This is the second statutory Report in respect of an airport charges price cap.

This Report, in accordance with statutory requirements, sets out:

- the Commission's revisions to the Determination;
- the Commission's reasons for making revisions to the Determination.

This document also sets out the Commission's position on the various representations received.

I would like to record my thanks to the many interested parties who took the time to participate in the public consultation process and whose comments and contributions were of great assistance to the Commission in its consideration of the issues under review.

William Prasifka
Commissioner

4 SCOPE OF THE REVIEW

4.1 Explanation of why the Commission amended the Determination

The Commission may only initiate a mid-term review on the basis of finding substantial grounds to do so. The Commission may then amend the Determination “if it sees fit”. The Commission has sought to exercise this discretionary power in a manner consistent with its statutory objective, which is “to facilitate the development and operation of cost-effective airports which meet the requirements of users” (section 33 of the Act). To this end, the Commission has considered the incentive effects, if any, of a mid-term review.

4.2 General Principles of Price Capping

Industries where price caps apply typically feature firms that could otherwise earn monopoly rents. In a competitive setting firms seek to realise cost savings (or improve quality) to gain an advantage over their rivals. On occasion, individual firms in a competitive market will earn large profits because of temporary advantages they enjoy over their rivals; at other times they will play catch-up and realise losses. But investors in such firms expect, when investing, to earn a “normal” risk-adjusted rate of return. In a monopoly setting, the absence of competition allows the firm to earn large profits without requiring efficiency. Price-cap regulation focuses on providing the firm with incentives to realise efficiencies — rather than seeking to outperform its competitors, the firm seeks to outperform the efficiency targets implicit in the price cap set by the regulator. A common alternative is cost of service regulation, which seeks to prevent the firm earning large profits.

In a dynamic setting, price-cap regulation (or “CPI-X”) differs from cost of service regulation in a number of respects.

Implementation of the high-powered incentives for cost reductions using price-cap regulation is dependent on the regulator's commitment not to take actions that expropriate any rents that the firm may obtain during the price-cap period. Profitability levels during the price-cap period are considered when the price cap is reviewed. Nevertheless, any profits realised (losses made) by the firm during the price-cap period are normally not expropriated (refunded) at the time of the review.

Furthermore, it is unlikely that prices under the price cap closely track changes in costs. It is to be expected that elements of the regulated firm's performance projected by the regulator will vary from actual performance of the firm. This potential for prices and costs to diverge over a reasonably long period of time may generate large gains or losses for the regulated firm or for consumers, and provide management with the incentives that are fundamental to price-cap regulation. Some of these divergences may however be seen as windfall gains or losses, to the extent that they arise from factors outside the control of the firm. To correct for this, the regulator may include an "automatic rate adjustment mechanism" to allow changes in input prices or other exogenous factors that materially affect the costs of the firm; or it may provide for an interim or mid-term review.

In regulatory regimes without automatic rate adjustment mechanisms, interim reviews provide an opportunity to correct for exceptional occurrences that materially affect either the regulated firms or consumers (a "non-automatic rate adjustment mechanism"). Such reviews would only be merited if the events were (largely) outside the control of the regulated firm, i.e. they were exogenous shocks rather than endogenous, and if they were outside the range of risks that the regulator intended the regulated firm to bear (e.g. if they were to jeopardise the firm's continued viability).

When setting a price cap, the regulator considers the need for investors to receive a return on any capital they invest. The regulator's decision on what exogenous shocks the regulated firm is to bear will affect the rate of return that investors will require. The price cap will depend on the cost of capital that the regulator allows, and this decision will depend in part on how the

regulator will treat exogenous shocks. In many cases, it will make sense to require the regulated firm to bear some or all the risks associated with exogenous shocks, since the regulated firm is best placed to manage the shock. A 100 per cent allowance would provide the regulated firm with no incentive to restrict how much costs increase.

If interim reviews are not confined to being “non-automatic rate adjustment mechanisms”, but instead used to re-open other aspects related to the price cap, then in practice the regulatory period is much shorter than initially intended. A shorter regulatory period may reduce the regulated firm’s incentive to seek cost savings during regulatory periods in the future.

If the interim review is used as a comprehensive price cap review, revision of the price cap in the future to take account of changes in cost or revenue which occurred prior to the date of the review (“retrospective review”) implies that the regulator is willing to expropriate/compensate the regulated company for large profit deviations. In either case, this implies that the price cap will no longer be seen as a high-powered mechanism for cost reductions. This will happen if the regulated firm engages in a cost reduction programme and sees its profits expropriated at the interim review, or if the regulated firm makes no effort to engage in cost reductions, and sees this compensated at the interim review by a rise in the price cap.

If the interim review is used as a comprehensive price cap review, and a revision of the price cap is made in the future to take account of changes in cost or revenues which occurred after the date of the review (“prospective review”), then the regulator signals that past excessive profits are not expropriated and past negative profits are not compensated. The price cap retains its incentives for efficiencies, albeit in a shorter period (two years in the case here).

If, the interim review is used to pass-through factors which are exogenous to the firm, and outside the acceptable business risk to the regulated firm, then the incentives for cost reductions may be left intact.

Incentive Effects of Different Options

4.3 Amending the Price Cap for Information Received after the making of the Determination

The Commission has already stated that the receipt of information after the making of the Determination might be possible grounds for a mid-term review.

For example, the Commission now knows:

- Aer Rianta's expected asset lives; and
- That the effective corporate tax rate is approximately 15% over the 5-year period (rather than the 22% claimed by Aer Rianta).

The Commission remains open to correcting factual and computational errors brought to its attention after the making of the Determination via the appeals panel route. If parties do not write to the Minister seeking a varied determination, the Commission may use a mid-term review to correct material errors. However, there is no reason why corrections for mistakes made in a determination should not be made for two years if they are identified sooner and therefore correctable on appeal.

Although an advantage of a price-cap regime is that it allows parties to plan with reasonable confidence about future price profiles, it is still possible to justify correcting the price cap for any mistakes made when setting it. Parties might reasonably expect that the Commission would not issue an arbitrary determination, and consequently parties might expect that were the Commission to do so the mistake would be corrected at the earliest opportunity. Parties will factor into their decision making the possibility that mistakes in setting the price cap will be corrected.

The price cap has incentive properties for both the regulated firm and customers of the regulated firm. For the regulated firm, the main incentive property is that it gets to retain any savings it can realise during the period of the price control. For (potential) customers of the regulated firm, the price-cap regime affects the prices they face, which in turn influence their

demand for the goods and services that the regulated firm offers. The Commission does not want to update continually the price cap, because this will remove Aer Rianta's incentives to realise cost savings. But correcting a mistake in setting the price cap does not alter the desired incentive property that any savings the regulated firm realises will not immediately be passed on to its customers; and it means that the price signal airport users face would be optimal (from the Commission's perspective) absent any shocks. Not correcting the mistake means that even if the economy developed as envisaged in the central forecast, airport users would be making too much or too little use of the regulated airports.

Correcting the price cap because of information that the Commission should have had at the time of the original determination does create incentives for regulatory gaming. Parties will have the opportunity to "cherry pick" the information subsequently provided that the Commission should have known at the time of the determination but did not. If all parties have equal access to information, this may not matter since their strategic behaviour will offset with parties wanting a higher price cap providing information likely to lead to such an outcome and vice versa. In practice, Aer Rianta is likely to have an informational advantage. Consequently, the Commission must seek to conduct reviews in such a manner so as to minimise the potential adverse effects of such strategic behaviour.

The Commission has decided that a revised determination because of better information is one case where a retrospective review may be appropriate. Previous airport users cannot be reimbursed or surcharged. A prospective review would mean that Aer Rianta would have realised the gains or losses arising because of the mistake. This would be undesirable if it was seen to reward regulatory gaming.

4.4 Amending the Price Cap to take account of Exogenous Factors

The commercial consequences for airport management and the airline business sector arising from September 11th is an exogenous event of a nature that makes it an appropriate matter to include in the review. This shock is relevant to both the passenger forecasts and security costs used to calculate the maximum levels of airport charges allowed during the period of the determination.

Most exogenous changes which impact on the business of a regulated firm should not be re-examined in the context of an interim review. The business of the regulated firm is not assumed to be risk free. In many cases, it will make sense to require the regulated firm to bear all the risks associated with exogenous shocks, since the regulated firm is best placed to manage the shock. A simple pass through of new or exogenous costs on the customers of the regulated firm would leave the regulated firm with no incentive to minimize the effect of various cost increases.

Exogenous industry wide shocks of an exceptional nature which fall outside the normal business risk of the regulated firm may be considered at an interim review stage without necessarily weakening the incentive effects of the price cap. However, care must be taken to ensure that any change in the cap preserves the incentives for the regulated firm to act in a cost effective manner.

The extent to which any exogenous shock forms the basis for a review depends on what the regulator considers is the need for investors in the regulated firm to receive a return on any capital they invest. The price cap set out in the August 2001 determination included the cost of capital of Aer Rianta and this cost of capital implicitly included a view by the regulator on what exogenous shocks should be borne totally by Aer Rianta and what exogenous shocks should be borne, at least in part, by the customers of Aer Rianta. The equity risk premium portion of the cost of capital of Aer Rianta was equated to that of the BAA. Therefore, the risk of the exogenous shock of September 11th borne by the BAA and the risk borne by its customers is an appropriate place to begin in analysing what is the appropriate allocation of

risks for the exogenous shocks relevant here as between Aer Rianta and its customers.

As to revised passenger numbers following September 11th, the CAA included revised passenger forecasts in its new Determination beginning 1 April 2003. No adjustment was made retrospectively to account for the fall off in passenger numbers between September 11, 2001 and the new Determination. The Commission proposes doing the same in the context of the review, that is, including new passenger forecasts going forward starting from January 2004². The passenger forecasts used will be the Aer Rianta centerline forecasts of 2002 for Dublin and the Aer Rianta centerline forecasts of 2003 for Cork and Shannon, which the Commission have reviewed and consider to be reasonable. No retrospective adjustment is made for the shortfall in passenger traffic between September 11, 2001 and the effective date of the implementation of the review as this is considered to be within the normal business risk of the regulated firm. Furthermore, the Commission wishes to signal its intent not to make retrospective adjustments in passenger numbers in the future.

As to additional security costs, the CAA includes in its regulatory formula an "S" factor as a partial cost pass through for additional annual security costs incurred during the course of the 5 year determination. The "S" factor permits a cost pass through of 75% of additional security costs incurred during a year upon a verifiable request for such a cost pass through being made by the BAA. Since September 11, 2001, the BAA has not yet made such a request.

Aer Rianta have provided to the Commission its security cost for the period of the Determination. Such costs can be divided into three categories: insurance, Opex and Capex. The Commission has decided to incorporate into the maximum level of airport charges in the remaining period of the Determination 75% of this exogenous element as calculated for the entire

² January 2004 is the beginning of the first new regulatory period following the earliest time at which a review may be made.

period of the Determination. To establish the exogenous element in relation to insurance and Opex, the Commission has established a constructive benchmark based on security costs at a pre 11 September 2001 level, adjusted the benchmark for inflation and passenger growth, and calculated the additional increment as to both projected and incurred costs. For all Opex adjustments, the Commission limited all increments to those, which it could verify and which it found, to be reasonable in the circumstances of the exogenous shock identified. To establish the exogenous element in relation to Capex, the Commission has identified those Capex projects related to security that were not included in the 2001 Aer Rianta Capex programme. Such new Capex projects have been included in the RAB in the same manner as other projects so included, with appropriate provision made for depreciation.

The Commission has therefore decided to include exogenous costs in the scope of a midterm review, and to revise the price cap accordingly.

4.5 Amending the Price Cap to take account of Endogenous Factors

It is the Commission's considered view that a review based on matters endogenous to the regulated firm would weaken the incentive effects of the price cap and effectively shorten the regulatory period.

4.5.1 Capital expenditure projects

Responding to Aer Rianta's request for a mid-term review to reconsider capital expenditure projects not included in the calculation of the price caps and more generally to revise allowable capital expenditure upwards may have adverse incentive effects.

The Commission will not at a review seek to automatically revise its allowable Capex provisions to track the actual capital expenditure that Aer Rianta has incurred since the initial determination. The price cap would effectively become rate of return regulation if the Commission allowed Aer Rianta to undertake whatever capital expenditures it chose knowing that the price cap would subsequently be revised accordingly. Moreover, it would remove Aer Rianta's incentives to manage projects to ensure cost effectiveness and increase uncertainty among airport users. The Commission notes an exception to this principle in the case of projects deemed necessary for users at the time of the original determination but which have been abandoned or delayed.

4.5.2 Other Performance Targets

A similar analysis applies to a review of other performance targets set as the basis for the price cap – set as efficiency, Opex or commercial revenue projections. A resetting of such targets at an interim stage would necessarily weaken the incentive effects of the price cap.

5 DECISION ON MATTERS INCLUDED IN THE REVIEW

5.1 Summary of amendments subsequent to CP4/2003

The Commission set out in CP4/2003 the changes it proposed in the Amended Determination. The Commission in this Amended Determination has made the following changes from its proposals as set out in CP4/2003.

- Traffic forecasts for Cork and Shannon are based on the Aer Rianta 2003 centerline forecasts.
- 75% of Security-related Capex that was not part of the original capital programme reviewed in the Determination was added to the RAB and depreciation calculations.
- The incremental insurance expense for 2005 was altered to reflect information obtained from Aer Rianta and its insurers. No such information was received for 2006. Therefore the Commission has allowed for an increase of inflation for this year.
- The method for calculating the incremental operating expense resulting from increased security requirements were modified to take account of the efficiency factor applied to Opex.
- In the prior period calculation the additional security expense was added to the allowable revenue before calculation of the X-factor. Now, additional security Opex is included in the calculation of the airport charges in the same manner as other Opex.
- The Commission has allowed 75% of the additional security costs (Opex and insurance) associated with September 11th, 2001.
- The taxation calculation was amended to calculate the tax allowance in the same manner as in the February 2002 Revised Determination. The

calculation is now 'grossed up' so as to leave Aer Rianta with an after-tax return of 6% of the RAB.

- Some minor changes were made to the RAB to reflect additional information obtained and to correct minor data input errors.

5.2 Sub-Cap on Off-Peak Landing & Take Off Charges at Dublin Airport

The existing sub-cap on off-peak landing and take off charges at Dublin Airport consists of damage-based per tonne charges for each of 5 categories of aircraft. However, as outlined in the Addendum to CP4/2003, this resulted in anomalies relating to certain aircraft types. Moreover, after extensive analysis, the Commission found it impossible to eliminate these anomalies by continuing with a (refined) set of per tonne charges. In particular, continuing with a system of per tonne charges would result in:

- Equally damaging aircraft paying different charges per movement³; and
- Less damaging aircraft paying higher charges per movement than more damaging aircraft.

It was, therefore, proposed to move to a system of damage-based per movement charges for 8 (rather than 5) categories of aircraft, which has the effect of eliminating these anomalies. Following industry consultation and in the absence of convincing arguments to the contrary, the Commission is of the view that this is the best way to proceed with the amendment of the sub-cap. However, the Commission has decided to delay the implementation of the revised sub-cap until 1 January 2005 to allow preparation by Aer Rianta and the airlines for the shift from tonnage- to (aircraft) movement-based charges.

³ Under the current system, the charge per movement for each aircraft type is equal to the appropriate per tonne category charge multiplied by the certified weight of the aircraft.

Based on the methodology set out in the Addendum, the charges (in respect of the 8 aircraft categories) to be levied per aircraft movement during off-peak times from 1 January 2005 are detailed in the table below:

Off-Peak Landing & Take off Charges at Dublin Airport from 1 January 2005

Aircraft Category	Charge per Movement
1	€3.45
2	€24.95
3	€64.77
4	€108.10
5	€254.18
6	€305.58
7	€475.14
8	€754.50

The corresponding aircraft classification is provided in the next table below, which corresponds with Schedule 2 of the Varied Determination.

Revised Aircraft Classification

Category 1					Category 2
B222	DO82	LR55	F27, FK27	CRJ	R100
BN2	FA3, SW3	DC3	EMB135	CL600, CL65, CRJ/-100	RJ100
C172	SK76	LR60	AN24	CVLT	IL76
C208	SW4, SWM	SAAB340B, SF34	AN26	F70, FK70	BA11530
C404	BE9	SH33	F50, FK50	G4	TU154
C406	C500	SH36	EMB145	DC6	L188
C421	C550	AN72	TU134	BAE14620	B737-200
PA23	E110, EMB110	D328	ATR72	BAE146, RJ	C130, L382
PA28	B190	DA20	ATP	BAE14630	B737-500
PA31	BE19	ATR42	F900	BAERJ85	B737-600
PA34	JS31	DHC8311	SAAB2000, SB20	F100, FK100	B757-200
PN68	BA41	DH8, DHC8	CL604		
BE20	LJ45	BAE748, HS748	AN12		
Category 3	Category 4	Category 5	Category 6	Category 7	Category 8
B737-300	A330-200	DC10	A300B4	B747-300	B767-400
B757-300	B727100	A330	DC8	B747-200	MD11
A319	A321		A300, -600	A340	B777-200
MD87	MD83		B767	B747-400	B777
A320	A330-301		B767-300	L1011	
B737-400	B727200		B747		
B757	B747SP				
MD80, -81	B767-200				
B737-700	A310				
MD82					
DC9					
MD88					
B737-800					
MD90					

These charges and corresponding aircraft classification are different to those proposed in the Addendum to CP4/2003 for the following reasons:

Total Damage Costs and Inflation: the amended sub-cap will apply from 1 January 2005. The next inflation adjustment will take place at the end of 2005 when rolling forward charges for the regulatory period beginning 1 January 2006. That adjustment will be for the percentage change in the Consumer Price Index between that published in October 2004 and October 2005. Therefore, in order to determine charges to apply from 1 January to

31 December 2005, the total damage cost base used for the purposes of the original 2001 Determination⁴ was inflated to take account of:

- (a) For the percentage change in the CPI between that published in December 2000 and January 2004 (the latest available published value), that is, 11.02%; and
- (b) An estimate of the percentage change in the CPI between that published in January 2004 and September 2004, that is, two-thirds of 3% = 2%.

Revised ACNs for Certain Aircraft Types: approximately 1750 different (registered) aircraft used Dublin Airport during calendar year 2002. Using the new ICAO coding system, this was aggregated to give 114 aircraft types (previously 113). For each type, a representative operating weight was calculated as a weighted average of the billed operating weights (supplied by Aer Rianta) of the individual registered aircraft of that type. These representative operating weights were, in turn, used to calculate ACNs. The Commission has since incorporated airline fleet information relating to actual aircraft operating weights into these calculations. In other words, the operating weights for certain registered aircraft (identified by airlines) are used in the calculation of the representative operating weights. This has resulted in lower ACNs for certain aircraft types.

Both changes affect Step 1 of the methodology detailed in section 6 of the Addendum, that is, calculation of the benchmark per movement damage cost of the "design" aircraft (C_d). Using the revised total damage cost base and new set of ACNs, $C_d = €264$ and not €195 as stated in the Addendum.⁵ The

⁴ As outlined in Appendix VIII to CP8/2001, total damage costs were estimated as the sum of expenditures on the "routine" repair and maintenance and on the structural repair of pavements. "Routine" repair and maintenance expenditures were taken as the sum of expenditures on associated external services and materials, as well as labour from the 2000 Aer Rianta General Ledger. Structural damage costs were estimated by the annualised cost of Aer Rianta's planned airfield upgrade projects over the 10 years to 2010.

⁵ The calendar year 2002 aircraft mix for scheduled, charter and cargo operations consisted of 114 aircraft types. The total number of landings and take offs was 163,765. As in footnote 3 of the Addendum to CP4/2003, this can be expressed as an equivalent number of landings of the design aircraft,

effect of this is to raise charges in respect of the 8 categories of aircraft (which are calculated according to the same methodology) from those proposed in the Addendum.

Likewise, the revised set of ACNs resulted in a slightly different aircraft classification, which should, because a greater number of aircraft are classified according to their actual operating weights, result in more cost-reflective charges.

$\Sigma_i(D_iL_i)=30,110$, which has fallen from 37,117 due to lower ACNs for several aircraft. Dividing total damage costs by these total equivalent movements gives the cost per movement of the design aircraft C_d .

6 ANALYSIS OF DECISION ON MATTERS NOT INCLUDED IN REVIEW

6.1 Opex

Aer Rianta submitted to the Commission a paper⁶ that argued for the existence of substantial grounds to review the efficiency improvements incorporated by the Commission into the calculation of maximum airport prices that were set in the Determination. Such a relaxation of the efficiency target would raise Aer Rianta's Opex, and hence airport charges.

The Commission has considered this paper in detail and has also studied the major international data sources on airport performance.

Ultimately, the question at issue is the reasonableness of the extent of any difference between the monies provided through maximum prices in respect of Opex and those sought by Aer Rianta. The funds provided via the price cap are the result of two interconnected factors:

- (1) the basis for projecting the 2001 Opex benchmarks throughout the quinquennium, as amended
- (2) by the application of the efficiency improvement sought from Aer Rianta.

Aer Rianta has disputed the second of these factors; it has the effect of reducing charges below the level at which they would otherwise be. Aer Rianta made no comment on the first factor, which raises charges relative to the levels given by, for example, the assumption used by Aer Rianta itself to forecast its opex costs. (Aer Rianta forecasts its Opex to grow at one-third the rate of passenger traffic growth). The Commission must judge whether the overall Opex funds available to Aer Rianta under the price cap is reasonable which is the combined result of the two factors mentioned above.

⁶ Review of the IMG Benchmarking Exercise undertaken on behalf of the Commission for Aviation Regulation for the purposes of its Determination on the Maximum Levels of Airport Charges

In section 6.2, the Commission's approach to Aer Rianta's Opex is described, while in section 6.3 Aer Rianta's objections to the IMG benchmarking study are considered, along with other airport benchmarking data.

6.2 The Commission's Opex Projections

According to the Aer Rianta's "Group Financial Projections 2000 to 2005" it expected its operating costs to grow one-third as fast as traffic. Nonetheless, the Commission projected costs in line with traffic. Part of the Commission's reasoning in support of this decision, was that, since revenues were also being projected in line with traffic, but given that future revenues are more uncertain than future costs, these two assumptions acted as a margin of error for any failure of revenue to grow strictly in line with traffic. These assumptions are entirely reasonable.

6.2.1 Alternative Approaches

The Commission made an examination of recent reports of the UK Competition Commission as regards the relationship between operating costs and passenger growth. The following information was obtained.

The financial model used by Manchester for the 5 yearly Review for the period up to April 2003 applied a series of elasticities relating changes in certain costs to changes in passenger numbers. These elasticities express the extent to which a particular element of cost was fixed or varied with passenger numbers. The assumptions for Manchester are set out below.

Table 6.1 Manchester Airport cost elasticities

	Percentage of costs that are elastic	Elasticity applied
Total employee costs	100%	0.3*
Security & baggage handling		0.8
Other staff		0.2
Total premises expenditure	40%	0.5
Total supplies and services	10%	1.0
Total transport and plant	90%	0.5
Total establishment	20%	0.3

* Weighted average of 0.8 and 0.2

The elasticities used in the financial model for the current quinquennium (2003-2008) are not available in comprehensive form, but reference is made to the fact that in the financial model it is assumed that rates, rent and certain minor costs were independent of passenger numbers. Fuel, light, cleaning and water supply costs were projected to increase with an elasticity of 0.25.

It is however possible to derive an elasticity measure for the largest single item of costs, staff costs. The increase in total staff costs (in constant prices) is 8.9%. The forecast growth in passengers over the corresponding period is from 18.3 million to 24.1 million, an increase of 32%. The implied elasticity therefore is close on 0.3, which was the elasticity applied in the previous five year period (1998-2003).

Comparable information for the London BAA airports is not provided in the periodic review documents. However, a consultant engaged by the Commission prepared information from a number of different Tables in the UK Competition Commission's Report. The results are shown in the Table below. The Table shows the (implicit) elasticities of Opex with respect to passenger growth over the quinquennium for certain items of expenditure with costs based on constant (September 2002) prices. Published expenditures for 2001/02 for all three airports combined are used in the

Table to give a broad indication of the relative importance of each line item. Staff costs account for approximately one-third of total expenditures, about the same proportion as for Manchester. The elasticities have been rounded and therefore are only approximate. Passenger growth figures are based on Table 10.6 in the report and adopt the Competition Commission's assumptions that the BAA's forecasts are appropriate for Heathrow and Gatwick and the CAA's forecast is appropriate for Stansted.

Table 6.2 Implied operating cost/passenger elasticities at BAA's London airports 2003/4 – 2007/8

	Heathrow	Gatwick	Stansted	Total Expenditure 2001/02 £m
Staff costs	1.0	0.5	0.6	210.3
Police costs	5.4	0.4	0.6	47.0
Rents	13.0	0.0	2.1	-
Rates	3.4	0.6	0.8	73.4*
Utility costs	2.0	0.6	1.6	92.0
Other	N/A	N/A	N/A	
Total				623.0

N/A = data are not available *Rents and rates combined.

From the Table it can be seen that Opex increases at a faster rate in relation to passenger growth at Heathrow than it does at Gatwick and Stansted. Although special factors can lead to large variances in the elasticities for particular expenditure items, in general, the elasticities for the growth in Opex relative to the growth in passenger numbers depends upon the level of fixed costs, the level of capacity that is utilised and assumptions made about productivity improvements and increases in the real cost of labour. When an airport has spare capacity generally it might be expected that Opex would increase more slowly than the growth in passenger volumes as fixed costs are spread over more output. As an airport becomes busier such economies of utilisation tail off and, with the expansion of capacity, a new lump of fixed costs is added. In circumstances where it is progressively more expensive to add capacity on the margin, it is possible for the fixed costs to rise disproportionately; in these circumstances there would be diseconomies of

scale (as distinct from (dis)economies of density) as a given level of fixed costs are spread over more units of output. Heathrow is probably such an example although, as one of the world's busiest airports on a very constrained site currently operating out of four terminals, it is an exceptional case.

The same exercise could not be repeated for the London airports because of incomplete data. In any case only Stansted Airport is of comparable size to Dublin.

6.2.2 Conclusions

The Commission's forecasting of operating costs appears more favourable to Aer Rianta than the assumption used by the UK Competition Commission for Manchester Airport and the London BAA airports.

Aer Rianta's own projections of its operating costs assume that they will grow only one-third as fast as traffic (i.e. much less rapidly than assumed by the Commission).

The Commission has therefore decided not to amend the basis of its Opex projections in this review.

6.3 Benchmarking

Aer Rianta's challenges to the IMG benchmarking report fall into three classes:

- a. General (that is, theoretical) arguments against all benchmarking exercises (with no special applicability to the IMG benchmarking report);
- b. A particular cost re-allocation, specifically, a cost reduction of Aer Rianta's Opex which, it is claimed, shows that the Aer Rianta airports "perform significantly better than the average of the comparator airports" (p.15)
- c. Claims that some of the data in the IMG report are inaccurate (including of the measurement of cargo volumes at Dublin airport).

In regard to the last claim, the Commission set the efficiency improvement well below the measured difference in unit costs revealed by the IMG Benchmarking report. The cargo figure did not have a material impact on the size of the efficiency factor.

6.3.1 Aer Rianta's Objections to Benchmarking

In the paper submitted to the Commission, Aer Rianta suggest (p.3) that simple measures cannot be relied on as a valid indicator of airport efficiency. But the more sophisticated approaches recommended by them are said (p.5) to be problematic. It stated that, recent attempts (by NERA amongst others) to apply them to airports, showed them to be incapable of producing robust results.

Subsequently, at a meeting with the Commission on 3rd December 2003, Aer Rianta stated its position to be that the Transport Research Laboratory (TRL) Annual Report on Airport Performance Indicators showing the statistic of 'core' opex/pax is a legitimate measure of airport efficiency. Aer Rianta has traditionally participated in this annual survey. However, it no longer does so; last year's report giving data for 2000 is the last one covering Aer Rianta's airports.

In the UK, on the basis of much more extensive research that was made by the Commission or IMG, the CAA recently concluded that:

“Nevertheless, subject to the above-mentioned caveats, comparing partial performance measures such as unit cost and factor productivity is still useful as they can identify potential areas of airport activities in which airport management may need to improve in order to match with the best practice airports.” (p.9)

Thus, suitably applied and cautiously interpreted, the CAA, at least, appears to accept the usefulness of airport benchmarking. In a paper prepared for its 2003 review of Manchester Airport prices, the CAA further stated that

“However, the results obtained so far do not necessarily negate the potential usefulness of benchmarking airports in providing incentives for the regulated airports to improve cost efficiency and to invest appropriately, so long as a sufficient sample can be gathered and the appropriate adjustments can be made to correct for the diversity in outputs, inputs and operational environment faced by the airports ... The CAA takes the view that in principle benchmarking can deliver a substantial improvement in regulatory incentives and intends to further explore the applicability of benchmarking to airports by expanding the data set and improving the quality of the data. This process is unlikely to yield results for the current review but should be useful for subsequent reviews.” (p.17)

In summary, therefore, in the Commission’s view, the Aer Rianta objections to benchmarking, of a general or theoretical kind, overstate the difficulties of applying benchmarks in the airport context.

6.3.2 Revised Opex figures for Aer Rianta airports

In the Aer Rianta submission, it stated that if one airport provides a greater range of services than another, then the cost effectiveness of the former airport should be assessed only in regard to the services offered at both airports. To achieve such a comparison, the cost base of the 'all-service' airport should be reduced to cover what are stated to be the costs of the (core) aeronautical services.

Some immediate queries as to the validity of this procedure include:

- It is stated that no adjustment (i.e. no reduction) is made to the cost base of the other airports.
- Aer Rianta does not state why its service range is so wide compared to other airports and whether there are any benefits to airports users from the Aer Rianta approach.
- Although global figures for the adjustments are provided, it is not possible to validate the adjustments, which in any case relate to 1999.

In its submission, Aer Rianta has reduced its Opex costs. However, the submission does not address whether costs of the other airports should be adjusted in a similar way.

To check the validity of the Aer Rianta approach, the Commission has examined whether the airports in the IMG sample are also surveyed by the TRL which reports adjusted (ie 'core') Opex costs. Table 6.3 below shows that

- 3 of the 5 IMG peer airports do appear in the TRL database and
- 2 of these 3 do adjust their Opex costs for comparability.

In other words, the TRL tables show that the Aer Rianta methodology does not make a 'like with like' comparison.

Table 6.3: Comparison of Aer Rianta and TRL approaches to 'Core' Airport Opex

NERA Airport Sample	TRL Airport Sample	Opex Data Adjusted in TRL Sample?
Dublin	Yes	Yes
Glasgow	No	-
Stansted (BAA)	Yes	Yes
Brussels	No	-
Copenhagen	Yes	No
Oslo (NAG)	Yes	Yes

6.3.3 Comparison between Aer Rianta's revised Opex and other statistical sources

Transport Research Laboratory (TRL) Reports

Table 6.4 shows the trend in the TRL database for Opex per pax from 1999 to 2001. Aer Rianta no longer participates in the TRL performance indicators survey. The latest figures for the company available from TRL relate to the year 2000 (published in the 2002 TRL report). However, the Commission has estimated the Aer Rianta Opex/pax figure for 2001 at €4.94. This calculation was made by taking the TRL data (for pay and non pay Opex) as a percentage of Aer Rianta (Annual Report) data in 1999 and 2000, and applying these proportions to the data in the 2002 Aer Rianta Annual Report.

From Table 6.4, it may be seen that 10 of the 18 airports in the survey show a fall in opex/pax during the three-year period 1999 to 2001; Aer Rianta's costs/pax, on the other hand, are 3% higher. The effect is to widen the difference between Copenhagen, one of the IMG peer airport group, and Aer Rianta, from just under 5% in 1999 to almost 22% in 2001.

As with all benchmarking exercises, the Commission takes a cautious view of the data in Table 6.4. Nonetheless, on a core-cost basis, the gap between Aer Rianta's opex/pax and that of Copenhagen Airport's is growing, and as of

2001 was twice as wide as the efficiency improvement sought by the Commission.

Table 6.4 1999 – 2001 Trend in TRL 'core opex'/pax (SDR*)

Airport	1999	2000	2001	% Change 1999-2001
Manchester	8.39	7.92	10.79	28.61
Budapest	6.53	6.39	9.83	50.54
Finnish Airports Group	8.27	7.70	7.91	-4.35
Berlin Group	7.92	7.38	7.57	-4.42
London - Heathrow	7.07	6.65	7.38	4.38
Frankfurt	8.38	6.44	7.19	-14.20
Aeroporti di Roma	7.63	6.80	6.91	-9.44
BAA Group	5.87	6.30	6.79	15.67
London - Gatwick	6.83	5.88	6.56	-3.95
Aeroports de Paris	7.31	6.84	6.38	-12.72
Vienna	6.04	5.79	6.10	0.99
Munich	11.40	6.01	5.92	-48.07
Amsterdam Group	5.88	5.44	5.43	-7.65
Aer Rianta **	4.79	4.65	4.94	3.13
Swedish Airports Group	4.69	4.05	4.91	4.69
Copenhagen	4.57	3.97	4.05	-11.38
Stockholm	4.18	3.78	3.29	-21.29
Norwegian Airports Group	2.72			

* To reduce possible distortions from sudden exchange rate swings, the data are presented in the IMF's accounting currency of 'special drawing rights'.

** The 2001 figure for Aer Rianta is an estimate by the Commission based on the relationship between total and 'core' Opex (from the Aer Rianta annual accounts and the TRL reports respectively) for 1999 and 2000.

Air Transport Research Society Airport Benchmarking Report

In 2002, the Transport Research Society⁷ published, in three volumes, the results of its large-scale attempt to benchmark airport performance around the world. Aer Rianta appears in some of the tables, though only at the Group level.

⁷ For further information, see www.atrsworld.org

Table 6.5: 1999 Total Non-Capital Costs/WLU from the ATRS database (€)

Ranking	Airport	TNCC/WLU
1	Madrid	2.94
2	Copenhagen	4.85
3	Brussels	5.61
4	Stockholm	5.72
5	Zurich	6.01
6	Amsterdam	6.55
7	Geneva	8.90
8	BAA	9.65
9	Dusseldorf	10.96
10	Manchester	11.17
11	CAA of Finland	11.67
12	CAA of Sweden	13.52
13	Munich	14.19
14	Vienna	14.34
15	Frankfurt	15.26
16	Aer Rianta	15.97
17	Rome	17.84

The cost variable that is benchmarked in the ATRS report which is closest to IMG's Opex/WLU is one that the ATRS report terms 'Total Non-Capital Costs (TNCC) per WLU'. The relevant information for European airports (or airport companies) is given in Table 6.5, converted to €. The information in the table speaks for itself.

Centre for Regulated Industries (CRI) of the University of Bath

The Centre for Regulated Industries (CRI) of the University of Bath publishes reports on regulatory issues, including an annual report giving financial statistics for UK airports.

As the data relates to UK airports, which operate according to the 'single till' model of Aer Rianta, it is reasonable to consider the cost data to be comparable.

Opex/WLU data are presented in Table 6.6 below, converted to € for comparability with the IMG data for Aer Rianta, which have been added from the IMG benchmarking report. As may be seen, Aer Rianta's opex/WLU lies in the middle of the data for this set of airports.

**Table 6.6: 1998/99 Opex/WLU data from the CRI UK database
(with IMG's figures for Aer Rianta added) (€)**

Ranking	Airport	Opex (€)/WLU
1	Belfast	8.05
2	Edinburgh	8.44
3	Glasgow	9.32
4	Heathrow	9.88
5	Aberdeen	9.95
6	Stansted	10.10
7	Gatwick	10.70
8	Liverpool	10.74
9	Cardiff	11.73
10	Aer Rianta	11.60
11	Birmingham	12.16
12	Leeds	12.36
13	Newcastle	12.59
14	Luton	13.61
15	Bristol	14.98
16	Manchester	15.57
17	Teeside	16.53
18	Southampton	19.84

Standard and Poor's November 2003 'Rated Peer Comparison'

Standard and Poor's (S&P), the credit rating agency which evaluates the financial standing of many airports around the world, issued a research report on Aer Rianta on 5 November 2003. At the end of the document there is a table entitled 'Rated Peer Comparison', which benchmarks Aer Rianta against the other European airport companies that are rated by S&P. Three of the four airport companies are comparable in size (passenger traffic) to Aer Rianta. The results are given in Table 6.7 below.

Table 6.7: Cost data for 2002 from Standard and Poor's

	Aer Rianta Y/E Dec 02	BAA Y/E Mar 03	Aeroporti di Roma Y/E Dec 02	Birmingham Y/E Mar 02
Total pax 2002 (million)	19.3	127.7	26.3	8
Operating costs/pax	\$ 19	\$ 13	\$ 12	\$ 10.7

Table 6.7 shows Aer Rianta's operating costs per passenger, consistently with the IMG findings, to be very substantially higher than those of the other airports.

6.3.4 Comparison between Aer Rianta revised Opex and other evidence

Aer Rianta Redundancy Programme

In the 2001 Annual Report of the company, there is a provision of €28.5 million towards restructuring costs, including a voluntary severance scheme. The Annual Report states that under this scheme it is estimated that 300 people will leave the company. Logically, it is only worth spending €28.5 million on what the 2001 Annual Report calls a "fundamental" programme, if there are expected to be cost savings to Aer Rianta in subsequent years *at least equal* (and perhaps much larger) than the cost of the programme. Therefore it is reasonable to assume that the adoption of a restructuring program by Aer Rianta means that the company accepts that there is scope

for efficiency improvement at its airports equal to some 10% of its current staffing.

Comments On Shannon Airport By Aer Rianta

Aer Rianta claims in its submission to the Commission that:

In fact, Shannon's operating expense per Work Load Unit is 25% below the average of the "peers" (p.19)

This statement appears to suggest that Aer Rianta considers Shannon Airport to be efficient.

On 22nd June 2003⁸, it was stated on behalf of Aer Rianta that:

"The structure in Shannon is designed for a huge airport. Without a shadow of a doubt, there are too many people employed down there, even for its present operation. It needs to be rationalised. At one time there were 1,600 people in Shannon, there are 620 now. Further rationalisation is needed."

This statement is an acknowledgement that Shannon Airport is not efficient and is inconsistent with the former statement.

6.3.5 Benchmarking Conclusions

The following assessment of Aer Rianta's efficiency emerges from the international data sources reviewed here.

From the TRL database, the trend in Aer Rianta's per-pax core costs seems to have worsened, vis-à-vis Copenhagen Airport (which is common to the IMG and TRL data sets) in the period 1999-2001.

In terms of the ATRS sample of European airports, the Aer Rianta cost performance (measured as total non-capital costs per WLU) looks very high (in the available year of 1999). The S&P report also shows Aer Rianta's total costs per pax to be higher than for the three other rated European airports. Finally, the CRI database puts Aer Rianta in the middle of the spectrum given by UK airports.

⁸ Sunday Tribune Interview

These various rankings and trends appear consistent with the finding of the IMG benchmarking report that there was scope for Aer Rianta to improve its operational performance and efficiency.

6.4 Opex: Conclusions

The Commission has thoroughly considered whether there are substantial grounds to revise the efficiency targets that it set for Aer Rianta as part of the original Determination. It has concluded that substantial grounds do not exist to do so. The Commission's reasoning in support of its conclusion includes the facts that the Commission's forecasting assumption is reasonable, appears more conservative than UK practice, and is much more favourable to the company than Aer Rianta's own basis for making such projections. Moreover, the challenges offered by Aer Rianta to the benchmarking study prepared for the Commission are not persuasive, are inconsistent with other statistical evidence from a wide range of international sources, and are undermined by the company's actions and statements of recent years.

6.5 Commercial Revenues

6.5.1 The Commission's Approach

In making the Determination, the Commission projected both Aer Rianta's operating *costs* and its commercial *revenues* to grow in line with traffic plus inflation.

Aer Rianta argued that projecting commercial revenues on the basis of the traffic forecasts, at the yield per passenger plus inflation, is a crude and unrealistic assumption. The Commission's view is that its assumptions, when projecting commercial revenues, were reasonable. The Commission assumed that revenues per passenger would remain constant in real terms. Because average incomes increase at a faster rate than inflation (incomes increase in real terms), the consequence of the assumption made by the Commission is that, over time, air travellers will be spending a smaller proportion of their average incomes on airport services (that is to say airport services is income inelastic). An alternative and perhaps more plausible view, given the nature

of the products being sold in airport shops, is that retailing revenues will increase pro rata with increases in average incomes, or even at a rate faster than increases in income (income elastic), so that in either case expenditures and thus commercial revenues, increase at a rate much faster than inflation.

An indication of the conservative nature of the assumptions adopted by the Commission is evident from the growth in commercial revenues experienced at other airports. During the late 1980s, the growth in passenger traffic at London Gatwick Airport was over a range similar to that anticipated for Dublin over the period of the Determination. In 1987/88 the number of passengers at Gatwick was 16.6 million rising to 20.4 million in 1990/91. In contrast, passenger numbers at Dublin in 2000 were 13.8 million and the forecast is for about 19 million at the end of the Determination period in 2006. In addition, the profile of passengers at both airports is fairly similar, with international travellers accounting for 90 per cent or more of the total. Between 1987/88 and 1990/91, commercial revenues per passenger at Gatwick increased by about 73 per cent; this compares with an increase in the retail price index of about 30 per cent in that period. Therefore, gross revenues per passenger at Gatwick grew by almost two and a half times the rate of inflation. This is to be contrasted with the Commission's equivalent estimate that gross commercial revenues are expected to grow in line with inflation. Although this latter estimate relates to the sum of all three of the Aer Rianta's airports, Dublin dominates the volume of commercial sales.

In addition, the Commission tested the reasonableness of its basis for projecting commercial revenues and operating costs in the following ways.

6.5.2 Commercial Revenues: Alternative Approaches

First, recent reports of the UK Competition Commission were reviewed in order to judge the relationship at Manchester and the London BAA airports, between commercial revenues and passenger traffic. Precise conclusions were not easy, partly because some information for the London airports was withheld for reasons of commercial confidentiality. However, Manchester Airport appears to expect commercial revenue to grow in the next five years

considerably more rapidly than passenger numbers. At the London airports, the BAA appears to expect commercial revenue in the next quinquennium to be broadly constant in real per-passenger terms. It should be recalled that a company, regulated under a single till, regime has an incentive to under-forecast future commercial revenue growth.

Second, the Commission obtained from the UK consultancy firm, the Transport Research Laboratory (TRL), recent data for commercial revenues per passenger at 18 European airports (or airport groups). The data relate to the three most recent years for which TRL has the relevant information, namely 2000 – 2002.

As may be seen from Table 6.8, (per passenger) whilst commercial revenues declined in 5 of the 18 airports (or airport groups) in 2001 they rose, in many case substantially, in the remaining 13. In 2002, 4 airports of the 18 suffered declines. But at only one of these (the Portuguese airport group, ANA) was there a decline for a second consecutive year. In the remaining 4 (that had declined in 2001), commercial revenues recovered strongly. Thus there does not appear to be any trend towards a leveling-off or a decline in airport commercial revenues at European airports

Indeed, per-passenger commercial revenues at European airports, judging from the data in the Table, seem to be increasing in real terms and there is no evidence that the Commission's decision to forecast commercial revenues in line with traffic and inflation is unreasonable or out of line with the actual trend in European airport performance in this regard.

6.5.3 Conclusions

The Commission has concluded that its assumption that Aer Rianta's commercial revenues should be projected in line with passenger traffic and inflation is reasonable and should not be changed for the purposes of the review.

Table 6.8 COMMERCIAL REVENUE PER PASSENGER (SDRs)*

	2000		2001			2002	
London Heathrow	7.57	London Heathrow	7.99	5.5%	London Heathrow	8.18	2.4%
London Gatwick	5.45	London Gatwick	6.69	22.8%	London Gatwick	6.91	3.2%
Aeroporti di Roma	5.10	London Stansted	5.71	24.7%	Oslo	6.46	23.6%
Oslo	5.09	Frankfurt	5.47	13.0%	London Stansted	5.59	-2.2%
Aeroports de Paris	4.91	Manchester	5.25	21.5%	Frankfurt	5.36	-2.0%
Frankfurt	4.84	Oslo	5.23	2.8%	Aeroports de Paris	5.10	16.6%
London Stansted	4.58	Birmingham	4.72	10.5%	Geneva	5.03	14.5%
Geneva	4.36	Aeroporti di Roma	4.46	-12.5%	Aeroporti di Roma	4.99	12.0%
Manchester	4.32	Geneva	4.39	0.7%	Zurich	4.92	16.9%
Birmingham	4.27	Aeroports de Paris	4.37	-11.0%	Birmingham	4.86	2.9%
Vienna	3.96	Zurich	4.21	10.8%	Berlin Airports	4.29	17.6%
Zurich	3.80	Amsterdam Group	3.72	3.0%	Vienna	4.15	12.3%
Munich	3.64	Vienna	3.70	-6.6%	Manchester Airports Group	4.09	-22.0%
Amsterdam Group	3.61	Berlin Airports	3.65	2.5%	Amsterdam Group	4.02	8.0%
Berlin Airports	3.56	Munich	3.64	0.0%	Copenhagen	3.98	23.1%
Copenhagen	3.38	Copenhagen	3.23	-4.4%	Munich	3.92	7.7%
ANA (Portuguese airports)	3.20	ANA (Portuguese airports)	3.09	-3.4%	ANA (Portuguese airports)	2.61	-15.4%
Stockholm	1.15	Stockholm	1.23	7.0%	Stockholm	2.24	82.5%
Average	4.27		4.49	5.2%		4.82	7.4%

* To reduce possible distortions from sudden exchange rate swings, the data are presented in the IMF's accounting currency of 'special drawing rights'.

6.6 Capex

The Commission has decided not to include the Capex or the stranded assets in this Review, other than Capex related to security. The reasons for this decision are set out below.

Although not part of its statutory submission, Aer Rianta provided the Commission with a revised Capex programme on 27 October 2003. A significant driver of this revised Capex programme was a Baseline study of airport capacity. The Commission has undertaken an analysis of the capital requirements of Aer Rianta taking into account information it has received subsequent to the making of the 2001 Determination. In addition it has also undertaken a thorough analysis of the Baseline study. Having considered the findings of its analysis of these documents and other information it received during the statutory consultation period, the Commission has not altered its view as enunciated in CP3/2004 and CP4/2004 as to the substantial grounds necessitating an interim review and the appropriate scope of that review.

In reaching this conclusion, the Commission is mindful of the following matters:-

- That considerable uncertainty exists as to the status of the Pier D project which forms a substantial element of Aer Rianta's current Capex programme;
- That the Commission has not had the benefit of representations from interested parties on the revised Capex programme of Aer Rianta, the Baseline study or other Capex related information, such representations being a necessary part of the proper consideration of this issue by the Commission.

Accordingly, the Commission is of the view that a further review of Capex may be warranted in the near future and the Commission may therefore

initiate another procedure under Section 32(14) of the Act in relation to Capex.

6.7 Other deviations between Aer Rianta's and the Commission financial projections

In the course of the work on the Review, the Commission became aware of a number of respects – in addition to those that were the subject of representations by Aer Rianta – in which the financial situation of the company was evolving differently to the projections made at the time of the original Determination. Examples include the company's corporate tax liabilities and its depreciation charge, which in the regulatory period to date, are considerably less than the Commission's estimates.

As explained already in this Report, especially in Section 4, the approach the Commission has taken to the Review is to treat deviations between the company's projected financial situation and the actual outturn as developments that would be considered normal and not, in their own right, constituting substantial grounds to change constituents of the price cap calculation.

Therefore, the Commission does not propose to amend its treatment of Aer Rianta's corporate tax liability, or its depreciation charge, in order to eliminate such deviations.

7 ACCEPTANCE AND/OR REJECTION OF REPRESENTATIONS

7.1 Response To Representations

This section addresses the representations received in response to CP4/2003 and the Addendum to CP4/2003. The full text of the responses are published on the Commission's website.

7.1.1 Traffic Forecasts

A number of comments were received in relation to the revised traffic figures to be used in the Review, both as to the date of the preparation of the traffic forecasts and as to whether such revised forecasts should be applied retrospectively.

Commission Response:

The Commission has carefully considered which traffic forecasts should be used for purposes of the Review to calculate the airport charges for the period 1 January 2004 forward. It has considered the 2002 and 2003 traffic forecasts prepared by Aer Rianta along with other industry wide forecasts and has retained IMG to independently assess traffic growth at the Aer Rianta airports. IMG has concluded that the Aer Rianta 2002 centerline forecasts for Dublin and the Aer Rianta 2003 centerline forecasts for Cork and Shannon are the most reasonable assessments of traffic forecasts before the Commission. Accordingly, the Commission has used these traffic forecasts in the Review for the period commencing 1 January 2004.

The Commission has rejected a representation to make a retrospective adjustment to traffic forecasts prior to 1 January 2004. Such a retrospective adjustment would reduce the business risk of

Aer Rianta to below that of what was provided for in the Determination. The prospective adjustment in traffic forecast is entirely consistent with accepted regulatory practice and in particular with the practice of the CAA as to the BAA airports – an important point as the Determination assumed that Aer Rianta is exposed to the business risk equivalent of the BAA.

Aer Rianta made a representation that the mismatch in the Determination between projected and actual traffic growth is due to the failure of the Commission to adjust the traffic forecasts in February 2002 Varied Determination – despite the representations at the time by Aer Rianta to do so. The Commission rejected this representation by Aer Rianta at the time, on the grounds that it did not have the statutory power to consider in the Appeal facts not in existence at the time of the making of the Determination. Aer Rianta raised this issued again in the judicial review proceedings it brought against the Commission. The High Court, in its decision of 3 April 2003 found that “the [Commissioner] was correct in taking the view that he was precluded by statute from considering the updated passenger forecast numbers” prior to a Review.

7.1.2 Security Costs

There was a broad range of comments received in relation to the best approach to the treatment of security costs. Issues raises included: the reasonableness of the costs put forward by Aer Rianta as well as the burden sharing of the costs as amongst the airport authority, airlines and the State and the existence of a proper incentive structure for an efficient management of the costs by the airport authority; the treatment of actual Hold Baggage Screening costs incurred and estimated by the airport authority after the Determination; and the treatment of additional security Capex expenditure by the airport authority after the Determination.

Commission Response:

The Commission has carefully considered the issue of the treatment of additional unforeseen security costs incurred by Aer Rianta after the making of the Determination. The Commission reviewed the security costs put forward by Aer Rianta in light of the changing security environment, increased security mandates imposed on Aer Rianta and industry practice at European airports after 9/11 and concluded that the Aer Rianta additional costs were reasonable in the context of the changed security environment at European airports and the Commission accepts this. To provide Aer Rianta with the appropriate incentives to manage this increase in costs efficiently, the Commission has allowed Aer Rianta with 75% of their costs here – this will have the effect of providing Aer Rianta with a business risk equivalent to that of the BAA, a factor relevant to the making of the Determination.

The Commission considered the issue of allocation of security costs among the airport authority, airlines and the State. The Commission has no policy role in this area. Therefore, it has only allowed verifiable security costs of Aer Rianta to be subject to the 75% costs associated with September 11th 2001 pass through. Should the burden sharing arrangement change in the future, the Commission will adjust its approach accordingly.

The treatment of hold baggage screening costs was provided for in the Determination. Accordingly, it is not an exogenous cost incurred by Aer Rianta as a result of 9/11 and the Commission does not propose to change its estimates of these costs here.

Aer Rianta stated that the Commission's proposals in relation to the Review are "utterly inconsistent [in] that the Commission should factor in an allowance for the operating costs associated with the

security requirements in its current proposals whilst not factoring into its calculation the capital expenditure and associated return and depreciation that is driven by the same events. The Commission has given no reason for this seemingly arbitrary decision.” The Commission has made no arbitrary decision, either in the issuance of CP4/03 or here. The Commission did not include a calculation of the impact of additional security Capex on airport charges in CP4/03 because it did not have the necessary information from Aer Rianta (as to asset lives and other information for the purposes of calculating depreciation) to do so. It was always the intention of the Commission to make an adjustment to the yields once it was in a position to do so and this was clearly stated in CP4/03: “The impact on maximum yields of any additional security Capex included at the review would be calculated in the same manner as other recoverable Capex.” Now that the Commission has the necessary information, the additional security Capex is reflected in the Review in the same manner as other Capex.

7.1.3 Regulatory Asset Base (RAB)

Several interested parties submitted comments on the Commission’s proposals as set out in CP4/2003 to adjust the Regulated Asset Base primarily these views related to the extent of the upward adjustment to the RAB.

Commission response:

The Commission’s approach in the Review is to assign a longer average life to Aer Rianta’s regulatory assets. This has two principal effects. On its own, this change reduces the annual depreciation charge (since the value of the assets to be depreciated is now spread over a greater number of years). Second, because the RAB is depreciated each year, a lower depreciation charge in any given year implies a larger RAB.

The depreciation charge influences the calculation of maximum airport prices in two ways. It affects the size of the RAB (as just discussed) and hence the allowed return calculated with reference to the RAB. In addition, the depreciation charge is itself an allowable cost that Aer Rianta may recover through airport charges. A second material change made in the Review, to *index* the depreciation charge, changes (increases) the depreciation charge and also airport charges.

Along with three other changes⁹ to depreciation, quantitatively much less important, the overall effect is to increase the RAB, used from January 2004 onwards by the Commission to calculate maximum airport charges, by some 30% in 2004. The annual depreciation charge now based on a longer average asset life but with its value indexed, is somewhat lower in January 2004 than it would have been prior to the changes made in the Review¹⁰.

The representations by Aer Lingus and IATA query the large upward adjustment in the RAB and the relatively small reduction in the annual depreciation charge. The new RAB value is the result of using the longer average asset life. The new depreciation charge is the result both of the longer average asset life and indexation, which are, to a substantial degree, offsetting changes. The Commission is satisfied that the changes to the treatment of the RAB and of depreciation, as discussed in section 2.2.1 of CP4/2003, fully account for the adjustments made to the RAB and depreciation charges as set out in Tables 4A and 4B of that report. Accordingly the Commission rejects the representations on these matters from Aer Lingus and from IATA.

⁹ As fully described in section 2.2.1 of CP4/2003.

¹⁰ See Tables 4A and 4B of CP4/2003.

7.1.4 Efficiency and the WACC

Aer Lingus stated that the Commission should either set more demanding efficiency targets for Aer Rianta as a result of changes in the commercial aviation environment since the date of the Determination or it should lower the cost of capital of the regulated firm (used to calculate airport charges) to equate Aer Rianta to a lower risk enterprise.

Commission response:

The Commission has given careful consideration to the Aer Lingus representation that the efficiency targets set for Aer Rianta should be made more demanding, inter alia, in light of the very difficult business environment faced in recent years by many airlines and of the evidence of some airlines having made substantial efficiency improvements.

The Commission has also tested its operational efficiency targets for Aer Rianta against all the international materials and publications known to it that benchmark airport costs and airport performance generally.

The Commission has concluded that its calculation of maximum airport charges, which includes the impact of the efficiency improvements, represents a sound and reasonable provision of funds to the company in respect of its operating costs. The Commission therefore rejects the Aer Lingus and IATA representations that a greater improvement in its operating efficiency be sought from Aer Rianta.

Aer Lingus has claimed that the efficiency targets set for Aer Rianta represent “insurance to Aer Rianta against adverse commercial conditions”, and IATA has claimed that airports are a “low risk” enterprise. A representation similar to IATA’s was also made by the

Irish Association of International Express Carriers (IAIEC). On these grounds, both Aer Lingus and IATA argue for a reduction in the return that the company is allowed to earn on its regulatory assets.

The Commission has rejected these representations that call for a lower allowed return. The return was determined by the Commission, following the preparation of a full technical analysis of the company's cost of capital carried out by the Commission's consultant. This analysis has already taken full account of the commercial environment and the enterprise risk faced by Aer Rianta. Therefore the Commission has made no change to the WACC of 6% as part of the Review.

7.1.5 Computation of the Security Increment

Aer Rianta raised two issues in relation to the computation of the security increment. It stated that additional security should be added into the calculation of charges in the same manner as other Opex. In addition, Aer Rianta stated that in calculating the security increment, the increment should take account of the efficiency adjustment made by the Commission to other personnel Opex. (Sections 2.2.1. and 2.2.2 of the Aer Rianta 8 December 2003 submission)

Commission Response

The Commission accepts these representations and has made the appropriate changes.

7.1.6 Redundancy Programme

Aer Rianta proposes that the review adjust charges at the review to take account of the cost of its redundancy programme undertaken during the period of the Determination.

Commission Response

The Commission rejects this representation. The redundancy programme is an endogenous matter to the regulated firm and including its costs in the price cap at this time would considerably weaken the incentive effects of the price cap. For such a redundancy package to be commercially viable it must be self financing – accordingly the statutory objective of facilitating the operation of cost effective airports would not be furthered by making a revision to the determination at an interim stage.

7.1.7 Sub-Cap on Off-Peak Landing & Take Off Charges

A broad range of comments were received on the Commission's proposal to adjust the sub-cap on off-peak landing and take off charges at Dublin Airport. In this section, each of the main issues raised is dealt with in turn.

1. That the complication and expense required administering the sub-cap imposes a costly regulatory burden.

Commission response:

The existing and revised sub-caps require the administration of, respectively, five (per tonne) and eight (per aircraft movement) off-peak landing charges. The Commission is of the view that costs borne by the airport operator and airlines in implementing this

charging structure are similar to costs incurred elsewhere associated with a new regulatory regime. Moreover, these costs provide an insufficient case against the implementation of a charging basis that aims to satisfy the Commission's statutory objective of facilitating the development and operation of cost-effective airports.

2. That certain aspects of the proposal result in a loss of precision.

Commission response:

Absolute precision in a charging structure to deal with over 1700 aircraft¹¹ would place a significant administrative burden on the airport authority through complexity. The information was, therefore, aggregated to give, using the new ICAO coding system, 114 aircraft types. Using information supplied by Aer Rianta, a weighted average billed operating weight was calculated for each and, in turn, used to calculate ACNs. Likewise, individual charges for each of 114 aircraft types were, as stated in the Addendum to CP4/2003, also deemed administratively burdensome in the short term. Aircraft were, therefore, grouped into categories according to A.C.N. ranges to derive a workable proposal involving 8 charges.

In a similar vein and in response to comments by Aer Lingus and Aer Rianta in respect of the underlying variables that determine ACNs, the Commission is of the view that the loss of precision from foregoing ongoing reassessments is necessary for the sake of regulatory certainty. Prospective aircraft fleet changes, however, have been incorporated into the revised charges.

Aer Rianta claimed that the proposal is contingent on the aircraft fleets of incumbent airlines, which could result in discriminatory

¹¹ 1748 registered aircraft operated at Dublin Airport in 2002.

charges. The Commission incorporated the fleet information of the three main airlines to determine cost-reflective charges for the most heavily used aircraft types. However, in the Addendum to CP4/2003, the Commission welcomed the receipt of fleet information from any and all airlines operating at Dublin and has made appropriate adjustments to its proposal on that basis.

Finally, Airbus submitted that certain aircraft are not categorised, including the Airbus 318, the Boeing 737-900 and -900X series and the Boeing 7E7. These aircraft were not categorised because they did not enter the 2002 aircraft mix. However, the Determination is specified in such a way as to allow their inclusion when and if they do so in the future.

3. That ACNs are an inappropriate basis for calculating off-peak landing and take off charges.

Commission response:

Efficient use of airfield infrastructure requires charges that reflect the marginal cost of an additional landing or take off. During off-peak times, marginal cost is the cost of damage to pavements. MTOW is an inefficient and inequitable basis for charges because aircraft weight is only one of several factors that contribute to pavement damage, the others being landing gear configuration and tyre pressures. ACNs are a means of capturing these additional determinants and were, therefore, deemed the best available tool for damage cost allocation. Figure 1 illustrates the inexact relationship between damage costs (derived from aircraft ACNs) and aircraft weight.

The original intent of the ACN/PCN system was to prevent/minimise excessive aircraft overloads on pavements. According to ICAO's

Aerodrome Design Manual, the ACN is a “number expressing the relative effect of an aircraft on a pavement for a specified standard subgrade strength” and describes their use as “a standard procedure for evaluation of the load rating of aircraft.” Closely related is the concept of a Pavement Classification Number which is defined by ICAO as “a number expressing the bearing strength of a pavement for unrestricted operations” where unrestricted is generally taken to mean that movements of an aircraft are not restricted within the design life of the pavement. Recognising that all pavements have a finite design life, a reasonable assumption is that an aircraft landing or take off consumes some of that life. The amount of that consumption is, in turn, a function of the aircraft’s load rating, which, as outlined above, can be measured by the aircraft’s ACN.

In respect of comments about heavier aircraft using greater runway length, the Commission is satisfied that, because aircraft weight is a significant determinant of aircrafts’ ACNs, this is adequately considered in the approach. Likewise, the Commission does not dispute the possibility that heavier aircraft spend more time on taxiways and runways nor the fact that they have higher wake vortex requirements. However, these factors are considered when determining runway capacity for scheduling purposes. Therefore, as long as capacity exceeds demand (which is the case during off-peak periods), the presence of heavy aircraft should not, in itself, impose costs over and above the marginal damage cost associated with the aircraft movement.

4. That peak/off-peak pricing is inappropriate in the airport context.

Commission response:

The Commission notes international acceptance of the price mechanism as a means of incentivising the efficient use of airport

assets. Peak/off-peak pricing identifies high value airport users, or those that are willing to pay higher prices for access because they generate the greatest benefit from using the airport at these times. Likewise, it is less fair and less efficient to impose equal charges on peak and off-peak users as they, in turn, impose different levels of costs. Peak/off-peak pricing also has the potential to lower airport costs because: (1) the resulting traffic is more evenly distributed throughout the day (more efficient use of resources); and (2) it postpones the optimal timing of investment for capacity expansion. Finally, the Commission notes that new text has now been added to the ICAO Airport Economics Manual (DOC 9562) and the Manual of Air Navigational Services Economics (DOC 9161), which permits airport and air navigational charges to reflect economic principles, providing their application is non-discriminatory.

In respect of comments about evidence to support the effectiveness of the approach, the Commission notes that it is the differential between peak and off-peak charges that determines the strength of the incentives for airlines to shift between peak and off-peak periods, thereby resulting in more efficient use of the airfield infrastructure. Peak landing charges are constrained only by the overall average revenue cap on Dublin Airport and, while the consequences of the existing charging differential are still being analysed, the Commission notes that the current peak charge is lower than the single per tonne charge that previously applied regardless of time of day.

The Commission is also of the view that the cost imposed by the loss of discretion to Aer Rianta over this single element of its overall charging structure is outweighed by the potential benefits of the sub-cap in terms cost-reflectivity and, hence, encouraging efficient use of airfield infrastructure. This, in turn, furthers the achievement of the Commission's statutory objective.

5. That certain costs were inappropriately excluded from the cost base used to calculate off-peak landing and take off charges.

Commission response:

Damage costs alone constitute the marginal infrastructure cost incurred in the off-peak. It was not intended to incorporate fixed, common or overhead costs (such as fire and rescue and ground-based navigational aids) because these costs are unaffected by a single aircraft movement. The Commission has set the overall price cap such that the company can recover all fixed, common and overhead costs, while providing incentives to encourage more efficient use of the existing airfield infrastructure. Similarly, to the extent that they are captured by aircraft weights used to calculate ACNs, passenger load capacities do not impose costs over and above the marginal damage cost associated with a movement of an aircraft.

The additional marginal costs imposed on other elements of the airport system by off-peak runway movements can be recovered through charges for those other elements, that is, parking charges for use of apron space, air bridge charges and passenger service charges for the use of terminal complexes. Aer Rianta is free to manage its charging structure such as to recover these costs.

Noise-related charges have not been imposed since, inter alia, noise/environmental considerations are not included in the list of matters to be considered in section 33 of the Act.

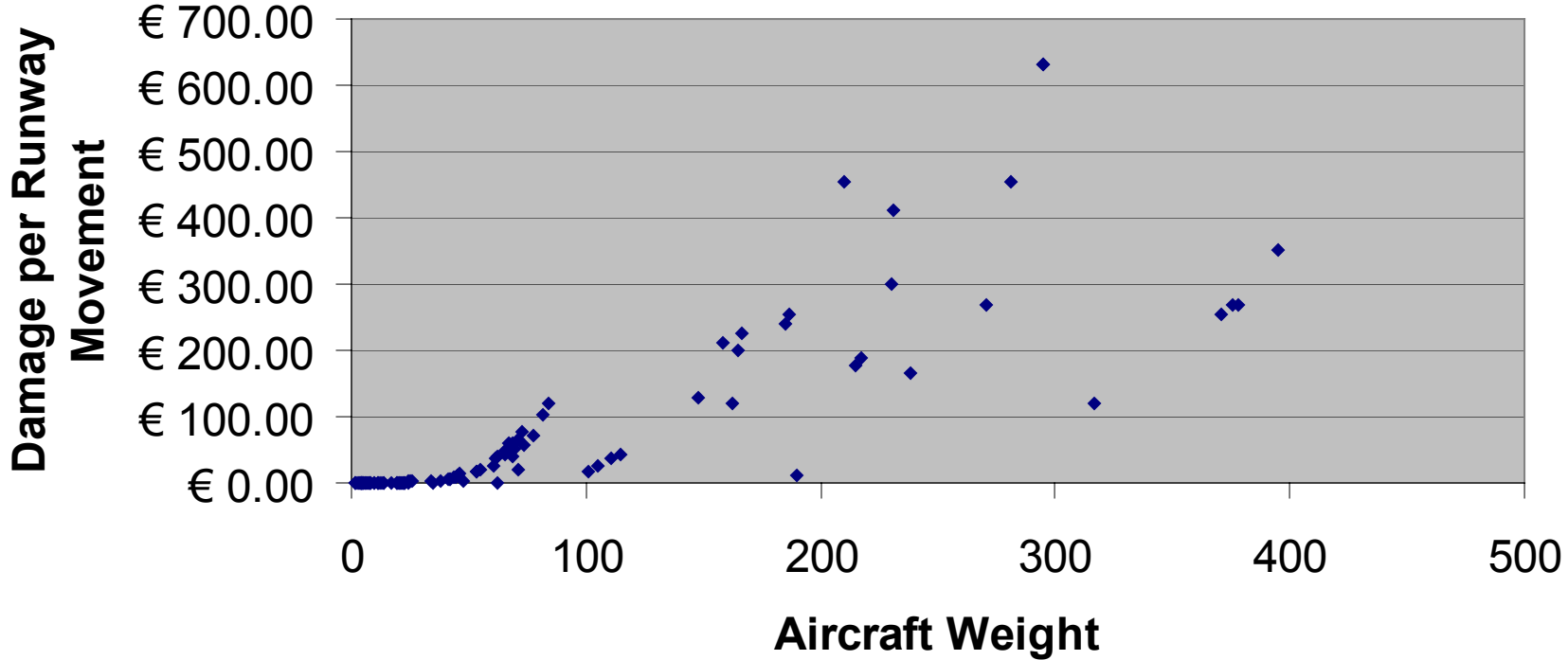
6. That the daily off-peak periods were based on insufficient evidence; were selected according to rigid pre-determined criteria; did not allow for operational changes that could occur over time; should be defined by the slot co-ordinator, and should be reviewed on a seasonal basis.

Commission response:

The Commission remains satisfied that the methodology used to define off-peak periods is consistent with standard practice as set out in ICAO's Aerodrome Design Manual. Moreover, they were specifically designed to allow for the possibility of operational changes, such as the "shifting peak" phenomenon, over time. In particular, the periods were forecast to have spare capacity of between 44% and 91% in 2007 when Aer Rianta considered (at the time of making the original Determination) that a second parallel runway would be required.

The Commission will give further thought to the possibility of involving the slot co-ordinator in the process of defining off-peak periods for the future. However, its view is that the loss of precision from foregoing ongoing reassessments is necessary for the sake of regulatory certainty.

Figure 1: Relationship between Damage & Aircraft Weight



8. YIELD AND RELATED TABLES

Table 1: Comparison of Centerline forecast provided by Aer Rianta for the 01 Price Cap to the forecast provided for the 2-year Review

ALL FIGURES ARE CALENDAR YEAR FIGURES IN '000's

Figures shown in Bold indicate where the CAR intend to switch to the new forecast

Dublin Airport	2001	2002	2003	2004	2005	2006
Varied Determination Feb 2002	15,192	16,070	16,931	17,863	18,838	19,720
Forecast 2002 Aer Rianta Report	14,334	15,000	15,752	16,780	17,711	18,725
<i>Difference</i>	(858)	(1,070)	(1,179)	(1,083)	(1,127)	(995)
Shannon Airport	2001	2002	2003	2004	2005	2006
Varied Determination Feb 2002	2,559	2,659	2,752	2,871	2,992	3,099
Forecast 2003 Aer Rianta Report	2,405	2,240	2,379	2,385	2,588	2,734
<i>Difference</i>	(154)	(419)	(373)	(486)	(404)	(365)
Cork Airport	2001	2002	2003	2004	2005	2006
Varied Determination Feb 2002	1,709	1,807	1,901	2,012	2,122	2,223
Forecast 2003 Aer Rianta Report	1,775	1,906	2,089	2,172	2,292	2,436
<i>Difference</i>	66	99	188	160	170	213
TOTAL ART	2001	2002	2003	2004	2005	2006
Varied Determination Feb 2002	19,460	20,536	21,584	22,746	23,952	25,042
Forecast 2002/3 Aer Rianta Reports	18,514	19,146	20,220	21,337	22,591	23,895
<i>Difference</i>	(946)	(1,390)	(1,364)	(1,409)	(1,361)	(1,147)

Table 2 Security Cost data and Capex

Schedule 1

Actual Airport Police and ASU payroll costs / FTE's 2001 – 2003 by year

Dublin

Total

Actual Y/E Dec 2001		
Total Cost	€ 10,342,599	€ 15,914,488
FTE's & Average Cost	221 FTE's € 46,799	321.92 FTE's € 49,436
Actual Y/E Dec 2002		
Total Cost	€ 11,557,915	€ 17,878,739
FTE's & Average Cost	261.9 FTE's € 44,131	367.92 FTE's € 48,594
Expected Y/E Dec 2003		
Total Cost	€ 12,104,323	€ 19,547,874
FTE's & Average Cost	264.9 FTE's € 45,694	377 FTE's € 51,851

Payroll costs are inclusive of Employer PRSI, Employer Pension contributions, overtime, RDAs and any other pay related costs.
FTE= Full Time Equivalent Staff Member, ASU = Airport Search Unit

Schedule 2

Forecast Airport Police & ASU Payroll Costs / FTE's 2004 - 2006

Dublin

Total

Forecast 2004		
Total Cost	€ 14,092,035	€ 22,495,434
FTE's & Average Cost	314.4 FTE's € 44,822	435.85 FTE's € 49,892 *
Forecast 2005		
Total Cost	€ 15,401,834	€ 24,252,507
FTE's & Average Cost	320.6 FTE's € 48,041	440.8 FTE's € 53,199 *
Forecast 2006		
Total Cost	€ 16,698,187	€ 26,500,313
FTE's & Average Cost	325.6 FTE's € 51,284	454.3 FTE's € 56,450 *

* - Part of the security cost is outsourced

Payroll costs are inclusive of Employer PRSI, Employer Pension contributions, overtime, RDAs and any other pay related costs.

Schedule 3 - Insurance Analysis

	Actual 2001	Actual 2002	Expected 2003	Expected 2004	CAR Allowance 2005	CAR Allowance 2006
Total Insurance Costs (including War and Terrorism)	€ 3,161,459	€ 6,970,896	€ 8,519,310			

Schedule 4 - Security CAPEX Analysis

Dublin

Description

Equipment Sept 2001 - 2006	€ 4,896,264	Includes CCTVs; Screening, X-Ray, Imaging, Access Control and various equipment
Facilities	€ 6,106,540	Screening facilities; ASU security unit; New comms rooms: DHL boundary fence; Security gates, Perimeter fencing, Cargo area, Energy centre and misc facilities
TOTALS	€ 11,002,804	

Shannon

Description

Equipment Sept 2001 - 2006	€ 1,220,066	CCTVs, APFS Petrol Vehicles, Access Control System, Fibre Optic Ring
Facilities	€ 2,059,531	Fencing; Security compound, Fuel farm, Staff Screening, Road development, Perimeter fence; misc work
TOTALS	€ 3,279,597	

Cork

Description

Equipment Sept 2001 - 2006	€ 618,271	CCTVs and vehicles, Access Control and local provisions
Facilities	€ 281,300	Staff airside access & Desks
TOTALS	€ 899,571	

March 2004

Table 3A: Security Costs Aer Rianta

Insurance	Regulatory Years			Calendar Years		
	2001/2002	2002/2003	Q4 2003	2004	2005	2006
Operator's Estimated Insurance Expense	1 5,228,172	8,132,207	2,161,775			
2001 Determination Projected Insurance Expense	2,440,081	3,520,109	953,525			
Discrepancy	2,788,091	4,612,098	1,208,251	5,085,847	5,185,450	5,107,562
Additional Operating Expense	Regulatory Years			Calendar Years		
	2001/2002	2002/2003	Q4 2003	2004	2005	2006
Operator's Estimated Additional OPEX	17,387,676	19,130,590	5,439,636	22,495,434	24,252,508	26,500,313
2001 Determination Projected Security OPEX	18,091,641	18,453,343	4,696,211	16,764,945	18,301,212	19,949,047
Discrepancy	-703,965	677,247	743,425	5,730,489	5,951,296	6,551,266
Total Insurance & Operating Expense Increment	2,084,126	5,289,345	1,951,676	10,816,336	11,136,746	11,658,828

Table 3B: Security Costs Dublin

Insurance	Regulatory Years			Calendar Years		
	2001/2002	2002/2003	Q4 2003	2004	2005	2006
Operator's Estimated Insurance Expense	1 4,083,202	6,351,253	1,688,346			
2001 Determination Projected Insurance Expense	1,739,509	2,519,332	684,210			
Discrepancy	2,343,694	3,831,921	1,004,137	4,162,610	4,273,265	4,233,237
Additional Operating Expense	Regulatory Years			Calendar Years		
	2001/2002	2002/2003	Q4 2003	2004	2005	2006
Operator's Estimated Additional OPEX	11,254,086	11,967,721	3,398,777	14,092,035	15,401,834	16,698,187
2001 Determination Projected Security OPEX	11,673,805	11,835,029	2,984,615	10,749,859	11,686,679	12,726,445
Discrepancy	-419,719	132,692	414,162	3,342,176	3,715,155	3,971,742
Total Insurance & Operating Expense Increment	1,923,975	3,964,613	1,418,299	7,504,786	7,988,420	8,204,979

Notes

1) CAR has not included the Aer Rianta Insurance figures for 2001 as the impact of Sept 11th was not felt until 2002

March 2004

Table 4A: Calculation of Regulatory Asset Base and Depreciation – Aer Rianta

	February 2002 Varied Determination		March 2004 Review
	€		€
Regulatory year starting:	Sep 2003	V	Jan 2004
Indexed cost of assets	1,682,021,195		1,193,494,628
Indexed accumulated depreciation	1,020,384,435		327,818,261
Indexed net assets (RAB)	661,636,760		865,676,367
x WACC (pre-inflation; post-tax)	6.00%		6.00%
= Return on Capital	39,698,206		51,940,582
Depreciation charge	58,511,543		51,384,550

Table 4B: Calculation of Regulatory Asset Base and Depreciation – Dublin Airport

	February 2002 Varied Determination		March 2004 Review
	€		€
Regulatory year starting:	Sep 2003	V	Jan 2004
Indexed cost of assets	1,078,806,759		830,613,707
Indexed accumulated depreciation	587,043,236		216,484,250
Indexed net assets (RAB)	491,763,523		614,129,457
x WACC (pre-inflation; post-tax)	6.00%		6.00%
= Return on Capital	29,505,811		36,847,767
Depreciation charge	41,588,012		35,724,786

Table 5: Prior Period Adjustments

March 2004 Review		Aer Rianta			Dublin Airport		
	Regulatory year	1	2	3	1	2	3
	<u>Maximum rate</u>	<u>Sep-01</u>	<u>Sep-02</u>	<u>Sep-03</u>	<u>Sep-01</u>	<u>Sep-02</u>	<u>Sep-03</u>
11	Maximum rate incl. security adj	€6.09	€6.16	€6.16	€5.16	€5.10	€4.98
12	CPI	4.20%	3.10%		4.20%	3.10%	
13	X	3.10%	3.10%		5.40%	5.40%	
14	I	3.18%	2.17%		3.18%	2.17%	
15	Actual yield (Y*)	€5.59	€5.31		€5.33	€5.00	
16	K		€0.52	€1.41		(€0.18)	(€0.06)
17	W		€0.02	€0.15		€0.02	€0.15
18	MX yield, inc. K and W	€6.09	€6.69		€5.16	€4.94	
19	<i>Published Rate (Feb 2002 incl.K and W)</i>	€6.34	€6.99	€8.48	€5.38	€5.26	€5.28

Table 6 Effect of proposed changes on Maximum 2004 Yields

March 2004

**Table 6A: Effect of Proposed Changes on Maximum 2004 Yields and X factor
AER RIANTA**

		Maximum rate 2004	X-factor
<u>Scenario</u>			
1	CP4/2003	€6.29	2.9%
2	- addition of incremental security-related CAPEX	€0.08	
3	Revised calculation including incremental security-related CAPEX	€6.37	2.6%
4	- revised traffic forecasts	€0.03	
5	- adjust incremental security personnel cost for efficiency factor	€0.15	
6	- revised taxation calculation	€0.07	
7	- 75% pass-through of incremental security costs	(€0.11)	
8	All computation and information adjustments	€6.46	2.9%
9	Carry forward of adjustments to period	K €1.41	
10	Prior to January 2004 (see Table 5)	W €0.15	
11	New Price Cap for 2004	€8.02	2.9%

**Table 6B: Effect of Proposed Changes on Maximum 2004 Yields and X factor
DUBLIN AIRPORT**

		Maximum rate 2004	X-factor
<u>Scenario</u>			
1	CP4/2003	€5.04	3.8%
2	- addition of incremental security-related CAPEX	€0.08	
3	Revised calculation including incremental security-related CAPEX	€5.12	3.8%
4	- revised traffic forecasts	€0.00	
5	- adjust incremental security personnel cost for efficiency factor	€0.15	
6	- revised taxation calculation	€0.06	
7	- 75% pass-through of incremental security costs	(€0.09)	
8	All computation and information adjustments	€5.20	3.7%
9	Carry forward of adjustments to period	K (€0.06)	
10	Prior to January 2004 (see Table 5)	W €0.15	
11	New Price Cap for 2004	€5.29	3.7%

March 2004

Table 7A: Calculation of the 2004 Yield for Aer Rianta

Aer Rianta		€
RAB @ 1 January 2004		865,676,366
Multiplied by WACC		6%
= Return on Capital		51,940,582
Plus : Depreciation		51,384,550
OPEX		220,561,391
less reduction in OPEX due to efficiency gains		-24,388,766
plus security adjustment		8,112,252
Regulatory Fees		1,731,888
= Sub-total		309,341,897
Plus : Taxation		9,510,459
Minus : Gross Commercial Revenue		-180,915,113
= Maximum Allowable Revenue		137,937,243
Divide by No of Passengers		21,337,000
= Maximum Average Revenue per Passenger		€ 6.46
Carry forward of adjustment from	"K"	€ 1.41
period prior to 2004	"W"	€ 0.15
= Maximum Average Revenue per Passenger incl W & K		€ 8.02

Table 7B: Calculation of the 2004 Yield for Dublin Airport

Dublin Airport		€
RAB @ 1 January 2004		614,129,455
Multiplied by WACC		6%
= Return on Capital		36,847,767
Plus : Depreciation		35,724,796
OPEX		146,145,591
less reduction in OPEX due to efficiency gains		-16,808,886
plus security adjustment		5,628,590
Regulatory Fees		1,228,639
= Sub-total		208,766,497
Plus : Taxation		6,466,876
Minus : Gross Commercial Revenue		-128,052,159
= Maximum Allowable Revenue		87,181,214
Divide by No of Passengers		16,780,000
= Maximum Average Revenue per Passenger		€ 5.20
Carry forward of adjustment from	"K"	€ (0.06)
period prior to 2004	"W"	€ 0.15
= Maximum Average Revenue per Passenger incl W & K		€ 5.29