ANNEX A - THE DEFINITION OF AVIATION MARKETS

1 In defining passenger markets in aviation, the starting point is usually an Origin and Destination ("OD") pair. Passengers are defined by a city pair - the city in which their air journey starts (the origin "O") and the city in which it ends (the destination "D"). As an example, this annex examines the OD markets which may be of most interest with respect to developments on the Manchester-New York route.

2 More generally, passengers who use the Manchester-JFK air services can be broken down into four different categories:

A. *"End-to-end" or "local" passengers* – Passengers whose air journey starts in Manchester and ends in New York or vice versa. In this case flights to both JFK and Newark are likely to serve the Manchester-New York market and so both are included where relevant in the analysis below.

B. *Those that connect in Manchester* – Passengers who fly into Manchester and then fly on to JFK/Newark. (A passenger flying, say, from Glasgow would be in the Glasgow-New York OD market.)

C. *Those that connect in the US* – Passengers who fly directly from Manchester to JFK/Newark, and then use these hubs to fly onto other destinations, not necessarily in the US. (These passengers fall into OD markets such as Manchester-Los Angeles.)

D. *Those that connect both in Manchester and in the US* – Those passengers who fly into Manchester, and then onto JFK/Newark, and then connect onto another flight via the US hub

3 Further to the above disaggregation of passengers, it will also be important to break down passengers by their residence and journey purpose. The split between business and leisure travellers is often viewed as a split between time sensitive and non-time sensitive passengers respectively.

Time Sensitive and Non-Time Sensitive Passengers

4 It is usual to distinguish between two types of customers:

- *time-sensitive* – these are passengers whose main concern is to reach their destination in the shortest possible time, who are not flexible in terms of time of departure or arrival, and who require the flexibility to change their reservations at short notice. These passengers will usually be less sensitive to price, and more sensitive to frequency.

- *non-time sensitive* – these are passengers whose main concern is price. They will usually be less prepared to pay for the convenience of direct flights or using major airports.

5 The passengers most likely to be affected by the introduction of another scheduled service from Manchester to JFK by an airline such as PIA without network connections at either end of the route are the end-to-end or local passengers. However, the relevant market of local passengers used in this study goes rather wider than the normal definition of a city-pair OD market because of the width of Manchester's catchment area and the lack of competing direct services to New York from closely competing airports.

Local passengers

6 Manchester draws its traffic from a number of regions and they may be divided into the following categories of traffic:

North West-New York (1) passengers - passengers who start their journey in the North West and end their journey in New York;
Other Regions-New York (2) passengers - passengers who start their journey outside the North West, travel to Manchester by surface and end their journey in New York. Surveys indicate that the majority of these passengers are from Yorkshire/Humberside;

North West - New York Market

7 This market includes the passengers from the North West who travel end-to-end on the direct Manchester-JFK/Newark services but will also include:

A) Passengers who travel by surface from the North West to another airport such as Heathrow in order to fly to New York.

B) Passengers who fly from Manchester to an intermediate airport and ultimately finish their journey at JFK/Newark

8 Table A1 consists of a breakdown of the North West – New York market. In 2003, approximately 155,000 passengers originating in the North West travelled to JFK/Newark. Of these passengers, approximately 95,000 flew directly from Manchester to JFK/Newark while, while approximately 18,000 travelled by surface from the North West to Heathrow. Approximately 42,000 passengers originating in the North West decided to fly indirectly from Manchester to JFK/Newark.

Table A1 – North West-New York market

Origin	*Destination*	*Via*	*Passengers*
North West	JFK	Direct	68,147
	Newark	Direct	27,063
	JFK/Newark	Direct	95,210
	JFK	Surface	12,526
	Newark	Surface[1]	5,062
	JFK/Newark	Surface	17,588
	JFK	Indirectly by air	34,333
	Newark	Indirectly by air	7,911
	JFK/Newark	Indirectly by air	42,244
Total			*155,042*

Source: CAA O & D Survey, 2003

Other Regions - New York Market

9 This market includes the passengers from the Yorkshire/Humberside region who travel end-to-end on the direct Manchester-JFK/Newark services but will also include:

[1] Includes 1044 passengers who travelled from the North West to Gatwick

A) Passengers who travel by surface from Yorkshire/Humberside to another airport such as Heathrow in order to fly to New York.
B) Passengers who fly from Yorkshire/Humberside to an intermediate airport and ultimately finish their journey at JFK/Newark

10 Yorkshire/Humberside is the next most popular surface origin for passengers using Manchester to fly to JFK/Newark. As Table A2 demonstrates, in 2003, approximately 68,000 Yorkshire and Humberside originating passengers flew directly to JFK/Newark. Unlike North West originating passengers, Newark appears to be the more popular destination of the two, in this example receiving almost 10,000 more passengers than New York. Leisure passengers again make up the core element of these passengers. Around 20,000 passengers travelled from Yorkshire/Humberside by surface to London. There are relatively few passengers who flew indirectly from Yorkshire/Humberside to JFK/Newark (see Table A2).

Table A2 – Yorkshire/Humberside-New York market

Origin	*Destination*	*Via*	*Passengers*
Yorkshire/Humberside	JFK	Direct	29,436
	Newark	Direct	38,976
	JFK/Newark	Direct	68,412
	JFK	Surface	14,700
	Newark	Surface	5,409
	JFK/Newark	Surface	20,109
	JFK	Indirectly by air	5,083
	Newark	Indirectly by air	796
	JFK/Newark	Indirectly by air	5,879
Total			*94,440*

Source: CAA O & D Survey, 2003

11 Overall, the Yorkshire/Humberside-New York market in 2002 was approximately 60% of the size of the North West-New York market and around a quarter of these passengers chose not to fly directly from Manchester.

12 In the analysis of markets in the main paper, a broader market has been established than in the above tables. When determining the number of passengers who have flown directly or indirectly from Manchester to the points studied in the paper, the estimate includes passengers originating from all regions of the UK, not just the North West and Yorkshire/Humberside.

ANNEX B – HISTORICAL DEVELOPMENTS ON THE MANCHESTER-NEW YORK ROUTE

1 Tables B1 and B2 examine whether the decline on Manchester-New York in recent years was typical of UK-US routes. The tables compare overall passenger numbers in the 2000 to 2002 period on routes to the US, both from London and from Manchester.

Table B1 – Passengers on London/Manchester-JFK/Newark routes in 2000, 2001 and 2002

	LHR/LGW	*% Change (Year on year)*	*% Change (2000-2002)*	*MAN*	*% Change (Year on year)*	*% Change (2000-2002)*
2000	3,970,234			390,594		
2001	3,292,100	-17%		252,945	-35%	
2002	3,423,570	4%	-14%	249,125	-2%	-36%

Source: CAA Airport Statistics (reduced by 6% to account for non-revenue passengers)

Table B2 – Passengers on other London/Manchester-other US in 2000, 2001 and 2002

	LHR/LGW	*% Change (Year on year)*	*% Change (2000-2002)*	*MAN*	*% Change (Year on year)*	*% Change (2000-2002)*
2000	11,642,153			524,208		
2001	10,483,054	-10.0%		614,836	17%	
2002	10,447,817	-0.3%	-0.1	729,686	19%	39%

Source: CAA Airport Statistics (reduced by 6% to account for non-revenue passengers)

2 Table B1 displays the number of passengers who flew from Heathrow/ Gatwick and Manchester to JFK/Newark. On the London route passenger numbers fell by 17% from the year ending 2000 to the year ending 2001 but the equivalent fall for Manchester was more than twice as great at 35%.

3 Table B2 shows that Manchester's transatlantic services to US points other than JFK/Newark did not appear unduly affected by the events of 2001. Passenger numbers increased in both 2001 and 2002 and by 2002 the other US routes at Manchester were carrying 39% more passengers than in 2000. In contrast, London routes to other US points seemed to be much more affected by the year 2001; comparing year-end 2000 and 2001 figures, London traffic to US destinations outside of JFK/Newark fell by 10%.

4 The tables suggest that the decline of the Manchester-New York market between 2000 and 2002 was much greater than both the London-New York market and other Manchester-US markets. This is attributable to some extent to Delta withdrawing its service from Manchester to JFK in 2001 but could be taken to suggest that there is some scope for additional capacity in the market. However, this depends on the type of traffic which Delta was carrying.

The effect of Delta's entry

5 Delta entered the Manchester-JFK route in 1997 and there was a significant increase of about 40% in Manchester-JFK/Newark passengers. Tables B3 and B4 explore the reasons behind this increase.

Table B3 - Breakdown of direct Manchester-JFK/Newark services in 1996

			< - - - - - - - - - - - - - Connecting - - - - - - - - - - - - - - >			
		End-to-End	*at Manchester*	*in US*	*At Both Ends*	*Total*
JFK	BA	83,710	10,136	25,158	1,323	120,327
		70%	*8%*	*21%*	*1%*	*100%*
Newark	Continental	41,855	1,528	74,860	1,379	119,622
		35%	*1%*	*63%*	*1%*	*100%*
	Total	125,565	11,665	100,018	2,702	239,949
		52%	*5%*	*42%*	*1%*	*100%*

Source: CAA O & D Survey, 1996

Table B4 - Breakdown of direct Manchester-JFK/Newark services in 1997

			< - - - - - - - - - - - - - - - - - - - Connecting - - - - - - - - - - - - - - - - - - >			
		End-to-End	*at Manchester*	*in US*	*at Both Ends*	*Total*
JFK	BA	81,325	20,345	14,228	1,377	117,275
		69%	*17%*	*12%*	*1%*	*100%*
	Delta	24,462	940	40,140	2,747	68,288
		36%	*1%*	*59%*	*4%*	*100%*
Newark	Continental	55,169	2,910	92,930	3,750	154,759
		36%	*2%*	*60%*	*2%*	*100%*
	Total	160,956	24,195	147,298	7,874	340,322
		47%	*7%*	*43%*	*2%*	*100%*

Source: CAA O & D Survey, 1997

6 The percentage of end-to-end passengers on Delta's Manchester-JFK route in 1997 was 36%, similar to that of Continental and much smaller than BA's 69%. Delta's entry in 1997 led to only a small decrease in the total number of BA's passengers compared with the previous year while Continental's passenger numbers grew by 29%. Connecting passengers contributed the bulk of the additional 94,000 passengers travelling on the Manchester-New York route in 1997 but the local or end-to-end market increased by 33,000. This suggests that Delta's entry not only diverted connecting passengers from other gateways but also stimulated the local or end-to-end market.

7 The ability of an airline to attract connecting passengers depends on the strength and connectivity of its network at one or other end of a route. In 2001 Delta was the second largest US airline at JFK with two million enplanements. It serves cities such as Atlanta, Baltimore and Los Angeles itself or using a regional affiliate such as Comair

operating under the Delta code. An airline which does not have such a network or an alliance with an airline that does will need to rely on attracting local passengers.

The effect of Delta's exit

8 Delta exited the Manchester-JFK route early in 2001 and Tables B5 and B6 demonstrate the impact that this had on the route. Table B5 represents the year 2000. Delta carried approximately 22% of passengers in this market, made up of around 50,000 passengers who connected in the US (61% of its total passengers) and 30,000 end to end passengers (35%). BA's traditionally high number of end-to-end passengers accounted for 78% of its traffic, while Continental's percentage passenger breakdown was almost identical to Delta's. 35% of passengers started their journey in Manchester and ended in New Jersey, while 60% of Continental's Manchester-New Jersey traffic connected in New Jersey.

Table B5– Breakdown of direct Manchester-JFK/Newark services in 2000

			< - - - - - - - - - - - - - - Connecting - - - -- - - - - - - >			
		End-to-End	*at Manchester*	*in US*	*at Both Ends*	*Total*
JFK	BA	93,165	18,484	6,317	737	118,705
		78%	16%	5%	1%	100%
	Delta	29,297	1,310	50,969	2,025	83,600
		35%	2%	61%	2%	100%
Newark	Continental	63,297	3,116	109,186	5,838	181,437
		35%	2%	60%	3%	100%
Total		185,759	22,911	166,472	8,600	383,742
		48%	*6%*	*43%*	*2%*	*100%*

Source: CAA O & D Survey, 2000

9 Table B6 shows that total traffic fell by some 130,000 passengers between 2000 and 2002 but most of the decline was in the connecting segments with the local market only decreasing by 13,000 passengers. The main change in the market was therefore the loss of connecting passengers who formed the bulk of passengers on the Delta service and whose volume declined at both Continental and BA. Given the competition between hubs, it is likely that these passengers may have simply decided to fly to another intermediate point in the US, on their way to their final destination. This suggests that the most likely source of new traffic if capacity is expanded would be an increase in New York's share of connecting traffic. However, the advantages of on-line connections are strong so that it would require entry by an airline with an established network in New York or the partner of such an airline to attract back significant volumes of connectors.

Table B6 – Breakdown of direct Manchester-JFK/Newark services in 2002

			< - - - - - - - - - - Connecting - - - - - - - - - - >			
		End-to-End	*at Manchester*	*in USA*	*at Both*	*Total*
JFK	BA	106,136	4,947	2,559	0	113,642
		93%	*4%*	*2%*	*0%*	*100%*
Newark	Continental	66,054	1,226	72,078	690	140,048
		47%	*1%*	*51%*	*0%*	*100%*
Total		172,190	6,173	74,637	690	253,690
		68%	2%	29%	0%	100%

Source: *CAA O & D Survey, 2002*

Note: *PIA had a very small number of point to point passengers in 2002 and was not captured in the survey*

ANNEX C – CPI METHODOLOGY APPLIED TO MANCHESTER-NEW YORK

The Basic Methodology

1 The first section of this annex provides an explanation of the methodology used to calculate CPIs (Competitive Performance Indicators) and the second section illustrates how the CPIs are used by calculating the change in passengers and airline revenues on Manchester-New York that might occur as a result of additional services by PIA.

2 Data on direct air services has been obtained from 2003 CAA Airport Statistics, while the data for indirect flights has been obtained from the 2003 CAA O & D Survey. The first step is to calculate the market share for each of the routes and airlines for each of the following categories: point-to-point passengers, flights, terminal passengers, transit passengers, total passengers and seats. The passengers are then split by business/leisure and UK/foreign resident using data from the 2003 CAA O & D survey.

3 The second step is to calculate the market share of UK and foreign business segments that each routeing option has within each of these sectors. Business passengers are assumed to respond most to frequency and so the relevant CPI is one based on frequency and is calculated for each option as:

CPIF = Relevant market share / relevant frequency share.

4 Leisure passengers are assumed to respond most to price and price is related to the volume of the capacity offered. The relevant CPI is therefore a CPIC and the CPICs are only calculated once CPIFs have been calculated. This is based on the assumption that the airlines give business passengers priority over leisure passengers because of the higher revenues that they provide. Using a business planning seat factor of 75% (in order to acknowledge the fact that not every business seat is sold), the total number of business passengers is used to obtain an estimate of the number of business seats offered by each of the airlines. The capacity that remains is therefore available for leisure consumers.

Leisure capacity = Total number of seats – seats allocated to business passengers

5 Unlike the third/fourth-freedom airlines, PIA carries a large number of transit passengers These passengers occupy capacity and an estimate of this capacity has been made using a leisure planning seat factor of 85%. This “transit” capacity is also excluded from the total capacity to allow a more accurate comparison of the capacity available to local leisure passengers to be made.

Therefore, PIA’s Leisure capacity = Total capacity – seats allocated to business passengers – seats allocated to transit passengers

6 Account is also taken of the number of connecting passengers on each airline’s flights. Connecting passengers are those whose journeys are extended beyond the point-to-point flight from Manchester to New York. An example would be a passenger who flies from Manchester to New York, and then connects onto another flight to Los Angeles.

7 Data on other routes suggests that PIA may not be able to penetrate these connecting markets and that it will need to focus on the point-to-point or local traffic on the Manchester-New York route. Therefore, the capacity taken up by connecting passengers on other airlines is deducted from their total capacity (in the same way that the capacity taken by transit passengers is deducted from PIA's capacity) in order to obtain an estimate of capacity likely to be offered to the local market. A connecting passenger planning seat factor of 85% has been assumed.

> *Therefore, Airline's Overall Leisure Capacity = Total Capacity – seats allocated to business passengers – seats allocated to transit passengers – seats allocated to connecting passengers*

And then for all airlines:

> *CPIC = Relevant market share / leisure capacity share*

Scenario 1

8 Scenario 1 assumes that PIA increases its four times a week service from Manchester to JFK to five times a week. PIA's flights have therefore been increased by 104 for the year and its seats by 38,064, on the assumption that PIA will employ 366-seater aircraft (366x104=38,064).

9 In 2003 PIA carried approximately 230 transit passengers per flight[1]. It would not seem reasonable to assume that the number of transit passengers will grow in proportion to an increase in flights. However, some growth could be expected; having analysed alternative routes from Pakistan to JFK, over points other than Manchester, it appears that travelling via Manchester is a relatively more attractive option (in terms of time) than flying over Dubai, for example. The assumption used here is therefore that any additional flight will have half the current level of transit passengers, i.e. around 115 transit passengers per flight. Therefore, in the new scenario, PIA will have 11,960 extra transit passengers (115x104=11,960).

Traffic stimulation

Business passengers

10 Now, in order to obtain a weight that accurately portrays each airline's position in the market, an 'attraction factor' has been calculated. Again, frequency is assumed to be the key determinant for business passengers so:

> *Attraction factor for business passengers = Airline or routes CPIF * number of flights.*

11 An increase in one flight a week by one airline does not necessarily have the same impact on the market as an increase in one flight a week by another airline if the latter airline is much more attractive to business passengers. The attraction factor is intended to capture this effect.

12 Calculating an aggregate attraction factor for both UK business and foreign business, both before and after PIA's increase in flights provides an estimate for the resulting 'growth' within the market. With business passengers likely to prioritise

[1] This is calculated based on the CAA Airport Statistics data, 2003

frequency, a frequency elasticity of 0.3 is estimated. A business fare response of –0.1 is used while the market price elasticity of business passengers is assumed to be –0.5.

13 The stimulation in business passengers (calculated separately for UK and foreign residents) due to the increase in frequency by PIA is calculated as:

> *Frequency stimulated market = Initial business market * (growth in the aggregate attraction factor ^ frequency elasticity).*

The greater level of competition is assumed to have a limited effect on business fares:

> *New Business fare = initial average business fare * (growth in the aggregate attraction factor ^ business fare response).*

Finally, the combined fare/frequency stimulated market is calculated:

> *Combined fare/frequency stimulated market = frequency stimulated market * (new business fare / old business fare) ^ business price elasticity*

Leisure passengers

14 Attraction factors are correspondingly calculated for the leisure market but based on capacity, rather than frequency:

> *Attraction factor for leisure passengers = CPIC * leisure capacity*

15 Again the attraction factor conveys the notion that when a more attractive airline increases capacity, there is likely to be a bigger overall effect on the market. Again, aggregate attraction factors across all routeing options are compared before and after PIA's flight increase. As before, transit passengers on PIA flights are also subtracted from the airline's remaining capacity in order to allow more accurate comparisons to be made.

16 In terms of elasticities, the model assumes a capacity elasticity of 0, a leisure fare response of –0.5 and a leisure price elasticity of –1.5.

17 The capacity stimulated leisure market is therefore calculated as:

> *Capacity stimulated market = Initial leisure market * (growth in the aggregate attraction factor ^ capacity elasticity).*

The new leisure fare is calculated as follows:

> *New Leisure fare = initial average leisure fare * (growth in the aggregate attraction factor^ leisure fare response).*

Finally, the fare/capacity-stimulated leisure market is calculated as:

> *Combined fare/capacity stimulated market = capacity stimulated market * (new leisure fare / old leisure fare) ^ leisure price elasticity.*

18 Having now calculated the potential size of the market stimulated by PIA's flight increases, it is left to determine how these new passengers are allocated across the routeing options.

19 Initially, the market share factor for business passengers is calculated as follows:

Market share factor = Attraction factor/Σattraction factors =
*CPIF * Flights/Σ CPIF* Flights*

And for leisure passengers as:

Market share factor = Attraction factor/Σattraction factors =
*CPIC * Local Leisure capacity/ΣCPIC* Local Leisure Capacity*

20 These market share factors are then used to calculate what proportion of the market each routeing option gains for each of the relevant market segments:

*New Business passengers =business market share factor * fare/frequency stimulated market*

*New Leisure passengers = leisure market share factor * fare/capacity stimulated market*

Impact on airlines

21 These new passenger numbers, i.e. those following a PIA expansion, are then compared with the passenger numbers recorded before PIA's flight increase in order to assess potential losses to UK airlines and benefits to UK residents. The effect on airlines is measured by:

*Original Revenue = Original Passenger numbers * Original fare*

*New Revenue = New Passenger numbers * New fare*

Change in revenue = Old revenue – new revenue

22 The overall loss to UK airlines is the aggregate of these changes in revenue across the market segments. The profit effect depends on the costs which UK airlines can avoid because of this loss in traffic/revenue. Details of the cost and profit calculations are shown in Annex G.

Impact on passengers

23 In order to calculate the change in consumer benefits, the following consumer surplus formula is used:

*Gain to existing passengers = Original passengers * (Old fare – New fare)*

Gain to new passengers = (New passenger number – old passenger number) 0.5 *(Old fare – New fare)*

24 The areas representing the gain to existing passengers and the gain to new passengers from PIA's one flight a week increase are represented by areas A and B respectively in Figure 3.1 in Chapter 3. The benefits to new passengers tend to be smaller than the benefits to existing customers (although in overall terms the gain made by existing passengers, who are assumed to have used the service regardless, is a transfer payment from the airlines which lose the same amount in terms of profit), and the multiple 0.5 is used because the demand curve of marginal passengers is assumed to be linear so that Area B is a triangle.

The case of the Manchester-New York route

25 In this illustration of the method, all of the data relates to the introduction of one additional service a week by PIA on its Manchester-JFK route and is based on the following calculated base CPIs:

Table C1 – CPIs in 2003 on Manchester-New York

CPIFs		*UK Business*	*Foreign Business*
	BA	15.1	16.4
	PIA	0.4	0.38
	Continental	18.1	17.0
	Indirect via UK (UK Airline)	0.1	0.5
	Indirect via UK (Foreign Airline)	1.1	0.8
	Indirect via other (UK Airline)	0.2	0.8
	Indirect via other (Foreign Airline)	2.0	0.5
	Via surface to Heathrow (UK airline)	0.5	0.2
	Via surface to Heathrow (Foreign Airline)	0.0	0.4

CPICs		*UK Leisure*	*Foreign Leisure*
	BA	33.4	34.5
	PIA	3.12	3.06
	Continental	48.4	36.9
	Indirect via UK (UK Airline)	0.2	0.5
	Indirect via UK (Foreign Airline)	0.1	0.1
	Indirect via other (UK Airline)	0.6	0.0
	Indirect via other (Foreign Airline)	4.2	4.9
	Via surface to Heathrow (UK airline)	0.1	0.3
	Via surface to Heathrow (Foreign Airline)	0.8	0.1

26 It should be noted that assumptions have been needed in order to categorise PIA's traffic into the various residence/journey purpose categories because PIA's carryings are too low for it to be captured in the CAA O &D survey. Different assumptions about the split would lead to different CPIS - some would rise and others fall as traffic is re-distributed - but they would still remain very small compared with those of the direct third/fourth-freedom airlines.

27 The assumption is that an increase in the supply of flights by PIA is likely to stimulate the market. As well therefore as potentially attracting existing passengers from the direct services of BA and Continental on Manchester-New York and from indirect routeings, PIA's additional flights may stimulate the market.

Impact on airlines – Base CPI case

28 The additional capacity that PIA mounts is assumed to reduce fares. Based on an initial assumed average business fare of £782 (IPS data) and an assumed leisure fare of £227, PIA's flight increase leads to a fall in all these yields for airlines (see Table C2). The biggest yield fall is for UK leisure passengers, while foreign business

passengers provide the smallest fall in yields for airlines. It should be stressed that airlines employ very complicated fare structures over the case of many different routes, and therefore the analysis provided concerning prices should be treated with a sense of caution and simply provide an informed estimate.

Table C2 – Effect on yields

	Old Yields	*New Yields*	% change
UK Business	£782.0	£781.9	-0.01%
UK Leisure	£227.0	£226.3	-0.3%
Fgn Business	£782.0	£781.9	-0.01%
Fgn Leisure	£227.0	£226.3	-0.3%

29 This fall in price together with the greater frequency stimulates the market. The market share factors change as a result of the PIA expansion and the effect on the carryings of individual airlines are shown in Table C3. BA loses the most passengers but the lack of attractiveness of PIA's current service is reflected in the loss being only 150 passengers for the entire year. Table C3 also translates these changes in passenger numbers and the fall in the overall market yield into changes in airline revenue.

Table C3 – Impact on passengers numbers, airline revenue and consumer surplus

	Overall Change in pax	*Change in airline Revenue (£m)*
BA	-150	-0.11
PIA	-1,450	0.35
Continental	-93	-0.07
Indirect via UK (UK Airline)	-25	-0.02
Indirect via UK (Foreign Airline)	-8	-0.01
Indirect via other (UK Airline)	-4	-0.00
Indirect via other (Foreign Airline)	-27	-0.02
Via surface to Heathrow (UK airline)	-13	-0.01
Via surface to Heathrow (Foreign Airline)	-42	-0.03
Total	1,087	0.09

Note: Replacement ratio of 50% that has been assumed for London services has not been incorporated into the above table

30 Under the assumed scenario, in terms of revenue (Table C3), PIA enjoys an increase of £0.35m while BA experiences the largest fall, approximately equal to £0.11m. Continental's fall in revenue is approximately £0.07m. The fall in revenue for airlines that provide indirect services to JFK/Newark from Manchester are relatively smaller, and this is perhaps predictable as their routes would appear to be less appealing that the direct alternative.

Impact on passengers – Base CPI case

31 Passengers benefit from the fall in fare levels. All passenger types enjoy a net benefit, with UK passengers being the biggest beneficiaries. UK leisure passengers enjoy greater gains than their foreign counterparts and the same is true of UK business passengers. UK leisure passengers stand to enjoy the greatest benefits available to all types of passengers, approximately equal to £0.14m.

Table C4 – Change in consumer surplus

	UK Business	*UK Leisure*	*Foreign Business*	*Foreign Leisure*	*Total*
Total	£2,000	£140,000	£1,000	£22,000	£165,000

32 The benefits in the above table include the benefits to both existing passengers and new passengers. A more detailed breakdown of the above analysis shows that the majority of benefits fall to existing passengers rather than new passengers.

The High CPI case

33 The evaluation above is based on PIA's current (base) CPIs. As mentioned in the main document, a "high CPI" case has been devised to test the sensitivity of the results to an improvement in PIA's attractiveness. The revised CPIs are shown in Table C5.

Table C5 – PIA's "high case" CPIs

CPIFs		*UK Business*	*Foreign Business*
	BA	15.1	16.4
	PIA	1.20	1.15
	Continental	18.1	17.0
	Indirect via UK (UK Airline)	0.1	0.5
	Indirect via UK (Foreign Airline)	1.1	0.8
	Indirect via other (UK Airline)	0.2	0.8
	Indirect via other (Foreign Airline)	2.0	0.5
	Via surface to Heathrow (UK airline)	0.5	0.2
	Via surface to Heathrow (Foreign Airline)	0.0	0.4

CPICs		*UK Leisure*	*Foreign Leisure*
	BA	33.4	34.5
	PIA	9.4	9.2
	Continental	48.4	36.9
	Indirect via UK (UK Airline)	0.2	0.5
	Indirect via UK (Foreign Airline)	0.1	0.1
	Indirect via other (UK Airline)	0.6	0.0
	Indirect via other (Foreign Airline)	4.2	4.9
	Via surface to Heathrow (UK airline)	0.1	0.3
	Via surface to Heathrow (Foreign Airline)	0.8	0.1

34 In the high case, PIA's CPIFs have been adjusted from 0.4 to 1.2 for UK Business and from 0.38 to 1.15 for foreign business. In turn, PIA's CPICs have been adjusted from 3.1 to 9.4 for UK leisure and from 3.06 to 9.2 for foreign leisure. Although comparable with the penetrations achieved in other markets, the high case CPIs do seem to represent very much an upper bound given PIA's present performance.

Impact on Airlines – High CPI case

35 Airline yields reduce more significantly with the increase to PIA's CPIs because its added capacity is assumed to be more effective. Table C6 shows that the yield obtained from UK leisure passengers falls the most while foreign business yields are least affected.

Table C6 – "High CPI" change in yields

	Old Yields	*New Yields*	*% change*
UK Business	£782.0	£781.1	-0.1%
UK Leisure	£227.0	£222.2	-2.1%
Fgn Business	£782.0	£781.1	-0.1%
Fgn Leisure	£227.0	£222.3	-2.1%

36 The effect of adjusting PIA's CPIs on passenger numbers is shown in Table C7. PIA experiences a more than a three-fold increase in point to point passengers as a result of increasing its flights to JFK by one a week [2]. BA loses the most customers, approximately 997 passengers for the year.

[2] This percentage should be treated with caution considering that PIA carries only approximately 3,000 point to point passengers.

Table C7 – "High CPI" impact on passenger numbers

	Overall Change in pax	*Change in airline Revenue (£m)*
BA	-997	-0.72
PIA	9,820	2.42
Continental	-607	-0.47
Indirect via UK (UK Airline)	-169	-0.12
Indirect via UK (Foreign Airline)	-81	-0.07
Indirect via other (UK Airline)	-26	-0.02
Indirect via other (Foreign Airline)	-187	-0.13
Via surface to Heathrow (UK airline)	-103	-0.08
Via surface to Heathrow (Foreign Airline)	-281	-0.19
Total	7,370	0.63

Note: Replacement ratio of 50% that has been used for London services has not been incorporated into the above table

37 Table C7 also shows the new changes in revenue after employing PIA's new CPIs and as expected (as the new CPIs are more optimistic), PIA gains significantly more than with its current CPIs while other routeing options suffer higher losses. PIA's change in revenue goes up to £2.42m while BA and Continental's fall in revenue increases to £0.72m and £0.47m respectively.

Impact on passengers – High CPI case

38 The benefits to passengers also increase in the High CPI case (see Table C8). Further analysis again shows that existing passengers receive the majority of the benefits. Leisure passengers as opposed to business passengers, receive most of the benefits, with UK leisure passengers enjoying a gain of around £0.93m.

Table C8 – "High CPI" change in consumer surplus

	UK Business	*UK Leisure*	*Foreign Business*	*Foreign Leisure*	*Total*
Total	£24,000	£931,000	£12,000	£149,000	£1.1m

ANNEX D – FIFTH-FREEDOM SERVICES ON OTHER ROUTES

1 The examples of airlines currently using fifth-freedom rights comparable to those of PIA are relatively limited. Tables D1 show the values calculated for the CPIs of the airlines currently exercising fifth-freedom rights through Heathrow to New York and Chicago. The CPIs shown in Table D1 were calculated in the same way as those for the Manchester services as described in Annex C. The data offers an insight into the type of penetration that can be achieved by fifth-freedom carriers, although it must be treated with caution because the characteristics of Heathrow are different from those at Manchester.

Table D1 – CPIs on Heathrow-New York and Heathrow-Chicago

New York	*UK Business CPIF*	*Foreign Business CPIF*	*UK Leisure CPIC*	*Foreign Leisure CPIC*
American	0.63	1.22	0.72	0.90
Air India	**0.16**	**0.00**	**1.67**	**0.80**
BA	1.29	0.84	0.90	0.70
Kuwait Airlines	**0.00**	**0.05**	**0.73**	**0.05**
United	0.42	1.34	0.80	1.06
Virgin	1.41	1.19	1.92	2.43
Chicago				
American	0.66	1.47	0.88	1.13
Air India	**0.53**	**0.21**	**3.77**	**1.47**
BA	2.35	0.42	1.03	0.51
United	0.54	1.19	1.64	2.57
Indirect via other	0.31	0.47	0.38	0.75

Source – CAA O & D Survey, 2003 and CAA Airport Statistics, 2003

2 On New York the two fifth-freedom carriers are relatively strong in leisure markets, particularly in the UK-resident leisure market. However, Air India and Kuwait Airlines have very low Business CPIFs compared with their third/fourth-freedom rivals.

3 Air India is the only fifth-freedom carrier operating from Heathrow to Chicago, and its CPIFs for UK Business and Foreign Business, while still low at 0.53 and 0.21 respectively, are much higher than on New York. Its CPICs for UK leisure and foreign leisure are 3.77 and 1.47 respectively so the airline is again strongest with regards to the UK resident leisure market. Overall, Air India appears to be a much more successful competitor in the Chicago market.

4 The CPIs of PIA's current service from Manchester to New York are very low with regard to business which is consistent with the data at Heathrow. PIA's CPIs for leisure passengers are well below the values that could be expected given the experience on Heathrow-New York. A more energetic exploitation of fifth-freedom rights by PIA in the future is a distinct possibility and so it is reasonable to consider a situation in which PIA achieves higher CPIs than these historic values by putting slightly more emphasis on point-to-point traffic from an intermediate point along its sector route. For this reason, the CPIs calculated (using historic data) for the Manchester-New York sector is taken as

a “base case” scenario (assuming that the further granting of fifth-freedom rights will at the very least not reduce the current number of passengers who use the service) and each of these CPIs will be multiplied by a factor of three in order to provide an alternative “high case” scenario. Table D2 shows the CPI assumptions that will be used:

Table D2 – CPIs assumed for PIA at Manchester

	UK Business	UK Leisure	Foreign Business	Foreign Leisure
Base Case	0.4	3.1	0.4	3.1
High Case	1.2	9.4	1.1	9.2

ANNEX E – FARES ON MANCHESTER-US ROUTES

1. Tables E1 to E5 show the fares which airlines have currently filed on routes from Manchester and London to New York, Toronto, Chicago and Houston.

2. Table E1 compares BA's fares from Manchester to New York with those from London. It shows that many of the lower Manchester fares (up to a level of about £700 round trip) and some of the higher fares are set at the same level as those from London but others are higher by amounts varying up to £89 one way. So, in some cases BA "common-rates" Manchester and London but in other cases the Manchester fare appears to have been set using the IATA add-on to the London fare. It is difficult to draw straightforward conclusions from the comparison. For example, BA has two Y2 and CRT1 fares on Manchester, one higher than the other. The lower level (£403 one way for the Y2) is for the direct Manchester-JFK flight only, while the higher level (£486 one way for the Y2) is for a routing specifically via London. However, although the direct Y2 fare from Manchester is just £6 higher than the direct Y2 fare from London, the Y and CRT1 fares are lower from Manchester.

3. Even BA's most restricted fares on Manchester-JFK, those in the V reservation class, will allow transfers, so the passenger is able to travel by air on a Manchester-London-New York routeing with a transfer at London at the same price as on the direct service from Manchester. They will, however, incur an additional PSC charge at Heathrow (£13.60 for a round-trip journey) . The usual APD charge of £20 will apply for whichever routeing unless their onward connection is more than 24 hours after their arrival at Heathrow (which is unlikely for a transfer on this routeing), in which case they will be charged an additional £5 APD for the domestic sector.

4. Table E2 shows PIA's fares on Manchester-JFK. The lowest fare offered (£639 round trip) is well above most of the spectrum of leisure fares offered by BA and the flexible fares are also set at levels above those of BA. PIA has filed the basic IATA levels and structure which is essentially the default option and does not suggest that PIA is actively attacking this market. A similar conclusion can be drawn from the absence of PIA fares on Manchester-New York in the Flightpath database of discount fares.

5. Table E3 compares BA's fares from Manchester to Houston with those from London. The Manchester fares are higher by the "add-on" amount of between £25 and £89 one way. The lower end of the range is more relevant in this study because PIA's traffic is likely to be leisure traffic.

6. BA's Manchester-Chicago fares are again set using the £25 to £89 one way add-ons to its London-Chicago fares. Table E4 compares bmi's fares from Manchester to Chicago for travel in July 2004 with those of BA from London. The filed levels can only be indicative as regards promotional fares as the fare structures are different and much will depend on the way in which the airline yield management systems operate. BA offers some lower promotional fares than bmi but the overall range is quite similar; bmi has a higher full economy but its premium class fares are generally somewhat lower than BA's.

7. Table E5 compares Air Canada's fares from Manchester to Toronto with those from London. Air Canada offers a number of promotional fares from Manchester that are set well below the lowest London level but the next tranche of Manchester promotional fares have the £25 one-way add-on. The flexible economy fares are only £11 one-way above the London level but the higher fares usually have the full £89 one-way add-on.

Table E1 - Fares from Manchester and London to JFK

From London			*From Manchester*			*Difference*
GBP	*OW/RT*	*Fare Class*	*GBP*	*OW/RT*	*Fare Class*	*= add-on in GBP*
240	R	VLNCGB4	240	R	VLNCGB4	0
290	R	RLNCGB4	290	R	RLNCGB4	0
302	R	NKXNNGB5	322	R	NKXNNGB5	20
332	R	NKWNNGB5	352	R	NKWNNGB5	20
340	R	MLNCGB4	340	R	MLNCGB4	0
357	R	VJNCGB4	357	R	VJNCGB4	0
390	R	KLNCGB4	390	R	KLNCGB4	0
404	R	NHXNNGB5	425	R	NHXNNGB5	21
434	R	NHWNNGB5	455	R	NHWNNGB5	21
407	R	RJNCGB4	407	R	RJNCGB4	0
440	R	HLNCGB4	440	R	HLNCGB4	0
457	R	MJNCGB4	457	R	MJNCGB4	0
458	R	VKNCGB4	458	R	VKNCGB4	0
478	R	VHNCGB4	478	R	VHNCGB4	0
507	R	KJNCGB4	507	R	KJNCGB4	0
508	R	RKNCGB4	508	R	RKNCGB4	0
528	R	RHNCGB4	528	R	RHNCGB4	0
557	R	HJNCGB4	557	R	HJNCGB4	0
558	R	MKNCGB4	558	R	MKNCGB4	0
578	R	MHNCGB4	578	R	MHNCGB4	0
608	R	KKNCGB4	608	R	KKNCGB4	0
628	R	KHNCGB4	628	R	KHNCGB4	0
658	R	HKNCGB4	658	R	HKNCGB4	0
678	R	HHNCGB4	678	R	HHNCGB4	0
640	R	TLAPGB04	792	R	TLAPGB04	152
702	R	TKXNNGB5	854	R	TKXNNGB5	152
732	R	TKWNNGB5	884	R	TKWNNGB5	152
757	R	TJAPGB04	909	R	TJAPGB04	152
397		Y2	403		Y2	6
			486		Y2*	89
804	R	THXNNGB5	956	R	THXNNGB5	152
834	R	THWNNGB5	986	R	THWNNGB5	152
858	R	TKAPGB04	1010	R	TKAPGB04	152
878	R	THAPGB04	1030	R	THAPGB04	152
1167	R	W2BA	1319	R	W2BA	152
1745	R	ILAPGB	1745	R	ILAPGB	0
888		Y	855		Y	-33
898		WTP1	974		WTP1	76
1966	R	IHAPGB	1966	R	IHAPGB	0
2245	R	DLAPGB	2245	R	DLAPGB	0
2466	R	DHAPGB	2466	R	DHAPGB	0
3567	R	CRT1	3415	R	CRT1	-152
			3745	R	CRT1*	178
			3758	R	J3BAMAN+	
3592	R	ALAPGB	3770	R	ALAPGB	178
3946	R	AHAPGB	4124	R	AHAPGB	178
3956	R	J2BA	4134	R	J2BA	178
2275		J1	2364		J1	89
6514	R	F2BA	6692	R	F2BA	178

3761	F1	3850	F1	89

* For routing via London
+ MAN only fare

Table E2 - PIA's Fares from Manchester to JFK

GBP	*OW/RT*	*Fare Class*	*Adv Pur*	*MIN*	*MAX*	*Seasons*
639	R	YLXAP6M	7	SU/	6M	25DEC -10APR
						27OCT -12DEC
686	R	YLWAP6M	7	SU/	6M	25DEC -10APR
						27OCT -12DEC
837	R	YKXAP6M	7	SU/	6M	11APR -26JUN
						25AUG -28SEP
						13DEC -24DEC
865	R	YHXAP6M	7	SU/	6M	27JUN -24AUG
882	R	YKWAP6M	7	SU/	6M	11APR -26JUN
						25AUG -28SEP
						13DEC -24DEC
911	R	YHWAP6M	7	SU/	6M	27JUN -24AUG
1308	R	YX2				
720		YX2				
1465	R	YW2				
805		YW2				
1828	R	Y1				
1006		Y1				
4207	R	C				
2314		C				
6872	R	F				
3781		F				

Note: Fares are IATA fares and are generally above carrier-coded fares
For example, BA's lowest promotional fare is £240RT as compared with PIA's lowest filed fare of £639RT

Table E3 - Fares from Manchester and London to Houston

From London			*From Manchester*			*Difference*
GBP	*OW/RT*	*Fare Class*	*GBP*	*OW/RT*	*Fare Class*	*= add-on in GBP*
286	R	VLNCGB4	336	R	VLNCGB4	50
336	R	RLNCGB4	386	R	RLNCGB4	50
358	R	NKXNNGB5	408	R	NKXNNGB5	50
386	R	MLNCGB4	436	R	MLNCGB4	50
388	R	NKWNNGB5	438	R	NKWNNGB5	50
413	R	VJNCGB4	463	R	VJNCGB4	50
436	R	KLNCGB4	562	R	KLNCGB4	126
463	R	RJNCGB4	513	R	RJNCGB4	50
486	R	HLNCGB4	612	R	HLNCGB4	126
491	R	NHXNNGB5	541	R	NHXNNGB5	50
513	R	MJNCGB4	563	R	MJNCGB4	50
521	R	NHWNNGB5	571	R	NHWNNGB5	50
544	R	VKNCGB4	594	R	VKNCGB4	50
563	R	KJNCGB4	689	R	KJNCGB4	126
594	R	RKNCGB4	644	R	RKNCGB4	50
605	R	VHNCGB4	655	R	VHNCGB4	50
613	R	HJNCGB4	739	R	HJNCGB4	126
644	R	MKNCGB4	694	R	MKNCGB4	50
655	R	RHNCGB4	705	R	RHNCGB4	50
686	R	TLAPGB04	838	R	TLAPGB04	152
694	R	KKNCGB4	820	R	KKNCGB4	126
705	R	MHNCGB4	755	R	MHNCGB4	50
744	R	HKNCGB4	870	R	HKNCGB4	126
755	R	KHNCGB4	881	R	KHNCGB4	126
758	R	TKXNNGB5	910	R	TKXNNGB5	152
788	R	TKWNNGB5	940	R	TKWNNGB5	152
805	R	HHNCGB4	931	R	HHNCGB4	126
813	R	TJAPGB04	965	R	TJAPGB04	152
891	R	THXNNGB5	1043	R	THXNNGB5	152
921	R	THWNNGB5	1073	R	THWNNGB5	152
944	R	TKAPGB04	1096	R	TKAPGB04	152
1005	R	THAPGB04	1157	R	THAPGB04	152
503		Y2	592		Y2	89
1008	R	Y2UP1	1186	R	T2UP2	178
1008	R	T2UP2	1186	R	Y2UP2	178
1008	R	Y2UP2	1186	R	T2UP1	178
1008	R	T2UP1	1186	R	Y2UP1	178
1012	R	B2R				
1012	R	H2R				
1460	R	W2BA	1612	R	W2BA	152
1725	R	W2R	1877	R	W2R	152
1992	R	ILAPGB	2118	R	ILAPGB	126
2327	R	IHAPGB	2453	R	IHAPGB	126
1200		Y	1276		Y	76
1210		WTP1	1286		WTP1	76
2592	R	DLAPGB	2770	R	DLAPGB	178
2927	R	DHAPGB	3105	R	DHAPGB	178
3825	R	CRT1	4003	R	CRT1	178
4406	R	ALAPGB	4584	R	ALAPGB	178

4976	R	AHAPGB	5154	R	AHAPGB	178
5100	R	J2BA	5278	R	J2BA	178
5100	R	D2R	5278	R	D2R	178
2937		J1	3026		J1	89
7367	R	F2BA	7545	R	F2BA	178
4257		F1	4346		F1	89

Table E4 - Fares from Manchester (bmi) and London(BA) to Chicago

Manchester (bmi)					London (BA)				
GBP	*OW/ RT*	*Fare Class*	*AP*	*MIN*	*GBP*	*RT*	*Fare Class*	*AP*	*OW/ MIN*
					544	*R*	VKNCGB4		SU
594	R	QHGB4W		SU	594	R	RKNCGB4		SU
644	R	HHGB4W		SU	605	R	VHNCGB4		SU
655	R	QJGB4W		SU	644	R	MKNCGB4		SU
705	R	HJGB4W		SU	655	R	RHNCGB4		SU
744	R	MHGB4W		SU	686	R	TLAPGB04	21	SU
					694	R	KKNCGB4		SU
					705	R	MHNCGB4		SU
					744	R	HKNCGB4		SU
					755	R	KHNCGB4		SU
805	R	MKGB4W		SU	805	R	HHNCGB4		SU
820	R	BHGB4W		SU	944	R	TKAPGB04	21	SU
881	R	BJGB4W		SU					
944	R	LKAPGB4	21	SU	1005	0R	THAPGB04	21	SU
1005	R	LHAPGB4	21	SU					
603		M2			486		Y2		
653		B2			1329	0R	W2BA		
812		BCE			2122	0R	IHAPGB	42	SU
812		U2	7	SU	1231		Y		
1918	R	JBGEN	7		1241		WTP1		
1360		Y							
1823		YCE							
2622	R	D3MHAPW	28	SU	2622	0R	DHAPGB	28	SU
4042	R	DAPBD	7	SU	4258	0R	CRT1	7	
4042	R	CE4D	7		4457	0R	AHAPGB	42	SU
4228	R	C2			4957	0R	J2BA		
					7436	0R	F2BA		

Table E5 - Fares from Manchester and London to Toronto with Air Canada

From London			*From Manchester*			*Difference*
GBP	*OW/RT*	*Fare Class*	*GBP*	*OW/RT*	*Fare Class*	*= add-on in GBP*
			235	R	LLDSPECW++	
			255	R	LKDSPECW++	
			258	R	QLEARL+	
			344	R	LHDSPECW++	
			345	R	QKEARL+	
379	R	HLAPGB4	429	R	HLAPGB4	50
429	R	BLPEXGB4	479	R	BLPEXGB4	50
			495	R	QHEARL+	
473	R	HJAPGB4	523	R	HJAPGB4	50
479	R	MLSXGB4	529	R	MLSXGB4	50
523	R	BJPEXGB4	573	R	BJPEXGB4	50
529	R	MLPXGB4	579	R	MLPXGB4	50
557	R	HKAPGB4	607	R	HKAPGB4	50
573	R	MJSXGB4	623	R	MJSXGB4	50
607	R	BKPEXGB4	657	R	BKPEXGB4	50
623	R	MJPXGB4	673	R	MJPXGB4	50
652	R	HHAPGB4	702	R	HHAPGB4	50
657	R	MKSXGB4	707	R	MKSXGB4	50
702	R	BHPEXGB4	752	R	BHPEXGB4	50
707	R	MKPXGB4	757	R	MKPXGB4	50
737	R	MLXAPW	737	R	MLXAPW	0
777	R	MLWAPW	777	R	MLWAPW	0
752	R	MHSXGB4	802	R	MHSXGB4	50
802	R	MHPXGB4	852	R	MHPXGB4	50
818	R	MJXAPW	818	R	MJXAPW	0
858	R	MJWAPW	858	R	MJWAPW	0
865	R	MKXAPW	865	R	MKXAPW	0
905	R	MKWAPW	905	R	MKWAPW	0
			938	R	SLAPGB++	
			945	R	SRMAN+	
1002	R	MHXAPW	1002	R	MHXAPW	0
1042	R	MHWAPW	1042	R	MHWAPW	0
494		M2UK	505		M2UK	11
			1038	R	SJAPGB+	
			1138	R	SKAPGB++	
			1238	R	SHAPGB++	
649		Y2UK	660		Y2UK	11
			681		S1MAN++	
			1600	R	CRMAN++	
1479	R	CAPGB	1657	R	CAPGB	178
1767	R	CLAP42	1945	R	CLAP42	178
2038	R	CHAP42	2216	R	CHAP42	178
2179	R	JLPEX	2357	R	CLPEX	178
2450	R	J/CHPEX	2628	R	CHPEX	178
2795	R	YR	2878	R	YR	83
1536		Y	1582		Y	46
3143	R	JRT3D*				
3492	R	JRUK*	2753	R	JRUK	
3922	R	JR	3852	R	JR	-70

1970		JOWUK	1913		JOWUK	-57
2351		JOW	2309		JOW	-42
6435	R	FR	6435	R	FR	0
4181		FOW	4181		FOW	0

*LON only fare

+ MAN only fare (no transfer through London)

++ Routeing through London permitted with additional tax

ANNEX F – AIRPORT ACCESS COSTS

1. Table F1 shows the typical cost for leisure passengers originating in the North West and Yorkshire/Humberside regions of England, and travelling to the three major airports within the UK. The surface origin of a passenger in the North West is assumed to be central Manchester and that of a passenger in Yorkshire/Humberside is assumed to be central Leeds. Estimates of the approximate distance travelled and time taken are also included for reference.

Table F1 – Surface access distance, time and cost for leisure passengers travelling from the North West and Yorkshire/Humberside to Heathrow, Gatwick and Manchester

		< - - - - - - - *Manchester*		- - - - - >	< - - - - - - - *Leeds*		- - - - - >
		Distance (miles)	*Time (hours)*	*Cost (£)*	*Distance (miles)*	*Time (hours)*	*Cost (£)*
By Road	To Heathrow	204.2	3.62	18.63	202.9	3.5	18.51
	To Gatwick	242.1	4.27	22.08	240.8	4.15	21.97
	To Manchester	10.2	0.33	0.93	59.6	1.08	5.44
By Air	To Heathrow	204.2	1	32.2	202.9	1	48.15
	To Gatwick	242.1	0.33	31.5	240.8	-	-
By Rail	To Heathrow	204.2	3.9	40.15	202.9	3.5	47
	To Gatwick	242.1	4	29.3	240.8	3.5	29
	To Manchester	10.2	0.42	3	59.6	1	8

Note: *Assume a passenger is taking a typical summer holiday, say 4 August until 18 August*

All prices are calculated as one way trip equivalents

By air, from Manchester to Heathrow and Gatwick, is with BA

By air, from Leeds to Heathrow is with bmi

By rail : All prices quoted are the cheapest available for the given journey at the time of going to press

ANNEX G - TRANSATLANTIC COST MODEL

The basic airline cost model

1. The publicly available data specifically related to long-haul services is limited to the Form 41 returns for the Atlantic and Pacific operations of US airlines. In this study the reported costs of Virgin Atlantic have been used as a template as all Virgin's services are long haul and the bulk are between the UK and the US. Each of the reported cost categories has been expressed as a cost per passenger or as a cost per seat. Each cost category has also been classified as to:

- Whether it would change in the short term or in the long term if passenger volumes or service frequency were to change;
- Whether the cost represents an expenditure in the UK region containing the regional airport, in the rest of the UK, or abroad;
- What the short-term level of profit associated with a particular type of expenditure is likely to be in the short term.

2. Manchester airport-specific passenger fees and landing fees have been used instead of the airline averages. The commercial revenue which Manchester is assumed to obtain from a new passenger has been derived from the airport accounts (see Table G2). Virgin's average catering costs per passenger have been halved to reflect the more leisure-oriented nature of PIA's traffic. The results of this exercise and the data sources used are shown in Table G1.

The costs relating to PIA's expansion

3. In the different scenarios the additional rights for PIA are sometimes used on existing flights and sometimes on new flights. In the first case the extra expenditure relates only to the passenger-related unit costs in Table G1. In the second case both the passenger-related and the capacity-related costs of Table G1 are involved.

Airport-related costs and profits

4. The PIA services generate various types of expenditure at and around Manchester such as:

(a) passenger embarkation and landing fees;
(b) expenditure in the airport shops;
(c) passenger travel to/from the airport and possibly accommodation[3];
(d) aircraft and passenger handling fees;
(e) fuel;
(f) crew expenditure on food, travel and accommodation;
(g) catering supplies;
(h) travel agents' fees;

5. The aeronautical charges to Manchester (category (a)) have been calculated from the airport's schedule of tariffs. Commercial revenue which the airport receives have been calculated as the historic revenue per passenger average. All the other

[3] This could be overnight accommodation before or after the flight or longer stays for passengers wanting to stop-over en route from Pakistan to the US.

expenditures have been calculated using the airline cost model shown in Table G1 although, as described above, the specific cost categories included in the analysis depend on the particular scenario being evaluated.

6. The short-term profitability of the various activities has been assumed to be the ratio of gross operating surplus to total turnover for the industry sectors into which the activities are most likely to fall. The data has been taken from Table 3 of the “Input-output Supply and Use” Tables produced by ONS (the latest version covers 2001).

Table G1 – Transatlantic Airline Cost Model

Passenger Related Costs	*Full Cost (per pax (£))*	*Incremental Cost Short Term*	*Incremental Cost Long Term*	*UK spend Foreign airline*	*UK spend UK airline*	*Short-term Profit (%)*
Passenger Embarkation fees UK	3.47	100%	100%	100%	100%	90%
Passenger Embarkation fees US	1.55	100%	100%	0%	0%	90%
Passenger Insurance	1.68	100%	100%	0%	100%	20%
Variable Catering	12.86	100%	100%	50%	50%	13%
On board duty-free sales	---	100%	100%	50%	50%	20%
Incremental Fuel Costs*	5.70	100%	100%	50%	50%	3%
Reservation Fees	7.21	100%	100%	50%	50%	20%
Sales Costs	2.68	100%	100%	50%	50%	20%
Advertising and Promotion	5.26	100%	100%	50%	50%	18%
Capacity Related Costs						
Crew Expenses	8.55	0%	100%	100%	0%	13%
Fuel	42.50	0%	100%	50%	50%	3%
Landing and departure fees - UK	3.17	0%	100%	100%	100%	90%
Landing and departure fees - US	1.67	0%	100%	0%	0%	90%
Handling charges and parking fees	15.20	0%	100%	50%	50%	50%
Maintenance	32.14	0%	100%	10%	90%	16%
Depreciation of Aircraft fleet	59.76	0%	100%	0%	0%	100%
En route Charges	12.87	0%	100%	90%	90%	90%
Flight Crew Salaries	10.40	0%	100%	0%	100%	100%
Cabin Crew Salaries	10.08	0%	100%	0%	100%	100%

Sources: CAA Airline Financial Statistics, Table 2.6 for Virgin, Year to 30 April 2003 (catering costs reduced by 50%); Manchester Airport PLC Accounts for year to 31 March 2003

Table G2 – Manchester Airport charges and commercial revenues

Runway and Air Traffic Charges	£7.99	per tonne up to and including 120 tonnes
	£4.35	per tonne thereafter
Passenger Facilities Charges	£8.09	per passenger, 1 May to 31st Oct 2004
	£4.80	at all other times
Passenger Security Charges	£2.88	per passenger
Commercial Revenue accrued by the Airport	£5.91	per passenger

Source: Manchester Airport Schedule of Fees and Charges, April 2004; Manchester Airport statutory accounts, Year to 31 March 2003