



**DETERMINATION IN RESPECT OF THE MAXIMUM  
LEVELS OF AIRPORT CHARGES THAT MAY BE LEVIED BY  
AN AIRPORT AUTHORITY IN RESPECT OF DUBLIN,  
SHANNON AND CORK AIRPORTS IN ACCORDANCE  
WITH SECTION 32 OF THE AVIATION REGULATION  
ACT, 2001**

**26 AUGUST 2001**

# 1 Definitions

In this Determination unless the context otherwise requires

1. “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” has the meaning assigned to it by section 2 of the Air Navigation and Transport (Amendment) Act, 1998;

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

“cargo air services” means services supplied in connection with the transportation by air of cargo to or from Dublin, Shannon or Cork airport and services supplied in connection with the landing, parking or taking off of cargo aircraft at Dublin, Shannon or Cork airport including the supply of airbridges (but excluding air navigation and aeronautical communications services as defined by the Irish Aviation Authority Act, 1993);

“non-cargo air services” means services supplied in connection with the arrival at or departure from Dublin, Shannon or Cork airport by air of passengers and services supplied in connection with the landing, parking or taking off of aircraft at Dublin, Shannon or Cork airport including the supply of airbridges (but excluding air navigation and aeronautical communications services as defined by the Irish Aviation Authority Act, 1993) other than cargo air services.

“Off-peak times” means for all days from 1 November to 30 April inclusive (“winter months”)

0000 – 0744

1545 – 1744

2100 – 2359

and for all days from 1 May to 31 October inclusive (“summer months”)

0000 – 0559

0800 – 0859

1500 – 1629

1915 – 2059

2130 – 2359

“passenger using” means a passenger embarking or disembarking an aircraft. Transit and transfer passengers, arriving at and departing from the same airport without leaving that airport, whether on the same aircraft or on two different aircraft, shall be counted as a single passenger;

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.

## 2 Regulatory Year 2001/02

1. The Airport Authority shall ensure that, for the regulatory year 2001/02, the average revenue per passenger yielded by way of airport charges levied at Dublin, Shannon and Cork airports shall not exceed:

$$Y_{ART,O1} = IR\text{£}5.29 = \textit{euro } 6.71$$

where

$Y_{ART,O1}$  = maximum average revenue per passenger using Dublin, Shannon or Cork Airport in the regulatory year 2001/02.

2. In the regulatory year 2001/02, 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

$$C_{01} = IR\text{£}10 = \textit{euro } 12.69$$

where

$C_{01}$  is the maximum charge per tonne that can be levied during the regulatory year 2001/02.

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).

3. The Airport Authority shall ensure that, for the regulatory year 2001/02, the average revenue per passenger yielded by way of airport charges levied at Dublin Airport shall not exceed:

$$Y_{DUB,O1} = IR\text{£}4.41 = \textit{euro } 5.60$$

where

$Y_{DUB,O1}$  = maximum average revenue per passenger using Dublin Airport in the regulatory year 2001/02.

4. The Airport Authority shall ensure that, for the regulatory year 2001/02, 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 five

different categories of aircraft referred to in the table below, not exceed the maxima stipulated therein

Aircraft Category 1	$TL_{01,1} = IR\mathcal{L}0.21 = euro\ 0.26$
Aircraft Category 2	$TL_{01,2} = IR\mathcal{L}0.86 = euro\ 1.09$
Aircraft Category 3	$TL_{01,3} = IR\mathcal{L}1.06 = euro\ 1.34$
Aircraft Category 4	$TL_{01,4} = IR\mathcal{L}1.52 = euro\ 1.93$
Aircraft Category 5	$TL_{01,5} = IR\mathcal{L}2.16 = euro\ 2.74$

where

$TL_{01,n}$  are the maximum charges per tonne per aircraft movement during off-peak times to be levied at Dublin Airport during the regulatory year 2001/02 in respect of the five different aircraft categories  $n = 1, \dots, 5$  as set out in schedule 1.

5. In this part of the Determination:

“regulatory year 2001/02” means the twelve month period beginning on 24 September 2001.

### 3 Regulatory Year 2002/03

1. The Airport Authority shall ensure that, for the regulatory year 2002/03, the average revenue per passenger yielded by way of airport charges levied at Dublin, Shannon and Cork airports in respect of non-cargo air services shall not exceed:

$$NCY_{ART,02} = NCY_{ART,01} \left( 1 + \frac{\Delta CPI_{01} - X_{ART}}{100} \right) - K_{ART,02}$$

where

$NCY_{ART,02}$  = maximum average revenue per passenger using Dublin, Shannon or Cork Airport in the regulatory year 2002/03 for non-cargo air services.

$\Delta CPI_{01}$  has the meaning assigned to it by paragraph 5 of this part of the Determination.

$$X_{ART} = 5$$

and where

$$\begin{aligned} NCY_{ART,01} &= IR\text{£}5.29 - (CY_{ART,01} - CIC_{ART,01}) + W_{CAR,01} \\ &= \text{euro } 6.71 - (CY_{ART,01} - CIC_{ART,01}) + W_{CAR,01} \end{aligned}$$

in which

$CY_{ART,01}$  = average revenue per passenger using Dublin, Shannon or Cork airports in the regulatory year 2002/03 for cargo air services

$CIC_{ART,01}$  = the incremental costs associated with the provision of cargo air services at Dublin, Shannon and Cork airports during the regulatory year 2001/02

$$W_{CAR,01} = A_{CAR,01} - B_{CAR,01}$$

in which

$A_{CAR,01}$  = the Commission for Aviation Regulation's actual cost per passenger recoverable through airport charges levied at Dublin, Shannon and Cork Airports during the regulatory year 2001/02

$B_{CAR,01}$  = the Commission for Aviation Regulation's budgeted cost per passenger recoverable through airport charges levied at Dublin, Shannon and Cork Airports during the regulatory year 2001/02.

$K_{ART,02}$  = the correction per passenger (only of a negative value) to be made in the regulatory year 2002/03, which is derived from the following formula:

if  $TNCY_{ART,01} < Q_{ART,01} \cdot NCY_{ART,01}$ , then

$$K_{ART,02} = \frac{TNCY_{ART,01} - (Q_{ART,01} \cdot NCY_{ART,01})}{Q_{ART,01}} \left[ 1 + \frac{I_{01}}{100} \right],$$

otherwise  $K_{ART,02} = 0$

in which

$TNCY_{ART,01}$  = total revenue from airport charges levied in respect of non-cargo air services at Dublin, Shannon and Cork airports in the regulatory year 2001/02

$Q_{ART,01}$  = passengers using Dublin, Shannon and Cork airports in the regulatory year 2001/02

$I_{01}$  = the interest rate in the regulatory year 2001/02.

2. In the regulatory year 2002/03, 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

$$C_{02} = C_{01} \left( 1 + \frac{\Delta CPI_{01} - X_{ART}}{100} \right)$$

where

$C_{02}$  is the maximum charge per tonne that can be levied during the regulatory year 2002/03

$C_{01} = IR£10 = \text{euro } 12.69$  is as defined above

$\Delta CPI_{01}$  has the meaning assigned to it by paragraph 5 of this part of the Determination

$$X_{ART} = 5$$

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).

3. The Airport Authority shall ensure that, for the regulatory year 2002/03, the average revenue per passenger yielded by way of airport charges levied in respect of non-cargo air services at Dublin Airport shall not exceed the amount calculated in accordance with the following formula:

$$NCY_{DUB,02} = NCY_{DUB,01} \left( 1 + \frac{\Delta CPI_{01} - X_{DUB}}{100} \right) - K_{DUB,02}$$

where

$NCY_{DUB,02}$  = maximum average revenue per passenger using Dublin Airport in the regulatory year 2002/03 for non-cargo air services.

$\Delta CPI_{01}$  has the meaning assigned to it by paragraph 5 of this part of the Determination.

$$X_{DUB} = 7$$

and where

$$\begin{aligned} NCY_{DUB,01} &= IR£4.41 - (CY_{DUB,01} - CIC_{DUB,01}) + W_{CAR,DUB,01} \\ &= euro 5.60 - (CY_{DUB,01} - CIC_{DUB,01}) + W_{CAR,DUB,01} \end{aligned}$$

in which

$CY_{DUB,01}$  = average revenue per passenger using Dublin Airport in the regulatory year 2002/03 for cargo air services

$CIC_{DUB,01}$  = the incremental costs associated with the provision of cargo air services at Dublin Airport during the regulatory year 2001/02

$$W_{CAR,DUB,01} = A_{CAR,DUB,01} - B_{CAR,DUB,01}$$

in which



$A_{CAR,DUB,01}$  = the Commission for Aviation Regulation's actual cost per passenger recoverable through airport charges levied at Dublin Airport during the regulatory year 2001/02

$B_{CAR,DUB,01}$  is the Commission for Aviation Regulation's budgeted cost per passenger recoverable through airport charges levied at Dublin Airport during the regulatory year 2001/02.

$K_{DUB,02}$  = the correction per passenger (only of a negative value) to be made in the regulatory year 2002/03, which is derived from the following formula:

if  $TNCY_{DUB,01} < Q_{DUB,01} \cdot NCY_{DUB,01}$ , then

$$K_{DUB,02} = \frac{TNCY_{DUB,01} - (Q_{DUB,01} \cdot NCY_{DUB,01})}{Q_{DUB,01}} \left[ 1 + \frac{I_{01}}{100} \right],$$

otherwise  $K_{DUB,01} = 0$

in which

$TNCY_{DUB,01}$  = total revenue from airport charges levied in respect of non-cargo air services at Dublin Airport in the regulatory year 2001/02

$Q_{DUB,01}$  = passengers using Dublin Airport in the regulatory year 2001/02

$I_{01}$  = the interest rate in the regulatory year 2001/02.

4. The Airport Authority shall ensure that, for the regulatory year 2002/03, the charges levied in respect of the landing and take-off of aircraft during daily off-peak times at Dublin Airport shall not exceed the maxima calculated in accordance with the following formula

$$TL_{02,n} = TL_{01,n} \left( 1 + \frac{\Delta CPI_{01}}{100} \right) \quad \text{for all } n = 1, \dots, 5$$

where

$TL_{02,n}$  are the maximum charges per tonne per aircraft movement during off-peak times to be levied at Dublin Airport during the regulatory year 2002/03 in respect of the five different aircraft categories  $n = 1, \dots, 5$  as set out in schedule 1.

$TL_{01,n}$  for all  $n = 1, \dots, 5$  are specified above.

5. In this part of the Determination:

“regulatory year 2002/03” means the twelve month period beginning on 24 September 2002;

“ $\Delta CPI_{01}$ ” means the percentage change (whether of a positive or negative value) in the Consumer Price Index between that published in July 2001 and July 2002;

“incremental costs associated with the provision of cargo air services” means the additional costs borne by the airport authority in the provision of cargo air services to be notified by the Commission to the airport authority from time to time;

“interest rate” means the average of the rate (expressed as an annual percentage interest rate) on three-month commercial paper issued between October 2001 and September 2002 by the National Treasury Management Agency (NTMA).

## 4 Regulatory Years 2003/04-2005/06

1. The Airport Authority shall ensure that, for each of the three consecutive regulatory years 2003/04, 2004/05 and 2005/06, the average revenue per passenger yielded by way of airport charges levied at Dublin, Shannon and Cork airports in each of the relevant regulatory years in respect of non-cargo air services shall not exceed the amount calculated in accordance with the following formula:

$$NCY_{ART,t} = NCY_{ART,t-1} \left( 1 + \frac{\Delta CPI_{t-1} - X_{ART}}{100} \right) - K_{ART,t}$$

where

$t$  denotes the relevant regulatory year in each case.

$NCY_{ART,t}$  = maximum average revenue per passenger using Dublin, Shannon or Cork Airport in the relevant regulatory year  $t$  for non-cargo air services, where  $t = 03, 04$  or  $05$ .

$\Delta CPI_{t-1}$  has the meaning assigned to it by paragraph 5 of this part of the Determination.

$$X_{ART} = 5$$

$NCY_{ART,t-1}$  = maximum average revenue per passenger using Dublin, Shannon or Cork Airport in the relevant regulatory year  $t - 1$  for non-cargo air services, which is calculated in accordance with the following formula

$$NCY_{ART,t-1} = \left[ NCY_{ART,t-2} \left( 1 + \frac{\Delta CPI_{t-2} - X_{ART}}{100} \right) - K_{ART,t-1} \right] + W_{CAR,t-1}$$

where

$NCY_{ART,t-2}$  = maximum average revenue per passenger using Dublin, Shannon or Cork airport in the relevant regulatory year  $t - 2$  for non-cargo air services

$\Delta CPI_{t-2}$  has the meaning assigned to it by paragraph 5 of this part of the Determination

$K_{ART,t-1}$  = the correction per passenger (only of a negative value) to be made in the relevant regulatory year  $t - 1$

$$W_{CAR,t-1} = A_{CAR,t-1} - B_{CAR,t-1}$$

in which

$A_{CAR,t-1}$  = the Commission for Aviation Regulation's actual cost per passenger recoverable through airport charges levied at Dublin, Shannon and Cork airports during the relevant regulatory year  $t - 1$

$B_{CAR,t-1}$  = the Commission for Aviation Regulation's budgeted cost per passenger recoverable through airport charges levied at Dublin, Shannon and Cork airports during the relevant regulatory year  $t - 1$ .

$K_{ART,t}$  = the correction per passenger (only of a negative value) to be made in the relevant regulatory year  $t$ , which is derived from the following formula:

if  $TNCY_{ART,t-1} < Q_{ART,t-1} \cdot NCY_{ART,t-1}$ , then

$$K_{ART,t} = \frac{TNCY_{ART,t-1} - (Q_{ART,t-1} \cdot NCY_{ART,t-1})}{Q_{ART,t-1}} \left[ 1 + \frac{I_{t-1}}{100} \right],$$

otherwise  $K_{ART,t-1} = 0$

in which

$TNCY_{ART,t-1}$  = total revenue from airport charges levied in respect of non-cargo air services at Dublin, Shannon and Cork airports in the relevant regulatory year  $t - 1$

$Q_{ART,t-1}$  = passengers using Dublin, Shannon and Cork airports in the relevant regulatory year  $t - 1$

$I_{t-1}$  = the interest rate in the relevant regulatory year  $t - 1$ .

2. In the relevant regulatory year  $t$ , 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

$$C_t = C_{t-1} \left( 1 + \frac{\Delta CPI_{t-1} - X_{ART}}{100} \right)$$

where

$C_t$  is the maximum charge per tonne that can be levied during the relevant regulatory year  $t$ , where  $t = 03, 04$  or  $05$

$C_{t-1}$  is the maximum charge per tonne that can be levied during the relevant regulatory year  $t - 1$

$\Delta CPI_{t-1}$  has the meaning assigned to it by paragraph 5 of this part of the Determination

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).

3. The Airport Authority shall ensure that, for each of the three consecutive regulatory years 2003/04, 2004/05 and 2005/06, the average revenue per passenger yielded by way of airport charges levied at Dublin Airport in each of the relevant regulatory years in respect of non-cargo air services shall not exceed the amount calculated in accordance with the following formula:

$$NCY_{DUB,t} = NCY_{DUB,t-1} \left( 1 + \frac{\Delta CPI_{t-1} - X_{DUB}}{100} \right) - K_{DUB,t}$$

where

$t$  denotes the relevant regulatory year in each case.

$NCY_{DUB,t}$  = maximum average revenue per passenger using Dublin Airport in the relevant regulatory year  $t$  for non-cargo air services, where  $t = 03, 04$  or  $05$ .

$\Delta CPI_{t-1}$  has the meaning assigned to it by paragraph 5 of this part of the Determination.

$$X_{ART} = 7$$

$NCY_{DUB,t-1}$  = maximum average revenue per passenger using Dublin Airport in the relevant regulatory year  $t - 1$  for non-cargo air services, which is calculated in accordance with the following formula

$$NCY_{DUB,t-1} = \left[ NCY_{DUB,t-2} \left( 1 + \frac{\Delta CPI_{t-2} - X_{DUB}}{100} \right) - K_{DUB,t-1} \right] + W_{DUB,t-1}$$

where

$NCY_{DUB,t-2}$  = maximum average revenue per passenger using Dublin Airport in the relevant regulatory year  $t - 2$  for non-cargo air services

$\Delta CPI_{t-2}$  has the meaning assigned to it by paragraph 5 of this part of the Determination

$K_{DUB,t-1}$  = the correction per passenger (only of a negative value) to be made in the relevant regulatory year  $t - 1$

$$W_{DUB,t-1} = A_{DUB,t-1} - B_{DUB,t-1}$$

in which

$A_{DUB,t-1}$  = the Commission for Aviation Regulation's actual cost per passenger recoverable through airport charges levied at Dublin Airport during the relevant regulatory year  $t - 1$

$B_{CAR,t-1}$  = the Commission for Aviation Regulation's budgeted cost per passenger recoverable through airport charges levied at Dublin Airport during the relevant regulatory year  $t - 1$ .

$K_{DUB,t}$  = the correction per passenger (only of a negative value) to be made in the relevant regulatory year  $t$ , which is derived from the following formula:

if  $TNCY_{DUB,t-1} < Q_{DUB,t-1} \cdot NCY_{DUB,t-1}$ , then

$$K_{DUB,t} = \frac{TNCY_{DUB,t-1} - (Q_{DUB,t-1} \cdot NCY_{DUB,t-1})}{Q_{DUB,t-1}} \left[ 1 + \frac{I_{t-1}}{100} \right],$$

otherwise  $K_{DUB,t-1} = 0$

in which

$TNCY_{DUB,t-1}$  = total revenue from airport charges levied in respect of non-cargo air services at Dublin Airport in the relevant regulatory year  $t - 1$

$Q_{DUB,t-1}$  = passengers using Dublin Airport in the relevant regulatory year  $t - 1$

$I_{t-1}$  = the interest rate in the relevant regulatory year  $t - 1$ .

4. The Airport Authority shall ensure that, for each of the three consecutive regulatory years 2003/04, 2004/05 and 2005/06, the charges levied in respect of the landing and take-off of aircraft during daily off-peak times at Dublin Airport shall not exceed the maxima calculated in accordance with the following formula

$$TL_{t,n} = TL_{t,n} \left( 1 + \frac{\Delta CPI_{t-1}}{100} \right) \quad \text{for all } n = 1, \dots, 5$$

where

$TL_{t,n}$  are the maximum charges per tonne per aircraft movement during off-peak times to be levied at Dublin Airport during the relevant regulatory year  $t$  in respect of the five different aircraft categories  $n = 1, \dots, 5$  as set out in schedule 1, where  $t = 03, 04$  and  $05$ .

$TL_{t-1,n}$  are the maximum charges per tonne per aircraft movement during off-peak times to be levied at Dublin Airport during the relevant regulatory year  $t - 1$  in respect of the five different aircraft categories  $n = 1, \dots, 5$  as set out in schedule 1

5. In this part of the Determination:

“relevant regulatory year  $t$ ” means the twelve month period beginning on 24 September of the year 2003 when  $t = 03$ , 2004 when  $t = 04$  and 2005 when  $t = 05$ ;

“ $\Delta CPI_{t-1}$ ” means the percentage change (whether of a positive or negative value) in the Consumer Price Index between that published in July 2001 and July 2002 when  $t = 03$ , July 2002 and July 2003 when  $t = 04$  and July 2003 and July 2004 when  $t = 05$ ;

“ $\Delta CPI_{t-2}$ ” means the percentage change (whether of a positive or negative value) in the Consumer Price Index between that published in July 2000 and July 2001 when  $t = 03$ , July 2001 and July 2002 when  $t = 04$  and July 2002 and July 2003 when  $t = 05$ ;

“interest rate” means the average of the rate (expressed as an annual percentage interest rate) on three-month commercial paper issued between October of one year and September of the following year by the National Treasury Management Agency (NTMA).



## **5 Treatment of Over-recovery**

In the event of the Commission assessing that the Airport Authority has levied charges in a regulatory year which exceed the maximum yields set out in this determination for the regulatory year in question, the airport authority shall, within 45 days of the end of that regulatory year or such further period as the Commission specifies, make a repayment to the airport users who have paid such charges.

The total amount of any such repayment shall equal the amount by which the yield exceeded the maximum level set for the regulatory year in question and shall be calculated and repaid to airport users on the basis of the same charging unit which was applied to the levying of the charge or charges as the case may be. Where a charge is set by reference to a maximum level fixed by this determination and without reference to a charging unit, the airport users who are entitled to a repayment in respect of such charge shall be repaid the amount by which the levied charge exceeded the maximum level fixed.

Notwithstanding the broad meaning ascribed to the term airport users by the Commission for the purpose of making this determination, only those airport users upon which charges have been levied directly will be entitled to a rebate in accordance with this part of the determination.

## **6 Entry into Force of this Determination**

This Determination shall enter into force on 24 September 2001.

## 7 Schedule 1 – Aircraft Categories

Aircraft Category 1				
AN24	B737500	B75723N	CRJ	RJ85
ATP	B737505	B75727B	D328	SAAB2000
ATR42	B737529	B75728A	D328110	SF34
ATR42300	B737530	B7572Q8	DC9	SH36
ATR72	B737548	B7572T7	DC941	SH360
B717	B73755S	BA11	DC951	SH360100
B737	B7375K5	BA11501	DC980	TU134
B737200	B7375L9	BA11510	DC982	TU154
B737222	B737600	BA11523	DC983	TU154B
B737229	B737683	BA11530	DC987	TU154M
B7372YF	B737700	BA146300	DH8	
B737300	B7377AK	BA41	DHC7	
B737329	B7377L9	BA46200	DHC8	
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	

Aircraft Category 2		Aircraft Category 3		Aircraft Category 4	Aircraft Category 5
A300	A320200	A330	B767200	A321	B727
A300203	A320211	A330200	B767204	A321131	B727256
A300600	A320212	A330243	B767300	A321132	B727276
A300B4	A320214	A330301	B767304E	A321200	
A310	A320231	AN12	B767332	A321211	
A310300	A320232	B747	B7673Q8	A321231	
A310304	DC862F	B747128	L1011	A340312	
A319	MD80	B747200	L10111	B777	
A319100	MD81	B747400	L101114	DC10	
A319111	MD82	B767	L1011385	DC1030	
A319112	MD83			MD11	
A319114	MD87			MD90	
A320	MD87H			MD9030	

## **Explanatory Memorandum**

### **to Accompany Determination in Respect of the Maximum Airport Charges**

#### Definitions

The Aviation Regulation Act, 2001 defines "airport charges".

The Commission is concerned with setting maximum levels of airport charges. Separately, under the Groundhandling Regulations, where access to airport installations gives rise to the collection of a fee, that fee must be specifically approved by the Commission. Accordingly, there may be a partial overlap between the separate regimes in that a fee requiring specific approval under the Groundhandling Regulations may also fall within the definition of airport charges. In such a case, the revenue arising from such a fee will be taken into consideration in terms of the operation of the regulatory till.

A person is counted by the Commission as a passenger each time they embark or disembark from an aircraft at an Aer Rianta airport in Ireland. Transit and transfer passengers, arriving at and departing from the same Irish airport without leaving that airport, whether on the same or different aircraft, are counted by the Commission as a single passenger.

Because the Commission's Determination is being made by reference to an average revenue yield per passenger, it is necessary to define the precise meaning of 'passenger'. This the Commission has done in paragraph 3.

The regulatory year shall run from 24<sup>th</sup> September to the following 23<sup>th</sup> September for each 12-month period beginning 24<sup>th</sup> September 2001.

The Act provides, in section 32(5), that, not later than 30 days after the making of the Determination, it shall come into force. The Commission's Determination was made on 26<sup>th</sup> August 2001.

Legally, it must come into force no later than 24<sup>th</sup> September 2001. The Determination shall come into force on 24<sup>th</sup> September 2001 and shall remain in force for 5 years. The regulatory year shall run from 24<sup>th</sup> September to the following 23<sup>rd</sup> September, starting from 24<sup>th</sup> September 2001. The legal significance is that this date determines the reference period for deciding Aer Rianta's compliance with the price cap. In other words, compliance must be secured and measured from that date.

### Maximum Airport Charges

The Determination is expressed in terms of the maximum average revenue per-passenger yielded by way of airport charges.

After the Commission issued its draft Determination, there was some confusion about the exact way in which a maximum average revenue yield operates. In this document, the Commission is including a fuller explanation of the average revenue yield concept in the hope of aiding understanding of its approach. A simplified example of how a yield is calculated is therefore contained in Appendix 1.

There shall be two maximum average revenue yields per passenger: (i) a maximum yield applied to the aggregate average revenue per passenger derived from airport charges at Aer Rianta's three Irish airports; and (ii) a

maximum applied to the average revenue per passenger derived from airport charges at Dublin Airport alone.

In its draft Determination, the Commission set maximum yields at each of Aer Rianta's three airports. For its final Determination, the Commission has decided to set an overall maximum yield and to place an airport-specific maximum yield at Dublin Airport alone.

For the regulatory year 2001/02, each maximum yield is expressed in terms of a fixed monetary amount stated in the Determination.

For the remaining four years of the Determination, the 2001/02 maximum yield is updated according to a CPI-X formula, as set out in the Determination, where the CPI refers to the Consumer Price Index of the Central Statistics Office and the X factor is stated in the Determination

An explanation and illustrative examples of the operation of the X factor are presented in Appendix 2.

## Regulatory Tills

Both of the Regulatory Tills defined in paragraph 6 exclude Aer Rianta International and Great Southern Hotels but include all other activities. Furthermore, in calculating maximum average yields per passenger, the Commission has excluded non-interest bearing loans from Aer Rianta to Aer Rianta International and Great Southern Hotels which would otherwise have had the effect of raising airport charges in Ireland.

Both Regulatory Tills are calculated to include all Aer Rianta's activities other than those excluded in paragraph 9.

The Commission's calculation of the maximum average revenue yield per passenger are shown in Table 1A and 1B below. As may be seen, the yield is calculated by adding the following four items: (i) the return allowed to the airport operator; (ii) depreciation; (iii) the operating costs (opex) of the airport; and (iv) the corporate tax liability. From that total, the airport's gross commercial revenues are subtracted. The result is divided by a forecast of passenger numbers to produce the maximum average yield.

In Table 1A and IB:

"RAB" means the regulatory asset base; this is the value of the set of physical assets on which Aer Rianta is allowed to earn a return. The Commission has accepted, for the purpose of calculating the value of the RAB, Aer Rianta's figure for the Indexed Historic Cost net book value (NBV) of the assets, subject to a write-down of the value of Pier C at Dublin and the new terminal building at Shannon;

TABLE 1A: CALCULATION OF THE 2001/02 YIELD FOR AER RIANTA

		IEP £
	RAB	457,294,032
	Multiplied by WACC	6%
	= Return on Capital	27,437,642
	Plus: Depreciation	35,320,757
	Opex*	209,714,472
	= Sub-total	272,472,871
	Plus: Taxation	8,098,638
	Minus: Gross Commercial Revenue	(182,481,110)
	=Maximum Allowable Revenue	98,090,398
	/ Passengers	18,557,881
	<b>= Maximum Average Revenue per PaPassenger</b>	<b>IEP £5.29</b>
		<b>EUR 6.71</b>

The opex figure incorporates the effect of an efficiency improvement of 3.5% in Dublin Airport and 4% in Shannon Airport.

TABLE 1B: CALCULATION OF THE 2001/02 YIELD FOR DUBLIN AIRPORT

		IEP £
	RAB	326,719,185
	Multiplied by WACC	6%
	= Return on Capital	19,603,151
	Plus: Depreciation	25,621,393
	Opex*	133,804,952
	= Sub-total	179,029,496
	Plus: Taxation	5,970,858
	Minus: Gross Commercial Revenue	(121,727,378)
	= Maximum Allowable Revenue	63,272,976
	/ Passengers	14,352,278
	<b>= Maximum Average Revenue per PaPassenger</b>	<b>IEP £4.41</b>
		<b>EUR 5.60</b>

The opex figure incorporates the effect of an efficiency improvement of 3.5% at Dublin Airport

“WACC” means the weighted average cost of capital; this is computed as the weighted average of Aer Rianta’s cost of equity and its cost of debt, with the weights given by the shares of equity and debt in Aer Rianta’s total financing;

“return on capital” means the return allowed by the Commission to the airport operator, computed as the weighted average cost of capital multiplied by the value of the regulatory asset base;

“depreciation” means depreciation evaluated with reference to the historic book value of Aer Rianta’s assets;



“opex” means operating costs, both aeronautical and commercial; the latter would include the cost of goods sold and the related labour and other costs;

“taxation” means the Commission’s estimate of the tax liability of Aer Rianta;

“gross commercial revenue” means all revenues other than aeronautical revenues (e.g. revenues from catering, retailing and car parks, from rents and fees, and from fuel sales net of the cost of fuel).

“maximum allowable revenue” means the total revenue which Aer Rianta is allowed to collect in the form of airport charges;

“passengers” has the meaning assigned to it in paragraph 3;

“maximum average revenue per passenger” means maximum allowable revenue divided by the passenger forecast. The Commission has used Aer Rianta’s passenger forecasts, which are presented in Table 2.

TABLE 2: AER RIANITA CENTRELINE PASSENGER FORECASTS ('000)

AER RIANITA				
CENTRELINE FORECASTS ('000) FOR PASSENGER TRAFFIC, 2000 TO 2006				
	DUBLIN	SHANNON	CORK	TOTAL
2001	15,192	2,559	1,709	19,460
2002	16,070	2,659	1,807	20,536
2003	16,931	2,752	1,901	21,584
2004	17,863	2,871	2,012	22,746
2005	18,838	2,992	2,122	23,952
2006	19,720	3,099	2,223	25,042

Source: "Long Term Passenger Traffic and Movement Forecasts" 20/7/2000, supplied by Aer Rianta under section 2.3 of Statutory Information Request, 2nd March 2001.

## Cargo sub-cap

The Commission has set a cargo sub-cap at £10 per tonne of cargo. Aer Rianta may not charge more than this maximum in respect of services supplied in connection with the transportation by air of cargo.

In its draft determination, the Commission defined the maximum revenue with respect to Workload Units (WLU). The Commission in its final determination has decided to define the average revenues in terms of passengers.

## Sub-cap on off-peak aircraft movement charges

At Dublin Airport, the Commission has set a tariff of charges in respect of the landing and take-off of aircraft within each of five aircraft categories. This sub-cap is based on the Commission's estimates of the costs of damage to the runways, taxiways and aprons caused by the movement of aircraft. This damage cost is an estimate of the short-run marginal costs (SRMC) at off-peak times. A paper setting out the Commission's estimates of SRMC, prepared by Commission staff in association with Economics Plus Ltd, its economic consultants, is included as an appendix to the report on the Determination.

## Regulatory Asset Base (RAB)

In calculating the value of the Regulatory Asset Base, the Commission has valued Aer Rianta's assets on the principle of Indexed Historic Cost. The figures were provided by Aer Rianta in its Submission to the Commission of 26<sup>th</sup> July 2001 (which is available on the Commission's website). Aer Rianta has valued its assets on an Indexed Historic Cost basis at £501 million at 31 December 2000. The Commission has adjusted this value to allow for inflation, capex and depreciation during the first nine months of 2001. The Commission has used that valuation of the RAB, subject to paragraphs 15 and 16 following.

At Dublin Airport, the Commission has adjusted downwards the value of the assets in Pier C by 22.6%.

At Shannon Airport, the Commission has written down the value of the assets in the new terminal building in Shannon by 21.2%.

In calculating the maximum average revenue per passenger in the Determination, the Commission has 'rolled forward' annually the value of the RAB at 30 September 2001. Annual investment, included in the Commission's Recoverable Capex Programme, has been added to the RAB. Depreciation has been subtracted from the RAB. The RAB has been indexed annually for inflation.

## Efficiency

The Commission continues to believe that there is room for Dublin and Shannon Airport's operational efficiency to be improved. The scope for such improvement has been evaluated at 3.5% per annum at Dublin Airport and at 4% per annum at Shannon Airport.

The Commission has obtained from its consultants, the Infrastructure Management Group (IMG) Inc. of Washington D.C., USA, a Benchmarking Report on Aer Rianta airports, which is being published to accompany the Determination. The Commission has also considered in detail the statutory representations it has received subsequent to its draft Determination. A paper, prepared by IMG in response to these representations, is being published by the Commission, as an appendix to the report on the Determination.

Taking all these considerations into account, the Commission continues to believe that there is room for efficiency to be improved. In terms of maximum average yields, the X factor in the Dublin Airport cap incorporates this efficiency improvement target. The X factor for the overall price cap (for the three Aer Rianta airports) includes the Dublin Airport efficiency improvement and the Shannon Airport efficiency improvement. The overall price cap does not assume any efficiency improvement at Cork Airport as the IMG Benchmarking Report found Cork Airport's efficiency to be comparable to that of its peer group.

## Capex

In its draft determination, the Commission had prepared its best estimate of a CAPEX programme for Dublin, Shannon and Cork airports. In the absence of financial analysis to justify and support Aer Rianta's large 5-year capex programme, and in the face of trenchant opposition from many airlines and other airport users, the Commission has not relied on the Aer Rianta capex, save to the extent that it identifies necessary safety/compliance projects.

Details of the revised Recoverable CAPEX Programme are set out in an Appendix to the report on the determination.

### Quality of Service

In respect of the service quality standards at the Aer Rianta airports, the Commission will publish a consultation paper on service quality at Irish airports and seek the views of the industry and the public as to how best to meet service quality standards in a cost-effective manner.

### Cost of Capital

Based on an expert consultancy study prepared for the Commission by Colm Kearney, Professor of Finance at Dublin City University, and published as an appendix to the report on the Determination, the Commission has set a value for Aer Rianta's cost of capital, on a real, after-tax basis, equal to 6%. The corresponding before-tax value is estimated at 7%. The Commission has modelled Aer Rianta's future tax liabilities directly and included these in the company's cost base. Therefore, in calculating the maximum average revenue per passenger, the Commission has allowed Aer Rianta a real, after-tax rate of return equal to 6%.

### Procedure for under- and over- recovery of the maximum yield in 2002/03-2005/06

The Determination includes a correction term, that is, a formula according to which the Commission will make annual modifications to the maximum yield to allow for any under-recovery of airport charges by the airport operator. The Determination also provides that Aer Rianta must return, within one month of the end of each regulatory year, any over-recovery of the maximum yield in that regulatory year.

The repayment will be calculated as follows. The over-recovery of the yield will be apportioned to each of the five airport charges in accordance with the share of that charge in total airport revenue. The over-recovery in respect of each charge will then be repaid to each airline or cargo-shipper in accordance with the number of charging units for which the airport user was charged in the relevant regulatory year.

Appendix 1: The calculation of a per-passenger yield

Consider the simplified case of an airport with just two charges: a landing charge and a passenger charge. The numbers below are chosen for illustration, not realism.

In the table, the number of passengers (for whom the passenger charge is payable) and the number of aircraft landings (which attract the landing charge) are presented for each of two years.

From the information in the table, the total revenues earned by the airport from the two airport charges may be calculated.

Charge	Year 1		Year 2	
	Unit Amount	Total Revenue	Unit Amount	Total Revenue
Landing	£1	£50	£1.05	£315
Passenger	£3	£6,000	£3.15	£9,450
Landings		50	300	
Passengers		2,000	3,000	
Passengers/landing		40	10	
Grand Total Revenue		£6,050	£9,765	

Dividing total revenues by the number of passengers gives the average revenue per passenger yielded by way of airport charges each year:

$$\text{Yield in Year 1} \quad 6,050/2,000 \quad = \quad \text{£}3.025$$

$$\text{Yield in Year 2} \quad 9,765/3,000 \quad = \quad \text{£}3.255 \quad (+7.6\%)$$

In the example given, the average revenue per passenger rises from £3.025 in the first year to £3.2025 in the second, an increase of 7.6%. Note that airport charges did not increased by 7.6%. Each airport charge rose by exactly 5%. The average revenue per passenger, however, rose by more because of the much stronger rise in landings (+600%) than in passengers (+50%). This is because while landings add to landing revenues they may add disproportionately less (or disproportionately more) to passengers according to how full the is. In the example, the landings added proportionately more to revenues than to passengers, hence the increase in the average revenue per passenger exceeded the increase in charges.

For the same reason, the average revenue per passenger might rise by less than a price increase if the pattern of traffic growth added proportionately more to passenger numbers than to income from airport charges. Therefore, the change in a yield is not the same thing as the change in the underlying charges.



## Appendix 2: The X factor

The 'CPI-X' formula is an established approach to updating from one year to the next the price cap of a regulatory regime that is set for a period longer than one year.

The formula has two elements. The CPI part of the formula adjusts the price cap for inflation, in order to maintain constant the real (after-inflation) value of the cap. Otherwise inflation would reduce the average revenue per passenger, year by year.

The X part of the formula combines into one term a number of other factors that affect the price cap. The best known of these is any efficiency improvement required from the regulated firm by the regulator. In a very simplified case, for example, that of an industry where charges covered only operating costs (but not depreciation or profits, etc.), the X factor would correspond exactly to the required efficiency improvement in the firm's operating costs. In actual, more complicated, cases, the value of X depends on all of the key policy variables that enter into the calculation of the allowed cap.

### Operational Efficiency (opex)

The larger the operational efficiencies that are required, the smaller is the permitted price increase (the greater is the required price reduction) implied by the price cap.

### Capital Expenditure (capex)

The smaller the capex budget, the smaller is the permitted price increase (or the greater is the required price reduction) implied by the price cap.

### Traffic Forecasts

The higher the assumed rate of traffic growth, the smaller the permitted price increase per passenger (or the greater the required price reduction) implied by the price cap. This is because a given level of expenditure is spread over more passengers.

### Some Simple Illustrative Examples

The following simple examples are designed to show how different efficiency improvements, capex, and traffic figures produce different X values.

Consider a world without inflation, and a business with opex costs, and depreciation costs on existing assets only, the latter depending on the quantity of capital. Also, consider only the first year of regulation. The figures below are chosen to give average per-passenger yields in 'round' numbers (even though this has the effect of making the values of X unrealistically large).

Suppose that in the year before regulation starts:

Opex	=	100
Depreciation	=	50
Passengers	=	25
Required average revenue	=	$(100 + 50)/25 = 6$

Therefore the average revenue before regulation, to which the X factor (or, in more realistic cases, the CPI – X factor) is to be applied, is 6.

Suppose that for the first year of regulation, the regulated firm presents the following figures:

Opex	=	125
Depreciation	=	75
Passengers	=	25
Sought average revenue	=	$(125+75)/25 = 8$

The regulated firm would need  $X = 33\%$  since  $6*1.33 = 8$ .

If the regulator requires opex efficiencies of 20% compared to the regulated firm's figures, then we have:

Allowed opex	=	100	( = $125*0.8$ )
Depreciation	=	75	
Passengers	=	25	
Allowed yield	=	$(100+75)/25 = 7$	

This implies  $X = 16.7\%$  since  $6*1.167 = 7$ . Note that the value of the efficiency improvement (20%) is not necessarily equal to the value of X (16.7%).

If the regulator proposes opex efficiencies of 20% and also reduces the allowed capital base with the result that allowed depreciation declines to 50, that would give:

Opex	=	100
Depreciation	=	50
Passengers	=	25
Yield	=	$(100+50)/25 = 6$

This implies  $X = 0\%$  since  $6*1.0 = 6$ . Again, note that X takes a value of zero in this example even though the efficiency improvement is 20% and depreciation is reduced by 33%.

Finally, a change to regulated firm's passenger forecast, even if nothing else changes, will produce a different value for X:

Allowed opex	=	100
Allowed depreciation	=	50
Passengers	=	50
Allowed yield	=	$(100+50)/50 = 3$

This implies  $X = -50\%$  since  $6*0.50 = 3$ . As before, the magnitudes of the efficiency improvement (0%) and X (-50) can diverge widely.

Therefore, in the Commission's Determination, the size of the X factor is the combined effect of all of the key policy variables that enter into the calculation of the allowed yield, in particular, the opex, the capex and the traffic forecast.