



# Memorandum

**U.S. Department of  
Transportation**

Office of the Secretary  
of Transportation

Office of Inspector General

Subject: **INFORMATION**: Airline Industry Metrics

Date: August 2, 2002

From: Inspector General

Reply to  
Attn of JA-50 x69970

To: The Secretary  
Deputy Secretary  
Chief of Staff  
Associate Deputy Secretary  
Assistant Secretary for Aviation  
and International Affairs  
Assistant Secretary for Transportation Policy  
Director, Bureau of Transportation Statistics  
Federal Aviation Administrator

Following the summer of 2000 and its high level of flight delays, cancellations, and air traffic congestion, we began monitoring a number of key metrics relating to aviation system demand and performance. In the aftermath of terrorist attacks of September 11, 2001 and the economic downturn, we expanded our work to include additional metrics relating to airline finances and changing service levels.

For your use, we have attached 16 of these metrics and grouped them in the following four categories: (1) **air service demand**, (2) **air system performance**, (3) **airline finances**, and (4) **air service at small airports**.

Given the severe challenges now facing the airline industry and resulting impacts to air service levels, flight delays, and cancellations, these metrics may assist you and the Congress in better understanding past, present, and future trends. We plan to issue periodic updates of our metrics for your use.

If I can answer any questions or be of further assistance, please feel free to contact me at (202) 366-1959, or my Deputy, Todd J. Zinser, at (202) 366-6767.

Attachment

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Control No. 2002-206

# SUMMARY OF AIRLINE INDUSTRY METRICS

As a result of the September 11 terrorist attacks and the economic downturn that has persisted since early 2001, the airline industry is facing significant economic challenges. Based on data obtained from the Federal Aviation Administration (FAA) and Air Transport Association (ATA), the Office of Inspector General has developed 16 metrics for monitoring airline industry trends relating to domestic system demand, performance, and finances.<sup>1</sup> Although changes in capacity and shifts in market share may be altered by unforeseen events, these metrics provide decision makers with past, present, and future indicators of domestic service levels and general state of the airline industry.

## *I. Air Service Demand*

- ✓ **OVERALL DEMAND PRE-9/11:** For most of 2001, overall demand on the National Aviation System—as measured in scheduled domestic flights and passenger enplanements—closely tracked record numbers for 2000. Yet, within the aggregate numbers, there were two noticeable exceptions—a decline in business travelers and flights to and from the smallest, non-hub airports.<sup>2</sup>
- ✓ **NEAR-TERM IMPACT OF TERRORIST ATTACKS:** With the terrorist attacks, however, demand fell dramatically, with passenger enplanements dropping nearly 34 percent and load factors declining 10 points in September 2001. The drop in passenger demand was soon followed by reductions in operating capacity, with the airlines cutting 14 to 15 percent of their scheduled domestic flights, available seats, and available seat miles in November 2001.
- ✓ **DEMAND AND CAPACITY SPRING/SUMMER 2002:** By late Spring/early Summer 2002, both demand and capacity had begun to recover, although the numbers were still significantly below prior year figures. For example, passenger enplanements were down 11 percent in June 2002 from the prior year. Likewise, as of July 2002, offered capacity was down as measured by scheduled flights (-10 percent), available seats (-9 percent), and available seat miles (-6 percent).
- ✓ **AIRLINE LOAD FACTORS:** Due to a combination of continued limits in capacity and the gradual return of passengers, aircraft load factors in June 2002 have returned to last year's levels of approximately 76 percentage points. However, the “break even” load factor (the percentage of paying passengers needed to cover airline costs) has worsened, rising 15 percentage points (71 to 86) for the 12 months ending March 2002 as compared to the same period ending March 2001.

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<sup>1</sup> FAA data were derived from two information systems: Aviation System Performance Metrics (ASPM) and Flight Schedule Data System (FSDS). ASPM is based on actual flight operations data obtained from the major airlines and several internal FAA tracking systems. FSDS is based on airline flight schedule data obtained from the Official Airline Guide (OAG).

<sup>2</sup> We used FAA's definition of a non-hub airport, which includes those airports having less than 0.05 percent of total U.S. enplanements.

- ✓ **AIRLINE SCHEDULES SUMMER/FALL 2002:** Airline schedules projected into the summer and fall show continued increases in capacity, with flights, available seats, and available seat miles in November 2002 up 8 percent to 13 percent from the same period in 2001. Nevertheless, when compared to November 2000, the numbers are down about 3 percent to 8 percent.

## ***II. Air System Performance***

- ✓ **FLIGHT DELAYS AND CANCELLATIONS IN 2001:** Before September 11, there had been a noticeable drop in the number of flight delays and cancellations from 2000. After the terrorist attacks, however, flight delays dropped 41 percent. Cancellations shot up an unprecedented 700 percent in September alone, because of the 2-day grounding of all U.S. flights and the subsequent revamping of airline operations.
- ✓ **JANUARY-JUNE 2002 STATISTICS:** For the first 6 months of 2002, both flight delays and cancellations remain well below levels established in 2001 (as well as 1999 and 2000). For example, arrival delays were down nearly 28 percent (405,122 to 291,837), while cancellations dropped 68 percent (57,553 to 18,335) over the same period in 2001. Likewise, gate departure delays were down 31 percent (353,188 to 245,305).
- ✓ **OTHER INDICATORS OF DELAYS:** Other indicators of flight delays were also down in June 2002 from the prior year—although only slightly—including the percentage of flights arriving late (from 22 percent to 19 percent) and the average length of these delays (from 57 minutes to 54 minutes). However, when compared to June 2000, these numbers were down far more (i.e., from 32 percent to 19 percent and from 59 minutes to 54 minutes).
- ✓ **AIR ROUTE TRAFFIC CONTROL OPERATIONS:** Some regions are beginning to see flight operations returning to pre-9/11 levels. For instance, FAA's Atlanta Air Route Traffic Control Center reported a 1.4 percent increase in flight operations in June 2002 over June 2001. Likewise, flight operations at FAA's Chicago Center were down only 0.5 percent during this time period.

## ***III. Airline Finances***

- ✓ **BUSINESS AND LEISURE TRAVEL:** The drop in higher-fare business travelers, which began even before September 11, has especially hurt the airlines. Although business (first class and full fare coach) and leisure traffic continue to return, both remained down in June 2002 as compared to the same period in 2001, by about 15 and 12 percent, respectively
- ✓ **AIRLINE YIELDS:** The loss in business travel significantly affected airline yields, which were down for most of 2001 and into 2002. As of June 2002, airline yields from passenger traffic were down 17 percent from June 2000 and 10 percent from June 2001—an improvement over October 2001 statistics, which showed a 19 percent decline. Nevertheless, as a consequence of double digit declines in both passenger

traffic and yields, passenger revenue declined nearly 22 percent during the first 5 months of 2002 from the same period in 2001. Airline revenue was also impacted by a drop in mail shipments, which were down 51 percent between April 2001 and 2002.

- ✓ **AIRLINE EXPENSES:** Operating expenses for the major airlines dropped 13 percent during the 1st quarter of 2002 as compared to 2001. Total operating revenues (e.g., passengers, cargo, and mail), however, declined at even a higher rate during this time period, dropping 22 percent.
- ✓ **AIRLINE DEBTS TO INVESTMENTS:** Debts to investments provides an indicator of an airline's exposure to fluctuations in demand and revenue, with the higher the ratio the more revenue needed to meet required debt payments. As a result of operating losses over the last year, airline debt to investment ratios have climbed, going from 53 percent in 2000 to 66 percent in 2001. For the 12 months ending March 2002, ratios for the major airlines were: Alaska (58 percent), American (60 percent), America West (67 percent), Continental (82 percent), Delta (69 percent), Northwest (58 percent), Southwest (30 percent), United (71 percent), and US Airways (120 percent).<sup>3</sup>
- ✓ **AIRPORT AND AIRWAY TRUST FUND:** Lagging demand and ticket prices have also impacted projected tax collections for the airport and airway trust fund. Prior to September 11, 2001, FAA projected overall collections of \$11.2 billion for FY 2002. FAA now estimates \$8.8 billion in tax collections, representing a drop of over 21 percent.

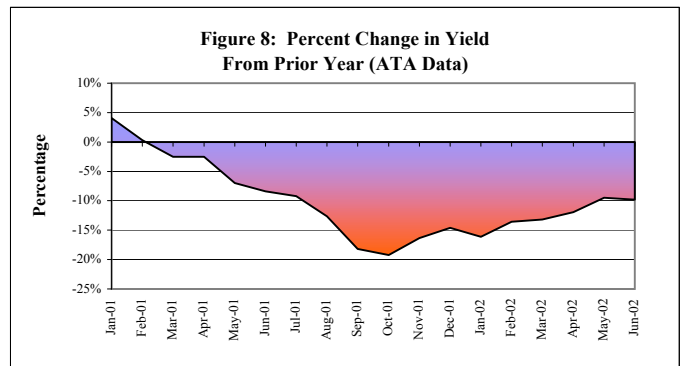
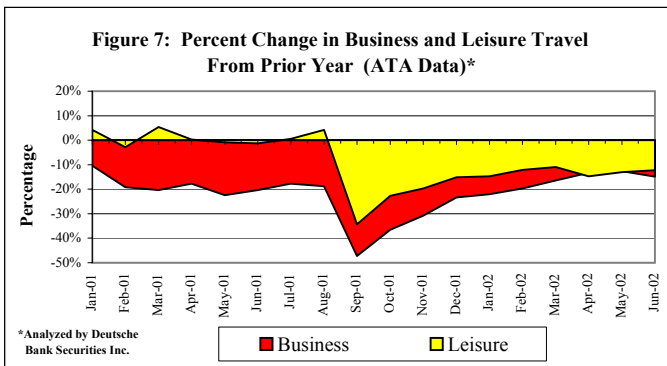
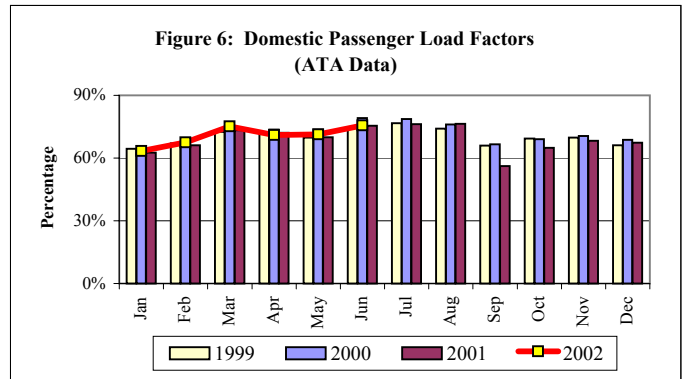
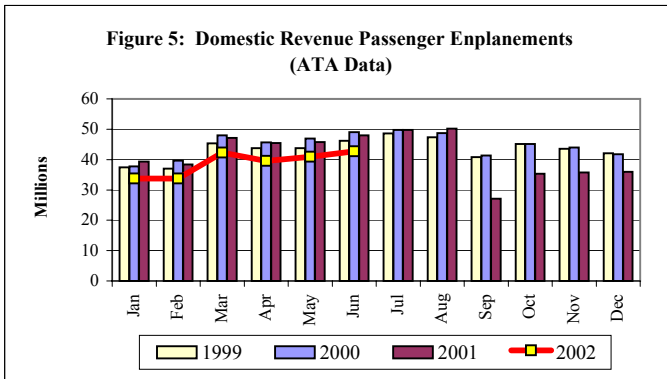
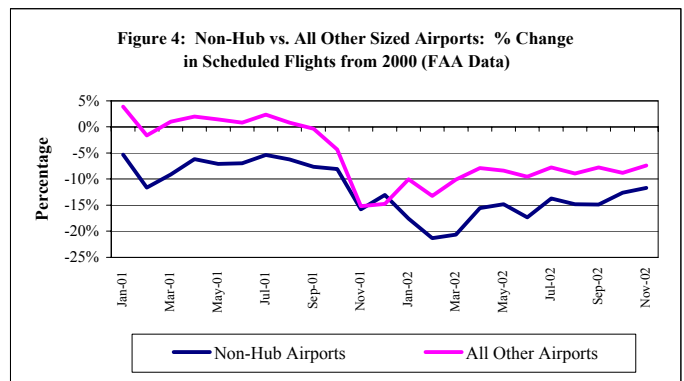
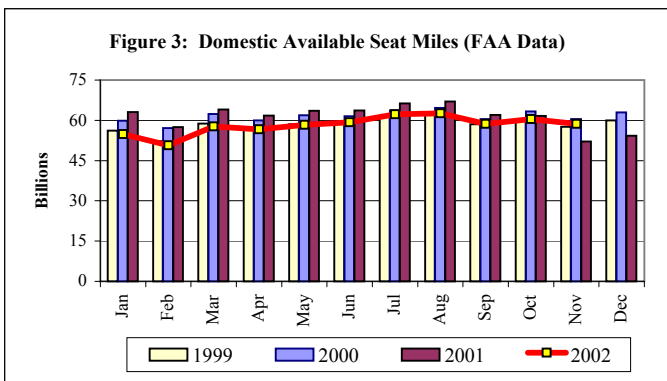
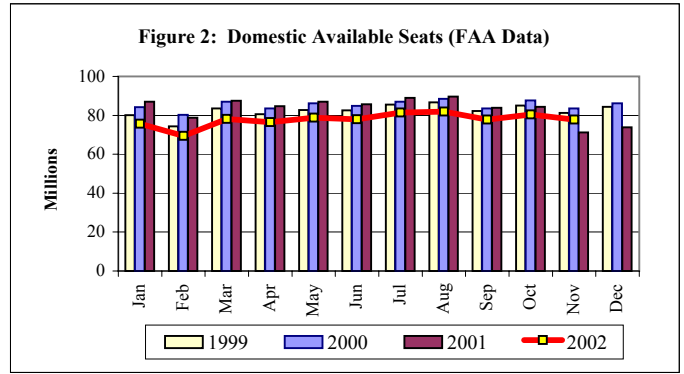
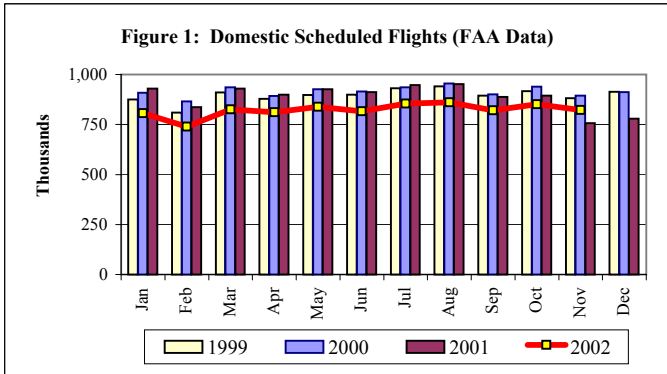
#### ***IV. Air Service at Small Airports***

- ✓ **LOSS OF AIR SERVICE AT SMALL AIRPORTS:** The smallest airports (non-hub) have experienced a greater drop in air service than the larger airports. Moreover, much of the loss occurred prior to the terrorist attacks as a result of a long-term, secular shift in demand rather than a short-term cyclical fluctuation. In contrast, larger airports experienced most of their drop in scheduled flight service in 2001 directly as a result of the terrorist attacks.
- ✓ **AIR SERVICE CHANGES POST-9/11:** As of November 2001, the non-hub airports had experienced a 16 percent reduction in scheduled flights from the prior year—as compared to a 15 percent reduction for the larger sized airports. Although airline schedules indicate some improvement by November 2002, non-hub airports are still projected to be down 12 percent from November 2000 levels—a full 4 percentage points lower than the larger sized airports, which will be down 8 percent.
- ✓ **ACCESS TO 31 LARGE AIRPORTS:** Non-hub airports also experienced a higher percentage loss of direct service to and from the 31 large airports than did other airports. Non-hub airports lost approximately 7 percent of their direct routes to and from the 31 large airports between June 2002 and June 2001. In comparison, small and medium sized airports experienced reductions of between 2 and 3 percent.

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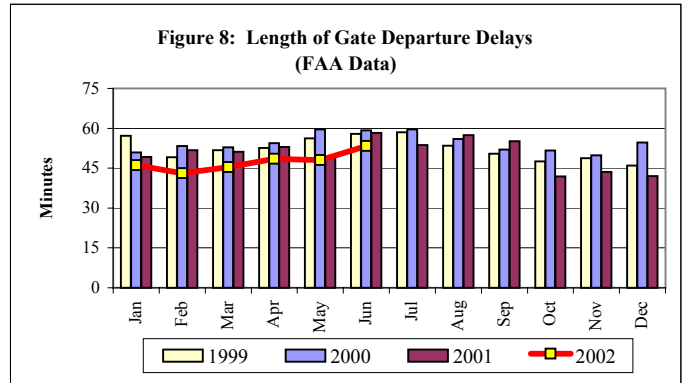
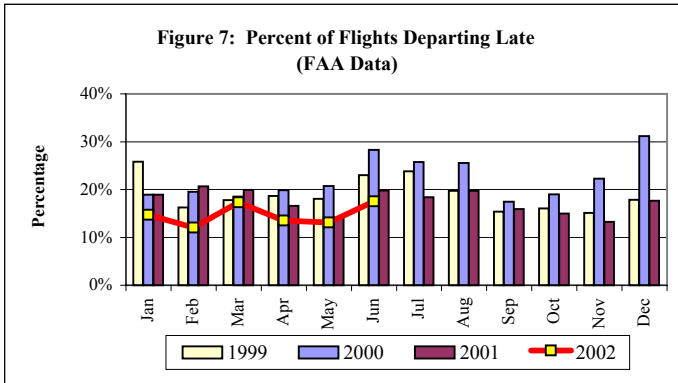
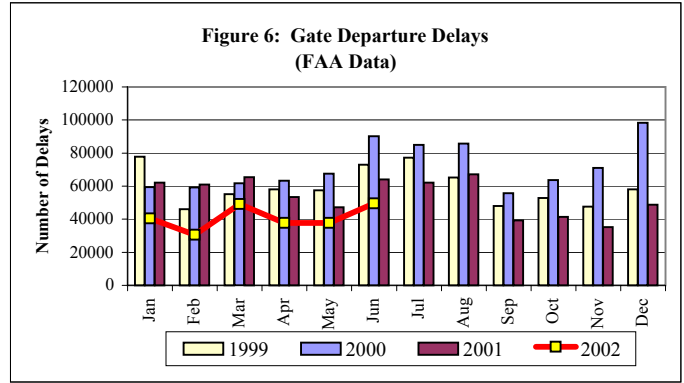
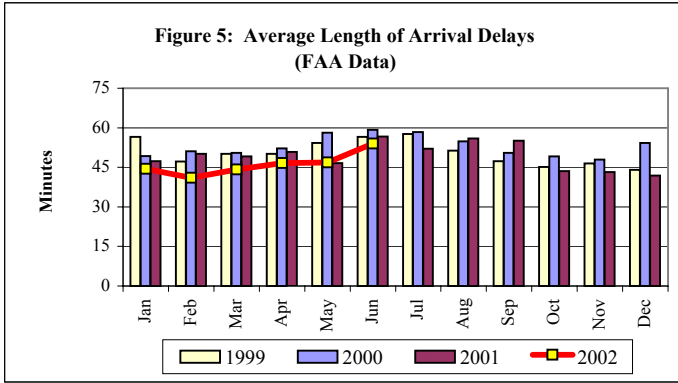
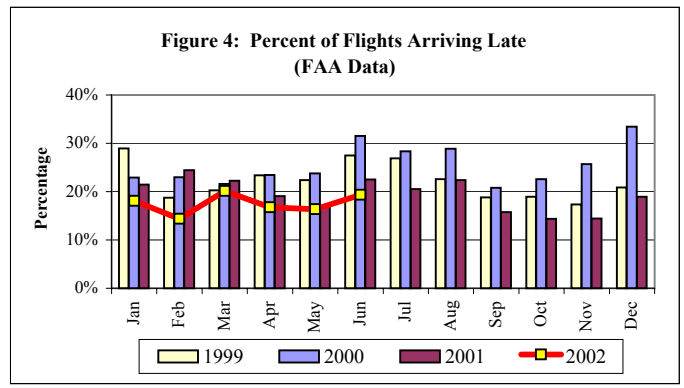
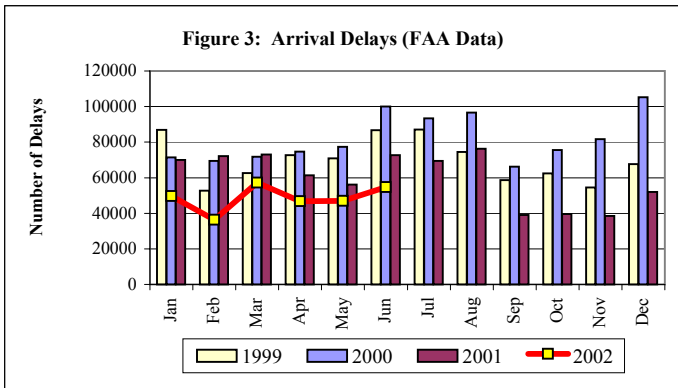
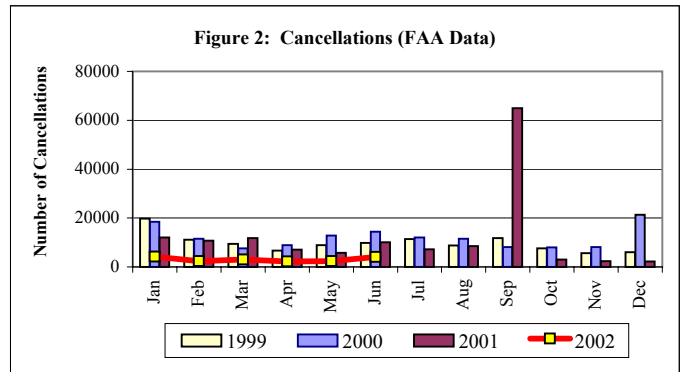
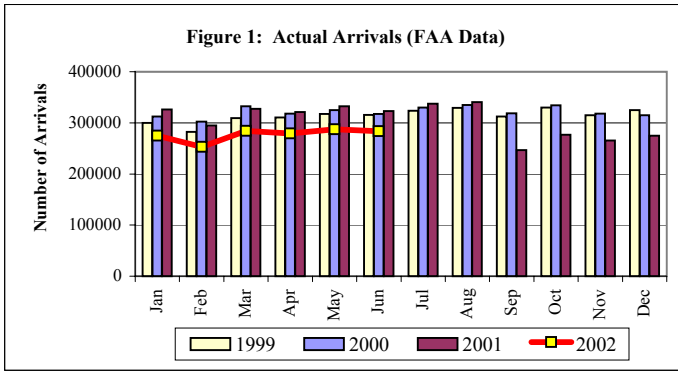
<sup>3</sup> Debt to total investment ratios are published by the Department of Transportation in the Major Airline Quarterly Financial Review. Debt is defined as long-term debt, capital leases, and advances from associated companies, less unamortized debt expenses. Total investment includes all the debt items plus stockholder's equity.

# Domestic Airline Operations Metrics (ATA and FAA FSDS Data)



\* Analyzed by Deutsche Bank Securities Inc.

## Domestic Major Airline Delay/Cancellation Metrics (FAA ASPM Data)



## Airline Metrics, Published August 2, 2002

### Domestic Airline Operations Metrics (ATA and FAA FSDS Data)

Figure 1: Domestic Scheduled Flights, FAA Data (amounts shown in thousands).

Month	1999	2000	2001	2002
January	875	909	930.29	806.39
February	809	865	837.35	739.53
March	911	936	930.23	825.56
April	878	892	898.58	811.14
May	898	926	927.00	839.09
June	900	916	911.98	816.68
July	931	937	947.31	852.28
August	941	954	951.86	859.44
September	895	901	887.45	818.42
October	917	940	893.68	850.89
November	881	894	757.34	820.38
December	914	912	779.90	Not Given
Total:	10,751.73	10,981.07	10,652.97	9,039.80

Figure 2: Domestic Available Seats, FAA Data (amounts shown in millions).

Month	1999	2000	2001	2002
January	80	84	87	76
February	74	80	79	69
March	83	87	88	78
April	81	83	85	77
May	83	86	87	79
June	83	85	86	78
July	86	87	89	81
August	87	88	90	82
September	82	83	84	78
October	85	88	84	80
November	81	83	71	78
December	84	86	74	Not Given
Total:	988.81	1,022.44	1,002.75	854.91

Figure 3: Domestic Available Seat Miles, FAA Data (amounts shown in billions).

Month	1999	2000	2001	2002
January	56	60	63	55
February	52	57	57	51
March	59	62	64	58
April	57	60	62	57
May	59	62	64	58
June	59	62	64	59
July	62	64	66	62
August	62	65	67	62
September	59	60	62	59
October	60	63	62	61
November	58	60	52	59
December	60	63	54	Not Given
Total:	702.24	738.29	736.80	639.85

Figure 4: Non-Hub versus All Other Sized Airports: Percent Change in Scheduled Flights from 2000, FAA Data.

Month	Non-Hub Percent Change from Base Year 2000	All Other Sized Airports Percent Change from Base Year 2000
January 2001	-5.33%	3.87%
February 2001	-11.64%	-1.61%
March 2001	-9.09%	0.99%
April 2001	-6.19%	1.98%
May 2001	-7.12%	1.42%
June 2001	-6.96%	0.85%
July 2001	-5.36%	2.38%
August 2001	-6.21%	0.84%
September 2001	-7.64%	-0.32%
October 2001	-8.09%	-4.31%
November 2001	-15.80%	-15.17%
December 2001	-13.04%	-14.77%
January 2002	-17.57%	-10.04%
February 2002	-21.33%	-13.23%
March 2002	-20.66%	-10.12%
April 2002	-15.56%	-7.90%
May 2002	-14.79%	-8.40%
June 2002	-17.35%	-9.56%
July 2002	-13.86%	-8.08%
August 2002	-14.59%	-9.09%
Sept 2002	-15.02%	-8.04%
October 2002	-12.90%	-8.82%
November 2002	-11.95%	-7.56%
December 2002	Not Given	Not Given

Figure 5: Domestic Revenue Passenger Enplanements, ATA Data (amounts shown in millions).

Month	1999	2000	2001	2002
January	37	38	39	34
February	37	40	38	34
March	45	48	47	42
April	44	46	45	40
May	44	47	46	41
June	46	49	48	43
July	49	50	50	Not Given
August	47	49	50	Not Given
September	41	41	27	Not Given
October	45	45	35	Not Given
November	44	44	36	Not Given
December	42	42	36	Not Given
Total:	521	538	498	233



Figure 6: Domestic Passenger Load Factors, ATA Data (amounts shown as percentage).

Month	1999	2000	2001	2002
January	64.42%	62.32%	62.62%	63.36%
February	67.02%	66.61%	66.17%	67.43%
March	72.51%	73.62%	73.33%	75.09%
April	71.94%	73.58%	72.06%	70.98%
May	69.84%	73.70%	69.97%	71.35%
June	74.68%	79.10%	75.40%	75.59%
July	76.75%	78.66%	76.20%	Not Given
August	74.12%	76.14%	76.31%	Not Given
September	65.98%	66.58%	56.18%	Not Given
October	69.41%	68.98%	64.90%	Not Given
November	69.87%	70.63%	68.27%	Not Given
December	66.13%	68.74%	67.30%	Not Given
Average:	70.32%	71.65%	69.50%	70.78%

Figure 7: Percent Change in Business and Leisure Travel From Prior Year, ATA Data.

Month	Business Change Year over Year	Leisure Change Year over Year
January 2001	-10.40%	4.20%
February 2001	-19.20%	-2.90%
March 2001	-20.30%	5.40%
April 2001	-17.80%	0.30%
May 2001	-22.50%	-0.90%
June 2001	-20.30%	-1.30%
July 2001	-17.70%	0.50%
August 2001	-18.80%	4.20%
September 2001	-47.30%	-34.30%
October 2001	-36.50%	-22.70%
November 2001	-30.80%	-19.70%
December 2001	-23.40%	-15.10%
January 2002	-22.10%	-14.70%
February 2002	-19.70%	-12.10%
March 2002	-16.50%	-11.00%
April 2002	-13.30%	-14.80%
May 2002	-12.70%	-13.10%
June 2002	-14.90%	-12.20%

Figure 8: Percent Change in Yield from Prior Year, ATA Data.

<b>Month</b>	<b>Percent Change</b>
January 2001	4.06%
February 2001	0.31%
March 2001	-2.49%
April 2001	-2.53%
May 2001	-7.00%
June 2001	-8.38%
July 2001	-9.19%
August 2001	-12.63%
September 2001	-18.22%
October 2001	-19.22%
November 2001	-16.35%
December 2001	-14.63%
January 2002	-16.13%
February 2002	-13.59%
March 2002	-13.17%
April 2002	-11.94%
May 2002	-9.48%
June 2002	-9.80%

## Domestic Major Airline Delay/Cancellation Metrics (FAA ASPM Data)

Figure 1: Actual Arrivals, FAA Data.

Month	1999	2000	2001	2002
January	299,905	312,067	326,251	274,512
February	282,013	302,660	294,771	252,787
March	309,462	332,473	327,579	284,236
April	310,603	318,206	321,382	279,207
May	317,257	325,139	332,274	287,401
June	315,433	317,293	322,949	283,273
July	323,820	329,582	337,431	Not Given
August	329,341	334,654	340,634	Not Given
September	312,061	318,580	246,549	Not Given
October	329,690	334,490	276,527	Not Given
November	314,628	317,915	265,629	Not Given
December	324,708	314,659	275,087	Not Given
Total:	3,768,921	3,857,718	3,667,063	1,661,416

Figure 2: Cancellations, FAA Data.

Month	1999	2000	2001	2002
January	19,727	18,512	12,077	4,199
February	11,104	11,477	10,706	2,361
March	9,409	7,585	11,753	3,063
April	6,724	8,853	7,086	2,265
May	8,926	12,835	5,796	2,399
June	9,824	14,407	10,135	4,048
July	11,356	11,985	7,189	Not Given
August	8,755	11,538	8,528	Not Given
September	11,780	8,057	64,947	Not Given
October	7,571	7,977	2,966	Not Given
November	5,599	8,150	2,371	Not Given
December	6,003	21,333	2,161	Not Given
Total:	116,778	142,709	145,715	18,335

Figure 3: Arrival Delays, FAA Data.

Month	1999	2000	2001	2002
January	86,811	71,485	69,926	49,657
February	52,772	69,499	72,136	36,355
March	62,668	71,757	73,012	57,175
April	72,648	74,655	61,288	46,841
May	70,944	77,400	56,127	47,039
June	86,682	100,115	72,633	54,770
July	87,078	93,399	69,374	Not Given
August	74,482	96,550	76,241	Not Given
September	58,649	66,251	38,952	Not Given
October	62,387	75,543	39,656	Not Given
November	54,570	81,731	38,456	Not Given
December	67,667	105,180	52,061	Not Given
Total:	837,358	983,565	719,862	291,837

Figure 4: Percent of Flights Arriving Late, FAA Data.

Month	1999	2000	2001	2002
January	28.94%	22.90%	21.43%	18.08%
February	18.71%	22.96%	24.47%	14.38%
March	20.25%	21.58%	22.28%	20.11%
April	23.38%	23.46%	19.07%	16.77%
May	22.36%	23.80%	16.89%	16.36%
June	27.48%	31.55%	22.49%	19.33%
July	26.89%	28.33%	20.55%	Not Given
August	22.61%	28.85%	22.38%	Not Given
September	18.79%	20.79%	15.79%	Not Given
October	18.92%	22.58%	14.34%	Not Given
November	17.34%	25.70%	14.47%	Not Given
December	20.83%	33.42%	18.92%	Not Given
Total:	22.21%	25.49%	19.63%	17.56%

Figure 5: Average Length of Arrival Delays, FAA Data (amounts shown in minutes).

Month	1999	2000	2001	2002
January	56.54	49.26	47.29	44.47
February	47.17	51.08	50.17	41.05
March	50.16	50.45	49.12	44.22
April	50.11	52.22	50.82	46.58
May	54.29	58.14	46.56	46.83
June	56.58	59.19	56.73	54.06
July	57.68	58.40	52.05	Not Given
August	51.32	54.85	55.95	Not Given
September	47.27	50.43	55.14	Not Given
October	45.16	49.10	43.53	Not Given
November	46.43	47.90	43.25	Not Given
December	44.11	54.24	41.81	Not Given
Total:	51.22	53.31	49.94	46.51

Figure 6: Gate Departure Delays, FAA Data.

Month	1999	2000	2001	2002
January	77,784	59,344	62,033	40,524
February	45,977	59,316	61,043	30,542
March	55,133	61,681	65,503	49,239
April	58,097	63,372	53,421	37,751
May	57,439	67,571	47,208	37,706
June	72,879	90,115	63,980	49,543
July	77,267	85,049	62,108	Not Given
August	65,153	85,760	67,207	Not Given
September	48,034	55,667	39,229	Not Given
October	52,933	63,742	41,444	Not Given
November	47,697	70,997	35,169	Not Given
December	58,032	98,386	48,710	Not Given
Total:	716,425	861,000	647,055	245,305

Figure 7: Percent of Flights Departing Late, FAA Data.

Month	1999	2000	2001	2002
January	25.81%	18.94%	18.96%	14.73%
February	16.26%	19.55%	20.67%	12.06%
March	17.79%	18.52%	19.96%	17.30%
April	18.66%	19.87%	16.59%	13.50%
May	18.05%	20.73%	14.19%	13.10%
June	23.02%	28.31%	19.78%	17.50%
July	23.78%	25.76%	18.37%	Not Given
August	19.73%	25.57%	19.70%	Not Given
September	15.36%	17.46%	15.91%	Not Given
October	16.03%	19.03%	14.96%	Not Given
November	15.13%	22.29%	13.22%	Not Given
December	17.85%	31.18%	17.69%	Not Given
Total:	18.96%	22.27%	17.62%	14.75%

Figure 8: Length of Gate Departure Delays, FAA Data.

Month	1999	2000	2001	2002
January	57.16	50.87	49.22	46.05
February	49.12	53.36	51.76	43.10
March	51.75	52.87	51.21	45.41
April	52.62	54.47	52.91	48.57
May	56.22	59.65	49.07	48.03
June	57.94	59.19	58.22	53.31
July	58.55	59.57	53.71	Not Given
August	53.41	55.93	57.37	Not Given
September	50.40	51.98	55.12	Not Given
October	47.60	51.65	41.86	Not Given
November	48.77	49.83	43.53	Not Given
December	45.93	54.68	42.05	Not Given
Total:	53.05	54.85	51.16	47.71