

**The State of the U.S. Aviation Industry  
and its Future Movements:  
An Overview**

Japan International Transport Institute  
Washington, DC  
July 2004

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## **The State of the U.S. Aviation Industry and its Future Movements**

The financial condition of the U.S. commercial aviation industry began rapidly deteriorating as a consequence of a recession in the fourth quarter of 2000, a situation that worsened dramatically in the aftermath of the terrorist attacks on September 11, 2001. The six major network carriers alone posted a total of \$19.1 billion in operating losses for 2001 and 2002 combined. Given such dire circumstances, the U.S. government provided a huge amount of financial and other assistance to the industry, and as a result of this support, none of the six major network carriers have withdrawn from the market. However, the financial condition of the six major network carriers still remains critical, with their share of the domestic market continuing to decline and their operating losses continuing to last even in 2003. Low-cost carriers, on the other hand, have constantly increased their market share, in large part by attracting passengers from the six major network carriers. Low-cost carriers captured about 25% of the market and all of them posted operating profits in 2003.

The clear difference in performance between the six major network carriers and the low-cost carriers - despite the recovery of the U.S. economy and a pickup in demand for air travel - can be attributed to the hub and spoke system of the six major network carriers. In order to maintain this high-cost system, these carriers have a fare-setting system that depends heavily on high-fare passengers, and have formed less convenient flights routed through hub airports. This business model has alienated passengers from the six major network carriers amid intensifying competition with the low-cost carriers offering low-fare, point-to-point service.

The six major network carriers have been unable to adequately address the situation. They have failed to carry out reforms, such as greater cost reduction, a review of fare-setting systems, and review of their networks. On the other hand, low-cost carriers have kept growing by meeting passengers' needs through improvement of routes and service. For the near to medium future, the low-cost carriers will continue to grow, while the six major network carriers will remain in the doldrums.

The following comparison of the six major network carriers and the seven low-cost carriers makes clear the fundamental problems facing the U.S. commercial aviation industry.

### **I. Analysis of the Current Situation of the U.S. Aviation Industry**

#### **1. Changes in Demand**

##### **o Key Points**

- **Demand for air travel declined in 2001 and 2002, after reaching a peak in 2000, although low-cost carriers rapidly grew while demand for network carriers fell. In 2003, passengers and revenue passenger miles (RPMs) either increased or remained stable, indicating a bottoming out of the decline in demand for air travel.**
- **Low-cost carriers have expanded their share of the domestic market, both in enplaned passengers and RPMs, to about 25%. They have also increased the average length of their routes, competing heavily with the network carriers even on long-haul routes.**

## **(1) Major Network Carriers**

• After hitting a peak of 437.4 million in 2000,<sup>1</sup> **the total number of passengers in the market as a whole** began to fall in 2001 as a result of the onset of a recession and then the September 11 terrorist attacks. In 2003, the number fell 5.2 % from the previous year, to 370.5 million. **The decrease in 2003 was partly due to the network carriers reducing flights on their mainline aircraft to cut costs but at the same time they increased flights with their regional partners. The decrease is thus not fully represented.** <sup>2</sup> **In the fourth quarter 2003, enplanements fell only 2.2 % from a year earlier, suggesting that the trend of a decline in demand has ended.**

• **Revenue passenger miles (RPMs)** also began falling after hitting a peak of 539.4 billion RPMs in 2000. In 2003, RPMs decreased 3.7% from the previous year, to 476.1 billion. **Again, as pointed out above, the figure does not necessarily represent the actual decrease.**<sup>3</sup> **In the fourth quarter of 2003, RPMs increased by one percent, also suggesting a recovery in demand.**

## **(2) Low-Cost Carriers**

• **The number of passengers for low-cost carriers has consistently increased.** Enplanements grew almost 90% from 1995 to 2003, to 133.6 million. **Low-cost carriers thus expanded their share in the domestic market from 14.3% in 1995 to 24.6% in 2003.**

• **RPMs have also consistently increased.** From 1995 to 2003, RPMs increased to 108.5 billion, a 158.7% jump. As a result, **low-cost carriers expanded their market share from 10.8% in 1995 to 22.8% in 2003.**

• RPMs grew at a faster rate than did passenger enplanements. This can be attributed to the fact that **the average distance of low-cost carriers' flights increased from 596 miles in 1995 to 812 miles in 2003. Low-cost carriers have aggressively moved into long-distance routes, including transcontinental routes, by changing their conventional short- and medium-haul route configurations and they are engaged in fierce competition with the six major network carriers.**

• The RPMs of low-cost carriers in 2003 represented an increase of 29.2 billion passenger miles over 2000, while the RPMs of the six major network carriers in the domestic market decreased by 38.3 billion passenger miles during the same period. This indicates that **the increase of low-cost carriers' RPMs made up for more than three-quarters of the decrease of the six major network carriers' RPMs.**

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<sup>1</sup> The operating and financial data of the carriers in this report are from Form 41 of the U.S. Department of Transportation, unless otherwise noted. Although some low-cost carriers operate some international flights (the Caribbean region, Mexico, etc.), they are included as domestic flights because the data cannot be broken out, and also because the proportion of those flights to the total is quite small.

<sup>2</sup> The number of passengers on regional partners to the six major network carriers increased by 51.9 million from 2002 to 2003, from 58.5 to 110.4 million. A large part of the increase can be attributed to the increase in subcontracted flights from the six major network carriers to their regional partners.

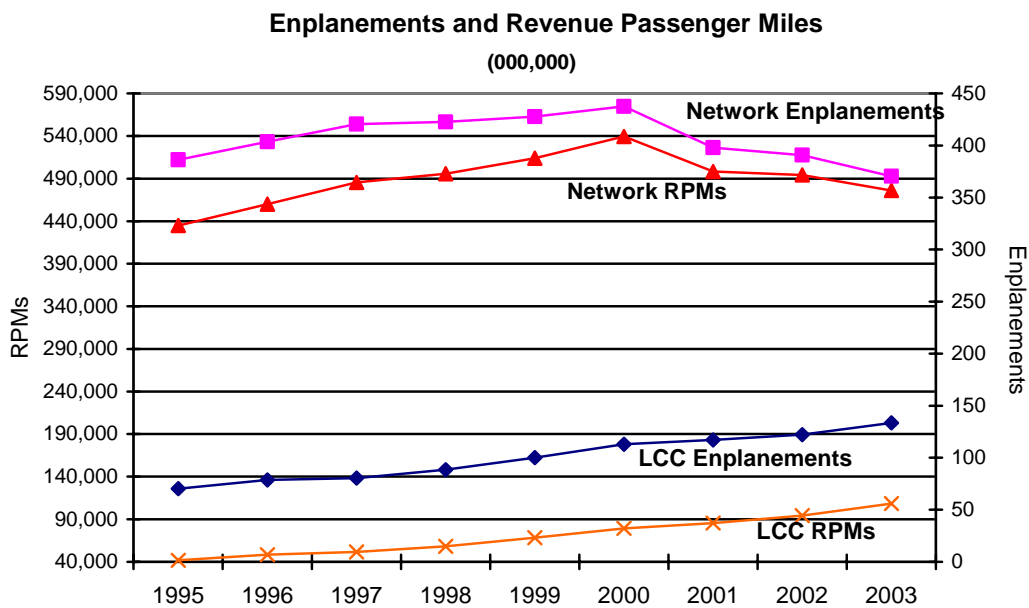
<sup>3</sup> Regional carriers' RPMs increased by 18.8 billion passenger miles from 2002 to 2003, from 24.0 billion RPMs to 42.9 billion RPMs. A large part of the increase can be attributed to the increase in subcontracted flights from the six major network carriers to their regional partners.

### (3) Industry as a whole

- Although the total number of passengers fell in 2001 and 2002, after hitting a peak of 652.4 million in 2000, that number actually increased 0.6% between 2002 and 2003, to 596.4, reflecting the rapid growth of low-cost carriers and signs of a halt to the decline in demand for the network carriers.

- RPMs also fell in 2001 and 2002 after hitting a peak of 652.2 billion passenger miles in 2000. But they remained almost flat in 2003, decreasing only 0.3% between 2002 and 2003, to 631.2 billion RPMs. As with passenger enplanements, the reason for this was the weakened demand for network carriers' flights.

- The number of enplaned passengers and RPMs either increased or remained almost unchanged in 2003, suggesting that the decline in demand for air transportation was ending.



	1995	1996	1997	1998	1999	2000	2001	2002	2003
Network Enpl (mil)	386.1	403.4	420.5	422.7	427.7	437.4	398.0	390.7	370.5
LCC Enpl	70.4	78.8	80.4	88.6	100.0	112.8	117.2	122.3	133.6
Network RPMs (bil)	435.0	459.9	485.6	495.6	513.8	539.4	498.1	494.3	476.1
LCC RPMs	42.0	48.4	51.6	58.1	68.5	79.3	85.6	94.3	108.5

## 2. Changes in Capacity

### o Key Points

- In response to a decrease in demand, the six major network carriers have reduced capacity and outsourced flights to their regional partners.
- Low-cost carriers have consistently increased their capacity and expanded their share to about 25% of the domestic market. The increase in low-cost carriers' capacity made up about 60% of the decrease in the network carriers' capacity from 2000 to 2003.

### (1) Network Carriers

- Total available seat miles (ASMs) began falling after hitting a peak of 736.9 billion ASMs in 2000. In 2003, ASMs were down by 6.2% over the previous year, to 635.6 billion. This was **almost at the same level as in 1995, indicating that capacity was adequately reduced to meet the decline in demand. Meanwhile, the network carriers reduced their mainline capacity and increased flights by their regional partners.**<sup>4</sup>

- The load factor in the entire market **began to rise in 2002 as a result of capacity reductions. In 2003, the load factor rose nearly 2% (1.9%) over the previous year, to 74.9%, the highest since 1995.** However, the **break-even load factor in 2003** increased 3.3% over 2002, to **100.8%**, a result of stagnant yields and inadequate cost reduction, which will be described later. At this level, **carriers lose money even if they operate at full capacity.**

### (2) Low-Cost Carriers

- **Available seat miles for the low-cost carriers have increased consistently, while those of the network carriers have steadily decreased.** In 2003, low-cost carriers increased ASMs by 11.4% from 2002, to 151.7 billion. As a result, **low-cost carriers expanded their share of capacity in the market from 10.7% in 1995 to 23.2% in 2003.**

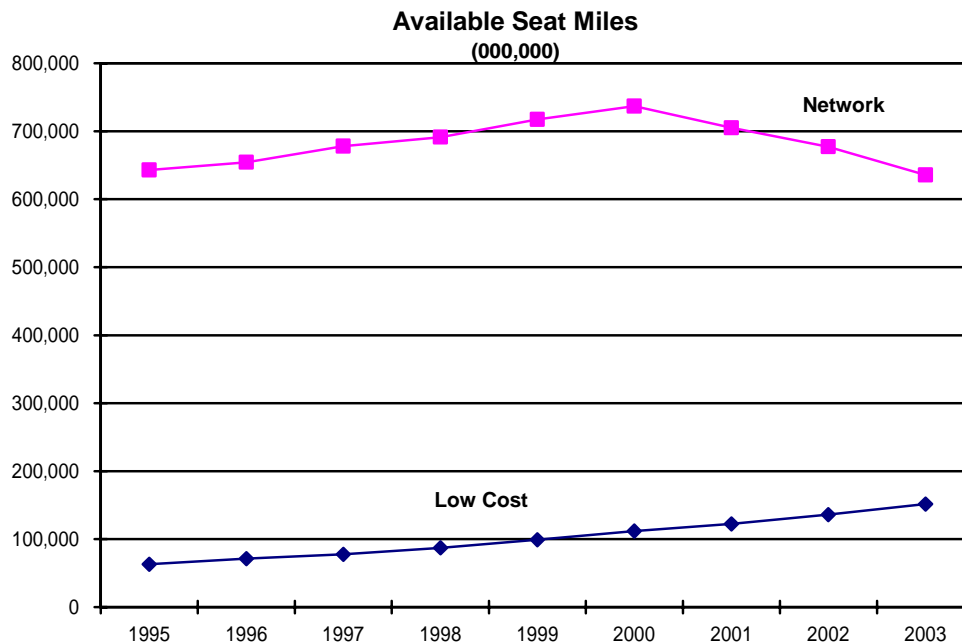
- ASMs of low-cost carriers in 2003 increased by 39.8 billion over 2000, while **the ASMs of the network carriers in the domestic market decreased by 66.5 billion ASMs** during the same period. **This indicates that the expansion of capacity by low-cost carriers made up for about 60% of the capacity cuts by the network carriers.**

### (3) The Market as a Whole

- Total ASMs came down after hitting their peak in 2000. **In 2003, ASMs marginally decreased by 2.7% over 2002, to 856.4 billion.**

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<sup>4</sup> In 2003, ASMs of the network carriers' regional partners increased by 29.5 billion over 2002, from 35.5 billion to 65.0 billion. A considerable portion of the increase is from the shift in outsourced flights from the six major network carriers to their regional partners.



(billions)	1995	1996	1997	1998	1999	2000	2001	2002	2003
<b>Network ASM</b>	642.9	654.4	678.3	691.4	717.3	736.9	705.1	677.3	635.6
<b>Low-Cost ASM</b>	63.2	71.2	77.6	87.1	99.2	111.9	122.4	136.2	151.7

### 3. Changes in Revenues and Costs

#### (1) Revenues

##### ○ Key Points

- **Unit operating revenues of the network carriers recovered to a considerable extent due to an increase in revenues from increased operations of their regional partners, although passenger revenue remained sluggish as a result of stagnant yields.**
- **The factors behind the stagnant yields are the expansion of flight networks and improvement of services by low-cost carriers shift of business passengers, now much more price sensitive since the economic slowdown, away from the network carriers, whose yield management practices meant extraordinarily high fares for them, and widespread use of the Internet to search for fares increasing the transparency of fares, making it difficult for carriers to adopt high fare-setting strategies.**
- **Low-cost carriers' operating revenue increased from a rise in demand, although unit operating revenue remained sluggish.**

#### 1) Network Carriers

• **Operating revenue** for the six network carriers was at a peak of \$82 billion, or 11.13 cents per ASM, in 2000, and began dropping in 2001 and 2002 as a result of the recession and the September 11 terrorist attacks. However, total revenue **increased from 2002 to 2003 by 4.1%, to \$68.3 billion, and on a unit basis increased 10.8%, or 10.74 cents per ASM.**

- **Yields peaked at 13.39 cents in 2000, and although they showed a small increase of 0.4%, to 11.42 cents, between 2002 and 2003, this was still below the 13.11 cents in 1997, when RPMs were at almost the same level.**

- **An examination of the extent of revenue recovery, based on operating revenue and yields, shows that unit revenue in 2003 was at the same level or higher than 1995 (9.94 cents) and 1997 (10.65 cents), the years when supply (ASM) and demand (RPM) were almost at the same level as in 2003.**

- **A breakdown of unit revenues shows that in 1995 passenger revenue was 8.73 cents per ASM and other revenue (including freight) was 1.21 cents per ASM, while in 1997 they were they were 9.38 cents and 1.27 cents, respectively. In 2003, passenger revenue was 8.55 cents and other revenue was 2.19 cents. In other words, other revenue in 2003 was higher than in 1995 and 1997, but passenger revenue in 2003 was 0.18 cents lower than in 1995 and 0.83 cents lower than in 1997. Stagnant unit passenger revenue can be attributed to either a decline in RPMs or stagnant yields. However, since RPMs in 2003 were 9.5% higher than in 1995 and at almost the same level as in 1997, it can be said that the main cause for the stagnant passenger revenue was stagnant yields (an 11.5% drop from 1995). Unit other revenues in 2003 sharply increased by 0.81 cents, to 2.19 cents from 1.38 cents in 2002. This increase can be mainly attributed to growth in transportation-related revenues, a large portion of which come from regional partner operations. This came to about \$5.1 billion, or 0.75 cents per ASM, in 2002 and \$7.3 billion, or 1.15 cents per ASM, in 2003. If we include the increase in transportation-related revenues generated by increased operations of network carriers' regional partners, then passenger revenue of the six network carriers showed significant recovery.<sup>5</sup>**

## 2) Low-Cost Carriers

- **Low-cost carriers' total operating revenue increased to \$12.3 billion in 2003, up 13.8% from the previous year, and on a unit basis, was 8.05 cents per ASM, up 2.2%. Although unit revenue of low-cost carriers was lower than that of the network carriers, revenue on a nominal basis posted a sharp increase as a result of an increase in demand. Low-cost carriers' share of total domestic operating revenue subsequently rose from 8.5% in 1995 to 17.1% in 2003.**

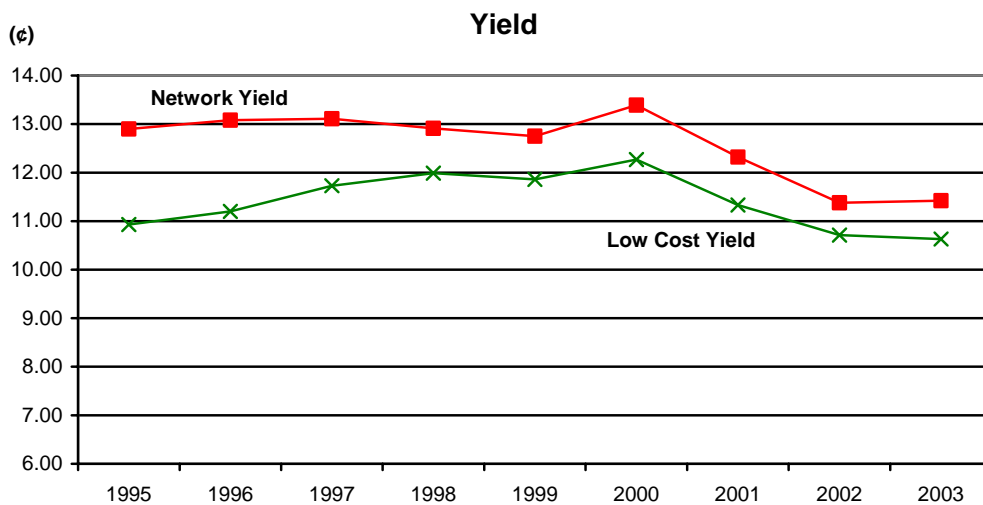
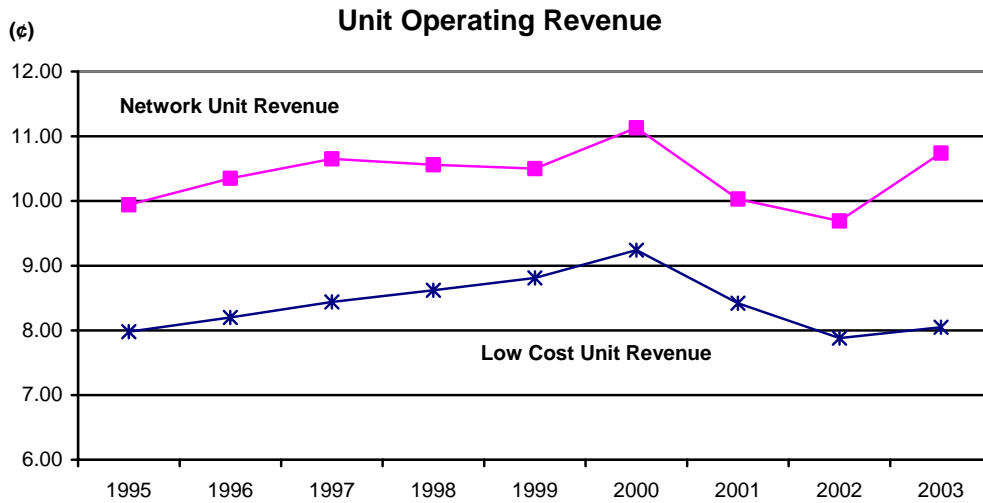
- **Yields hit their peak of 12.27 cents in 2000, but by 2003 had fallen to 10.63 cents, a 0.7% decline over 2002, and the lowest level since 1995. The yield in 2003 represented a decrease of 13.4% over the peak of 2000. Unlike in the case of the network carriers, the rate of decrease in low-cost carriers' yield is not widely different from the 12.9 % decrease in their unit revenue. Since low-cost carriers' operating revenue is comprised mainly of passenger revenue (about 95% in 2003), a change in passenger revenue has a direct**

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<sup>5</sup> The breakdown of transportation-related revenues is not available. However, given the dramatic increase from 2002 to 2003 in demand and capacity of regional carriers partnered with the six major network carriers, it is safe to say that a considerable portion of the transportation-related revenues in 2003 resulted from increased operations through regional partners. Also, transportation-related revenue of the six major network carriers came to \$7.3 billion while transportation-related costs were \$7.7 billion in 2003. Transferring operations to regional partners to cut costs did not necessarily result in a profit.



impact on total revenue. From 2000 to 2003, ASM and RPM posted almost the same growth rate of about 35% to 36%, making it possible for low-cost carriers to limit the decrease in per-ASM revenue to the same level as the rate of decrease in yields.



(€)	1995	1996	1997	1998	1999	2000	2001	2002	2003
<b>Network Unit Rev</b>	9.94	10.35	10.65	10.56	10.50	11.13	10.03	9.69	10.74
<b>Low Cost Unit Rev</b>	7.98	8.20	8.44	8.62	8.81	9.24	8.42	7.88	8.05
<b>Network Yield</b>	12.90	13.08	13.11	12.91	12.75	13.39	12.32	11.38	11.42
<b>Low Cost Yield</b>	10.93	11.20	11.73	11.99	11.86	12.27	11.33	10.71	10.63

### 3) Changes in Fares

- An examination of fares on certain city-pair routes between major domestic airports shows that **the six major network carriers tend to set lower fares on the routes where they faced competition, particularly from low-cost carriers.** (Refer to the attachment “Price Setting for Major Domestic Air Routes”.)

- Network carriers have been trying to pass on the recent rise in fuel prices to passengers, but have been unable to do so because of the fare competition from low-cost carriers.

- In view of these facts, **the six major network carriers are being forced to set lower air fares due to severe competition with low-cost carriers.** As a result, yields remain at low levels.

### 4) Factors behind the Network Carriers’ Stagnant Yields

#### (a) Expansion of routes and enhancement of services by low-cost carriers

As we outlined earlier, low-cost carriers’ share of RPMs in the U.S. domestic market stood at 23.4% in 2003. Low-cost carriers have moved into long-haul - including transcontinental - routes, and have been competing with the six major network carriers in many key markets. On competing routes, they offer lower fares than those offered by the network carriers, and the expansion of their routes has also prompted passengers to shift from the network carriers to low-cost carriers.<sup>6</sup>

#### (b) Business passengers shifting away from the six major network carriers due to exorbitantly high fares (a problem of yield management)

The six major network carriers utilize yield management to maximize revenue. They sell low-priced, restricted tickets, such as nonrefundable tickets requiring a Saturday stay, to leisure passengers, while selling unrestricted, high-priced tickets to business passengers with less flexible schedules. As an example, the Detroit-Los Angeles flight operated by Northwest had the widest gap between the average market fare and its highest fare in 2000. The top unrestricted fare was 15 times higher than the average fare for the market (See “Price Setting for Major Domestic Air Routes”).

Deteriorating economic conditions have led many companies to become more sensitive to high fares and to question the exorbitant gap between leisure fares and business fares. Consequently, business passengers have shifted en masse away from the network carriers to low-cost carriers.<sup>7</sup>

#### (c) Increased transparency of fares due to widespread use of the Internet

Because on-line travel reservation sites such as Orbitz, Travelocity, and Expedia have made it possible for

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<sup>6</sup> American, for example, has been competing with low-cost carriers in 40 of its top 50 air routes (including those that use nearby secondary airports). (Jon Ash, “New Market Structure Realities,” Global Aviation Associates, Ltd., July 2003)

<sup>7</sup> According to the “2003 U.S. Business Travel Survey & Analysis” (Business Travel Coalition, October 6 2003), 70% of the responding corporations said they increased the use of low-cost carriers for business trips in 2003 and 65% of the respondents said they intended to further increase the use of low-cost carriers in 2004.

passengers to relatively easily search for low fares and to compare fares offered by air carriers, the transparency of fares has increased drastically. As a result, passengers' shift away from the six major network carriers has accelerated.<sup>8</sup>

## (2) Changes in Costs

### ○ Key Points

- **The six major network carriers have made significant efforts to slash costs, particularly labor, but their efforts have been inadequate. The fundamental cause of their failure to carry out sufficient cost reductions is the high-cost structure inherent in the hub and spoke system adopted by the network carriers in the aftermath of deregulation.**
- **A rise in fuel costs caused by higher crude oil prices could have a major impact on the major network carriers, which are not sufficiently hedged against such a rise, offsetting their cost-cutting efforts.**
- **Low-cost carriers have kept their unit expenses low by quickly reducing expenses in line with decreases in unit revenue.**

### 1) Network Carriers

#### (a) Total operating expenses

- Network carriers' operating expenses increased sharply between 2000 and 2001. **This was mainly because of a dramatic increase in wages resulting from the collective bargaining agreements, led by United, reached in 2000 and 2001.**

- **The network carriers began to address cost reductions in earnest in 2003. Three of them—US Airways, American, and United—reached agreements with labor unions on drastic wage cuts, and implemented the cuts immediately.** In the first quarter of 2003, operating expenses rose 6.9% from the same period in the previous year as a result of a 45.3% surge in unit fuel costs. In the second quarter of 2003, operating expenses began to increase at a slower pace. As a result, for the whole of 2003, operating expenses were \$73.1 billion, down 2.8% from the previous year, and 11.50 cents per ASM, an increase of 3.6% for the same period.

- Despite a sharp rise in fuel costs, the increase in unit expenses in 2003 was marginal due to labor cost cuts. However, **costs have not been reduced sufficiently, as unit expenses are still 0.76 cents higher than unit revenues.**

#### (b) Operating expenses by category

##### (i) Labor costs

- **Labor is the largest expense item (38% of total operating costs in 2003).**

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<sup>8</sup> According to the Business Travel Coalition survey noted earlier, 73% of the responding corporations said that business discounts have lost their appeal and 69% of the respondents said they can buy low-priced tickets with better terms by using the Internet.

- Labor costs increased consistently from 1995 to 2002, on both a nominal and unit basis. Unit labor costs began to decrease in the second quarter of 2003, as the above three carriers reached agreements on drastic wage cuts with labor unions and implemented the accords immediately. For 2003 as a whole, labor costs fell \$3.5 billion over 2002, to \$27.5 billion. On a unit basis, labor costs were 4.33 cents per ASM, a decline of 5.5%.

#### (ii) Fuel costs

- Fuel cost rose 19.2%, to 1.43 cents per ASM in 2003 due to a surge in crude oil prices. **The rise in fuel costs offset the reductions in labor costs.**

- **Fuel costs are continuing to rise in 2004.** If fuel prices stay high, they could become a major factor squeezing the economy. ATA says that every one-dollar-per-barrel rise in crude oil price would translate into \$425 million increase in cost for the U.S. aviation industry as a whole. Crude oil prices, which averaged \$31 per barrel in 2003, rose to nearly \$40 per barrel as of May 2004. If the price stays at this level, it would **increase costs by \$3 to \$4 billion for the full year.** A cost increase of that magnitude could have a **major impact on the six major network carriers which**, unlike Southwest and some other carriers, **are not sufficiently hedged against a rise in oil prices,<sup>9</sup> and thus face an offset of their cost-cutting efforts.**

#### (iii) Distribution costs<sup>10</sup>

- Distribution costs **decreased to 1.00 cent per ASM in 2003, down 41.5% from 1995.** The decrease is attributable to various cost cutting efforts made by the six major network carriers, such as the closing of reservation centers and ticket sales offices, the promotion of ticket sales via the Internet, and cutbacks in commissions to travel agents. **The ratio of unit distribution costs to total unit operating costs dropped to 8.7% in 2003, from 18.5% in 1995.**

## 2) Low-Cost Carriers

- Operating costs have been kept to extremely low levels. When unit revenue plunged in 2001, unit costs came down 1.5%, to 8.09 cents. In 2003, unit expenses came down 2% over 2002, to 7.51 cents, while unit revenues increased to 8.05 cents from 7.88 cents. Low-cost carriers are engaged in cost management to reduce unit expenses promptly in line with a decrease in unit revenue. As a result of the cutback on unit expenses, **the gap in unit costs between the two groups of carriers in the domestic market widened from 2.96 cents in 2000 to 4.83 cents in 2003. Network carriers' costs were 136% of low-cost carriers' costs in 2000, and 164% in 2003.**

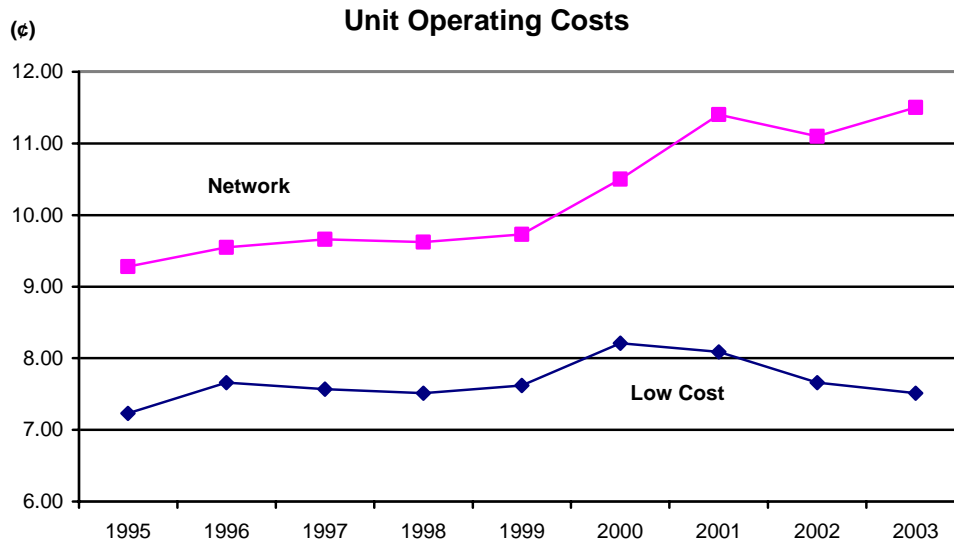
- Low-cost carriers' unit labor costs in 2003 were 2.99 cents, 1.34 cents lower than that of the network

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<sup>9</sup>United, Continental, and Northwest have not hedged for 2004. American, Delta, and US Airways have hedged for the year, but their hedging covers only one-third of their fuel requirements. On the other hand, Southwest has hedged 80% for 2004 and 70% for 2005. (Wall Street Journal, 2/27/04)

<sup>10</sup> Distribution costs include reservation and sales expenses plus advertising and publicity expenses (source: US DOT Form 41)

carriers, or **about 70% of major carriers' costs**. Low-cost carriers' distribution costs were 0.73 cents in the same year, or 0.27 cents lower than that of the network carriers.<sup>11</sup>



(¢)	1995	1996	1997	1998	1999	2000	2001	2002	2003
<b>Network Unit Cost</b>	9.28	9.55	9.66	9.62	9.73	10.50	11.40	11.10	11.50
<b>Low Cost Unit Cost</b>	7.23	7.66	7.57	7.51	7.62	8.21	8.09	7.66	7.51

### 3) Factors Behind Inadequate Cost Reductions by the Network Carriers

Unit costs for the network carriers are 1.6 times higher than those for low-cost carriers. **Problems inherent to the hub and spoke model are factors behind higher costs of the network carriers.** The hub and spoke system, compared to the point-to-point flights operated by low-cost carriers, requires complicated operations. Generally speaking, the following factors contribute to higher costs.

- The need to secure many boarding gates and other airport facilities necessary for connecting flights
- The need to secure personnel to handle connecting passengers and baggage
- Lower aircraft utilization because of layovers
- Higher labor costs resulting from the increased length of time that cabin crew and pilots work due to the connections of flights (travel times are longer)
- Higher fuel consumption from taxiing for each takeoff and landing
- Establishment and maintenance of lounges in airports

To meet the needs of business travelers, the network carriers have to put together flight schedules that allow

<sup>11</sup> The percent of reservations booked on websites of low-cost carriers such as Southwest and jetBlue is close to 70%, compared to 10-15% for the network carriers. ("New Market Structure Realities," Jon Ash, Global Aviation Associates, Ltd., July 2003, p.3)

for several peak hours of incoming and outgoing flights at hub airports, and thus must secure sufficient airport facilities and personnel to meet this peak hour demand. The network carriers also use a mixed aircraft fleet to meet various levels of flight demand from smaller local airports. This has resulted in dramatic cost increases compared to the use of a single type aircraft because different types of aircraft require additional training for pilots, preparing substitute pilots in training, and using parts that differ from one type of aircraft to another. These high-costs that are inherent in the hub and spoke system result in lower productivity, compared to that of low-cost carriers offering primarily point-to-point flights.

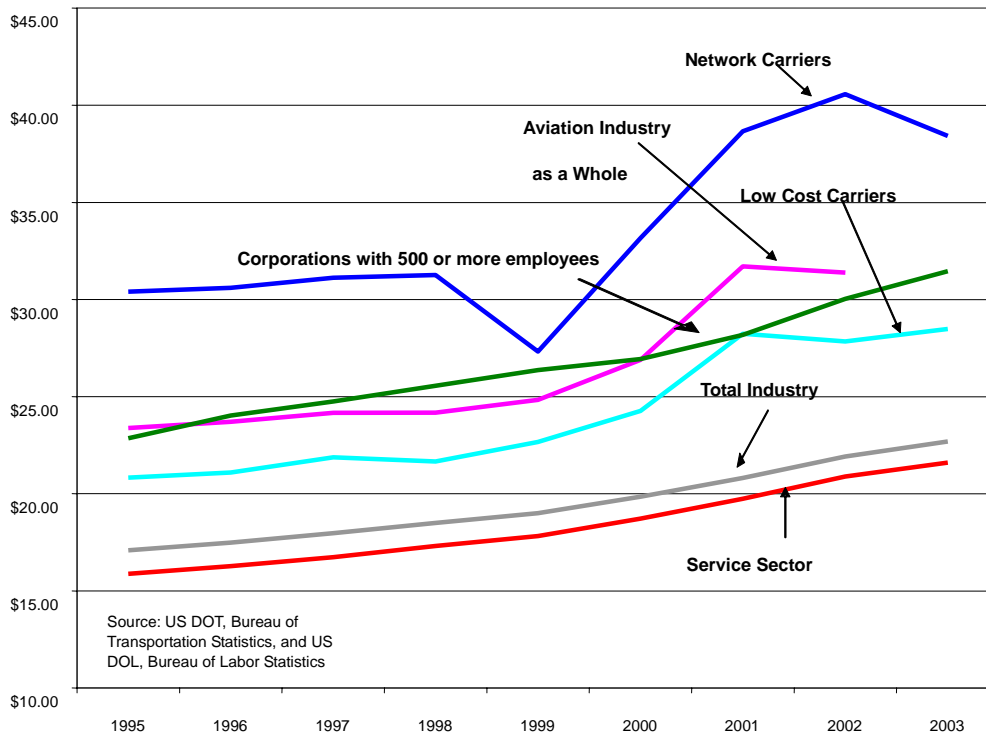
Wage cuts are difficult because of the bargaining power of the labor unions representing workers at the network carriers, although the unions vary from carrier to carrier. Furthermore, there are still many working rules that reduce productivity, such as restrictions on the working hours of flight crew and on the type of work that can be carried out by ground service personnel.

The following is a comparison of average hourly compensation (wages plus benefits) of the six network carriers, the seven low-cost carriers, and workers in other industries.

**The average hourly compensation at the network carriers was 1.35 times higher than that of the low-cost carriers** in 2003, indicating low productivity of major carriers. Though it is difficult to make exact comparisons due to different sources of data, it appears that the unit labor costs of the six major network carriers were higher than the average unit labor costs of the service industry, of all industries as a whole, and even of corporations with 500 or more employees. Although unit labor costs of low-cost carriers were higher than the average unit labor costs of the service industry and of all industries as a whole, it was slightly lower than the average unit labor cost of corporations with 500 or more employees. Given the fact that the number of employees at each low-cost carrier far exceeds 500, it appears that the unit labor costs of low-cost carriers is not that high compared to those of other industries.

### **Average Hourly Compensation**

## Comparison



	1995	1996	1997	1998	1999	2000	2001	2002	2003
Aviation Industry as a Whole	\$ 23.38	\$ 23.70	\$ 24.16	\$ 24.17	\$ 24.84	\$ 26.89	\$ 31.71	\$ 31.38	
Network Carriers	\$ 30.41	\$ 30.60	\$ 31.12	\$ 31.26	\$ 27.32	\$ 33.16	\$ 38.66	\$ 40.57	\$ 38.42
Low Cost Carriers	\$ 20.83	\$ 21.10	\$ 21.88	\$ 21.66	\$ 22.67	\$ 24.27	\$ 28.24	\$ 27.84	\$ 28.49
Total Industry	\$ 17.10	\$ 17.49	\$ 17.97	\$ 18.50	\$ 19.00	\$ 19.85	\$ 20.81	\$ 21.92	\$ 22.69
Corporation with 500 or more employee	\$ 22.85	\$ 24.03	\$ 24.75	\$ 25.56	\$ 26.37	\$ 26.93	\$ 28.17	\$ 30.03	\$ 31.45
Service Sector	\$ 15.88	\$ 16.28	\$ 16.73	\$ 17.31	\$ 17.82	\$ 18.72	\$ 19.74	\$ 20.88	\$ 21.60

Note:

Figures for the network and low-cost carriers, and aviation industry as a whole were calculated using total compensation and number of employees from the DOT Form 41 database, and using a total annual hours figure of 2,080. The aggregate aviation data for 2003 was not available at the time of this writing, and employee numbers for 2003 were from the 10-K annual reports of the carriers. Figures for other industries are from the U.S. Department of Labor, Bureau of Labor Statistics.

### (3) Operating Profits and Losses

#### ○ Key Points

- **The network carriers posted huge losses because of both weak passenger revenue and inadequate cost reductions.**
- **Low-cost carriers as a whole continue to post profits because of successful strategy of reducing unit costs when unit revenue weakened.**

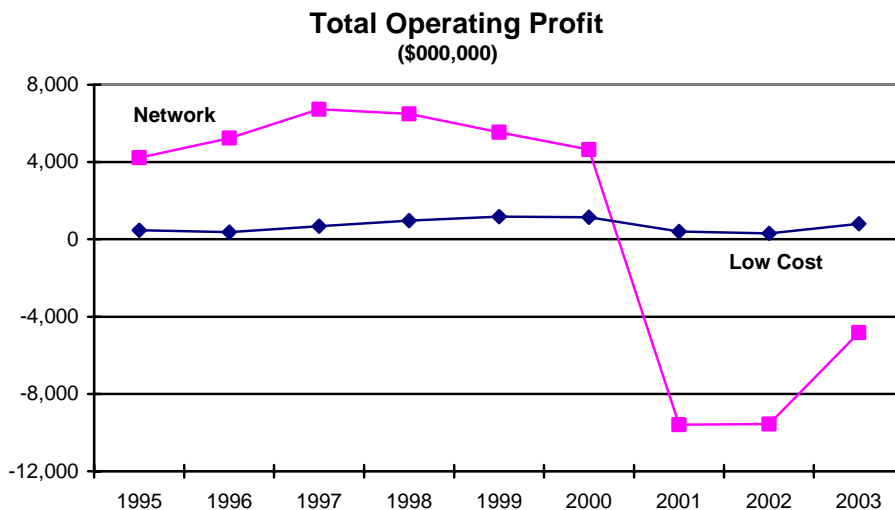
#### 1) Network Carriers

- The network carriers posted a total of \$19.1 billion in operating losses for 2001 and 2002 combined, compared to operating profits of \$4.6 billion in 2000. **They continued to post huge operating losses in 2003, although they cut their losses by almost 50% (49.5%) compared to 2002, to -\$4.8 billion.**
- They also continued to post losses on a unit basis in 2003, although as with total losses, they were able to cut unit losses by nearly 50% (46.1%) from 2002, to -0.76 cents per ASM.

The network carriers continued to post losses because, as we described earlier, passenger revenue was weak and cost reduction efforts were inadequate. Passenger revenue has not recovered enough primarily because of the expansion of route networks and enhanced services by low-cost carriers, loss of high-fare business passengers, who increasingly shifted to low-cost carriers, and stagnant yields resulting from the increased transparency of fares brought about by expanded use of the Internet to shop for fares. Network carriers' cost-cutting efforts have proven inadequate because of the high costs inherent to the hub and spoke system and an inability to drastically cut wages because of the strong bargaining power of labor unions and the existence of work rules that prevent productivity improvements.

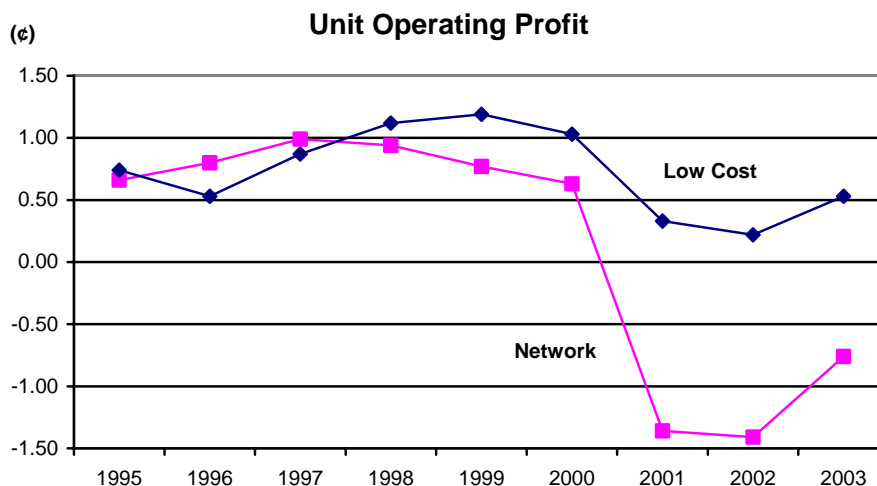
## 2) Low-Cost Carriers

- Low-cost carriers' **operating profit steadily increased**, reaching \$805.9 million in 2003.
- Low-cost carriers also **continued to post profits on a unit basis**, as they were able to **reduce unit costs in line with a decline in unit revenue**. From 2002 to 2003, their unit profit increased 141%, from 0.22 cents to 0.53 cents per ASM.



(\$000,000)	1995	1996	1997	1998	1999	2000	2001	2002	2003
<b>Network</b>	4,221	5,233	6,728	6,497	5,543	4,649	-9,593	-9,554	-4,823
<b>Low Cost</b>	469	379	675	972	1,180	1,147	403	304	806





(£)	1995	1996	1997	1998	1999	2000	2001	2002	2003
<b>Network Unit Profit</b>	0.66	0.80	0.99	0.94	0.77	0.63	-1.36	-1.41	-0.76
<b>Low Cost Unit Profit</b>	0.74	0.53	0.87	1.12	1.19	1.03	0.33	0.22	0.53

#### 4. Impact of Government Assistance

##### ○ Key Points

- The U.S. government provided support in the form of reimbursement of security expenses, government-provided war risk insurance and others in 2003
- The financial value of the benefits provided by the federal government to the six major network carriers in 2003 is estimated at \$3.01 billion, or 62.4% of their combined operating loss of \$4.8 billion for the year.
- The financial value of the benefits provided to low-cost carriers is estimated at \$698 million, suggesting that the low-cost carriers would have posted an operating profit of \$108 million even without the government assistance.
- In addition, the pension contribution burden on the aviation industry has been temporarily eased for the next two years under the Pension Funding Equity Act of 2004 (although it applies only to certain network carriers).

##### (1) Government Assistance in 2003

The financial value of the government assistance provided in 2003 is as follows:

##### Financial Value of the Benefits Provided by the Government (estimate)

##### (Network Carriers)

(\$millions)	Reimbursement of Security Expenses	Government-Provided War Risk Insurance ( estimate )	Tax Refunds ( estimate )	<b>Total</b>
American	383	135	550	<b>1,068</b>
Continental	179	61	0	<b>240</b>

Delta	402	136	54	<b>591</b>
Northwest	216	79	105	<b>400</b>
United	315	100	0	<b>415</b>
US Airways	222	67	7	<b>296</b>
<b>Total</b>	<b>\$1,717</b>	<b>\$579</b>	<b>\$716</b>	<b>\$3,011</b>

Note:

1. Figures for reimbursement of security expenses are fixed amounts. Others are estimated amounts.
2. There were no additional tax refunds to Continental. As for United, there was no tax credit carryback due to additional tax refund measures of up to 2002.

**(Low-Cost Carriers)**

(\$ millions)	Reimbursement of Security Expenses	Government-Provided War Risk Insurance ( estimate )	Tax Refunds ( estimate )	<b>Total</b>
JetBlue	24	14	0	<b>38</b>
Southwest	276	110	0	<b>386</b>
ATA	40	16	0	<b>54</b>
Spirit	15	11	0	<b>26</b>
Frontier	16	8	0	<b>24</b>
America Trans	39	15	0	<b>54</b>
America West	84	30	0	<b>114</b>
<b>Total</b>	<b>\$494</b>	<b>\$204</b>	<b>0</b>	<b>\$698</b>

Note:

1. Figures for reimbursement of security expenses are fixed amounts. Figures for government-provided war risk insurance are estimated amounts.
2. Since low-cost carriers did not post losses in 2003, they were not eligible for the special tax refund.

**(2) Impact of Government Assistance in 2003**

- **The six major network carriers** received a total of \$3.01 billion worth of assistance in 2003, or **62.4 % of their combined operating loss of \$4.8 billion in that year**. Without this assistance, their operating losses would have amounted to \$7.8 billion, and an average unit loss of -1.23 cents.

- Low-cost carriers received a total of \$698 million worth of assistance in 2003, or 86.6% of their operating profit of \$806 million in that year. Without government assistance, their operating profit would have been reduced to \$108 million and their unit profit to 0.07 cents. Still, the low-cost carriers as a whole were able to generate both total and unit operating profits.

**(3) Pension Funding Equity Act of 2004**

- The Pension Funding Equity Act of 2004, signed into law April 10, 2004, **provides additional financial relief** for the steel and **airline industries** for two years. The additional funding relief is expected to enable the airline industry to save \$1.3 billion during the two years starting in 2004, according to an estimate made by the Pension Benefit Guaranty Corporation.

- The relief measure applies only to American, Continental, Delta, Northwest, and United. No low-cost carriers are eligible for the funding relief. The amounts saved by the above five carriers are as follows.

American	Continental	Delta	Northwest	United
\$167 million	*	\$36 million	\$260 million	\$375 million

\* Continental is scheduled to calculate its amount in the second quarter of 2004.

(Figures are from each carrier's 10-K Annual Report for fiscal year ended December 31, 2003 and 10-Q Quarterly Reports for the period ending March 31, 2004)

**United, which is still under Chapter 11 protection**, faced a minimum \$1.1 billion funding requirement for 2004, but as a result of the legislation, that was reduced to \$725 million. The \$375 million thus saved accounted for nearly 25% of the company's operating loss of \$1.6 billion in 2003. The government assistance was **extremely effective** for the air carrier's efforts to emerge from Chapter 11. However, the Act allows United to merely postpone its funding obligations, and thus **it will face these problems again in two years.**

## II. Future Movement of the U.S. Aviation Industry

### **The Present Situation and Future Movement of the U.S. Aviation Industry**

#### **(1) Decline of Six Major Network Carriers' Share and Growth of Low-Cost Carriers**

##### ○ Key Points

- **Air travel demand usually matches the trend in GDP growth. However, demand for the network carriers has remained stagnant and far removed from economic trends. This can be attributed to the business model adopted by these carriers.**
- **To be more precise, the shift in passenger demand away from the major carriers is due to their discriminatory fare setting through complicated and excessive yield management and charging higher fares in those markets where they hold a monopoly or oligopoly market, and the inconvenience of longer travel times and distances of connecting flights through the hub and spoke system.**

- As we pointed out earlier, there have been significant changes in the share of the market held by the six major network carriers and the low-cost carriers. These two types of carrier groups have different business models, the former utilizing a hub and spoke system and the latter operating primarily point-to-point service. To look at the causes for these changes in market share, we compare changes in year-to-year growth of GDP and revenue passenger miles.

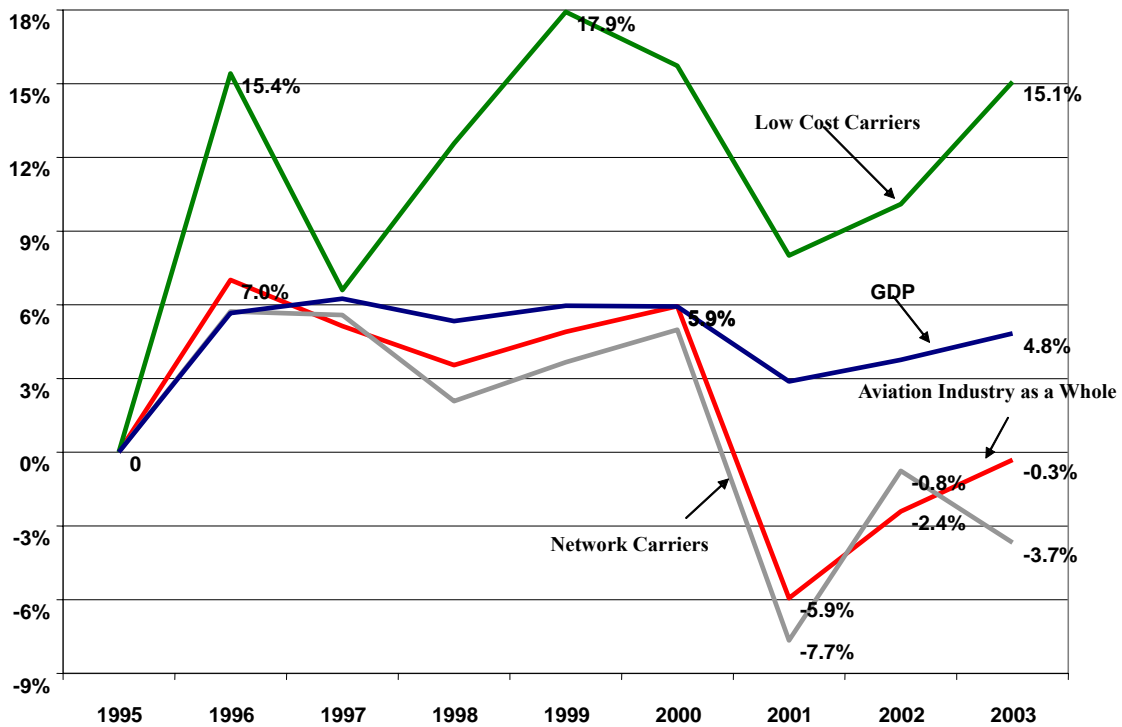
- Since air travel demand is generated by various economic indicators, demand is assumed to grow in proportion to GDP growth. In fact, RPMs of the U.S. aviation industry as a whole moved in tandem with changes in GDP from 1995 to 2000, with the former posting an average growth rate of 5.3% and the latter 5.8%. However, the RPM growth rate has been deviating from GDP growth rate since 2001, when an economic recession was underway and then exacerbated by the September 11 terrorist attacks.

- To examine what was behind the deviation in demand for air travel compared to changes in GDP, we looked at the changes in RPM growth for the six major network carriers and low-cost carriers. On average,

network carriers' RPMs grew at a 4.4% annual rate from 1995 to 2000, slightly lower than average GDP growth of 5.8% during this period. For 2001 and after, however, there was negative growth in RPMs for the network carriers, while GDP growth slowed but continued on a positive trend. On the other hand, the average annual growth rate of RPMs for low-cost carriers from 1995 to 2000 was 13.6%, considerably higher than GDP growth. In 2003, low-cost carriers' RPMs grew 15.1%, which is higher than the average growth rate for the five years up to 2000.

- Growth in demand for U.S. air travel is much slower than GDP growth, despite the economic recovery. This is because demand for the six major network carriers remains stagnant, moving out of touch with economic trends. Since demand for air travel tends to mirror GDP growth, the sluggish performance of the six major network carriers can therefore be attributed to their business model.

**US GDP and RPMs: Year-Over-Year Change**



%	1995	1996	1997	1998	1999	2000	2001	2002	2003
Aviation Industry as a Whole	-	7.0	5.1	3.5	4.9	5.9	-5.9	-2.4	-0.3
Network Carriers	-	5.7	5.6	2.1	3.7	5.0	-7.7	-0.8	-3.7
Low Cost Carriers	-	15.4	6.6	12.6	17.9	15.7	8.0	10.1	15.1
GDP	-	5.7	6.2	5.3	6.0	5.9	2.9	3.8	4.8

Source: U.S. DOT Form 41, etc.

We next examine problems attributed to the business model utilized by the six major network carriers.

○ **Discriminatory fare setting through extreme yield management, and high fare setting through monopolistic and oligopolistic market power**

● Against the background of recent changes, the extreme yield management practices of the six major network carriers to maximize revenue has alienated passengers, who now have increased options as a result of the expansion and improvement of route networks by low-cost carriers, and business passengers' increased reluctance to pay such high fares in an environment of weak economic growth.

● According to a survey conducted by the Japan International Transport Institute (refer to the attachment "Price Setting for Major Domestic Air Routes"), in 17 of the 30 city-pairs surveyed, at least one of the six major network carriers set its highest fare more than 800 % higher than the average fare for that market. In many routes, the highest fares were set at levels significantly higher than the average fares. On the other hand, the differential between the highest and average fares for low-cost carriers fell into a narrower range of 350% to 500%. **The six major network carriers still set fares by excessive yield management, charging exorbitantly high fares to business passengers in particular.**

● However, **in 14 routes in which the network carriers competed with low-cost carriers, between 2000 and 2003, the average fare fell by 12.5% and the highest fares by 18.6%.** This was **because competition with low-cost carriers put downward pressures on air fares, forcing network carriers to review their fare-selling strategies.**

● The survey also shows that the six major network carriers set high fares by taking advantage of their monopolistic market power. Between 2000 and 2003, **network carriers increased both average fares and highest fares in six routes in which they enjoyed an overwhelming advantage (90% share of passengers).** In these six routes, with the exception of one, the number of passengers decreased over this period, **suggesting that the high fare-setting practices of network carriers holding a monopoly position sent passengers away.**

○ **The inconvenience of longer travel times and distances as a result of connecting flights under the hub and spoke system**

● **The hub and spoke system** of the six major network carriers has increased the frequency of flights, but at the same time has **heightened the inconvenience of longer travel times and distances** due to flight connections. In contrast, point-to-point direct flights operated by low-cost carriers are clearly more convenient than connecting flights. **One of the reasons for the decline in the market share of the network carriers is that many passengers have shifted to more convenient direct flights corresponding to an expansion and improvement of air route networks by low-cost carriers.**

● Moreover, since the hub and spoke system is based on connecting flights, it has inherent **cost-raising characteristics**, such as inadequate utilization of aircraft and airport facilities, and lower labor productivity compared to point-to-point direct flights. For the network carriers, reducing costs has become the top priority

amid intensifying competition with low-cost carriers. **Since it has become difficult to maintain many hub airports, the six major network carriers have begun to suspend or reduce the service from some of their hub airports.**<sup>12</sup> They have also, as mentioned above, **begun to review their less convenient, high-cost hub and spoke system and return to offering more point-to-point direct flights amid intensifying competition with low-cost carriers.**

## (2) Future Movements

### ○ Key Points

- **Expansion of low-cost carriers and fierce fare-cutting competition are expected to continue in the domestic market for some time to come.**
- **In the face of this, the six major network carriers will be forced to reform their business model, including revision of the fare-setting system relying on excessive yield management, and abolition/reduction of hubs and simultaneous expansion of direct flights.**
- **Of the six major network carriers, only those that can enhance their competitiveness through successful reform and drastic cost reduction, before overall competition in the market reaches an equilibrium, will survive.**
- **In the international market, competition will heat up as a consequence of the inroads being made by low-cost carriers.**

### **Domestic Market**

● In 2004, low-cost carriers drastically increased their capacity in transcontinental routes, and the six major network carriers, in response, increased their capacity and reduced fares for both restricted and unrestricted tickets. As a result, fares for transcontinental flights dropped sharply, illustrating the effect of fare-cutting pressures by low-cost carriers. **Due to the expansion of low-cost carriers, the six major network carriers can no longer afford to maintain fare-setting strategies that rely on high-fare paying passengers, particularly in those markets where they compete with low-cost carriers, and are being forced to revise their business model that depends on excessive yield management.**

● Furthermore, in view of Independence Air's entry into the market, and planned aircraft purchases by JetBlue and Southwest, **the fare-cutting pressure brought on by the sharp increase in capacity by low-cost carriers is expected to continue for some time to come.** For this reason, **the six major network carriers have no choice but to review their fare system and will be increasingly forced to revise fare-setting strategies that rely heavily on excessive yield management.**

● The expansion of low-cost carriers is also expected to force the six major network carriers to revise their networks of numerous connecting flights via hub airports. Since it has become increasingly difficult for the network carriers to maintain many hub airports amid intensifying competition with low-cost carriers, as we discussed above, **further expansion of low-cost carriers in the future is expected to force the six major**

<sup>12</sup> American suspended its hub operations at St. Louis airport in November 2003, Northwest cut 44 routes from its Memphis hub starting in January 2004, and US Airways plans to reduce operations at Pittsburgh in September 2004.

**network carriers to abolish or reduce some of their hub airports and increase point-to-point flights.**

- **And, since it takes time to carry out such drastic reforms, low-cost carriers can be expected to continue to increase their market share.**

- **The six major network carriers are expected to cope with the expansion of low-cost carriers by lowering their fares to keep or capture passengers. But whether they can adequately cope with the fare competition with low-cost carriers depends on whether they can cut their unit costs, which on average are one and a half times higher than those of low-cost carriers, to a competitive level. However, since the financial situations of the six major network carriers has yet to recover, as we have already described, there is no knowing if they will even still exist in their current form in the future.**

- **As things stand now, however, the six major carriers are not likely to lose out completely to low-cost competition, as they are far bigger in size than the low-cost carriers and have large, lucrative international networks. Following a period of severe competition, they will reach a certain equilibrium with low-cost carriers. Of the six major network carriers, those that are successful in revising their networks and reducing costs drastically are likely to further increase their competitiveness.**

#### **International Market**

- **The six major network carriers** that are exposed to severe competition with low-cost carriers in the domestic market **will focus on increasing their capacity in the international market, where there is almost no competition with low-cost carriers, while at the same time strive to defend their position in the domestic market.** The world economy is forecast to show steady growth in the years to come<sup>13</sup> and air travel demand is forecast to increase in line with economic growth. Growth is expected to be strong particularly in Asian countries, including China and India, where those economies are expected to continue their fast growth. Air carriers thus may increase their capacity even in Pacific routes that have been stagnant in recent years,<sup>14</sup> and this, in turn, is expected to intensify competition.

- **Meanwhile, low-cost carriers are expected to intensify the inroads they are making in international routes.** For instance, JetBlue plans to expand into the Caribbean area, while Canada's West Jet plans to operate flights between the United States and Canada, and Sky Link plans to move into Atlantic routes. These moves are expected to **intensify competition between the six major network carriers and low-cost carriers in the international market.** As for the Pacific market, where a low-cost carrier is not yet operating, some low-cost carriers may move into such resort passenger-oriented routes as Guam, Saipan, and Hawaii, by slashing costs through the simplification of in-flight services in the near future.

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<sup>13</sup> "World Economic Outlook" (Global Insight, December 2003)

<sup>14</sup> According to the FAA, between 2003 and 2004, RPMs increased 5.1% in the domestic market, 11.9% in the Atlantic market, 11.8% in Latin American market, and 10.8% in the Pacific market. Between 2004 and 2005, RPMs are forecast to rise 5.6%, 6.2%, 7.0%, and 9.5%, respectively. (FAA Aerospace Forecasts: Fiscal Year 2004-2015, dated March 2004)

### **Price Setting for Major Domestic Air Routes**

In a sample of thirty city-pair markets, average and top unrestricted fares were compared for all competing airlines in each market. (Refer to the note following this section for a listing of the routes). The changes in fares in these markets showed four major characteristics.

(1) Routes for which both average fares and highest fares have decreased (16 routes)

These routes can be roughly divided into two groups.

*a) Network carriers competing with low-cost carriers from nearby airports (5 routes)*

- Examples

- Chicago/O'Hare and New York La Guardia: American, United  
(ATA : Chicago Midway and La Guardia)
- Washington National and Los Angeles LAX: United, America, Delta  
(Southwest and America West: Baltimore BWI and Los Angeles LAX)

*b) Network carriers and low-cost carriers competing from the same airports (9 routes)*

- Examples

- Atlanta and Miami: Delta, American, AirTran
- Detroit and Los Angeles: American, Northwest, United, Spirit, America West
- Los Angeles and Boston: American, United, ATA, America West

Both average and top unrestricted fares for the six major network carriers came down between 2000 and 2003, a response to competition from low-cost carriers. However, the highest fares of the six major network carriers were still high and the gap between the average market fares and the highest fares was still extreme. They thus continued to maintain a discriminatory pricing model that targeted business passengers for revenue maximization.

On the other hand, the average fares of low-cost carriers were generally lower than those of the network carriers and their highest fares were significantly lower than those of the major carriers. In addition, the gap between the average fares and highest fares was considerably smaller than that of the network carriers. Consequently, low-cost carriers have increased both the number of passengers and their market share on these routes.

The average fares and highest fares for all of these routes are declining because the six major network carriers are being forced to lower fares to address severe competition from low-cost carriers. Given the fact that number of passengers have increased in the 15 of these 16 routes, setting lower fares is a response to passengers' preference.

(2) Routes for which only average fares have decreased (6 routes)



Generally speaking, these are the routes in which at least one network carriers had a very high market share (60-70%) competed with a low-cost carrier or another network carrier. The high share network carrier was being forced to lower fares in order to meet the competition, which resulted in a decline in the average fares. However, in these markets we saw that the discriminatory pricing model that charges extremely high unrestricted fares was still maintained, as the top unrestricted fares actually increased between 2000 and 2003.

At the same time the total number of passengers increased in all six routes, indicating that the lower average fares brought in additional passengers carriers, while the network carrier with the oligopolistic market position was able to maximize revenue from its business passengers.

(3) Routes in which only the highest fares declined (2 routes)

In one of these routes, the competition was solely between two low-cost carriers, and in the other it was solely among network carriers. Average fares for the low-cost carrier route were low and slightly increased over the three years. In the network carrier-dominated market, competition increased among three carriers.

The total number of passengers for each route increased over this period.

(4) Routes for which both average fares and highest fares have increased (6 routes)

Generally speaking, these were routes in which one of the network carriers enjoyed a monopolistic market position (about 90%) and in which no low-cost carriers competed. Thus, both average and top unrestricted fares increased over the three years.

At the same time, the number of passengers fell in five of the six routes, which may be because they found alternatives, either from smaller airports farther away, or may have chosen travel by means other than air, or may have given up traveling.

### Selection of City-Pair Markets

#### 1. List of Airports

##### Hub Airports of the Six Major Network Carriers

<b>American</b>	Chicago/O'Hare, Dallas/Ft.Worth, St. Louis, Miami, San Juan P.R.
<b>Continental</b>	Houston/Intercontinental, Newark, Cleveland
<b>Delta</b>	Atlanta, Cincinnati, Salt Lake City, Dallas/Ft.Worth
<b>Northwest</b>	Minneapolis/St. Paul, Detroit, Memphis
<b>United</b>	Chicago/O'Hare, Washington/Dulles, San Francisco, Los Angeles/LAX, Denver
<b>US Airways</b>	Charlotte, Philadelphia, Pittsburgh

##### Low-Cost Carriers' Key Airports in Major City Areas

<b>Southwest</b>	Houston Hobby, Baltimore, Chicago Midway, Oakland
<b>Air Tran</b>	Atlanta
<b>ATA</b>	Chicago, Indianapolis
<b>JetBlue</b>	New York JFK
<b>America West</b>	Phoenix, Las Vegas
<b>Frontier</b>	Denver
<b>Spirit</b>	Detroit, Ft. Lauderdale

#### 2. Selection of City-Pair Routes

The following 30 city-pairs were selected on the basis of having one or more of the following characteristics:

- more than one airport in the area
- a hub airport of a network carrier
- the presence of a low-cost carriers
- distance between the two cities (short-, medium-, and long-haul metropolitan markets)

<b>Fewer than 500 miles</b>		
	Atlanta	Memphis
	Charlotte	Philadelphia
	Charlotte	Pittsburgh
	Boston	Philadelphia
	Boston	Pittsburgh
	Boston	Washington National
<b>Between 500 and 1000 miles</b>		
	New York LaGuardia	Chicago O'Hare
	New York LaGuardia	Chicago Midway
	Washington National	Chicago O'Hare
	Washington Dulles	Chicago O'Hare

	Baltimore	Chicago Midway
	Chicago Midway	New Orleans
	Chicago O'Hare	New Orleans
	Atlanta	Miami
	Dallas Ft. Worth	Chicago O'Hare
	Detroit	Memphis
	Detroit	Minneapolis St. Paul
	Houston Hobby	Chicago Midway
<b>Between 1000 and 2000 miles</b>		
	Atlanta	Los Angeles LAX
	Detroit	Los Angeles LAX
	Denver	New York LaGuardia
	New York JFK	Ft. Lauderdale
	Baltimore	Phoenix
	Boston	Minneapolis St. Paul
<b>More than 2,000 miles</b>		
	Baltimore	Los Angeles LAX
	Washington Dulles	Los Angeles LAX
	Cleveland	Los Angeles LAX
	Boston	Los Angeles LAX
	New York JFK	Oakland
	Atlanta	San Francisco