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Regional Differences in International Airline Operating Economics: 2004 and 2005

Approved by the Secretary General and published under his authority

International Civil Aviation Organization

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Chapter 1

INTRODUCTION

1.1 This circular has been prepared pursuant to ICAO Assembly Resolution A36-15, Appendix G, which requests the Council to instruct the Secretary General to issue periodically "a study on regional differences in the level of international air transport operating costs, analysing how differences in operations and input prices may affect their levels and the impact that changes in costs may have on air transport tariffs". This study on *Regional Differences in International Airline Operating Economics: 2004 and 2005* succeeds one which covered the years 2002 and 2003 and was published in 2006 (Circular 310-AT/132) and three previous studies: one covering the years 2000 and 2001 (published in Circular 306-AT/128), one covering the years 1998 and 1999 (published in Circular 293-AT/125) and one covering the years 1992 to 1997 (published in Circular 280-AT/117). Prior to that, similar studies were published annually under the title *Regional Differences in Fares, Rates and Costs for International Air Transport*, which covered the years 1976 to 1992. The studies are now published biennially or every other year, although data have continued to be collected and analysed on an annual basis. The present circular focuses on the years 2004 and 2005 and makes some comparisons with 2003, the last year for which data are available in the previous Circular (Circular 310-AT/132).

1.2 For 17 international route groups, comprising all international routes, passenger, freight and mail revenue yield data are presented in Chapter 2 for scheduled services. With reference to the same route groups, regional differences in the costs related to the scheduled service passenger yields are presented in Chapter 3. The major causes of regional differences in costs are identified in Chapter 4. In Chapters 2 and 3, the 2005 results are compared with those for 2003.

1.3 The sources of data used in the study are given in Appendix 1, together with information on the sample sizes on which revenue and cost data are based. The method of analysis used in the study is presented in Appendix 2, together with information on the margins of uncertainty, a factor which should be borne in mind when considering the results of studies of this nature. Facsimiles of the questionnaire and information on responses appear in Appendix 3.

1.4 Unless indicated otherwise, all references to "cents" in this circular mean "U.S. cents" and all references to "dollars" mean "U.S. dollars".

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Chapter 2

LEVELS OF UNIT REVENUES

Passenger traffic

2.1 Estimates of average unit passenger revenues for scheduled services in 2004 and 2005 by route group are presented in Table 2-1.

2.2 Column 1 of Table 2-1 shows the average (weighted) revenue per passenger-kilometre for scheduled passenger traffic on each route group for 2004 and 2005. These data are considered representative of all airlines operating on the particular route group and also include estimates for non-reporting airlines. The data are presented without distinction to class of travel or fare type. Thus, they represent the overall weighted average for all individual routes on all route groups and for all fare types. The overall average revenue per passenger-kilometre (excluding incidental revenues) was estimated at 8.04 cents for 2004 and 8.38 cents for 2005. However, the route group averages vary from a high of 14.6 cents in local Europe to a low of 5.5 cents on routes across the North/Mid-Pacific in 2004 and from a high of 14.4 cents to a low of 5.8 cents on the same route groups in 2005. Due to inadequate representation in reporting, three route groups — between and within Central America and the Caribbean, local Middle East and local Africa — are not included in this analysis, although their estimates are included in the worldwide totals for both years.

2.3 On a worldwide basis, the estimated average revenue per passenger-kilometre for scheduled services at 8.38 cents in 2005 showed an increase of over 8 per cent from the level in 2003. Comparable data by route group between 2003 and 2005 are available for 14 individual route groups. Out of these 14 route groups, 12 showed increases, ranging from a growth of over 15 per cent for routes across the North/Mid- and South Pacific to some 4 per cent for routes between Canada, Mexico and the United States. A decrease of about 1 per cent was witnessed on routes within Europe, and there was virtually no change in the estimated average passenger yield on routes between North America and Central America/Caribbean (Figure 2-1).

2.4 The changes in yields experienced between 2003 and 2005 reflect the weakening of the U.S. dollar against most other world currencies, especially the currencies of countries in Europe and Asia/Pacific. The relative change between 2003 and 2005 would, in many cases, be significantly lower if expressed in the national currencies of the airlines concerned. A brief evaluation of this effect is given in Chapter 3 (paragraphs 3.11 and 3.12).

2.5 The analyses in paragraphs 2.2 to 2.4 relate only to the average unit revenues for all airlines combined on each route group. There can be wide variations around these averages shown among individual airlines. In the case of passenger services, the variation in yields for each route group for 2004 and 2005 is shown in Tables 2-2 and 2-3, respectively. For a few route groups, the unit revenues for individual airlines do not vary much from the route group average (for example, for routes between North America and Central America/Caribbean, within North America and across the South Pacific). However, on most route groups, the unit revenues differ significantly among airlines, reflecting differing route structures and traffic mix among other factors.

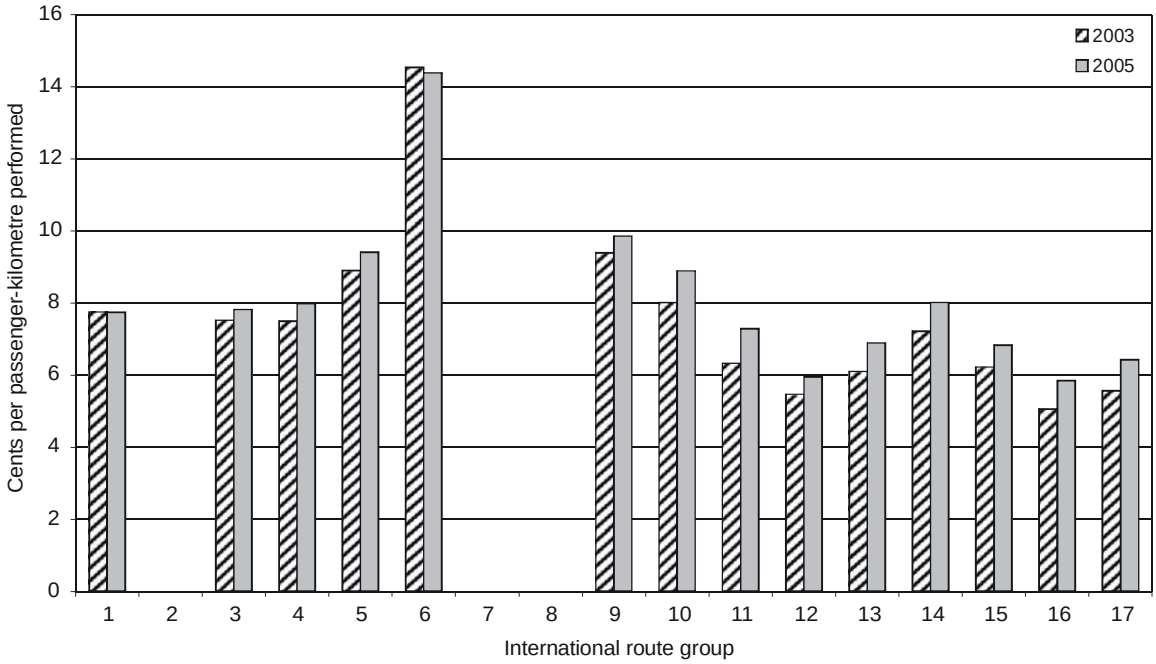
Freight and mail traffic

2.6 Average reported unit freight and mail revenues for the years 2004 and 2005 by international route group are presented in Table 2-4. It has to be borne in mind that the average unit revenues may not be for the same set of airlines for both years for each of the route groups. Again, the reason is that the availability of data is limited and dependent upon the reporting of air carriers whose composition may differ from year to year.

Table 2-1. Estimated average unit passenger revenues for scheduled services by international route group[1]: 2004 and 2005

Route group[2]	Revenue (cents) per passenger-kilometre[3] (1) 2004	Revenue (cents) per passenger-kilometre[3] (1) 2005	Load factors (percentage points) (2) 2004	Load factors (percentage points) (2) 2005
1. Between North America and Central America/Caribbean	7.7	7.7	69	72
2. Between and within Central America and the Caribbean	—	—	—	—
3. Between Canada, Mexico and the United States	7.6	7.8	69	71
4. Between North America/Central America/Caribbean and South America	7.8	8.0	70	73
5. Local South America	9.1	9.4	63	65
6. Local Europe	14.6	14.4	70	72
7. Local Middle East	—	—	—	—
8. Local Africa	—	—	—	—
9. Between Europe and Middle East	9.4	9.9	69	71
10. Between Europe/Middle East and Africa	8.4	8.9	72	72
11. North Atlantic	6.7	7.3	80	81
12. Mid-Atlantic	5.7	6.0	78	80
13. South Atlantic	6.5	6.9	80	80
14. Local Asia/Pacific	7.7	8.0	69	69
15. Between Europe/Middle East/Africa and Asia/Pacific	6.6	6.8	75	76
16. North and Mid-Pacific	5.5	5.8	81	80
17. South Pacific	6.0	6.4	76	77

1. Data, where presented, are considered representative for all airlines operating in the route group concerned. The representative nature of the data is described in Appendix 1, and the margins of uncertainty to be taken into account are discussed in Appendix 2. For routes between and within Central America and the Caribbean, in local Middle East and in local Africa the representation was inadequate to justify separate presentation, but the data have been included in the world averages.
2. More detailed definition of the route groups may be found in Appendix 3 on the reverse of the revenue questionnaire.
3. These figures do not generally include such incidental operating revenues as may be attributed to international passenger traffic. On individual route groups incidental operating revenues not included may represent up to an additional 8 per cent for both 2004 and 2005 over the average revenue quoted.



1. North-Central America
2. Central America
3. North America
4. North-South America
5. South America
6. Europe
7. Middle East
8. Africa
9. Europe-Middle East
10. Europe-Africa
11. North Atlantic
12. Mid-Atlantic
13. South Atlantic
14. Asia/Pacific
15. Europe-Asia/Pacific
16. North/Mid-Pacific
17. South Pacific

Figure 2-1. Comparison of unit passenger revenues: 2003 and 2005

Table 2-2. Variation in scheduled passenger revenue yield among airlines: 2004

Route group (short title)	Average revenue (cents) per passenger-kilometre (all airlines from Table 2-1)	Number of airlines in this analysis	Revenue (cents) per passenger-kilometre for individual airlines																							
			2 to 3	3 to 4	4 to 5	5 to 6	6 to 7	7 to 8	8 to 9	9 to 10	10 to 11	11 to 12	12 to 13	13 to 14	14 to 15	15 to 16	16 to 17	17 to 18	18 to 19	19 to 20	20 to 21	21 to 22	22 to 23	23 to 24	24 to 25	25 and over
			Number of airlines																							
1. North-Central America	7.7	8					4	3	0	1																
2. Central America	—																									
3. North America	7.6	11				1	3	5	2																	
4. North-South America	7.8	11			1	1	1	4	1	1	1	0	0	1												
5. South America	9.1	3							2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1		
6. Europe	14.6	41				2	1	3	4	2	2	3	2	2	2	2	2	2	4	3	1	0	2	1		1[1]
7. Middle East	—																									
8. Africa	—																									
9. Europe-Middle East	9.4	24				3	6	3	5	4	1	0	1	0	0	1										
10. Europe-Africa	8.4	26			1	3	2	4	2	6	5	0	0	1	1	1										
11. North Atlantic	6.7	28	1	0	5	12	8	1	0	1																
12. Mid-Atlantic	5.7	9			2	5	0	0	2																	
13. South Atlantic	6.5	11		1	2	2	5	0	0	0	1															
14. Asia/Pacific	7.7	19	1	1	1	3	4	2	2	0	1	2	1	0	1											
15. Europe-Asia/Pacific	6.6	34		1	7	11	6	5	2	2																
16. North/Mid-Pacific	5.5	16		1	6	3	4	2																		
17. South Pacific	6.0	3				2	0	1																		

1. In the range of (37 to 38).

Table 2-3. Variation in scheduled passenger revenue yield among airlines: 2005

Route group (short title)	Average revenue (cents) per passenger-kilometre (all airlines from Table 2-1)	Number of airlines in this analysis	Revenue (cents) per passenger-kilometre for individual airlines																								
			2 to 3	3 to 4	4 to 5	5 to 6	6 to 7	7 to 8	8 to 9	9 to 10	10 to 11	11 to 12	12 to 13	13 to 14	14 to 15	15 to 16	16 to 17	17 to 18	18 to 19	19 to 20	20 to 21	21 to 22	22 to 23	23 to 24	24 to 25	25 and over
			Number of airlines																								
1. North-Central America	7.7	10				3	1	4	1	1																	
2. Central America	—																										
3. North America	7.8	11				1	2	6	2																		
4. North-South America	8.0	9				1	2	3	2	1																	
5. South America	9.4	4						1	1	1	0	1															
6. Europe	14.4	34				1	1	2	2	2	2	3	3	2	2	0	2	6	1	0	1	1	2				1[1]
7. Middle East	—																										
8. Africa	—																										
9. Europe-Middle East	9.9	22				1	4	5	2	3	3	2	0	1	0	0	0	1									
10. Europe-Africa	8.9	25				2	3	2	5	4	3	3	2	0	1												
11. North Atlantic	7.3	26	1	0	3	6	10	5	0	0	1																
12. Mid-Atlantic	6.0	11			2	5	2	1	0	1																	
13. South Atlantic	6.9	11		1	1	2	5	1	0	0	1																
14. Asia/Pacific	8.0	27		1	1	4	5	4	5	1	1	3	1	0	1												
15. Europe-Asia/Pacific	6.8	35		1	9	9	6	5	4	0	1																
16. North/Mid-Pacific	5.8	18		2	4	5	4	2	0	0	1																
17. South Pacific	6.4	4		1	0	2	0	1																			

1. In the range of (33 to 34).

2.7 Column 1 of Table 2-4 shows the overall average revenue per tonne-kilometre performed for all scheduled freight traffic on each route group (whether carried on passenger, combination or all-freight aircraft). The variation among route group averages ranges from a high of 78.7 cents on routes within North America to a low of 19.1 cents on routes across the South Pacific in 2004 and from a high of 88.8 cents to a low of 18.0 cents on the same route groups in 2005. Comparing the figures of 2003 and 2005, 13 of the route groups experienced an increase and 4 showed decreases.

2.8 Columns 2 and 3 of Table 2-4 show the average revenue per tonne-kilometre performed for scheduled freight traffic carried on passenger and combination aircraft and on all-freight aircraft, respectively. For the majority of route groups for which data are available, due to the large cargo capacity offered at competitive rates on wide-body passenger and combination aircraft (for example, on routes across the North/Mid-Pacific), the revenue yields of passenger and combination aircraft are lower than those of all-freight aircraft. This reflects the fact that, depending on the mix of traffic, the freight cost basis on combination aircraft may allow much lower rates to be offered than those on pure freight services. Also, in the case of some routes involving North America, the higher freight revenue yield on all-cargo services reflects the data of major all-freight air carriers, which also include courier traffic and revenue in their figures.

2.9 Column 4 of Table 2-4 shows the average revenue per tonne-kilometre performed for airmail traffic on each route group. The route group averages range from a high of 81.1 cents on routes within the Middle East to a low of 24.2 cents on those within South America in 2004 and from a high of 61.2 cents for routes within North America to a low of 28.8 cents for routes across the South Pacific in 2005. Between 2003 and 2005, unit mail revenues increased on 5 out of 13 route groups for which there are data available, did not change on 1 route group and decreased on the remaining 7 route groups. Unit mail revenues in general still remain somewhat higher than unit freight revenues except for routes within North America, between North America/Central America and South America, within Europe and within Asia/Pacific (2005 only).

2.10 The variation among individual airlines in freight revenue per tonne-kilometre for scheduled services for each route group for 2004 and 2005 is shown in Tables 2-5 and 2-6, respectively. For a few route groups, the unit revenues for individual airlines do not vary much from the route group average (for example, on routes within the Middle East, across the Mid- and South Atlantic and across the South Pacific). However, as with passenger traffic, the unit revenues on most route groups differ significantly among airlines.

Table 2-4. Reported average unit freight and mail revenues by international route group, scheduled services: 2004 and 2005[1]

Route group (short title)	Freight revenue (cents) per tonne-kilometre performed						Mail revenue (cents) per tonne-kilometre performed	
	Overall		Passenger and combination aircraft		All-freight aircraft		Overall	
	(1)		(2)		(3)		(4)	
	2004	2005	2004	2005	2004	2005	2004	2005
1. North-Central America	27.2	24.4	27.2	24.4	—	—	39.6	36.3
2. Central America	38.2	30.9	38.2	30.9	—	—	—	—
3. North America	78.7	88.8	24.5	31.0	84.5	100.2	49.0	61.2
4. North-South America	22.2	44.0	21.7	22.2	26.0	84.8	36.0	39.5
5. South America	35.4	21.2	35.4	21.1	—	—	24.2	—
6. Europe	60.1	67.1	58.7	67.4	71.4	65.9	57.2	59.6
7. Middle East	28.5	33.5	28.5	33.5	—	—	81.1	—
8. Africa	35.2	31.8	35.2	31.8	—	—	—	—
9. Europe-Middle East	21.2	26.0	21.9	24.6	18.8	31.7	43.2	41.3
10. Europe-Africa	23.1	24.1	22.6	24.1	46.6	23.9	46.5	43.0
11. North Atlantic	27.3	30.3	15.9	17.5	66.6	69.6	30.8	30.6
12. Mid-Atlantic	20.9	23.7	20.9	23.7	—	—	31.1	30.4
13. South Atlantic	21.1	25.2	21.1	25.2	—	—	30.1	33.4
14. Asia/Pacific	38.5	42.6	38.2	38.8	39.5	49.5	42.2	41.5
15. Europe-Asia/Pacific	22.4	24.1	21.5	24.1	23.5	24.2	28.2	27.7
16. North/Mid-Pacific	27.9	31.6	22.0	24.8	30.1	34.0	44.1	38.0
17. South Pacific	19.1	18.0	19.1	18.0	—	—	30.6	28.8

1. Data represent only carriers for which substantive information was available and are only presented where they include two or more carriers. The representative nature of the data is described in Appendix 1.

Table 2-5. Variation in scheduled freight revenue yield among airlines: 2004

Route group (short title)	Average revenue (cents) per tonne-kilometre (all airlines from Table 2-4)	Number of airlines in this analysis	Revenue (cents) per tonne-kilometre for individual airlines																
			0 to 10	10 to 20	20 to 30	30 to 40	40 to 50	50 to 60	60 to 70	70 to 80	80 to 90	90 to 100	100 to 110	110 to 120	120 to 130	130 to 140	140 to 150	150 to 160	160 and over
			Number of airlines																
1. North-Central America	27.2	7		3	2	0	0	0	1	1									
2. Central America	38.2	2				1	0	0	0	0	1								
3. North America	78.7	11		2	5	1	0	2	0	0	0	0	0	0	0	1			
4. North-South America	22.2	9		4	4	0	0	0	0	0	0	0	1						
5. South America	35.4	2			1	0	0	0	0	0	0	0	1						
6. Europe	60.1	27			2	2	3	4	2	3	2	1	1	2	0	0	1	1	3[1]
7. Middle East	28.5	3			1	2													
8. Africa	35.2	2			1	0	1												
9. Europe-Middle East	21.2	19		5	6	2	1	2	1	0	0	0	0	1	0	0	0	0	1[2]
10. Europe-Africa	23.1	23		4	7	3	3	2	2	1	1								
11. North Atlantic	27.3	30		20	8	0	1	0	0	0	1								
12. Mid-Atlantic	20.9	8		4	2	2													
13. South Atlantic	21.1	10		8	1	1													
14. Asia/Pacific	38.5	20		1	4	4	3	0	3	1	1	0	1	0	1	0	1		
15. Europe-Asia/Pacific	22.4	32		8	17	5	0	0	2										
16. North/Mid-Pacific	27.9	18		6	8	1	1	2											
17. South Pacific	19.1	3		1	1	1													

1. In the ranges of (170 to 180) and (210 to 220).
2. In the range of (210 to 220).

Table 2-6. Variation in scheduled freight revenue yield among airlines: 2005

Route group (short title)	Average revenue (cents) per tonne-kilometre (all airlines from Table 2-4)	Number of airlines in this analysis	Revenue (cents) per tonne-kilometre for individual airlines																
			0 to 10	10 to 20	20 to 30	30 to 40	40 to 50	50 to 60	60 to 70	70 to 80	80 to 90	90 to 100	100 to 110	110 to 120	120 to 130	130 to 140	140 to 150	150 to 160	160 and over
			Number of airlines																
1. North-Central America	24.4	7		2	3	0	0	0	0	2									
2. Central America	30.9	3			2	0	0	0	0	0	0	1							
3. North America	88.8	12			7	2	0	1	0	0	1	0	0	1					
4. North-South America	44.0	11		1	5	2	0	1	0	0	0	0	1	0	0	0	0	0	1[1]
5. South America	21.2	3	1	1	0	1													
6. Europe	67.1	25			1	2	1	0	3	5	2	3	0	2	0	1	0	1	4[2]
7. Middle East	33.5	2			1	1													
8. Africa	31.8	3			1	0	0	0	1	1									
9. Europe-Middle East	26.0	18		2	5	2	4	3	0	0	0	0	0	1					1[3]
10. Europe-Africa	24.1	20		2	6	4	3	1	0	1	2	0	1						
11. North Atlantic	30.3	28		12	13	0	2	0	0	0	1								
12. Mid-Atlantic	23.7	9		2	5	1	1												
13. South Atlantic	25.2	10		7	1	2													
14. Asia/Pacific	42.6	29		1	3	8	6	4	3	1	2	0	0	0	0	0	1		
15. Europe-Asia/Pacific	24.1	37		4	22	7	3	0	1										
16. North/Mid-Pacific	31.6	21		6	10	1	1	0	3										
17. South Pacific	18.0	4		2	2														

1. In the range of (170 to 180).
2. In the ranges of (160 to 170), (180 to 190), (200 to 210) and (240 to 250).
3. In the range of (170 to180).

Chapter 3

REGIONAL DIFFERENCES IN SCHEDULED PASSENGER UNIT REVENUES AND RELATED COSTS

Overall financial results by international route group

3.1 Selected operational data and estimated financial results for the years 2004 and 2005, overall and by route group, are presented in Table 3-1.

3.2 Column 1 of Table 3-1 shows that the number of scheduled airlines operating jet services in each route group ranged from a low of 15 on the South Pacific route group to a high of 208 serving routes within Europe in 2004 and from a low of 14 to a high of 205 on the same route groups in 2005. It should be noted that the propeller aircraft operations of these airlines are excluded from the study, as are the operations of some 115 and 119 small international airlines which operated exclusively propeller-driven aircraft in 2004 and 2005, respectively. Together these operations with propeller aircraft represented about 0.6 and 0.5 per cent of world international seat-kilometres in 2004 and 2005, respectively, with their highest representations in any single route group being some 28 and 29 per cent within Central America/Caribbean in 2004 and 2005, respectively, and around 3 per cent both in 2004 and 2005 within Africa.

3.3 The operational data included in columns 3 to 5 of Table 3-1 all have a significant effect on unit operating costs (see Chapter 4), and the world unit cost is also affected by the geographical traffic composition presented in column 2. There are considerable differences among route groups in the volume of traffic, the average length of flight stages, the average number of seats per aircraft and the average passenger load factor.

3.4 Financial results are presented in columns 6 to 8. It should be borne in mind that the revenue figures do not generally take into account incidental operating revenues. Incidental revenues (which may be directly attributed to passenger traffic) include revenues from passengers paying less than 25 per cent of the normal applicable fare, commissions received on sales of transportation on other carriers, “no-show” and cancellation fees (expenses incurred against these revenue items are however included in the cost figures shown in column 7). Incidental revenues also include, on a net basis, capacity equalization payments arising from pooled and/or joint services as well as from the sale of own capacity to other carriers. Revenues accruing from the provision of services other than for air transportation (such as service and maintenance sales or handling services for third parties) and the corresponding costs are excluded from all figures presented in this study. An analysis of reported incidental revenue data on this basis for 2004 and 2005 indicates that for international routes as a whole, relevant incidental revenues not included in Table 3-1 might have been about 0.36 cents per passenger-kilometre in both 2004 and 2005. If these relevant incidental revenues had been added to the estimated worldwide unit revenue, they would have increased the estimated worldwide unit revenue from 8.04 to 8.40 cents per passenger-kilometre in 2004 and from 8.38 to 8.74 cents per passenger-kilometre in 2005, this being over 4 per cent for each year. For individual route groups, the passenger-related incidental operating revenues may represent as much as almost an additional 8 per cent over the average revenue in both years. In further analysis, however, they have not been included since no attempt has been made to estimate them for all airlines (reporting and non-reporting) due to the uncertainty of to what extent they can be attributed to the carriage of passengers on passenger and combination aircraft.

3.5 The average (weighted) operating cost — attributable to the carriage of passengers on passenger and combination aircraft — per passenger-kilometre for all international routes was 8.27 cents and 8.55 cents (column 7) in

2004 and 2005, respectively (for further details on the way passenger costs have been derived, see paragraph 10 of Appendix 2). The figures for individual route groups range from a high of 14.6 cents on routes within Europe to a low of 5.8 cents on routes across the North/Mid-Pacific in 2004 and from a high of 13.8 cents to a low of 6.3 cents on the same routes in 2005. These estimated costs include such items as depreciation and sales commission paid (which are sometimes accounted for differently) but exclude costs attributable to the carriage of freight and mail.

3.6 The ratio of passenger revenues to passenger costs (column 8) for international routes as a whole is estimated at 0.97 for 2004 and 0.98 for 2005, with the ratios for individual route groups varying from 0.75 to 1.05 for both years. Taking into account the relevant incidental revenues associated with international passenger traffic and the margins of uncertainty in estimated revenues and costs (discussed in Appendix 2), the revenue/cost ratio for all international passenger traffic is estimated to be between 0.98 and 1.05 in 2004 and between 0.98 and 1.06 in 2005, with a most likely value of 1.01 and 1.02 in 2004 and 2005, respectively.

3.7 The components of the total passenger costs are presented in Table 3-2. The primary breakdown is between “aircraft operating costs” (i.e. those directly attributable to the operation of aircraft on each route group) and “other operating costs”. All the itemized data carry relatively wide margins of uncertainty and should be regarded as indicative only. Nevertheless, it appears that most of the individual items vary significantly among route groups.

3.8 The variations in revenue/cost ratios among airlines in 2004 and 2005 are shown in Table 3-3. On most route groups, the ratios vary significantly among the airlines, and the average revenue/cost ratios do not therefore adequately portray the economics of the operations. The revenue/cost ratios of individual carriers ranged from less than 0.7 to greater than 1.3 on 2 and 3 of the 14 route groups included in the analysis in 2004 and 2005, respectively, while ratios ranging from 0.7 to 1.3 were observed on 2 route groups both in 2004 and 2005.

Comparison of results for 2005 with those for 2003

3.9 An overall comparison between data for 2005 and corresponding data for 2003 shows an increase of 8.5 per cent in the estimated passenger cost per available seat-kilometre, from 5.89 cents to 6.39 cents. Since the worldwide average load factor at 74.7 per cent showed an improvement of over three percentage points in 2005, as compared to 2003, the cost per passenger-kilometre shows an increase of about 3.8 per cent, from 8.24 cents to 8.55 cents (see column 7 of Table 3-1). Unit revenues (excluding incidental operating revenues) showed an increase of 8.4 per cent, from 7.73 cents per passenger-kilometre to 8.38 cents in 2005 (see column 6 of Table 3-1). As a result, the overall revenue/cost ratio increased from 0.94 in 2003 to 0.98 in 2005.

3.10 Between 2003 and 2005, 11 out of the 14 route groups for which comparable data were available showed increases in costs per passenger-kilometre ranging from about 10 per cent on routes across the South Pacific and between Europe/Middle East/Africa to Asia/Pacific to some 2 per cent for those between Europe and the Middle East. The remaining 3 route groups showed some decreases ranging from a reduction of over 4 per cent on routes within Europe to less than 1 per cent for routes within North America (Figure 3-1).

3.11 As with the revenue figures discussed in Chapter 2, the comparison of unit costs between 2003 and 2005 has been affected in some cases by a change in the value of the U.S. dollar against other world currencies. Within the Americas, where most fares and rates are transacted in U.S. dollars, the changes in yields generally reflect market changes. Similarly, changes in unit costs in the Americas to a large extent reflect the general change in costs, as well as some operational changes, since the greater part of costs are generally borne in U.S. dollars.

3.12 Outside the Americas, for those route groups where, between 2003 and 2005, the mix of national currencies generally strengthened against the U.S. dollar (such as route groups involving Europe and Asia/Pacific), with some exceptions which caused local distortions, the changes shown in revenues and costs when expressed in U.S. dollars are effectively understated. Hence, between 2003 and 2005, the yields and costs expressed in local currencies for some of the route groups involving airlines from these regions would have shown decreases rather than increases.

Table 3-1. Basic operational data and financial results for scheduled passenger services by international route groups: 2004 and 2005[1]

Route group (short title)	Operational data										Financial results[2]					
	Number of airlines		Percentage of world's international traffic (available seat-km)		Average length of flight stages (km)		Average number of seats per aircraft[3]		Average passenger load factor (percentage points)		Average revenue (cents) per passenger-kilometre[4]		Average passenger costs (cents) per passenger-kilometre		Ratio revenue/ costs[4,5]	
	(1)		(2)		(3)		(4)		(5)		(6)		(7)		(8)	
	2004	2005	2004	2005	2004	2005	2004	2005	2004	2005	2004	2005	2004	2005	2004	2005
I. All world international routes	542	542	100.0	100.0	2 060	2 086	220	219	74	75	8.04	8.38	8.27	8.55	0.97	0.98
II. International route groups																
1. North-Central America	48	42	2.2	2.1	1 810	1 810	164	163	69	72	7.7	7.7	8.9	9.0	0.85	0.85
2. Central America	26	24	0.2	0.2	863	835	140	141	–	–	–	–	–	–	–	–
3. North America	57	56	3.5	3.5	1 380	1 415	118	116	69	71	7.6	7.8	9.9	10.1	0.75	0.75
4. North-South America	34	35	2.7	2.8	3 034	3 212	193	194	70	73	7.8	8.0	7.3	7.6	1.05	1.05
5. South America	31	33	0.7	0.7	1 271	1 294	148	154	63	65	9.1	9.4	10.4	10.5	0.90	0.90
6. Europe	208	205	14.2	14.6	1 039	1 059	133	136	70	72	14.6	14.4	14.6	13.8	1.00	1.05
7. Middle East	20	23	0.7	0.6	926	902	195	193	–	–	–	–	–	–	–	–
8. Africa	73	73	0.8	0.9	1 248	1 269	144	145	–	–	–	–	–	–	–	–
9. Europe-Middle East	72	68	3.2	3.3	2 993	3 096	225	225	69	71	9.4	9.9	8.9	9.2	1.05	1.05
10. Europe-Africa	128	137	5.7	5.7	2 859	2 884	232	231	72	72	8.4	8.9	8.3	8.6	1.00	1.05
11. North Atlantic	60	65	16.5	16.0	5 991	6 008	257	256	80	81	6.7	7.3	7.0	7.3	0.95	1.00
12. Mid-Atlantic	37	44	3.6	3.5	6 127	6 526	290	294	78	80	5.7	6.0	7.3	7.1	0.80	0.85
13. South Atlantic	23	28	2.2	2.2	6 553	6 805	272	281	80	80	6.5	6.9	6.6	6.8	1.00	1.00
14. Asia/Pacific	129	140	14.7	14.6	2 088	2 088	259	255	69	69	7.7	8.0	7.6	8.0	1.00	1.00
15. Europe-Asia/Pacific	130	135	18.2	18.3	4 917	5 000	294	292	75	76	6.6	6.8	6.8	7.3	1.00	0.95
16. North/Mid-Pacific	25	25	9.5	9.6	7 173	7 373	315	312	81	80	5.5	5.8	5.8	6.3	0.95	0.90
17. South Pacific	15	14	1.7	1.6	6 346	6 665	322	320	76	77	6.0	6.4	6.0	6.4	1.00	1.00

1. Excluding operational and financial data attributed to propeller-driven aircraft.
2. The margins of uncertainty which should be considered in relation to these results are discussed in Appendix 2. For routes between and within Central America and Caribbean, within Middle East and within Africa the representation was inadequate to justify separate presentation, but the data have been included in the world averages.
3. As defined by available seat-kilometres divided by aircraft-kilometres flown.
4. These figures do not generally include incidental operating revenues. For all international routes, that part of this additional revenue which may be directly attributed to international passenger traffic is estimated at about 0.36 cents per passenger-kilometre for both 2004 and 2005. On individual route groups it may represent up to an additional 8 per cent over the average passenger revenue quoted for both 2004 and 2005.
5. Rounded to the nearest twentieth for individual route groups.

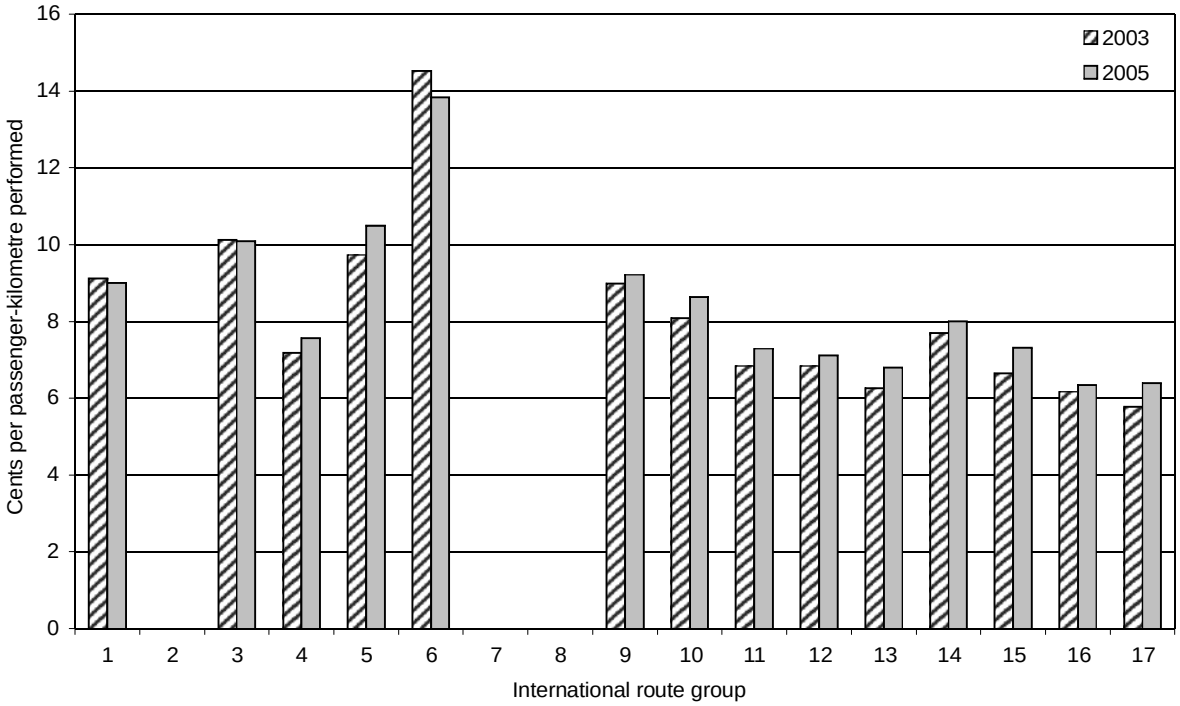
Table 3-2. Estimated passenger costs[1] per passenger-kilometre by cost item: 2004 and 2005

Route group (short title)	Total operating costs (cf. Table 3-1) (sum of columns 1–9)		Aircraft operating costs				Other operating costs													
			Aircraft operating costs excluding fuel and oil[2]		Aircraft fuel and oil		Landing and associated airport charges		Air navigation charges		Station expenses		Passenger services		Commission		Ticketing, sales and promotion		General, administrative and miscellaneous	
			(1)		(2)		(3)		(4)		(5)		(6)		(7)		(8)		(9)	
	2004	2005	2004	2005	2004	2005	2004	2005	2004	2005	2004	2005	2004	2005	2004	2005	2004	2005	2004	2005
I. All																				
Cents	8.27	8.55	2.46	2.39	1.48	2.01	0.35	0.35	0.32	0.31	0.81	0.81	1.20	1.16	0.45	0.39	0.54	0.49	0.66	0.64
Percentage of total costs	100.0	100.0	29.7	28.0	17.9	23.5	4.2	4.1	3.9	3.6	9.8	9.5	14.5	13.6	5.4	4.6	6.5	5.7	8.0	7.5
II. International route groups																				
1. North-Central America	8.9	9.0	3.1	2.8	1.6	2.2	0.2	0.3	0.1	0.1	1.3	1.3	1.1	1.0	0.3	0.3	0.5	0.4	0.6	0.7
2. Central America	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
3. North America	9.9	10.1	3.7	3.4	1.7	2.2	0.3	0.3	0.1	0.1	1.5	1.6	1.2	1.1	0.4	0.3	0.5	0.5	0.7	0.7
4. North-South America	7.3	7.6	2.4	2.2	1.5	2.0	0.2	0.2	0.2	0.1	0.6	0.6	1.0	0.9	0.6	0.5	0.5	0.4	0.5	0.7
5. South America	10.4	10.5	3.2	3.1	2.0	2.5	0.4	0.4	0.4	0.3	0.8	0.8	1.0	1.0	1.5	1.2	0.7	0.8	0.4	0.4
6. Europe	14.6	13.8	4.4	4.0	1.8	2.3	1.1	1.0	0.9	0.8	1.9	1.8	1.9	1.8	0.8	0.6	1.1	1.0	0.7	0.6
7. Middle East	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
8. Africa	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
9. Europe-Middle East	8.9	9.2	2.5	2.5	1.5	2.0	0.4	0.4	0.5	0.5	1.0	0.9	1.1	1.1	0.6	0.6	0.5	0.5	0.8	0.9
10. Europe-Africa	8.3	8.6	2.6	2.5	1.6	2.1	0.3	0.3	0.5	0.4	0.6	0.6	1.2	1.2	0.4	0.4	0.5	0.5	0.7	0.7
11. North Atlantic	7.0	7.3	2.0	1.9	1.3	1.8	0.2	0.2	0.2	0.2	0.7	0.7	1.1	1.0	0.3	0.3	0.4	0.4	0.9	0.9
12. Mid-Atlantic	7.3	7.1	2.1	1.9	1.5	1.9	0.2	0.2	0.3	0.3	0.3	0.3	1.2	1.2	0.3	0.2	0.4	0.4	1.1	0.8
13. South Atlantic	6.6	6.8	1.9	1.9	1.4	2.0	0.2	0.2	0.3	0.4	0.4	0.4	0.9	0.9	0.6	0.5	0.4	0.4	0.6	0.4
14. Asia/Pacific	7.6	8.0	2.3	2.3	1.4	2.0	0.4	0.4	0.2	0.2	0.8	0.8	1.2	1.2	0.4	0.4	0.6	0.5	0.3	0.3
15. Europe-Asia/Pacific	6.8	7.3	1.9	1.9	1.4	2.0	0.2	0.2	0.3	0.3	0.4	0.4	1.1	1.1	0.4	0.3	0.4	0.4	0.7	0.7
16. North/Mid-Pacific	5.8	6.3	1.7	1.7	1.3	1.9	0.2	0.2	0.1	0.1	0.4	0.4	1.0	1.0	0.3	0.3	0.4	0.4	0.5	0.5
17. South Pacific	6.0	6.4	1.9	1.8	1.3	1.9	0.2	0.2	0.1	0.1	0.4	0.4	0.8	0.7	0.5	0.5	0.5	0.4	0.6	0.5

1. "Passenger costs" have been derived for each route group by taking into account the contribution made by the revenue earned for the carriage of freight and mail on passenger flights towards covering total costs for these flights. Due to the margins of uncertainty in the estimates of individual cost items, the figures should be regarded as indicative only.
2. This item includes flight operations expenses (cockpit crew salaries and expenses, rentals and insurance of flight equipment), aircraft maintenance and overhaul, and aircraft standing charges such as depreciation.

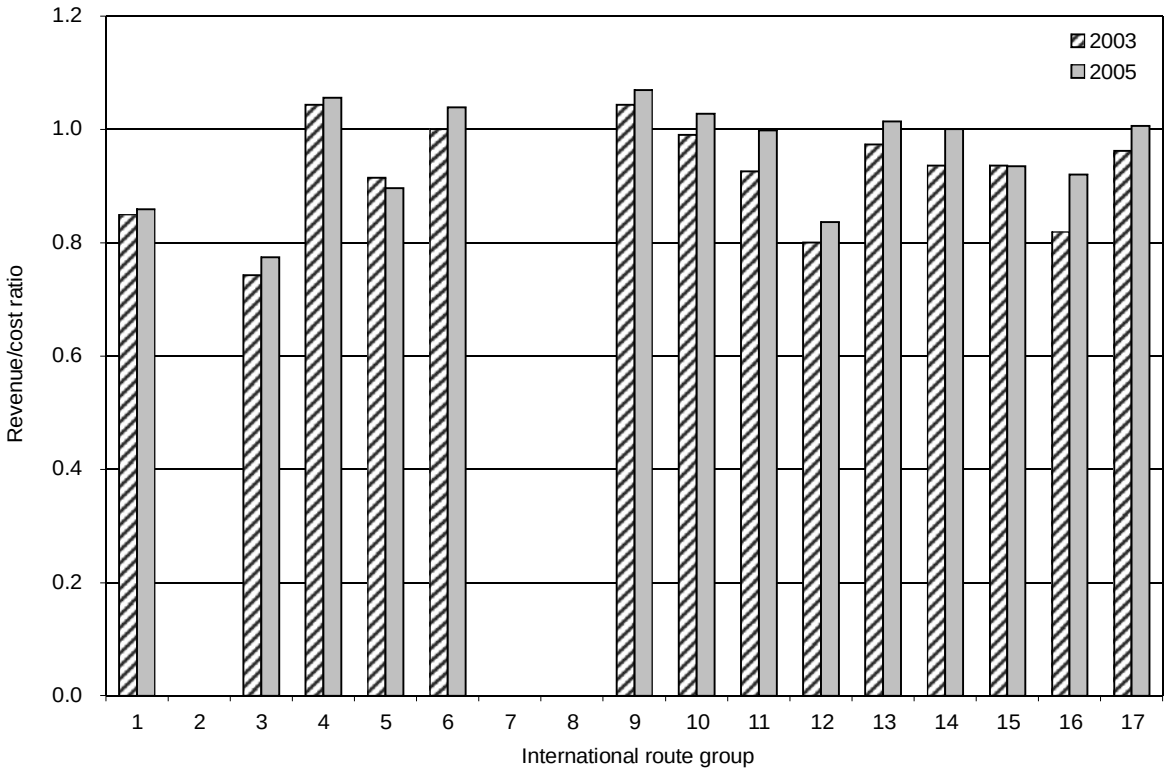
Table 3-3. Variation of revenue/cost ratios amongst airlines: 2004 and 2005

Route group (short title)	Average revenue/cost ratio (all airlines from Table 3-1)		Number of airlines in this analysis		Less than 0.7		0.7 to 0.9		0.9 to 1.1		1.1 to 1.3		Greater than 1.3	
					Number of airlines									
	2004	2005	2004	2005	2004	2005	2004	2005	2004	2005	2004	2005	2004	2005
I. All world international routes	0.97	0.98	68	72	6	10	20	23	34	37	8	2		
II. International route groups														
1. North-Central America	0.85	0.85	7	8	1		3	5	2	2	1	1		
2. Central America	—	—												
3. North America	0.75	0.75	11	10	4	6	7	2		2				
4. North-South America	1.05	1.05	10	8	1		2	4	4	2	3	2		
5. South America	0.90	0.90	2	4				1	2	3				
6. Europe	1.00	1.05	29	30	1	3	11	7	15	18	2	2		
7. Middle East	—	—												
8. Africa	—	—												
9. Europe-Middle East	1.05	1.05	20	21	5	3	7	10	8	5		3		
10. Europe-Africa	1.00	1.05	22	24	5	4	3	7	10	8	3	4	1	1
11. North Atlantic	0.95	1.00	26	24	4	4	14	7	7	10	1	3		
12. Mid-Atlantic	0.80	0.85	8	10	2	1	2	5	4	3		1		
13. South Atlantic	1.00	1.00	10	10		1	2	4	7	3	1	2		
14. Asia/Pacific	1.00	1.00	18	19	2	5	2	5	8	6	5	2	1	1
15. Europe-Asia/Pacific	1.00	0.95	28	30	2	6	10	11	10	11	6	2		
16. North/Mid-Pacific	0.95	0.90	15	16		1	5	7	6	5	4	2		1
17. South Pacific	1.00	1.00	3	4		1	1	3	1		0		1	



1. North-Central America
2. Central America
3. North America
4. North-South America
5. South America
6. Europe
7. Middle East
8. Africa
9. Europe-Middle East
10. Europe-Africa
11. North Atlantic
12. Mid-Atlantic
13. South Atlantic
14. Asia/Pacific
15. Europe-Asia/Pacific
16. North/Mid-Pacific
17. South Pacific

Figure 3-1. Comparison of total unit operating costs: 2003 and 2005



1. North-Central America
2. Central America
3. North America
4. North-South America
5. South America
6. Europe
7. Middle East
8. Africa
9. Europe-Middle East
10. Europe-Africa
11. North Atlantic
12. Mid-Atlantic
13. South Atlantic
14. Asia/Pacific
15. Europe-Asia/Pacific
16. North/Mid-Pacific
17. South Pacific

Figure 3-2. Comparison of revenue/cost ratios: 2003 and 2005

3.13 Of the 14 route groups analysed in this study for which comparable data were available, 12 showed an increase in their respective revenue/cost ratios between 2003 and 2005, while the remaining 2 showed a marginal decrease (Figure 3-2). Contributions to these changes by different regional groups of airlines are discussed below.

3.14 For 10 of the 12 route groups where there was an improvement in revenue/cost ratios in 2005 compared to 2003, yields expressed in cents per passenger-kilometre showed increases. Unit costs expressed in terms of cents per seat-kilometre also increased on these route groups; however, the increase was either smaller than the increase in yields, or the difference in the increase was compensated by the improvements in load factors, resulting in the improvement of the revenue/cost ratios. For the remaining two route groups, there were some increases in unit costs per seat-kilometre. However, due to improvements in load factors, unit costs per passenger-kilometre experienced decreases higher than those in yields, resulting in the improvement of their respective revenue/cost ratios. Two route groups, which saw their revenue/cost ratios deteriorate, experienced significant increases in unit costs per seat-kilometre which were not offset by improvements both in yields and load factors.

Variations in revenue/cost ratios among airlines

3.15 Comparing the years 2003 and 2005, the airlines of Europe, Asia/Pacific and North America, each as a group, showed improvements in their respective overall operating ratios, while the airlines of the South American region experienced some decline (airlines from Central America/Caribbean, Africa and the Middle East are excluded from this analysis because of their low representation in both years).

3.16 Compared to 2003, in 2005 airlines registered in the Asia/Pacific region saw their overall revenue/cost ratio increase, especially on routes across the North/Mid-Pacific and within Asia/Pacific, while there was a slight decline in the ratio on 1 route group, i.e. over the South Pacific. Unit operating costs per seat-kilometre increased on all route groups as did yields per passenger-kilometre, but the latter at a lower rate on almost all route groups on which the Asia/Pacific airlines operated. The overall load factor increased by over 3 percentage points which contributed to the improvement of the overall revenue/cost ratio of the airlines of the Asia/Pacific region.

3.17 Compared to 2003, airlines of the European region improved their overall average revenue/cost ratio, as well as ratios on all route groups they were operating, except for one (between Europe/Middle East/Africa and Asia/Pacific) where there was no change in the ratio. These airlines saw the average unit cost per seat-kilometre increase on all route groups they operated, except for routes over the South Atlantic, where a marginal decrease occurred. Likewise, there were increases in yields per passenger-kilometre (except for routes within Europe), although on some route groups these increases were lower than the increases in unit costs per seat-kilometre on these route groups. Combined with the improvements in load factors (on average by about three percentage points) on all route groups, except for routes over the South Atlantic, these increases in yields resulted in improvements in the revenue/cost ratios. However, with respect to the routes between Europe/Middle East/Africa and Asia/Pacific, the improvements in load factors and yields were not sufficient to offset the increase in unit costs per seat-kilometre, resulting in no change of the revenue/cost ratio on that route group.

3.18 Compared to 2003, in 2005 airlines of the North American region saw their average revenue/cost ratio improve on all route groups they operated, except for routes between North America and Central America/Caribbean and North America/Central America and South America, where minor deterioration was observed. Passenger yields increased on all route groups, except for routes between North America and Central America/Caribbean where they did not change, and average unit costs per seat-kilometre increased less than the respective yields on a majority of the route groups operated. That development, coupled with the improvements in average load factors on all route groups helped increase the average revenue/cost ratio by over 5 per cent for all route groups on which the North American airlines operated.

3.19 Among the four groups of airlines for which comparable data were available, in 2005 airlines of the South American region were the only group to experience a decrease in the average revenue/cost ratio for all route groups on which they operated, except for one, i.e. between North America/Central America and South America, as compared to 2003. Contributing to these decreases were significant increases in unit costs per seat-kilometre on all these route groups. Yields improved on all route groups operated by the airlines of the region as did load factors; the latter except for routes over the South Atlantic and the South Pacific. These improvements, however, were not sufficient to offset the increases in unit operating costs, resulting in a decline of the overall revenue/cost ratio of almost 5 per cent.

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Chapter 4

FACTORS CAUSING REGIONAL DIFFERENCES IN COSTS

4.1 The financial analysis presented in Chapter 3 included estimates of the average cost per passenger-kilometre performed for each of the 14 international route groups for which adequate data were available for 2004 and 2005. This chapter is concerned with assessments of the factors which caused this average cost to vary among the route groups. Some main factors can be identified and their effects quantified, but a number of other factors do not lend themselves to individual assessment and are therefore dealt with in a summary manner, although their combined influence on cost differences is significant.

4.2 The factors which have been considered are:

a) the effect of differences among route groups in the aircraft equipment being used, on aircraft operating costs;

b) the effect of differences among route groups in the average length of flight stages;

c) the effect of varying fuel and oil prices in different parts of the world;

d) the effect of different levels of airport user charges in different parts of the world;

e) the effect of differences in the average load factor achieved on each route group; and

f) other factors.

An examination of the influence exercised by each of the above on the operating costs for traffic in the route groups is made below, and the resulting variations in the costs per passenger-kilometre from the world average are subsequently presented in Table 4-5 and discussed in 4.22 and 4.23 of this chapter.

Aircraft mix and stage length
[factors a) and b)]

4.3 The volume of traffic on a route and the geographical characteristics of the route (in particular, the length of flight stages) determine the sizes of aircraft that are utilized in the route group, the number of seat-kilometres per departure and per flight hour that can be produced by these aircraft, and the possible utilization of the aircraft in terms of flight hours per year. For these reasons, the geographical characteristics of a route group strongly influence the operating costs per seat-kilometre that will be incurred on that route group. The effects on these costs of differences among the route groups in aircraft mix and average stage length are discussed below.

4.4 In general, aircraft operating costs per aircraft-kilometre or per seat-kilometre on a long-haul flight are lower than on a short-haul flight, mainly because of the higher average block speed that may be achieved on a long-haul flight and the generally higher aircraft daily utilization recorded. Similarly, large aircraft, which may be used where traffic density is high, have lower aircraft operating costs per seat-kilometre than small aircraft mainly because of liquidation of

indirect costs over larger capacity. The combined impact of these factors may be illustrated by looking at the average aircraft operating costs incurred in international passenger service in 2004 and 2005 for different categories of aircraft. Table 4-1 presents the average aircraft operating costs per block hour and per available seat-kilometre for 4 categories of aircraft, grouped according to their size and by the length of haul for which they were generally used in 2004 and 2005. The average hourly cost varied from $2 912 for narrow-body short-haul aircraft to $6 797 for wide-body long-haul aircraft in 2004 and from $3 199 to $7 808 for the same categories in 2005. However, primarily because of their greater productivity, the average aircraft operating cost per available seat-kilometre (adjusted to exclude costs attributable to freight and mail traffic) of the wide-body long-haul aircraft was at 2.7 cents for 2004 and 3.2 cents for 2005, the lowest for any category. At the other end of the spectrum, the narrow-body short-haul aircraft averaged 3.9 cents per seat-kilometre for 2004 and 4.2 cents for 2005, which is some 44 and 31 per cent higher than the figure for wide-body long-haul aircraft for 2004 and 2005, respectively.

4.5 Aircraft operational data for each route group (excluding utilization effects) are shown in Table 4-2. The average block speed achieved is shown to be significantly higher on route groups with a long average stage length, such as transatlantic and transpacific routes, than on route groups with a short average stage length such as within Europe, within Central America/Caribbean and within the Middle East.

4.6 This relative economic advantage for the operations of long-haul routes is amplified by the fact that large wide-body aircraft accounted for a high proportion of the total capacity on long-haul routes but were being used less on the route groups with a short average stage length. The variation in average aircraft productivity resulting from variations in average block speed and average size of aircraft is very wide. For example, the seat-kilometres per aircraft block hour for routes within Central America/Caribbean, within North America and within Europe are in each case about one-third or less of the seat-kilometres per block hour on the Mid-Atlantic, South Atlantic, between Europe/Middle East/Africa and Asia/Pacific, North/Mid-Pacific and South Pacific route groups.

4.7 Differences in aircraft fleet composition among route groups contribute to the differences in both aircraft and other operating costs, but mainly to the aircraft costs. The contribution to regional differences in aircraft operating costs arising from differences in aircraft mix (excluding the effects of differences in stage length, fuel prices and load factors) has been estimated and is presented in 4.23.

4.8 As with aircraft operating costs, other operating costs are, of course, also strongly influenced by the average length of flight stages operated in a route group. The reason is that certain important cost items, such as station expenses and landing charges, are primarily dependent upon the number of aircraft departures. Since the number of seat-kilometres (or passenger-kilometres) per departure increases proportionally with increasing stage length, the cost per seat-kilometre (or per passenger-kilometre) of station expenses and landing charges falls with increasing stage length. Estimated effects of differences in stage length on operating costs (both aircraft and other) are also presented in 4.23.

Prices for aircraft fuel and oil
[factor c)]

4.9 The estimated total consumption of aircraft fuel and oil on international subsonic jet passenger routes in 2004 was approximately 117 billion litres, and the total cost to the airlines was about $36.1 billion for an average price per litre of 30.8 cents; and in 2005, some 124 billion litres with a total cost to the airlines of some $53.2 billion for an average price per litre of 43.0 cents. Fuel represented about 17.9 and 23.5 per cent of the total passenger operating costs in 2004 and 2005, respectively, which was significantly above the 2003 level of 13.0 per cent.

4.10 Detailed estimates have been made of the average price of fuel purchased in the different regions of the world (Table 4-3) and of the average price of fuel consumed on the various route groups (Table 4-4). As shown in Table 4-3, on a regional basis, the price per litre of fuel in 2004 ranged from 28.3 cents in North America to 34.7 cents in Africa (some 23 per cent higher than the price paid in North America) and in 2005, from 39.8 cents to 47.4 cents for the same regions; fuel prices in 2005 were above the levels of 2003, worldwide by around 84 per cent, and on a regional basis ranging from some 78 per cent for Africa to about 86 per cent for South America.

Table 4-1. Operational and cost data for aircraft categories: 2004 and 2005 (international scheduled passenger services)

Grouping of subsonic aircraft	Primary jet types operated on international scheduled services[1]	Per cent of world's international traffic (available seat-km)		Average number of seats[2]		Average length of flight stages operated (km)		Average utilization[3] (hours/day)		Aircraft operating costs[4]			
										Dollars per block hour		Cents per available seat-km[5]	
		(1)		(2)		(3)		(4)		(5)		(6)	
		2004	2005	2004	2005	2004	2005	2004	2005	2004	2005	2004	2005
World		100.0	100.0	220	219	2 060	2 086	10.1	10.3	4 674	5 257	3.0	3.5
Narrow-body short-haul	A320 B737 DC9 MD80	23.2	24.3	129	131	1 163	1 189	8.6	8.4	2 912	3 199	3.9	4.2
Narrow-body medium-haul	B727 B757 TU154	3.9	4.0	178	179	2 022	2 165	9.2	9.7	3 863	4 309	3.2	3.5
Wide-body medium-haul	A300 A310 A330 B767	12.5	12.5	240	242	2 930	3 025	10.1	10.7	5 307	6 048	2.9	3.3
Wide-body long-haul	A340 B747 B767ER B777 DC10 MD11	60.4	59.2	301	300	5 403	5 503	12.0	12.6	6 797	7 808	2.7	3.2

1. Only aircaft types providing more than 0.5 per cent of the world international scheduled available seat-kilometres in 2004 and 2005 are listed in this column. The catergorization of aircraft types is based on the average number of seats and length of flight stages in 2004 and 2005.
2. Available seat-kilometres divided by aircraft-kilometres flown.
3. Including domestic and non-scheduled operations of the international airlines concerned.
4. Data in these columns include flight operations expenses, aircraft fuel and oil (at the world average cost of 30.8 and 43.0 cents per litre for 2004 and 2005, respectively), aircraft maintenance and overhaul, and aircraft standing charges such as depreciation. If prevailing regional prices rather than the world average price were to be used for aircraft fuel and oil there would be no change in the seat-kilometre cost data presented but small changes in some of the per block hour data.
5. Aircraft operating costs have been adjusted in this case to exclude costs attributable to freight and mail traffic.

Table 4-2. Aircraft operational data by route group: 2004 and 2005

Route group (short title)	Average length of flight stage (km)		Average block speed (km/h)		Percentage distribution Narrow-body		Percentage distribution Wide-body		Average aircraft productivity: available seat-kilometres per block hour (thousands)	
	(1)		(2)		(3)		(4)		(5)	
	2004	2005	2004	2005	2004	2005	2004	2005	2004	2005
I. All world international routes	2 060	2 086	655	656	27	28	73	72	144	144
II. International route groups										
1. North-Central America	1 810	1 810	631	630	83	85	17	15	103	102
2. Central America	863	835	541	538	100	100	0	0	76	76
3. North America	1 380	1 415	572	574	96	96	4	4	67	67
4. North-South America	3 034	3 212	720	726	33	31	67	69	139	141
5. South America	1 271	1 294	597	603	76	77	24	23	88	93
6. Europe	1 039	1 059	531	535	95	96	5	4	70	73
7. Middle East	926	902	535	533	41	41	59	59	104	103
8. Africa	1 248	1 269	624	621	76	74	24	26	90	90
9. Europe-Middle East	2 993	3 096	688	694	24	24	76	76	155	156
10. Europe-Africa	2 859	2 884	702	703	22	24	78	76	163	162
11. North Atlantic	5 991	6 008	768	767	3	5	97	95	198	196
12. Mid-Atlantic	6 127	6 526	788	791	1	1	99	99	229	233
13. South Atlantic	6 553	6 805	796	800	0	0	100	100	217	225
14. Asia/Pacific	2 088	2 088	659	657	17	18	83	82	171	168
15. Europe-Asia/Pacific	4 917	5 000	755	755	5	5	95	95	222	220
16. North/Mid-Pacific	7 173	7 373	793	793	1	1	99	99	250	247
17. South Pacific	6 346	6 665	809	810	3	3	97	97	261	259

Table 4-3. Estimated unit fuel prices and airport charges by region: 2004 and 2005 (international scheduled services)

	Aircraft fuel and oil prices (cents/litre)		Landing and associated airport charges (dollars/departed tonne)[2]	
Area[1]	2004	2005	2004	2005
World	30.8	43.0	12.0	12.1
North America	28.3	39.8	8.5	8.7
Central America/Caribbean	31.8	43.6	4.9	5.7
South America	32.2	45.7	6.6	6.5
Europe	31.0	42.9	17.5	17.5
Middle East	30.3	41.4	6.2	6.3
Africa	34.7	47.4	9.7	9.6
Asia/Pacific	31.6	44.4	9.6	9.8

1. More detailed descriptions of areas and route groups may be found in Appendix 3 on the reverse of the cost questionnaire.
2. Tonnes of aircraft maximum take-off mass.

4.11 On a route group basis (Table 4-4), the estimated fuel prices range from a low of 27.1 cents per litre for routes across the South Pacific to a high of 32.8 cents per litre for routes over the South Atlantic in 2004 and from a low of 37.6 cents to a high of 46.2 cents per litre for the same route groups in 2005.

Airport and associated charges
[factor d)]

4.12 As shown in Table 3-2, airport charges represented some 4.2 and 4.1 per cent of the total costs for international passenger operations in 2004 and 2005, respectively. The basis on which these charges are levied varies from airport to airport, but aircraft mass is the predominant element. A broad and simple comparison of the levels of airport charges in different parts of the world can be based on dollars paid per tonne of aircraft maximum take-off mass. Using this measure, estimated average airport charges in different regions of the world are presented in Table 4-3. The table shows that the world average was $12.0 and $12.1 per tonne in 2004 and 2005, respectively; the average charges in regions ranged from $4.9 in Central America/Caribbean to $17.5 in Europe in 2004 and from $5.7 to $17.5, respectively, in 2005. Air navigation charges are not generally included in these estimates because of the margin of uncertainty associated with their estimation on a regional basis.

4.13 Estimates of landing and associated airport charges have also been made on a route group basis and are shown in Table 4-4. The range of these estimates for route groups is from $5.3 per tonne for traffic within North America to $17.8 for traffic within Europe in 2004 and from $5.6 to $17.8 for the same route groups in 2005. One of the reasons that airport charges in Europe appear high is because the airport passenger service charge is generally paid by the air carrier. This approach is also applied by the majority of States in the Caribbean and a significant proportion of States in Africa and the Middle East. But in most States in other regions of the world, the airport passenger service charges are collected from the passenger either at the point of embarkation or are added onto the ticket as a separate charge when the ticket is issued.

Table 4-4. Estimated unit fuel prices and airport charges by route group: 2004 and 2005 (international scheduled services)

Route group (short title)	Aircraft fuel and oil prices (cents/litre) 2004	2005	Landing and associated airport charges (dollars/departed tonne)[1] 2004	2005
I. All world international routes	30.8	43.0	12.0	12.1
II. International route groups				
1. North-Central America	31.1	43.7	5.7	6.7
2. Central America	—	—	—	—
3. North America	28.3	39.3	5.3	5.6
4. North-South America	30.3	43.3	6.4	6.5
5. South America	31.3	43.5	7.0	6.8
6. Europe	31.4	43.0	17.8	17.8
7. Middle East	—	—	—	—
8. Africa	—	—	—	—
9. Europe-Middle East	31.5	42.8	12.5	12.4
10. Europe-Africa	32.2	44.0	11.1	10.9
11. North Atlantic	29.7	41.5	13.4	13.7
12. Mid-Atlantic	31.8	43.9	10.7	11.2
13. South Atlantic	32.8	46.2	10.7	10.5
14. Asia/Pacific	32.7	45.9	9.3	9.7
15. Europe-Asia/Pacific	30.6	42.8	10.8	10.9
16. North/Mid-Pacific	29.1	41.4	10.7	10.7
17. South Pacific	27.1	37.6	9.6	9.9

1. Tonnes of aircraft maximum take-off mass.

Load factor
[factor e)]

4.14 A large part of the total costs of operating a flight on a scheduled air service is independent of, or only moderately affected by, the number of passengers actually carried on the flight. Therefore, when statistics are reported as a rate per passenger-kilometre, load factor is a primary variable. Since, as shown in Table 3-1, the passenger load factors achieved in 2004 and 2005 varied significantly among route groups, from a low of 63 per cent on routes within South America to a high of 81 per cent on routes across the North/Mid-Pacific in 2004 and from a low of 65 per cent on routes within South America to a high of 81 per cent on routes across the North Atlantic in 2005, they had a significant influence on the differences in total operating costs per passenger-kilometre. Estimated effects of differences in load factor on operating costs for each route group are presented in 4.23 and Table 4-5.

Other causes of regional differences in costs

4.15 Among the factors that led to regional differences in the total cost of passenger operations in 2004 and 2005, the varying aircraft operating costs, including the effect of varying prices of fuel, have been discussed above. The effect of varying stage lengths and load factors has been assessed for both aircraft operating costs and other cost items, but with the exception of variations in airport charges, other effects of differences in non-aircraft cost items have not been analysed. The remaining cost items include *station expenses*; *passenger services*; *commission*; *ticketing, sales and promotion*; and *general, administrative and miscellaneous*. Table 3-2 shows that together they accounted for approximately 44 and 41 per cent of the total costs for international passenger operations in 2004 and 2005, respectively (compared with 46 per cent in 2003). Some of these cost items for passenger operations show significant differences among route groups even after extraction of any stage length and load factor effects. A general commentary concerning these items and their variation is given below.

4.16 ***Station expenses*** (column 5 of Table 3-2) relate mainly to the servicing of aircraft and passengers at airports. While they vary greatly among route groups, from 0.3 cents to 1.9 cents per passenger-kilometre in 2004 and from 0.3 cents to 1.8 cents in 2005, some of the variations are due to the effects of differences in stage length.

4.17 ***Passenger services*** (column 6 of Table 3-2) relate primarily to cabin services provided in flight. Passenger service costs represented some 14.5 and 13.6 per cent of total passenger operating costs in 2004 and 2005, respectively. The differences in their level among the route groups, from 0.8 to 1.9 cents per passenger-kilometre in 2004 and from 0.7 to 1.8 cents in 2005, primarily reflect the differences in salary, service levels and utilization of cabin crew.

4.18 ***Commission*** (column 7 of Table 3-2) is paid by each airline to travel agents and other airlines for the sale of passenger tickets. Commission is dependent on the extent to which airline sales are handled by agents in different parts of the world and also reflects the intensity of competition and traditions in the product distribution methods on different regional markets. However, because the commission is usually a certain percentage of the price of the ticket, the variation in this cost item, from 0.3 cents to 1.5 cents per passenger-kilometre in 2004 and from 0.2 cents to 1.2 cents in 2005, is also related to the variation in average revenue per passenger-kilometre. In 2004 and 2005, commission expenses accounted for about 5.4 and 4.6 per cent of the world's scheduled international airline costs, respectively.

4.19 ***Ticketing, sales and promotion*** (column 8 of Table 3-2) is a cost item whose level is largely determined by decision-making within individual airlines. In 2004 and 2005, this item represented about 6.5 and 5.7 per cent of passenger costs, respectively. The variation among the route groups, from 0.4 cents to 1.1 cents per passenger-kilometre in 2004 and from 0.4 cents to 1.0 cent in 2005, reflects differing competitive situations and the extent to which airlines handle their own sales in the various route groups.

4.20 Commission, ticketing, sales and promotion together reflect the overall cost of selling passenger tickets. Depending on the route group, between 9 and 21 per cent and between 8 and 19 per cent of total passenger revenues were used in 2004 and 2005, respectively, to defray this overall cost, with the world average of about 12 and 10 per cent in 2004 and 2005, respectively.

4.21 ***General, administrative and miscellaneous expenses*** (column 9 of Table 3-2) vary from 0.3 cents to 1.1 cents per passenger-kilometre in 2004 and from 0.3 cents to 0.9 cents in 2005. This partly reflects variations in the organizational structure and the accounting practices of airlines in different parts of the world, as well as variations in salary levels and the staff productivity among regions. Additionally, economies of scale may be an important factor affecting variations in this cost item since large airlines, which tend to have lower administrative overheads per passenger-kilometre performed than smaller airlines, play a greater role on some route groups than on others. In recent years, those expenses, which include gains or losses due to changes in exchange rates, have been heavily influenced by fluctuations in exchange rates.

Summary of the causes of regional differences in costs

4.22 The effects of the factors described in 4.3 to 4.21 on the cost levels for route groups are shown in Table 4-5. Column 1 of that table shows against each route group the world average cost per passenger-kilometre in 2004 and 2005, which was 8.3 cents and 8.6 cents, respectively. Columns 2 through 6 show the deviations from this world average that may be attributed to each of the individually assessed factors described in 4.3 to 4.14, and column 8 shows the aggregate effect of the other factors (some other factors were described in summary form in 4.15 to 4.21). Column 9 shows the resulting actual total costs per passenger-kilometre for each route group.

4.23 Table 4-5 enables comparison of the various factors which contributed to differences from the world average cost per passenger-kilometre for the 14 route groups included in the analysis for 2004 and 2005. Focussing on columns 2 to 6, *stage length and average block speed* were the most important factors for 11 and 12 route groups in 2004 and 2005, respectively. Other factors making significant contributions included *aircraft mix*, which was the most important single factor for 1 route group both in 2004 and 2005 and *load factor,* which was the most important factor for 1 route group both in 2004 and 2005. In 2004, both stage length and average block speed, and load factor were equally the most important factors for one route group. In addition, as may be seen by comparing column 7 (the sum of the effects in columns 2 to 6) with column 8, an important proportion of the differences in route group costs from the world average cost was due to the other factors which do not lend themselves to precise analysis.

Table 4-5. Contributions to differences in costs amongst route groups: 2004 and 2005

Route group (short title)	World average total passenger operating costs		Effect of aircraft mix		Effect of stage length and average block speed		Effect of aircraft fuel and oil prices		Effect of landing and associated airport charges		Effect of load factor		Sum of effects in columns 2–6		Effect of other factors		Actual total passenger operating costs: columns 1+7+8	
	(1)		(2)		(3)		(4)		(5)		(6)		(7)		(8)		(9)	
	2004	2005	2004	2005	2004	2005	2004	2005	2004	2005	2004	2005	2004	2005	2004	2005	2004	2005
	(cents per passenger-kilometre)																	
I. All world international routes	8.3	8.6	—	—	—	—	—	—	—	—	—	—	—	—	—	—	8.3	8.6
II. International route groups																		
1. North-Central America	8.3	8.6	0.7	0.5	0.3	0.3	0.0	0.0	–0.2	–0.2	0.5	0.2	1.3	0.8	–0.7	–0.4	8.9	9.0
2. Central America	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
3. North America	8.3	8.6	1.0	0.8	1.2	1.1	–0.1	–0.2	–0.2	–0.2	0.4	0.4	2.3	1.9	–0.7	–0.4	9.9	10.1
4. North-South America	8.3	8.6	0.0	0.0	–0.7	–0.8	0.0	0.0	–0.2	–0.2	0.3	0.2	–0.6	–0.8	–0.4	–0.2	7.3	7.6
5. South America	8.3	8.6	0.7	0.5	1.1	1.0	0.0	0.0	–0.1	–0.2	1.1	1.0	2.8	2.3	–0.7	–0.4	10.4	10.5
6. Europe	8.3	8.6	1.1	0.9	2.1	2.0	0.0	0.0	0.2	0.2	1.0	1.0	4.4	4.1	1.9	1.1	14.6	13.8
7. Middle East	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
8. Africa	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
9. Europe-Middle East	8.3	8.6	0.0	0.0	–0.6	–0.6	0.0	0.0	0.0	0.0	0.4	0.3	–0.2	–0.3	0.8	0.9	8.9	9.2
10. Europe-Africa	8.3	8.6	–0.1	0.0	–0.6	–0.6	0.1	0.0	0.0	0.0	0.2	0.2	–0.4	–0.4	0.4	0.4	8.3	8.6
11. North Atlantic	8.3	8.6	–0.4	–0.3	–1.3	–1.3	–0.1	–0.1	0.0	0.0	–0.4	–0.4	–2.2	–2.1	0.9	0.8	7.0	7.3
12. Mid-Atlantic	8.3	8.6	–0.4	–0.3	–1.4	–1.4	0.0	0.0	0.0	0.0	–0.3	–0.4	–2.1	–2.1	1.1	0.6	7.3	7.1
13. South Atlantic	8.3	8.6	–0.4	–0.3	–1.5	–1.5	0.1	0.1	0.0	0.0	–0.4	–0.3	–2.2	–2.0	0.5	0.2	6.6	6.8
14. Asia/Pacific	8.3	8.6	–0.1	–0.1	0.0	0.0	0.1	0.1	–0.1	–0.1	0.4	0.4	0.3	0.3	–1.0	–0.9	7.6	8.0
15. Europe-Asia/Pacific	8.3	8.6	–0.3	–0.3	–1.2	–1.2	0.0	0.0	0.0	0.0	–0.1	–0.1	–1.6	–1.6	0.1	0.3	6.8	7.3
16. North/Mid-Pacific	8.3	8.6	–0.4	–0.3	–1.5	–1.5	–0.1	–0.1	0.0	0.0	–0.4	–0.3	–2.4	–2.2	–0.1	–0.1	5.8	6.3
17. South Pacific	8.3	8.6	–0.4	–0.3	–1.5	–1.5	–0.2	–0.3	–0.1	–0.1	–0.1	–0.1	–2.3	–2.3	0.0	0.1	6.0	6.4

Appendix 1

DATA SOURCES AND COVERAGE

Sources

1. The primary sources of information for this study were two sets of questionnaires which were dispatched (under cover of State letters EC 2/20.3.2-05/75 of 27 June 2005 and EC 2/20.3.2-06/75 of 29 September 2006) to all Contracting States, to be filled out with respect to their international carriers. One questionnaire each year sought information on scheduled and non-scheduled passenger, freight, mail and incidental revenues for each route group, together with corresponding volumes of traffic and capacity. The second questionnaire sought information on costs for international scheduled passenger airlines. Replies to the questionnaires were received with respect to 65 and 64 States for the years 2004 and 2005, respectively. Facsimiles of the two questionnaires and a list of States from which replies were received are given in Appendix 3.

2. As far as scheduled operations were concerned, another important source of information was a computer analysis carried out by the ICAO Secretariat of airline schedules obtained from *Back Aviation Solutions*. The data obtained from this analysis were the number of departures, aircraft block hours and distance flown for each and every airline, and aircraft type operating in each of the route groups. In addition, research was carried out on the operating characteristics of aircraft types and sub-types, generating data on average number of seats (combination aircraft), fuel consumption per block hour (as a function of stage length), maximum take-off mass, payload, and volumetric capacity. This information was related to the basic data used to provide a bank of operating statistics for each route group and for each geographical area of operation within each route group, as well as aggregate statistics for each area and for the world as a whole.

3. A wide range of supplementary information sources was used. In particular, sources included data on airline traffic, traffic by flight stage, fleet and personnel, and airline financial data regularly filed by Contracting States on Air Transport Reporting Forms and available on a dedicated ICAO aviation statistics website (www.icaodata.com).

Coverage

4. For scheduled services, traffic, capacity and other operational data were derived both from the questionnaires and from the timetable material, supplemented by information from the regular statistical reports to ICAO, and may be considered as fully comprehensive of all international operations. Revenue and cost data originated essentially from the questionnaires, supplemented by national publications or other suitable sources of financial data where available. In the case of passenger traffic, available revenue and cost data were adapted according to operational data to render them representative of all international operations (see Appendix 2).

5. The study was based on revenue data obtained from 95 and 92 scheduled airlines (including 7 and 5 all-cargo airlines) for 2004 and 2005, respectively, and on cost data from 68 and 72 scheduled passenger airlines for 2004 and 2005, respectively.

6. The number of airlines and the coverage of international scheduled passenger traffic represented by revenue and cost data by region of airline registration are shown in Table A1-1 for the year 2004 and in Table A1-2 for the year 2005. The overall representation in terms of available seat-kilometres is 68 and 69 per cent for revenue data for 2004 and 2005, respectively, and 65 and 64 per cent for cost data for 2004 and 2005, respectively. In terms of cost data,

in 2004, representation of Africa at 15 per cent was the lowest and that of North America at 83 per cent was the highest among the regions. In 2005, representation of the African region at 9 per cent was the lowest and that of North America at 83 per cent was significantly higher than that for the other regions.

7. For each route group, the number of airlines and the percentage of traffic represented by these airlines are shown in Table A1-3 for the year 2004 and in Table A1-4 for the year 2005. The differences in the overall representation between Tables A1-1 and A1-3 as well as between Tables A1-2 and A1-4 occur partly because of some differences in the ICAO Statistical Programme definitions on what constitutes a domestic or international service. Another reason is the different databases used for these tables; Tables A1-1 and A1-2 contain reported traffic, whereas Tables A1-3 and A1-4 include traffic volume according to published timetables, and Tables A1-5 and A1-6 indicate the representative nature of revenue data for scheduled freight and mail services.

8. As shown in Tables A1-3 and A1-4, in terms of available seat-kilometres, representation of either revenue or cost data is 60 per cent or above for 8 route groups in 2004 and for 9 route groups in 2005. Representation of some route groups on the cost side, however, is substantially lower than on the revenue side. In both 2004 and 2005, for routes within Central America/Caribbean, within North America (2005 only), within South America, within Europe, within the Middle East, within Africa, between Europe and the Middle East, between Europe/Middle East and Africa, across the Mid-Atlantic, between Europe/Middle East/Africa and Asia/Pacific (2005 only) and across the South Pacific (2004 only), representation is below 60 per cent; hence cost and revenue figures must be interpreted with a certain degree of caution. For routes within Central America/Caribbean, within the Middle East and within Africa, the representation is so low (less than 20 per cent in the case of costs) as to cast significant doubt on the validity of the results for those route groups; hence figures for those route groups are not presented in this study, although their estimates are included in the worldwide totals.

Table A1-1. Representation by ICAO region of airline registration: 2004

Region	International scheduled available seat-kilometres (millions)	Revenue data represent			Cost data represent		
		Number of airlines	Available seat-kilometres		Number of airlines	Available seat-kilometres	
			Number (millions)	Per cent of total		Number (millions)	Per cent of total
All	2 743 006	88	1 875 768	68	68	1 780 954	65
Africa	98 519	3	14 456	15	2	14 403	15
Asia/Pacific	825 803	20	642 621	78	18	614 785	74
Europe	1 051 680	42	712 248	68	30	664 543	63
Middle East	188 067	5	65 087	35	3	53 827	29
North America	451 069	9	373 987	83	9	373 987	83
Central America/Caribbean	56 393	4	32 756	58	3	24 823	44
South America	71 475	5	34 613	48	3	34 586	48

Source: ICAO Air Transport Reporting Form A.

Table A1-2. Representation by ICAO region of airline registration: 2005

Region	International scheduled available seat-kilometres (millions)	Revenue data represent			Cost data represent		
		Number of airlines	Available seat-kilometres		Number of airlines	Available seat-kilometres	
			Number (millions)	Per cent of total		Number (millions)	Per cent of total
All	2 938 833	87	2 026 850	69	72	1 888 418	64
Africa	111 058	4	10 097	9	4	10 097	9
Asia/Pacific	863 636	28	714 198	83	19	611 315	71
Europe	1 129 723	34	766 911	68	31	756 821	67
Middle East	210 223	3	54 861	26	3	54 861	26
North America	490 730	9	405 568	83	9	405 568	83
Central America/Caribbean	56 750	5	38 414	68	2	12 955	23
South America	76 713	4	36 801	48	4	36 801	48

Source: ICAO Air Transport Reporting Form A.

Table A1-3. Representation by international route group: 2004

Route group (short title)	Revenue data represent		Cost data represent	
	Number of airlines	Per cent of total scheduled seat-kilometres	Number of airlines	Per cent of total scheduled seat-kilometres
I. All world international groups	88	65	68	62
II. International route groups				
1. North-Central America	8	76	7	67
2. Central America	3	22	2	16
3. North America	11	68	11	68
4. North-South America	11	64	10	64
5. South America	3	40	2	40
6. Europe	41	57	29	51
7. Middle East	4	29	2	20
8. Africa	3	14	2	13
9. Europe-Middle East	24	47	20	41
10. Europe-Africa	26	41	22	39
11. North Atlantic	28	77	26	74
12. Mid-Atlantic	9	52	8	50
13. South Atlantic	11	83	10	77
14. Asia/Pacific	19	69	18	67
15. Europe-Asia/Pacific	34	66	28	62
16. North/Mid-Pacific	16	78	15	76
17. South Pacific	3	56	3	56

Table A1-4. Representation by international route group: 2005

Route group (short title)	Revenue data represent		Cost data represent	
	Number of airlines	Per cent of total scheduled seat-kilometres	Number of airlines	Per cent of total scheduled seat-kilometres
I. All world international groups	87	65	72	61
II. International route groups				
1. North-Central America	9	77	8	71
2. Central America	3	26	1	4
3. North America	11	67	10	55
4. North-South America	9	64	8	62
5. South America	4	40	4	40
6. Europe	33	57	30	56
7. Middle East	2	19	2	19
8. Africa	4	5	4	5
9. Europe-Middle East	21	41	21	41
10. Europe-Africa	24	40	24	40
11. North Atlantic	25	75	24	74
12. Mid-Atlantic	11	48	10	47
13. South Atlantic	11	80	10	79
14. Asia/Pacific	26	72	19	61
15. Europe-Asia/Pacific	35	64	30	59
16. North/Mid-Pacific	18	80	16	78
17. South Pacific	4	61	4	61

Table A1-5. Representative nature of revenue data for scheduled freight and mail services by ICAO region of airline registration: 2004

Region	International scheduled freight tonne-km performed (millions)	Freight revenue data represent			International scheduled mail tonne-km performed (millions)	Mail revenue data represent		
			Tonne-km performed				Tonne-km performed	
		Number of airlines	Number (millions)	Per cent of total		Number of airlines	Number (millions)	Per cent of total
All	115 184	70	81 712	71	2 832	51	1 841	65
Africa	2 122	2	337	16	35	2	3	9
Asia/Pacific	43 595	21	36 166	83	953	12	735	77
Europe	36 043	27	24 252	67	964	20	306	32
Middle East	7 803	4	2 003	26	121	4	58	48
North America	21 652	10	17 718	82	696	10	690	99
Central America/Caribbean	496	3	121	24	6	1	2	33
South America	3 473	3	1 115	32	57	2	47	82

Source: ICAO Air Transport Reporting Form A.

Table A1-6. Representative nature of revenue data for scheduled freight and mail services by ICAO region of airline registration: 2005

Region	International scheduled freight tonne-km performed (millions)	Freight revenue data represent			International scheduled mail tonne-km performed (millions)	Mail revenue data represent		
			Tonne-km performed				Tonne-km performed	
		Number of airlines	Number (millions)	Per cent of total		Number of airlines	Number (millions)	Per cent of total
All	119 877	77	89 702	75	2 976	46	1 948	65
Africa	2 195	3	227	10	44	1	1	2
Asia/Pacific	46 460	30	43 764	94	1 012	14	856	85
Europe	36 981	24	24 059	65	1 002	18	323	32
Middle East	8 786	3	1 794	20	121	2	41	34
North America	21 634	10	18 641	86	728	8	681	94
Central America/Caribbean	475	4	147	31	7	1	4	57
South America	3 346	3	1 070	32	62	2	42	68

Source: ICAO Air Transport Reporting Form A.

Appendix 2

METHOD OF ANALYSIS AND MARGINS OF UNCERTAINTY

Method of analysis

1. ***General.*** Data sources in general are discussed in Appendix 1. All airline financial data were initially adjusted where necessary to represent the calendar years 2004 and 2005 and converted where necessary from local currency to U.S. dollars. For currency conversions, the exchange rates provided by States in their reply to the questionnaires were used. In cases where an exchange rate was not supplied, the rate used was the average *IATA Clearing House Five-Day Monthly Rate* for 2004 and 2005.

2. Prior to detailed analysis, all financial and operational data were verified: (a) as to the mutual consistency and consistency with data from previous years; (b) with information provided on statistical reporting forms regularly submitted to ICAO; and (c) with data obtained from a computer analysis of published timetable material (see Appendix 1).

3. ***Analysis of available revenue data.*** Scheduled and/or non-scheduled passenger, freight and mail revenues for each international route group, together with corresponding volumes of traffic and capacity, as well as incidental revenues attributable directly to international scheduled services were obtained for individual carriers from the revenue questionnaires designed for this purpose (facsimiles of the revenue and the cost questionnaires are included in Appendix 3). This information for individual carriers was aggregated for each route group in order to obtain weighted average revenues per passenger-kilometre and per seat-kilometre (for passenger traffic) or per tonne-kilometre performed (for freight and mail traffic). In the case of scheduled operations, the data for individual airlines, and hence the average unit revenues, include allowance for discounts, pro-rates, etc., but generally exclude deductions for commission payments.

4. ***Analysis of available cost data.*** Cost data are obtained and analysed only for international scheduled passenger airlines. While most scheduled (and non-scheduled) carriers maintain revenue and traffic data on a route-by-route and/or route group basis, fewer maintain cost data in a correspondingly disaggregated form. Hence, in order to present data which are generally representative of scheduled passenger airline operations in each region of the world and, at the same time, minimize the reporting burden on States and their airlines, the questionnaire was designed so that the requirement for disaggregation of system-wide operating costs was both sparing and in line with practices followed by a majority of airlines. The cost data obtained for individual airlines through this questionnaire were subsequently allocated by the Secretariat among route groups as necessary (that is, where an airline operated on more than one route group), using the analysis of published timetable material.

5. The cost data obtained for an individual airline, and the procedures used for allocating these costs among the route groups on which the airline operated, may be divided into three broad categories as shown in Table A2-1:

Category (A) — operating costs which for a given airline and a given aircraft type may, for this purpose, be considered as independent of where the aircraft is flying;

Table A2-1. Procedures used to allocate individual airline costs among route groups

Category of costs	*Cost item (see note)*	*Airline data input to study*	*Cost allocation criteria*
A. Costs related primarily to aircraft type	I.1 Flight operation expenses, excluding fuel and oil costs I.2 Aircraft maintenance and overhaul expenses I.3 Aircraft depreciation and amortization costs	System-wide costs and system-wide block hours flown for each aircraft type operated	I.1 to I.3 Number of block hours flown by each aircraft type on each route group
B. Costs related significantly to both aircraft type and geographical area of operation	II.1 Aircraft fuel and oil costs II.2 Landing and associated airport charges II.3 Air navigation charges II.4 Other station expenses	Either: a) costs by geographical area of operation, or b) costs by route group (no allocation to route group necessary)	II.1 Fuel consumption by each aircraft type in each area of operation II.2 Maximum take-off mass times number of departures for each aircraft type in each area of operation II.3 Maximum take-off mass times number of block hours flown for each aircraft type in each area of operation II.4 Maximum payload times number of departures for each aircraft type in each area of operation
C. Costs related significantly to volume of traffic or volume of capacity	III.1 Passenger service costs III.2 Commission payments III.3 Other ticketing, sales and promotion costs III.4 General and administrative expenses III.5 Miscellaneous operating costs IV.1 Balance of miscellaneous non-operating items (excluding payments from public funds and balance of income from affiliated companies)	System-wide costs	III.1 Number of seat-hours on each route group III.2 Passenger and freight revenue earned on scheduled services from each route group III.3 Total revenue earned from each route group III.4 to IV.1 Number of tonne-kilometres performed in each route group

Note.— Cost item references are those used in the cost questionnaire (see Appendix 3). The items themselves are described in the Reporting Guidelines on the reverse of the cost questionnaire.

Category (B) — operating costs which are significantly related both to aircraft type and to geographical area of operation; and

Category (C) — operating costs and pertinent non-operating items which may be related only in part to aircraft type or to the region in which they are incurred, but which are related significantly to the volume of traffic or the volume of capacity in each route group.

6. Costs in the *first category (A)* were extracted from the data of each airline as an average system-wide cost per aircraft block hour for each aircraft type used in international scheduled service. The costs for each route group were calculated according to the number of block hours flown by each aircraft type operated by the airline on that route group.

7. Costs in the *second category (B)* were recorded for each airline according to route group or to geographical area. Where recorded by area, data were adapted to obtain corresponding data according to route group by using appropriate operational criteria (such as consumption in the case of “aircraft fuel and oil”). The relationships between route groups and geographical areas in terms of operational data were available from the computer analysis of timetable material.

8. Costs in the *third category (C)* were recorded as system-wide totals for the operations of each airline. These costs were disaggregated into route group costs by using a suitable allocation parameter for each cost item. The allocation parameter devised for each item bears a direct or indirect relationship with the volume of traffic or capacity in each route group. In the case of “Commission payments” and “Other ticketing, sales and promotion costs”, the allocation parameter used is the total revenue earned from each route group, thereby including effects from both traffic and regional differences in revenue yields (and hence regional differences in ticketing, sales and promotion costs).

9. For some airlines, cost data reported in the three categories were related to domestic operations and/or international non-scheduled operations as well as to international scheduled operations. Such costs associated with domestic and non-scheduled operations were subtracted by using the same allocation procedures that were used to distribute costs among route groups.

10. As far as data for individual airlines were concerned, the total costs for the scheduled international passenger flights in each route group were estimated by adding all the itemized costs allocated to the route group. Finally, costs allocable to the carriage of freight and mail on passenger flights were deducted from these total costs in order to obtain the passenger costs. For this purpose, it was assumed that the cost of the carriage of freight and mail on passenger and combination aircraft on a route group was equal to the freight and mail revenue from operations of these aircraft.

11. ***Estimates of revenues and costs for airlines for which financial data were not available.*** For all those carriers whose basic financial data were available, the procedures described in paragraphs 1 to 10 produced the total revenues and (for international scheduled passenger traffic) total costs on each route group according to the airline’s region of registration. In most cases, this financial database did not include all carrier operations. However, for scheduled passenger traffic, estimated revenues and costs presented in this study were formulated to cover all airlines operating on each route group.

12. In the case of revenues, the reported average revenue yield per passenger-kilometre for airlines registered in the same region within each route group has been applied to the total revenue passenger-kilometre for all airlines registered in that region operating on the route group.

13. In the case of costs, the estimates for non-reported airlines have been based on cost data for reported airlines from the same region of registration for the route group, and the estimates also take into account the differences in the operating characteristics of the two groups of airlines concerned (including differences in load factors). With respect to the costs in Category A (see Table A2-1), the average costs per block hour for the aircraft of airlines whose cost data were available were applied to the hours flown by the same aircraft types by non-reported airlines from the same region of registration, thus taking into account the differences in the aircraft fleet, in block speed and in seating configuration. Costs in Categories B and C were similarly estimated on the basis of criteria parallel to those used in allocating costs of individual airlines among route groups.

14. For some route groups where airlines of a particular region had a very low representation, the grossing-up process for revenues and costs was adjusted to take into account the revenues and costs of major non-reported airlines based on data provided for previous studies as well as on data regularly filed by Contracting States on Air Transport Reporting Forms.

Margins of uncertainty

15. ***General.*** It is important to recognize that the revenue and cost data presented in this circular are not perfectly defined quantities but involve margins of uncertainty. Such margins of uncertainty are inherent in any presentation of airline financial data which covers a multiplicity of currencies, involves disaggregation of system-wide revenues and costs, or has an incomplete database. Hence, an important feature of the method used in this series of studies has been to identify and evaluate the various sources of uncertainty for the purpose of establishing the degree of precision in the published data as well as the constraints on drawing conclusions from these data. The evaluations concerned were carried out by means of statistical analysis of detailed airline data and by means of tests to determine the sensitivity of the published data to the procedures used in the study. The resulting assessments of margins of uncertainty in average unit revenues, average unit costs and average revenue/cost ratios published in this study for scheduled passenger traffic in 2004 and 2005 are presented in paragraphs 16 to 21.

16. ***Estimates of unit revenues.*** The margin of uncertainty in the estimated unit revenues for a route group arises from limitations on the quality of reported data, from exchange rate fluctuations and, in the case of scheduled passenger traffic, from the assumption that the change over the previous year in the average yield for non-reported airlines is similar to that for reported airlines on the same route group. An analysis was carried out to evaluate each of these sources of uncertainty and their cumulative effect, leading to composite margins of uncertainty for the various route groups. The conclusion was that the estimated scheduled passenger revenue per passenger-kilometre can be relied on for up to ±5 per cent for 2004 (with the exception of routes within South America, between Europe and the Middle East and across the Mid-Atlantic) and ±4.5 per cent for 2005, except for routes between Europe and the Middle East. Caution should be also exercised when interpreting the revenue data for routes within Europe and between Europe/Middle East and Africa, and across the South Pacific for 2004 and for routes within South America, within Europe and between Europe/Middle East and Africa for 2005, due to the relatively low representation in these route groups. For routes within Central America/Caribbean, within the Middle East and within Africa, the representation was so low as to cast some doubt on the validity of the results for those route groups; hence revenue (and cost) figures for those routes are not presented in this study, although their estimates are included in the worldwide totals. A margin of uncertainty that is significantly narrower than ±5 per cent for 2004 and ±4.5 per cent for 2005 applies for those route groups where the representation was relatively high (see Appendix 1). On a global basis, taking into account all route groups as a whole, the margin of uncertainty is reduced by compensatory effects and by scale and is thus estimated at ±4 per cent for both 2004 and 2005.

17. ***Estimates of unit costs.*** The estimated unit passenger costs for a route group contain similar elements of uncertainty as those for passenger revenues. In addition, further elements of uncertainty arise from the need to allocate costs among route groups according to standardized procedures. These additional sources of uncertainty arise because:

a) the generic nature of some cost items (for example, general administrative costs) makes their allocation among route groups a matter of convention; and

b) even for those cost items which are region- or route-specific, the standardized allocation procedures do not take into account the detailed conditions under which individual airlines operate.

18. As for the revenue data, a composite margin of uncertainty was developed with respect to the average unit costs for each route group and for all route groups combined. The margin of uncertainty in the estimated scheduled passenger costs per passenger-kilometre for all route groups presented is considered to be within ±8 per cent for both 2004 and 2005 (except for routes within North America for 2004; between Europe and the Middle East and within Asia/Pacific for 2005 only). On the cost side, there were more route groups with lower representation, which increases the degree of uncertainty (see Appendix 1, paragraph 8). On a global basis, taking into account all route groups as a whole, the margin of uncertainty in the average costs per passenger-kilometre is estimated at ±8 per cent for both years.

19. Much of the uncertainty arising from the generic nature of certain costs is inherent and cannot be influenced (see paragraph 17), and little can be done to reduce the uncertainty arising from fluctuations in currency exchange rates. A major factor in these studies therefore is getting as much coverage of financial data as possible, while at the same time, making efforts to improve the quality of reported data.

20. All the estimates of uncertainty cited in paragraphs 16 to 19 apply only to the overall average cost data (as presented in Chapter 3, Table 3-1). Estimates of individual elements making up the overall cost are, in a number of cases, subject to wider margins of uncertainty.

21. ***Estimates of revenue/cost ratios.*** The estimated ratios of revenues to costs have margins of uncertainty which vary from route group to route group, depending on the margins of uncertainty in the estimated revenue and cost data. It should be noted, however, that the uncertainties in the revenue and the cost figures for a route group are to some extent interdependent. In other words, if the revenue on a route group is overestimated, the cost figure is also probably overestimated. This circumstance reduces the margin of uncertainty in the revenue/cost ratios when compared with the margins of uncertainty for either the revenue data alone or the cost data alone. The composite margin of uncertainty in the revenue/cost ratio for all the route groups combined is estimated at ±4.0 per cent both for 2004 and 2005.

Appendix 3

QUESTIONNAIRES RELATING TO REVENUES AND COSTS

I. Facsimiles of questionnaires

ATTACHMENT A

QUESTIONNAIRE ON COSTS INCURRED BY INTERNATIONAL SCHEDULED AIR PASSENGER CARRIERS (Reporting guidelines and geographical descriptions on page A-2)

Carrier name: . . . . . **Calendar period:** 12 months from . . . . . to: . . . . .

Reporting currency (U.S.$ or national) . . . . .
Exchange rate between national currency and U.S. $ during period:
1 U.S.$ = ...

TOTAL AMOUNTS FOR CALENDAR PERIOD

SECTION I – Expenses by aircraft type and operating data by aircraft type and by route group [1]	**AIRCRAFT TYPE** (please specify)							
Check boxes if cost data in this Section include: Domestic ☐ Non-Scheduled ☐								
I.1 Flight operations expenses, *excluding fuel and oil costs*								
I.2 Maintenance and overhaul expenses								
I.3 Depreciation and amortization costs								
I.4 Block hours (use additional sheets as required)								
a) operated on international services **Total**								
By route group RG								
(Please specify, e.g. 11 NA) RG								
RG								
RG								
RG								
b) operated on international non-scheduled services **Total**								
By route group RG								
(Please specify, e.g. 11 NA) RG								
RG								
c) operated on domestic services **Total**								
d) all services (a + b + c) **Total**								

SECTION II – Operating expenses by geographical area or route group[1]	**AREA OR ROUTE GROUP**	North America	Central America/ Caribbean	South America	Europe	Middle East	Africa	Asia/Pacific	**Domestic Services**
Check box if data in this Section include: Non-scheduled ☐ (Please specify e.g. 11 NA)									
II.1 Aircraft fuel and oil									
II.2 Landing and associated airport charges									
II.3 Air navigation charges									
II.4 Station expenses									

SECTION III – Other operating expenses	**All international route groups or areas**	**Domestic services**
Check box if data in this Section include: Non-scheduled ☐		
III.1 Passenger services (including cabin crew salaries and expenses)		
III.2 Commission payments		
III.3 Other ticketing, sales and promotion		
III.4 General and administrative		
III.5 Miscellaneous operating expenses		
SECTION IV – Balance of non-operating items		
IV.1 Total (international and domestic services) (Note: + = revenue, – = expenses)		
TOTAL – SECTIONS I to IV		

Name and title of person completing questionnaire: . . . . . Telephone no.: . . . . .

Fax no.: . . . . .

E-mail: . . . . .

Remarks: (include description of any deviations from the reporting guidelines and geographical descriptions on page A-2)

Note 1.
Route group descriptions are on page B-4 of questionnaire on revenues. Route groups specified should be the same as those for which data are entered in the revenue questionnaire.

REPORTING GUIDELINES AND GEOGRAPHICAL DESCRIPTIONS

REPORTING GUIDELINES

General

a) This questionnaire is to be returned completed by ICAO Contracting States for each of their airlines that provide international scheduled air passenger services. The material provided will not be made public in such a way as to permit identification of individual operators. Information provided should be the total amount for a 12-month period as close as possible to the calendar year specified in the covering State Letter, with the period being identified in the space provided. It is recognized that, in order for your reply to reach ICAO by the date indicated in the State Letter, final audited financial data may not be available, but preliminary data are acceptable. Similarly, if full information is not available for any Section of the questionnaire, partial and/or aggregated data would be appreciated.

b) Data referring to domestic legs of international services should be included as international. Indicate any exceptions. It would be preferable if data on expenses for domestic services under Sections II, III and IV are filled in. Should it be troublesome, please provide the data for international services only.

c) Financial data may be provided either in terms of national currency or in terms of U.S. dollars. In either case the weighted average annual exchange rate used or to be applied to convert national currency into U.S. dollars should be specified in the space provided.

d) *All* expense and operating data relating to freight and mail, including those for all-cargo aircraft operations, should be *included* where relevant in the questionnaire. Expenses incurred for the provision of services to other airlines such as maintenance, handling and catering should be *excluded*.

e) Expenses and operational data should be reported in the case of:

1) pooled services – by each participating carrier for its own services,

2) operations with leased aircraft (under operating lease arrangements) – by the operating carrier; the aircraft expenses should be reported under I.1 flight operating expenses,

3) in the case of code-shared, blocked space, joint services and other commercial arrangements – by the operating carrier only.

The costs should be reported for all cost items as specified in the questionnaire except for aircraft expenses under (2) above.

f) A brief description of each data item is given below. More detailed definitions of financial data items are given in the Instructions for completion of ICAO Air Transport Reporting Form EF (as revised recently), for airline Financial Data.

SECTION I – Expenses by aircraft type and operating data by aircraft type and by route group

Report for all aircraft types used, whether combination or all-cargo, using model designation (e.g. A300-B4, DC10-30CF, Boeing 747-200F).

I.1 Flight operation expenses, *excluding fuel and oil costs*. This item comprises flight crew salaries and expenses, flight equipment insurance, rental of flight equipment (excluding any payments made under aircraft capital or finance lease arrangements), flight crew training, and other flight expenses excluding those covered by Items I.2, I.3 and II.1.

I.2 Maintenance and overhaul expenses. *Include* here all expenses incurred for the repair, overhaul and maintenance of flight equipment, including payments to outside contractors and manufacturers. *Exclude* expenses incurred for the provision of maintenance and overhaul services to other airlines.

1.3 Depreciation and amortization costs. Incorporate all such costs relating to flight equipment, including depreciation charges for aircraft acquired through capital or finance lease arrangements. Depreciation of ground property and equipment should be included if possible under the appropriate headings or in Item III.5.

I.4 Block hours. Provide data by aircraft type and route group wherever possible, even where disaggregated cost data for this Section are not available.

SECTION II – Operating expenses by geographical area

Geographical Areas are described below. Data for this Section may alternatively be reported by route group in accordance with the descriptions appearing in the associated questionnaire on revenues (in which case please specify each route group).

II.1 Aircraft fuel and oil. Include through-put charges, non-refundable duties and taxes.

II.2 Landing and associated airport charges. Include all charges and fees related to air traffic operations which are levied against the airline for services provided at the airport for landing charges, passenger and cargo fees, security, parking and hangar charges.

II.3 Air navigation charges. Include all fees levied against the airline for the provision of route facilities and services. Where a single charge is levied for both airport and route facilities, the amount should be reported under Item II.2.

II.4 Station expenses. *Include* all expenses incurred (passenger and/or cargo) for traffic handling and aircraft loading and servicing, including payments to outside contractors. *Exclude* expenses incurred for sales staff at airports (to be included under Item III.3) and for the handling and servicing of traffic and aircraft of other airlines.

SECTION III – Other operating expenses

III.1 Passenger services. *Include* all expenses incurred for the provision of passenger services (including pay, allowances and expenses of cabin attendants and other passenger service personnel); premiums for passenger liability and accident insurance paid by the airline; expenses of handling passengers incurred because of cancelled and delayed flights. *Exclude* expenses incurred for the provision of passenger services to other airlines.

III.2 Commission payments. Include commissions payable to third parties for the sale of transportation on the airline's services, preferably on a *gross* basis (specify where different).

III.3 Other ticketing, sales and promotion. Include all expenses related to these three functions, including staff, accommodation, reservations, and advertising/publicity.

III.4 General and administrative. Include all expenses incurred in performing the general and administrative functions of the airline. Overhead costs directly related to specific functions should preferably be allocated elsewhere under the appropriate heading.

III.5 Miscellaneous operating expenses. Include all operating expenses which could not be assigned elsewhere in Sections I to III.

SECTION IV – Balance of non-operating items

Include profits and losses from retirement of property and equipment, foreign exchange transactions, gross interest charges on loans for the purchase of flight equipment, including the interest element of aircraft financing leases, net interest charges on loans and overdrafts not related to the purchase of flight equipment, and miscellaneous non-operating items. *Exclude* payments from public funds and balance of income from affiliated companies.

DESCRIPTIONS OF GEOGRAPHICAL AREAS

North America
Bermuda, Canada, St. Pierre et Miquelon, United States including Alaska and Hawaii, but excluding Puerto Rico and the Virgin Islands.

Central America/Caribbean
Anguilla, Antigua and Barbuda, Aruba, Bahamas, Barbados, Belize, British Virgin Islands, Cayman Islands, Costa Rica, Cuba, Dominica, Dominican Republic, El Salvador, Grenada, Guadeloupe, Guatemala, Haiti, Honduras, Jamaica, Martinique, Mexico, Montserrat, Netherlands Antilles, Nicaragua, Panama, Puerto Rico, Saint Kitts and Nevis, Saint Lucia, Saint Vincent and the Grenadines, Trinidad and Tobago, Turks and Caicos Islands and Virgin Islands of the United States.

South America
Argentina, Bolivia, Brazil, Chile, Colombia (including San Andres Islands), Ecuador, Falkland Islands (Malvinas), French Guiana, Guyana, Paraguay, Peru, Suriname, Uruguay and Venezuela.

Middle East
Bahrain, Iran (Islamic Republic of), Iraq, Israel, Jordan, Kuwait, Lebanon, Oman, Qatar, Saudi Arabia, Syrian Arab Republic, United Arab Emirates and Yemen.

Europe
Geographical Europe and Azores, Canary Islands, Cyprus, Greenland, Iceland, Madeira, Malta, Russian Federation (west of Urals) and Turkey.

Africa
The continent of Africa (including Algeria, Egypt, Morocco, Sudan and Tunisia) and offshore islands, but excluding Azores, Canary Islands, Madeira and Malta.

Asia/Pacific
Afghanistan, Australia, Bangladesh, Bhutan, Brunei Darussalam, Cambodia, China, Democratic People's Republic of Korea, Hong Kong S.A.R., India, Indonesia, Japan, Kazakhstan, Kyrgyzstan, Lao People's Democratic Republic, Macau, Malaysia, Maldives, Mongolia, Myanmar, Nepal, New Zealand, Pakistan, Papua New Guinea and all other islands of the Pacific (including American Samoa, Christmas Islands, Cocos (Keeling) Islands, Cook Islands, Fiji, French Polynesia, Guam, Kiribati, Marshall Islands, Micronesia (Federated States of), Nauru, New Caledonia, Niue, Norfolk Island, Northern Mariana Islands, Palau, Pitcairn, Samoa, Solomon Islands, Tokelau, Tonga, Tuvalu, United States Minor Outlying Islands, Vanuatu, Wallis and Futuna Islands), Philippines, Republic of Korea, Russian Federation (east of Urals), Singapore, Sri Lanka, Taiwan (Province of China), Tajikistan, Thailand, Timor-Leste, Turkmenistan, Uzbekistan and Viet Nam.

QUESTIONNAIRE ON REVENUES OF INTERNATIONAL SCHEDULED AND NON-SCHEDULED AIR CARRIERS

(Reporting guidelines on page B-2 and route group descriptions on page B-4)

Carrier name: . . . . . **Calendar period**: 12 months from . . . . . **Reporting currency** (U.S.$ or national): . . . . . Exchange rates between national currency and U.S. dollar during period: . . . . . 1 U.S.$ = ...	**ALL Total Services** (DOMESTIC plus INTERNATIONAL)	**Total DOMESTIC Services**	**Total INTERNATIONAL Services** (Total for route groups 1 to 17)	**INTERNATIONAL SERVICES BY ROUTE GROUP**						
				1	**2**	**3**	**4**	**5**	**6**	**7**
				Between North America and Central America/ Caribbean (NC)	**Between and within Central America and the Caribbean (LC)**	**Between Bermuda, Canada, Mexico and the United States (LNM)**	**Between North America, Central America/Caribbean and South America (NCS)**	**Local South America (LS)**	**Local Europe (LE)**	**Local Middle East (LM)**
SECTION I – Scheduled services										
I.1 **Revenue**										
a) Passenger traffic (including excess baggage).										
b) Freight traffic.										
c) Mail traffic.										
d) Other.										
I.2 **Corresponding volume of traffic and capacity**										
a) Passenger-kilometres (millions).										
b) Seat-kilometres (millions).										
c) Freight tonne-kilometres performed (millions).										
d) Mail tonne-kilometres performed (thousands).										
e) Available tonne-kilometres (millions).										
I.3 **All-cargo services only (included in I.1 and I.2 above)**										
a) Revenue (total).										
b) Tonne-kilometres performed (millions).										
SECTION II – Non-scheduled operations										
II.1 **Revenue**										
a) Passenger traffic.										
b) Freight traffic.										
II.2 **Corresponding volume of traffic and capacity**										
a) Passenger-kilometres (millions).										
b) Seat-kilometres (millions).										
c) Freight tonne-kilometres performed (millions).										
d) Available tonne-kilometres (millions).										

Name and title of person completing questionnaire: . . . . . Telephone no.: . . . . . Fax no.: . . . . .

E-mail: . . . . .

Remarks:

Carrier name:										
Calendar period:	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**
12 months from	**Local Africa (LA)**	**Between Europe and Middle East (EM)**	**Between Europe/ Middle East and Africa (EMA)**	**North Atlantic (NA)**	**Mid-Atlantic (MA)**	**South Atlantic (SA)**	**Local Asia/Pacific (LAP)**	**Between Europe/ Middle East/Africa and Asia/Pacific (EMAAP)**	**North and Mid-Pacific (PN)**	**South Pacific (PS)**
Reporting currency (U.S.$ or national):										
Exchange rates between national currency and U.S. dollar during period:										
1 U.S.$ = ...										
SECTION I – Scheduled services										
I.1 **Revenue**										
a) Passenger traffic (including excess baggage).										
b) Freight traffic.										
c) Mail traffic.										
d) Other.										
I.2 **Corresponding volume of traffic and capacity**										
a) Passenger-kilometres (millions).										
b) Seat-kilometres (millions).										
c) Freight tonne-kilometres performed (millions).										
d) Mail tonne-kilometres performed (thousands).										
e) Available tonne-kilometres (millions).										
I.3 **All-cargo services only (included in I.1 and I.2 above)**										
a) Revenue (total).										
b) Tonne-kilometres performed (millions).										
SECTION II – Non-scheduled operations										
II.1 **Revenue**										
a) Passenger traffic.										
b) Freight traffic.										
II.2 **Corresponding volume of traffic and capacity**										
a) Passenger-kilometres (millions).										
b) Seat-kilometres (millions).										
c) Freight tonne-kilometres performed (millions).										
d) Available tonne-kilometres (millions).										

Remarks:

REPORTING GUIDELINES

General

a) This questionnaire is to be returned completed by ICAO Contracting States for each of their major international scheduled and non-scheduled air carriers (including any all-cargo carriers). *The material provided will not be made public in such a way as to permit identification of individual operators*. Information provided should be the total amount for a 12-month period as close as possible to the calendar year specified in the covering State Letter, with the period being identified in the space provided. It is recognized that, in order for your reply to reach ICAO by the date indicated in the State Letter, final audited financial data may not be available, but preliminary data are acceptable.

b) Data for all-cargo aircraft operations should be included in the relevant sections of the questionnaire. Data for scheduled services with such aircraft should be included in Items I.1 and I.2, and specified under I.3 if possible.

c) Financial data may be provided either in terms of national currency or in terms of U.S. dollars. In either case the weighted average annual exchange rate used or to be applied to convert national currency into U.S. dollars should be specified in the space provided.

d) A brief description of each financial data item is given below; for more detailed definitions see the Instructions for completion of ICAO Air Transport Reporting Form EF (as revised recently), for airline financial data. The traffic and capacity data should be reported by the operating carrier only. In this context the term “operating carrier” refers to that carrier whose flight number is being used for air traffic control purposes. For definitions of traffic and capacity data items see ICAO Air Transport Reporting Form A for airline traffic data.

e) Descriptions of the route groups are also given below, along with guidelines on allocating data amongst them.

SECTION I − Scheduled services

For Items I.1 a) to I.1 c) and I.3 a) report *gross* revenues related to scheduled flights before capacity equalization payments arising from pooled services, payments arising from the services operated under commercial arrangements (code-share, blocked space, etc.) and from the operations with leased or interchanged aircraft. Those revenues should be reported by the operating carrier.

For Item I.1 d) *Other air transport related revenue* is intended to *include* on a *net* basis capacity equalization payments arising from pooled services, payments arising from the services operated under commercial arrangements (code-share, blocked space, etc.) and from the operations with leased or interchanged aircraft; and on a *gross* basis (with related expenses reported under the relevant expense item, indicate where different) incidental revenues accruing from air transportation services such as revenues from passengers paying less than 25% of the normal applicable fare; commissions received on sales of transportation on other carriers; "no-show" and cancellation fees. *Exclude* revenue accruing from the provision of services other than for air transportation, such as for surface transportation; food services; service and maintenance sales; handling services for third parties; and property.

SECTION II − Non-scheduled operations

Include revenue derived from all non-scheduled flights performed for remuneration, including empty flights related thereto, when the responsibility for the performance of transportation is that of the carrier reported.

Allocation to route groups

All data referring to domestic legs of international operations should be included as international in data for the route group concerned. Any service with a single flight number should be allocated to the route group which covers travel from the point of origin to the point of destination. For example, a flight Zurich-Geneva-Abidjan-Dakar should be reported as a Europe/Middle East-Africa flight (in route group 10) and not split between domestic, Europe-Africa and Local Africa. Specify all reporting differences.

Also specify any services which fall into more than one route group, including the criterion used for allocating data amongst the route groups concerned.

DESCRIPTIONS OF ROUTE GROUPS

1. Between North America and Central America/Caribbean (NC)

Includes routes between on the one hand Canada and/or the United States (including Alaska and Hawaii) and/or Bermuda and/or St. Pierre et Miquelon and on the other hand Central America and the Caribbean. Routes between the United States and Puerto Rico/U.S. Virgin Islands are considered domestic and are excluded. Central America/Caribbean is defined as the geographical area covered by route group 2 below but *excluding* Mexico.

2. Between and within Central America and the Caribbean (LC)

Includes routes between or among: Anguilla, Antigua and Barbuda, Aruba, Bahamas, Barbados, Belize, British Virgin Islands, Cayman Islands, Costa Rica, Cuba, Dominica, Dominican Republic, El Salvador, Grenada, Guadeloupe, Guatemala, Haiti, Honduras, Jamaica, Martinique, Mexico, Montserrat, Netherlands Antilles, Nicaragua, Panama, Puerto Rico, Saint Kitts and Nevis, Saint Lucia, Saint Vincent and the Grenadines, Trinidad and Tobago, Turks and Caicos Islands and Virgin Islands of the United States.

3. Between Bermuda, Canada, Mexico and the United States (LNM)

Includes routes between or among the above States. The United States includes Alaska and Hawaii but excludes Puerto Rico and the Virgin Islands.

4. Between North America/Central America/Caribbean and South America (NCS)

Includes routes between the geographical areas defined on the one hand by route group 1 and/or Mexico and on the other hand by route group 5 (Local South America).

5. Local South America (LS)

Includes routes between or among: Argentina, Bolivia, Brazil, Chile, Colombia (including San Andres Islands), Ecuador, Falkland Islands (Malvinas), French Guiana, Guyana, Paraguay, Peru, Suriname, Uruguay and Venezuela.

6. Local Europe (LE)

Includes routes between or among the States of geographical Europe, Azores, Canary Islands, Cyprus, Greenland, Iceland, Madeira, Malta, Russian Federation (west of Urals) and Turkey.

7. Local Middle East (LM)

Includes routes between or among: Bahrain, Iran (Islamic Republic of), Iraq, Israel, Jordan, Kuwait, Lebanon, Oman, Qatar, Saudi Arabia, Syrian Arab Republic, United Arab Emirates and Yemen.

8. Local Africa (LA)

Includes routes between or among the States of continental Africa (including Algeria, Egypt, Morocco, Sudan and Tunisia) and offshore islands but excluding Azores, Canary Islands, Madeira and Malta.

9. Between Europe and Middle East (EM)

Includes routes between the two geographical areas defined by route group 6 (Local Europe) and route group 7 (Local Middle East), respectively.

10. Between Europe/Middle East and Africa (EMA)

Includes routes between on the one hand the geographical areas defined by route group 6 (Local Europe), and/or route group 7 (Local Middle East) and on the other hand the geographical area defined by route group 8 (Local Africa).

11. North Atlantic (NA)

Includes routes between on the one hand Bermuda, Canada, St. Pierre et Miquelon and/or the United States (including Alaska and Hawaii but excluding Puerto Rico and Virgin Islands) and on the other hand the geographical areas defined by route groups 6, 7 and 8 (Europe/Middle East/Africa).

12. Mid-Atlantic (MA)

Includes routes between on the one hand gateway points in the geographical areas defined by route group 2 (Central America and the Caribbean) and/or in the following South American States: Bolivia, Colombia (including the San Andres Islands), Ecuador, French Guiana, Guyana, Peru, Suriname and Venezuela and on the other hand the geographical areas defined by route groups 6, 7 and 8 (Europe/Middle East/Africa).

13. South Atlantic (SA)

Includes routes between on the one hand gateway points in the following South American States: Argentina, Brazil, Chile, Falkland Islands (Malvinas), Paraguay and Uruguay and on the other hand the geographical areas defined by route groups 6, 7 and 8 (Europe/Middle East/Africa).

14. Local Asia/Pacific (LAP)

Includes routes between or among:
Asia: Afghanistan, Bangladesh, Bhutan, Brunei Darussalam, Cambodia, China, Democratic People's Republic of Korea, Hong Kong S.A.R., India, Indonesia, Japan, Kazakhstan, Kyrgyzstan, Lao People's Democratic Republic, Macau, Malaysia, Maldives, Mongolia, Myanmar, Nepal, Pakistan, Philippines, Republic of Korea, Russian Federation (east of Urals), Singapore, Sri Lanka, Taiwan (Province of China), Tajikistan, Thailand, Timor-Leste, Turkmenistan, Uzbekistan and Viet Nam.
Southwest Pacific: Australia, New Zealand, Papua New Guinea and all other islands of the Pacific including American Samoa, Christmas Islands, Cocos (Keeling) Islands, Cook Islands, Fiji, French Polynesia, Guam, Kiribati, Marshall Islands, Micronesia (Federated States of), Nauru, New Caledonia, Niue, Norfolk Island, Northern Mariana Islands, Palau, Pitcairn, Samoa, Solomon Islands, Tokelau, Tonga, Tuvalu, United States Minor Outlying Islands, Vanuatu, Wallis and Futuna Islands.

15. Between Europe/Middle East/Africa and Asia/Pacific (EMAAP)

Includes routes between on the one hand the geographical areas defined by route groups 6, 7 and 8 (Europe/Middle East/Africa) and on the other hand that defined by route group 14 (Local Asia/Pacific).

16. North and Mid-Pacific (PN)

Includes routes via the North and Central Pacific Ocean between on the one hand points in the Americas as defined in route group 2 (Central America and the Caribbean), 3 (Bermuda, Canada and the United States) and 5 (Local South America) and on the other hand the geographical area defined by route group 14 (Local Asia/Pacific) *except* Southwest Pacific.

17. South Pacific (PS)

Includes routes via the South Pacific Ocean between on the one hand points in the Americas as defined in route group 2 (Central America and the Caribbean), 3 (Bermuda, Canada and the United States) and 5 (Local South America) and on the other hand the area defined as Southwest Pacific in route group 14 (Local Asia/Pacific).

II. Respondents to questionnaires

Covering the year 2004

Contracting States or groups of States that provided replies to the air carrier revenue and cost questionnaires issued under the cover of State Letter EC 2/20.3.2-05/75 of 27 June 2005.

Argentina, Armenia, Australia, Austria, Azerbaijan, Belgium, Botswana, Brazil, Burkina Faso, Chile, China, Costa Rica, Croatia, Cyprus, Czech Republic, Ecuador, Egypt, Ethiopia, Fiji, Finland, France, Germany, Greece, Gulf States[1], Hungary, Ireland, Israel, Italy, Jamaica, Japan, Kuwait, Lithuania, Madagascar, Malaysia, Malta, Mauritius, Mexico, Moldova, Norway, Oman, Pakistan, Peru, Philippines, Poland, Portugal, Qatar, Republic of Korea, Romania, Russian Federation, Scandinavia[2], Serbia/Montenegro, Singapore, Slovenia, Spain, Sri Lanka, Switzerland, Thailand, Turkey, Ukraine, United Kingdom, United States, Venezuela and Yemen.

Covering the year 2005

Contracting States or groups of States that provided replies to the air carrier revenue and cost questionnaires issued under the cover of State Letter EC 2/20.3.2-06/75 of 29 September 2006.

Argentina, Australia, Austria, Azerbaijan, Belgium, Brazil, Burkina Faso, Chile, China, Costa Rica, Croatia, Czech Republic, Ecuador, Fiji, Finland, France, Germany, Greece, Gulf States[1], Hungary, Ireland, Israel, Italy, Jamaica, Japan, Kuwait, Lebanon, Lithuania, Madagascar, Malaysia, Mauritius, Mexico, Moldova, Myanmar, New Zealand, Pakistan, Paraguay, Peru, Philippines, Poland, Portugal, Republic of Korea, Romania, Russian Federation, Scandinavia[2], Serbia and Montenegro, Singapore, Slovenia, Spain, Sri Lanka, Switzerland, Thailand, Turkey, Ukraine, United Kingdom, United Republic of Tanzania, United States, Uzbekistan and Venezuela.

— END —

1. Reply from Gulf Air, which is the international airline of Bahrain, Oman, Qatar and United Arab Emirates.
2. Reply from SAS, which is the international airline of Denmark, Norway and Sweden.