

U.S. Airline Passenger Trip Delay Report (2008)

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 CENTER FOR AIR TRANSPORTATION SYSTEMS RESEARCH



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Objective

The objective of this report is to provide statistics for delays experienced by *Passengers* on scheduled domestic U.S. airline flights.

Passenger trip delays are not the same as *flight delays*. In addition to delayed flights, passengers accrue trip delays due to cancelled flights, diverted flights, and oversold flights.

This report supplements government and airline industry reports that focus on airline flight delays.

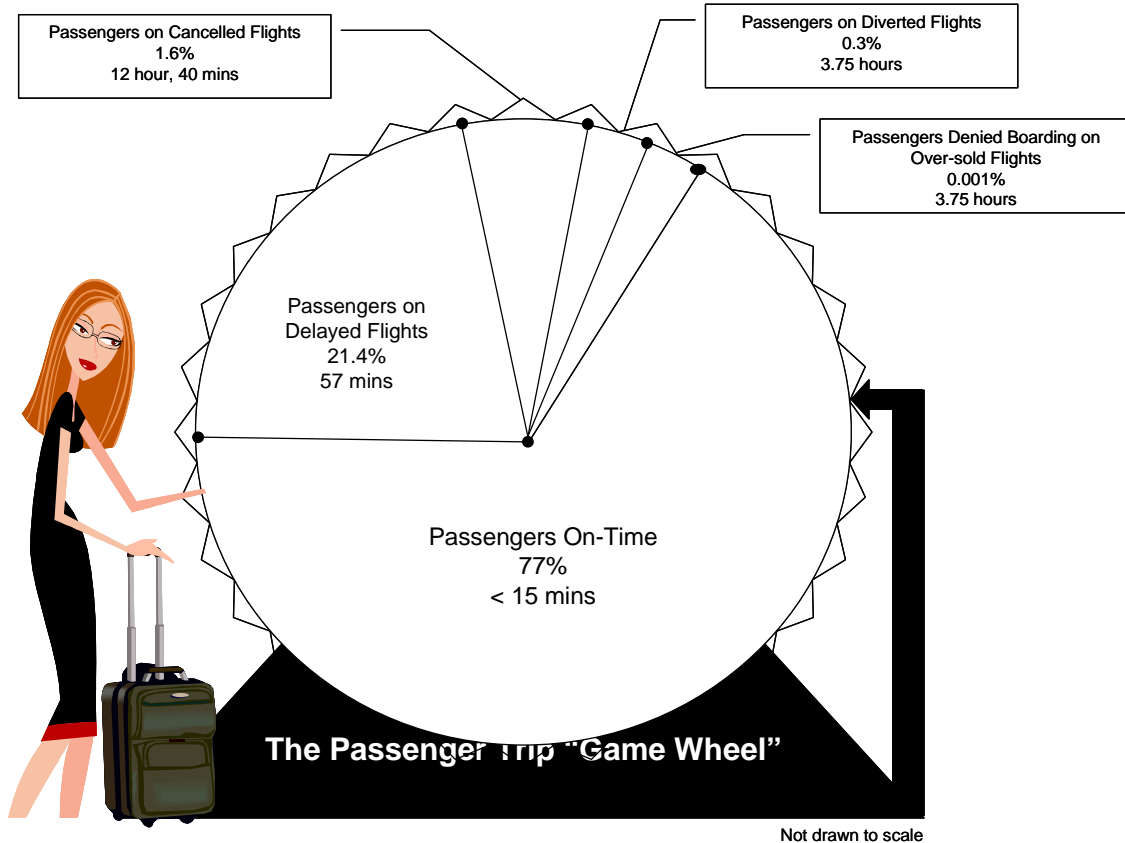
Definition of Passenger Trip Delays

Passenger Trip Delays are the delays experienced by passengers relative to the scheduled time of arrival published on the original airline ticket (not the –rebooked ticket). Passenger Trip Delays include trip disruptions accrued due to:

1. delayed flights
2. rebooking due to cancelled flights
3. rebooking after denied boarding on oversold flights
4. diverted flights

Individual passenger trip delay is determined by the combination of the *likelihood* of being on a flight in one of the four categories above, and on the *magnitude* of the delay experienced by passengers in each one of the four categories.

In many ways, the passenger experience is akin to spinning a game wheel with probabilities for on-time, delayed, cancelled, diverted and oversold flights. The “award” for each category is the amount of trip delay accrued by each passenger in each category.



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2008 Results

Passengers experienced less delays in 2008, ...

Trip delays experienced by passengers flying domestic routes in the U.S. in 2008 were down 17 % over 2007.

Passengers were delayed a total of 276 million hours (or 31 thousand years). A conservative estimate places the annual cost of these delays to be \$8.2 billion in lost productivity to the nation’s economy.

In 2008, 607 million passenger trips were flown by U.S. domestic airlines between 266 airports on 7 million flights. These numbers reflect a 5.5% drop in passenger trips and a 6% reduction in airline flights. The number of airports served by airlines remained unchanged.

Total Passenger Trip Delays in 2008: 31 thousand years

Total Passenger Trip Delays decreased 17% in 2008 from 2007

Cost to economy \$8.2B per Year

	2007	2008	Change
Passenger Trips	642,719,733	607,184,983	-5.5%
Flights	7,453,156	7,007,833	-6.0%
Airports Served	267	266	-0.1%
Total Passener Trip Delay (Years)	38,152	31,549	-17.3%
Total Passenger Trip Delay (Hours)	334,211,814	276,365,616	-17.3%
Average Passenger Trip Delay (Minutes)	31	27	-12.7%

... but structural issues remain.

The reduction in flights and passengers should have “taken pressure off” the system resulting in improved passenger trip experience. This did not occur.

One out of four passengers (23%) experienced a Passenger Trip Delay in 2008. In 2007, 26% of passengers experienced a trip disruption.

In 2008, the average Passenger Trip Delay experienced across all airline passengers was 27 minutes, a reduction of only 4 minutes from 31 minutes in 2007.

No change 2007 to 2008:

- **1 of 4 passengers experienced a disrupted airline trip**
- **Average passenger trip delay: 27 minutes**
- **Disrupted passengers: average 1 hour and 48 minute delay**

The average duration of the trip delay experienced by disrupted passengers in 2008 was 1 hour 48 minutes, a 4 minute decrease over 2007. See table below.

Passenger trips were disrupted by 4 categories of delays:

1. Passengers on Delayed Flights: In 2008, 21.4% of the passengers were on flights that were delayed (down from 23.8% in 2007). These passengers experienced an average delay of 57 minutes (same as 2007).
2. Passengers on Cancelled Flights: In 2008, 1.6% of the passengers were rebooked due to cancelled flights (down from 1.8% in 2007). The average delay for these passengers was 12 hours 40 minutes, down from 13 hours and 40 minutes in 2007.
3. Passengers on Diverted Flights: The number of passengers on diverted flights rose from 0.2% in 2007, to 0.3% in 2008. The trip delays experienced by these passengers remained constant.
4. Passengers Denied Boarding on Oversold Flights: The number of passengers denied boarding due to over-sold flights decreased from 1.12 in 10,000 passengers in 2007, to 1.1 in 10,000 passengers in 2008.

Summary of Percentage Passengers On-Time/Average Passenger Trip Delay

	Percentage Passengers			Average Passenger Trip Delay		
	2008	2007	Change (- improved)	2008	2007	Change (- improved)
Passengers Experiencing Trip Delay (>15 minutes)	23%	26%	- 9.8 %	1 hour 48 minutes	1 hour 52 minutes	-4 minutes
• Passengers on Delayed Flights	21.4%	23.8%	- 9.9%	57 minutes	56 minutes	+1 minutes
• Passengers on Cancelled Flights	1.6%	1.8%	- 0.2%	12 hours, 40 mins	13 hours, 40 mins	-1 hour
• Passengers on Diverted Flights	0.3%	0.2%	- 33%	3.75 hours	3.75 hours	No Change
• Passengers Denied Boarding on Oversold Flights	<0.001% (1.10 in 10,000)	<0.001% (1.12 in 10,000)	No Change	3.75 hours	3.0 hours	- 45 mins

Complete summary statistics are available in Appendix Table 1.

Airlines in 2008

As described in the previous sections of this report, the total passenger trip delays decreased by 17% in 2008 from 2007. This improvement was reflected in the passenger trip delays delivered by *all* the U.S. domestic airlines.

Overall reductions in passenger trip delays benefited passengers on *all* airlines.

Passengers experienced improved trip performance on 9 airlines, and unchanged trip performance on 7 airlines. By contrast, in 2007, no airlines provided passengers improved performance when compared with 2006.

The best and the worst

The best passenger trip experience was provided by Hawaiian, Frontier and Southwest Airlines all with average passenger trip delays of 8 minutes or less

Passengers on Hawaiian, Frontier and Southwest airlines experienced best trip delay performance

The worst passenger trip experience was provided by American Airlines with an average passenger trip delay of 27 minutes.

It should be noted that the airlines with the best passenger trip delay performance operate out of non-congested airports. In the case of the Hawaiian airlines, not only are the airports it services not congested, but they are also not impacted by convective weather in the summer or snow storms in the winter.

The range of airline performance

As in past years, the airlines exhibited a wide range of performance in 2008. Average Passenger Trip Delay ranged from 7 minutes (Hawaiian Airlines) to 27 minutes (American Airlines). The difference between the best and worst airlines in 2008 was 20 minutes. The difference between the best and worst airlines in 2007 was 28 minutes.

Passengers on the airline with the lowest passenger trip delays, 4 times less trip delay minutes than passengers on the airline with the highest trip delays.

Improved performance by all the airlines

The overall reduction in passenger trip delays was experienced by *all* the airlines. Passengers travelling on nine airlines experienced a reduction in trip delay over 2007. Passengers travelling on six airlines experienced the same trip delay as 2007. Only passengers on one airline, Hawaiian, experienced increased passenger trip delays, up by +1 minute.

Ranking of U.S. Domestic Airlines

Rank 2008	Change in Ranking 2007 to 2008 (+ Improved)	Airline	Average Trip Delay Experienced by Passengers (Minutes)	Change in Average Trip Delay Experienced by Passengers 2007 to 2008 (+ increased delay)
1 (Best)	No Change	Hawaiian Airlines Inc.	7.0	+ 2.1
2	No Change	Southwest Airlines Co.	8.1	No Change
3	+ 1	Frontier Airlines Inc.	8.2	No Change
4	+ 1	AirTran Airways Corporation	12.5	No Change
5	+ 4	Northwest Airlines Inc.	13.0	-7.7
6	+ 4	Alaska Airlines Inc.	13.1	-9.0
7	+ 5	Skywest Airlines Inc. ²	13.3	-10.5
8	- 1	US Airways Inc.	13.4	-4.5
9	- 1	Delta Air Lines Inc.	15.0	-3.3
10	- 4	Continental Air Lines Inc.	16.2	No Change
11	+ 5	United Air Lines Inc.	16.7	-12.4
12	+ 6	Pinnacle Airlines Inc. ³	20.4	-12.6
13	- 2	JetBlue Airways	23.3	No Change
14	- 1	ExpressJet Airlines Inc. ¹	23.7	No Change
15	- 1	Comair Inc.	24.1	-4.2
16	+ 1	Mesa Airlines Inc. ⁴	25.0	-6.1
17 (Worst)	- 2	American Airlines Inc. ⁵	27.1	No Change

Notes:

- 1 ExpressJet (XE) operates flights for ExpressJet, Continental Express, Delta Connections
- 2 SkyWest Airlines (OO) operates flights for United Express, Delta Connection, and Midwest Connect
- 3 Pinnacle Airlines (9E) operates flights for US Airways Express, United Express, Continental Connection
- 4 Mesa Airlines (YV) operates flights for US Airways Express, United Express, Delta Connection
- 5 Includes American Eagle flights as a wholly owned subsidiary

Passengers experiencing the worst trip delays flew through over-scheduled, congested airports. Despite the economies-of-scale achieved by hub airlines, resulting in service to more cities and (in some cases, lower fares), passengers on hubbing airlines were more likely to be subject to long delays. This is especially true when movements at the carefully choreographed hub are disrupted even for a few hours (e.g. thunderstorm over the airport, or accumulation of snow)

Airline Ranking

Eight airlines improved their ranking from 2007. This list was headed by United Airlines that improved their ranking by 5 positions, followed by Northwest and Alaska that improved their ranking by 4 positions. Seven airlines slipped in the

rankings. Continental dropped 4 positions and American Airlines dropped two positions. Of the regional carriers operating flights for major airlines, SkyWest improved their ranking by 5 positions.

Five airlines slipped in the rankings and five airlines maintained their ranking from 2007.

See Appendix - Table 1 for more detailed Annual Passenger Trip Delay performance by airlines.

Airports in 2008

Despite the magnitude of the reductions in passenger trip delays overall (-17%), the passengers at the nations busiest airports experienced only modest reductions in passenger trip delays. For the third consecutive year the average passenger experienced more than 29 minutes of trip delay at Newark, LaGuardia, JFK, and Chicago O'Hare.

Passengers at 15 of the nations busiest airports experienced decreased Passenger Trip

Out of the nations 35 busiest airports, the passenger trip delays at 15 airports improved from 2007 to 2008. The passenger trip delays at 9 airports remained unchanged. Passenger at 9 airports experienced worse passenger trip delays than the year before.

Passengers at the nations busiest airports experienced modest reductions (3 minutes) in Passenger Trip

In 2008, seven airports experienced average Passenger Trip Delays of greater than 20 minutes. In 2007, the number of airports with greater than 20 minutes average Passenger Trip Delays had increased to eleven from four in 2006.

In 2008, passengers at seven airports experienced average trip delays greater than 20 minutes (down from eleven airports in

Ranking of Airports

The nation's top-ranked airports with lowest Passenger Trip Delay were: Salt-Lake City, Honolulu, Chicago-Midway, Phoenix-Sky Harbor (+7 positions from 2007), and Baltimore Washington (+3 positions from 2007). Passengers at these airports experienced an average Passenger Trip Delay of 10 minutes or less.

San Diego and Portland, ranked in the top 5 in 2007, dropped one position and seven positions respectively.

The nation's lowest-ranked airports with highest Passenger Trip Delays were Newark, La Guardia, New York-JFK, Chicago- O'Hare, Dallas-Ft Worth, Washington-Dulles, and Boston-Logan. Passengers at these airports experienced average Passenger Trip Delays in excess of 20 minutes.

The airports at which passenger trip delays improved the most from 2007: Denver Int'l (+15 positions), Minneapolis (+10 positions), Pittsburg (+8 positions) and Phoenix-Sky Harbor (+7 positions). The airports at which passenger trip delays degraded the most: Houston-George Bush Int'l (-15 positions), Portland Int'l (-7 positions) and Miami Int'l (-5 positions).

See Appendix - Table 2 for Annual Passenger Trip Delay at 35 of the nation's busiest airports.

The passenger trip delay experience at the smaller airports reflects more about how that airport is connected to the network, than how the airport or the airlines at the airport operate. Flights to/from larger, congested airports will propagate delay to these smaller airports.

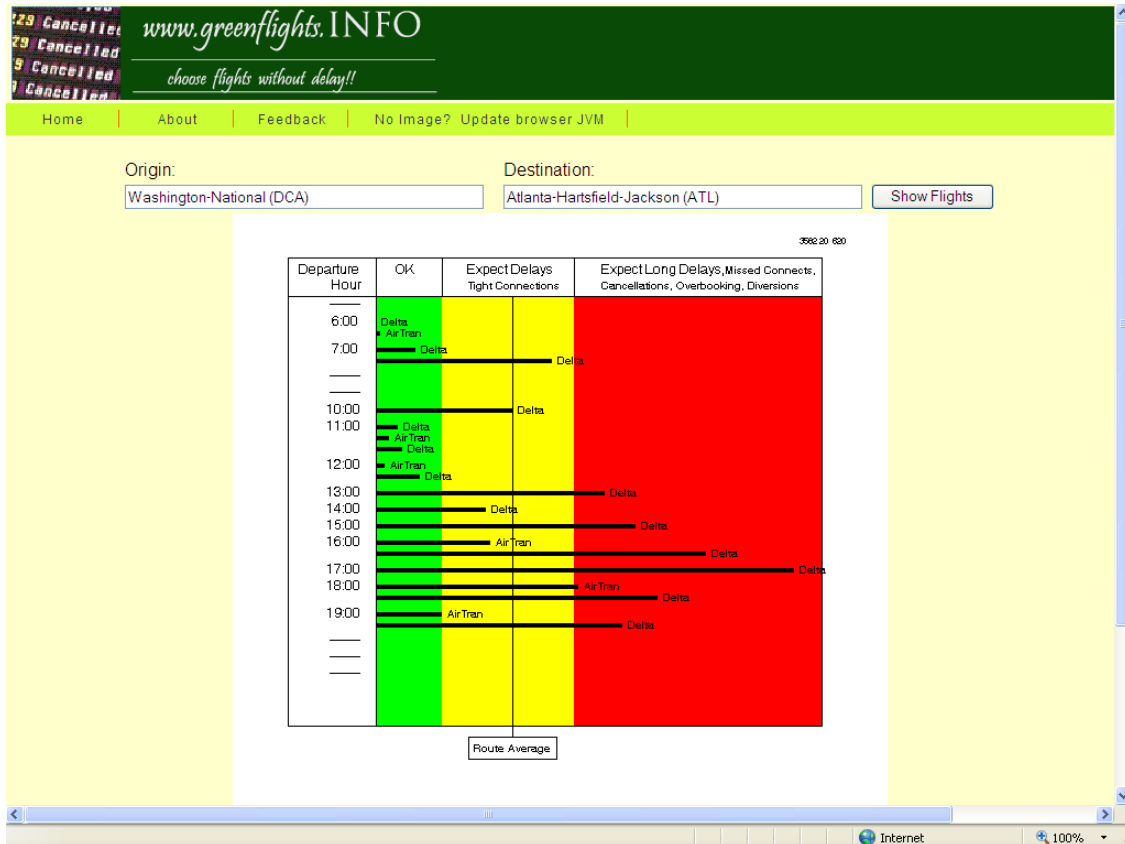
See Appendix - Table 3 for Annual Passenger Trip Delay at 267 of the nation's airports reported by the Bureau of Transportation Statistics.

Ranking of the Nation's Busiest Airports by Average Passenger Trip Delay

2008 Rank (Best to Worst)	Change in Rank (+ improved)	Airport	Average Trip Delay Experienced by Passengers (mins)
1	+ 2	Salt Lake City International	8.2
2	- 1	Honolulu-International	9.3
3	- 1	Chicago-Midway	10.1
4	+ 7	Phoenix-Sky Harbor	10.4
5	+ 3	Baltimore-Washington	10.5
6	-2	San Diego-Lindbergh Field	11.0
7	+ 13	Denver International	11.3
8	+ 1	Los Angeles International	11.4
9	- 2	Las Vegas-McCarran	11.5
10	- 4	Tampa International	11.6
11	+ 1	Orlando International	11.8
12	- 7	Portland International	12.6
13	+ 2	Fort Lauderdale-Hollywood	13.3
14	No Change	Seattle-Tacoma	13.6
15	+ 1	St Louis-Lambert	13.7
16	+ 8	Pittsburg Int'l	15.2
17	- 4	Cleveland-Hopkins	15.6
18	+ 10	Minneapolis-St Paul	15.8
19	- 1	Atlanta-Hartsfield-Jackson	15.9
20	- 1	San Francisco International	16.0
21	- 4	Cincinnati-Northern Kentucky	16.0
22	+ 4	Detroit-Metropolitan Wayne	16.9
23	- 2	Memphis International	17.2
24	+ 1	Washington-National	17.4
25	- 15	Houston-George Bush	17.5
26	- 4	Charlotte-Midway	17.7
27	No Change	Philadelphia International	18.3
28	- 5	Miami International	19.6
29	No Change	Boston-Logan	21.7
30	No Change	Washington-Dulles	22.0
31	No Change	Dallas-Ft Worth	23.2
32	+ 2	Chicago-O'Hare	29.0
33	+ 2	New York-John F Kennedy	29.7
34	- 1	New York-La Guardia	30.0
35	- 3	Newark International	32.1

Individual Flights and Routes

Passenger Trip Delays for individual flights and routes can be found at the website: www.GreenFlights.INFO



This website is maintained by the Center for Air Transportation Systems Research (CATSR) at George Mason University. For more information please contact Executive Director, Lance Sherry, 703-993-1711.

APPENDIX

- Table 1 Summary Passenger Trip Delay Statistics (2008 vs. 2007)
- Table 2 Rank and Performance of U.S. Domestic Airlines
- Figure 0 Performance of U.S. Domestic Airlines (2008 vs. 2007)
- Table 3 Rank & Performance of Flights To/From the Nation's Busiest 35 Airports
- Table 4 Rank & Performance of Passenger Trip Delays To/From Nation's Airports with Scheduled Airline Service
- Figure 1 Monthly Totals 2007
- Figure 2 Monthly Average Passenger Trip Delay for Disrupted Passengers
- Figure 3 Monthly Average Passenger Trip Delay for Disrupted Passengers on Delayed Flights
- Figure 4 Monthly Average Passenger Trip Delay for Disrupted Passengers on Cancelled Flights

Notes on the Statistics and Sources of Data in this Report

Summary Passenger Trip Delay Statistics (2008 vs. 2007)*
Table 1

	2007	2008	% Change
TOTAL PASSENGERS			
Passenger Trips	642,719,733	607,184,983	-5.5%
Flights	7,453,156	7,007,833	-6.0%
Airports Served	267	266	-0.1%
Total Passenger Trip Delay (Years)	38,152	31,549	-17.3%
Total Passenger Trip Delay (Hours)	334,211,814	276,365,616	-17.3%
Average Passenger Trip Delay (Minutes)	31	27	-12.7%
DISRUPTED PASSENGERS (DELAYED + CANCELLED + DIVERTED)			
% Passengers	25.8%	23.3%	-9.8%
Total Passengers	166,418,248	126,516,453	-24.0%
Average Disrupted Passenger Trip Delay (Minutes)	112	108	-3.0%
PASSENGERS ON DELAYED FLIGHTS			
% Passengers	23.8%	21.4%	-9.9%
Total Passengers	153,334,863	130,959,953	-14.6%
Average Disrupted Passenger Trip Delay (Minutes)	56	57	1.0%
PASSENGERS ON CANCELLED FLIGHTS			
% Passengers	1.8%	1.6%	-10.5%
Total Passengers	11,565,381	9,863,973	-14.7%
Average Disrupted Passenger Trip Delay (Minutes)	820	760	-7.4%
PASSENGERS ON DIVERTED FLIGHTS			
% Passengers	0.2%	0.3%	8.3%
Total Passengers	1,518,004	1,542,926	1.6%
Total Disrupted Passenger Trip Delay (Minutes)	546,481,440	555,453,360	1.6%

Data based on reports by US Domestic Airlines that carry more than 1% of total annual U.S. passengers

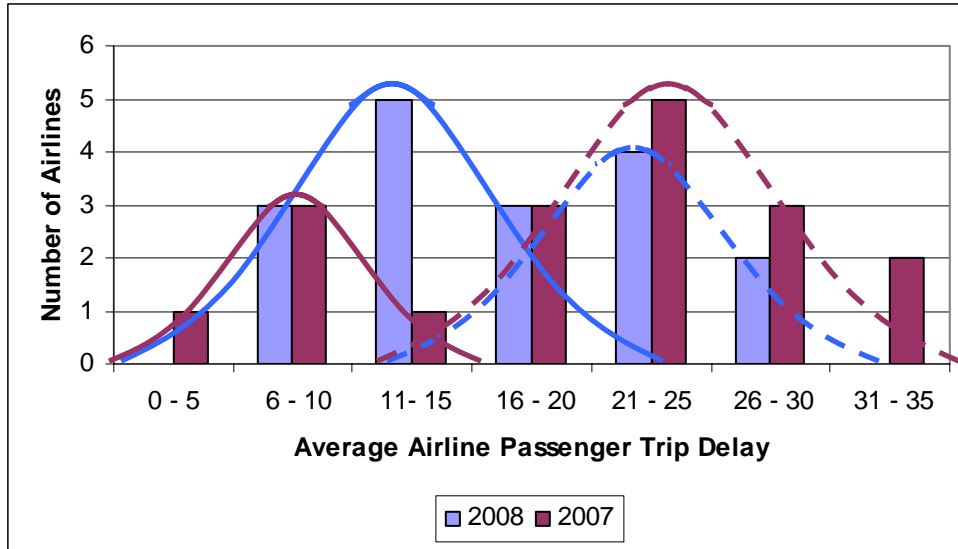
Rank & Performance of U.S. Domestic Airlines*
Table 2

* US Domestic Airlines that carry more than 1% of total annual U.S. passengers

** Aloha Airlines terminated reporting end of Q1 2008

Rank	Change in Ranking 2007 to 2008 (+ Improved)	Airline	Average Trip Delay Experienced by Passengers (Minutes)	Change in Average Trip Delay Experienced by Passengers 2007 to 2008 (+ increased delay)
1 (Best)	No Change	Hawaiian Airlines Inc.	7.0	+ 2.1
2	No Change	Southwest Airlines Co.	8.1	No Change
3	1	Frontier Airlines Inc.	8.2	No Change
4	1	AirTran Airways Corporation	12.5	No Change
5	4	Northwest Airlines Inc.	13.0	-7.7
6	4	Alaska Airlines Inc.	13.1	-9.0
7	5	Skywest Airlines Inc.	13.3	-10.5
8	-1	US Airways Inc.	13.4	-4.5
9	-1	Delta Air Lines Inc.	15.0	-3.3
10	-4	Continental Air Lines Inc.	16.2	No Change
11	5	United Air Lines Inc.	16.7	-12.4
12	6	Pinnacle Airlines Inc.	20.4	-12.6
13	-2	JetBlue Airways	23.3	No Change
14	-1	ExpressJet Airlines Inc.	23.7	No Change
15	-1	Comair Inc.	24.1	-4.2
16	1	Mesa Airlines Inc.	25.0	-6.1
17 (Worst)	-2	American Airlines Inc.	27.1	No Change

Performance of U.S. Domestic Airlines 2008 vs. 2007*
Figure 0



Rank & Performance of Flights To/From Nation's Busiest 35 Airports
Table 3

Airport	Average Trip Delay Experienced by Passengers (mins)	2008 Rank (Best to Worst)	2007 Rank	Change in Rank
Salt Lake City International	8.2	1	3	+ 2
Honolulu-International	9.3	2	1	- 1
Chicago-Midway	10.1	3	2	- 1
Phoenix-Sky Harbor	10.4	4	11	+ 7
Baltimore-Washington	10.5	5	8	+ 3
San Diego-Lindbergh Field	11.0	6	4	- 2
Denver International	11.3	7	20	+ 13
Los Angeles International	11.4	8	9	+ 1
Las Vegas-McCarran	11.5	9	7	- 2
Tampa International	11.6	10	6	- 4
Orlando International	11.8	11	12	+ 1
Portland International	12.6	12	5	- 7
Fort Lauderdale-Hollywood	13.3	13	15	+ 2
Seattle-Tacoma	13.6	14	14	No Change
St Louis-Lambert	13.7	15	16	+ 1
Pittsburg Int'l	15.2	16	24	+ 8
Cleveland-Hopkins	15.6	17	13	- 4
Minneapolis-St Paul	15.8	18	28	+ 10
Atlanta-Hartsfield-Jackson	15.9	19	18	- 1
San Francisco International	16.0	20	19	- 1
Cincinnati-Northern Kentucky	16.0	21	17	- 4
Detroit-Metropolitan Wayne	16.9	22	26	+ 4
Memphis International	17.2	23	21	- 2
Washington-National	17.4	24	25	+ 1
Houston-George Bush	17.5	25	10	- 15
Charlotte-Midway	17.7	26	22	- 4
Philadelphia International	18.3	27	27	No Change
Miami International	19.6	28	23	- 5
Boston-Logan	21.7	29	29	No Change
Washington-Dulles	22.0	30	30	No Change
Dallas-Ft Worth	23.2	31	31	No Change
Chicago-O'Hare	29.0	32	34	+ 2
New York-John F Kennedy	29.7	33	35	+ 2
New York-La Guardia	30.0	34	33	- 1
Newark International	32.1	35	32	- 3

**Rank & Performance of Passenger Trip Delays To/From Nation's Airports
with Scheduled Airline Service**
Table 4

RANK	Airport	Avg Trip Delay Experienced by Passengers
1	Toledo, OH*	0.6
2	Pierre, SD*	1.3
3	West Yellowstone, MT*	1.3
4	Oxnard/Ventura, CA	2.5
5	Salem, OR	2.9
6	El Centro, CA	2.9
7	Lewisburg, WV*	3.2
8	Lewiston, ID	3.9
9	Carlsbad, CA	4.2
10	Saint George, UT	4.2
11	Bemidji, MN*	4.6
12	Casper, WY	4.7
13	Bakersfield, CA	5.4
14	Cody/Yellowstone, WY	5.5
15	Elko, NV	5.6
16	Hilo, HI - Island of Hawaii	5.7
17	Bellingham, WA*	5.9
18	Yakima, WA	5.9
19	Santa Maria, CA	5.9
20	Pasco, WA	6.0
21	Jacksonville, NC*	6.2
22	Pocatello, ID	6.2
23	Grand Junction, CO	6.3
24	Columbus, GA*	6.3
25	Dillingham, AK*	6.4
26	Cedar City, UT	6.7
27	Great Falls, MT	6.8
28	Kona, HI - Island of Hawaii	6.9
29	Muskegon, MI*	7.0
30	Pellston, MI*	7.1
31	Helena, MT	7.2
32	Inyokern, CA	7.3
33	Redmond, OR	7.5
34	Glacier Park International, MT	7.5
35	Billings, MT	7.5
36	Missoula, MT	7.6
37	Ashland, KY/Huntington, WV*	7.7
38	Kauai Island/Lihue, HI	7.7
39	Idaho Falls, ID	7.8
40	Reno, NV	8.0
41	Salt Lake City International	8.2

42	Rock Springs, WY	8.3
43	Ontario, CA	8.3
44	Oakland, CA	8.4
45	Islip, NY	8.4
46	El Paso, TX	8.4
47	Boise, ID	8.5
48	Tucson, AZ	8.5
49	Yakutat, AK	8.6
50	Albuquerque, NM	8.7
51	Fresno, CA	8.8
52	Cordova, AK	8.9
53	Sacramento, CA	8.9
54	Gillette, WY	8.9
55	Burbank, CA	9.1
56	Palm Springs, CA	9.2
57	San Jose, CA	9.2
58	Honolulu-International	9.3
59	Santa Barbara, CA	9.4
60	Orange County, CA	9.7
61	Grand Forks, ND	9.7
62	Eugene, OR	9.7
63	Fayetteville, NC*	9.8
64	Amarillo, TX	9.8
65	Yuma, AZ	9.9
66	Chicago-Midway	10.1
67	Midland/Odessa, TX	10.2
68	Phoenix-Sky Harbor	10.4
69	Spokane, WA	10.4
70	Dallas, TX - Love Field	10.4
71	Kahului, HI - Island of Maui,	10.5
72	Baltimore-Washington	10.5
73	Durango, CO	10.8
74	King Salmon, AK	10.8
75	Minot, ND	10.9
76	Fairbanks, AK	10.9
77	La Palmdale Regional, CA	10.9
78	San Diego-Lindbergh Field	11.0
79	Rockford, IL*	11.1
80	International Falls, MN	11.3
81	Denver International	11.3
82	Montrose, CO	11.3
83	Lubbock, TX	11.4
84	Bristol, VA	11.4
85	San Antonio, TX	11.4
86	Los Angeles International	11.4
87	Las Vegas-McCarran	11.5
88	Bismarck, ND	11.5
89	Tampa International	11.6
90	Carmel, CA	11.8
91	Flint, MI	11.8

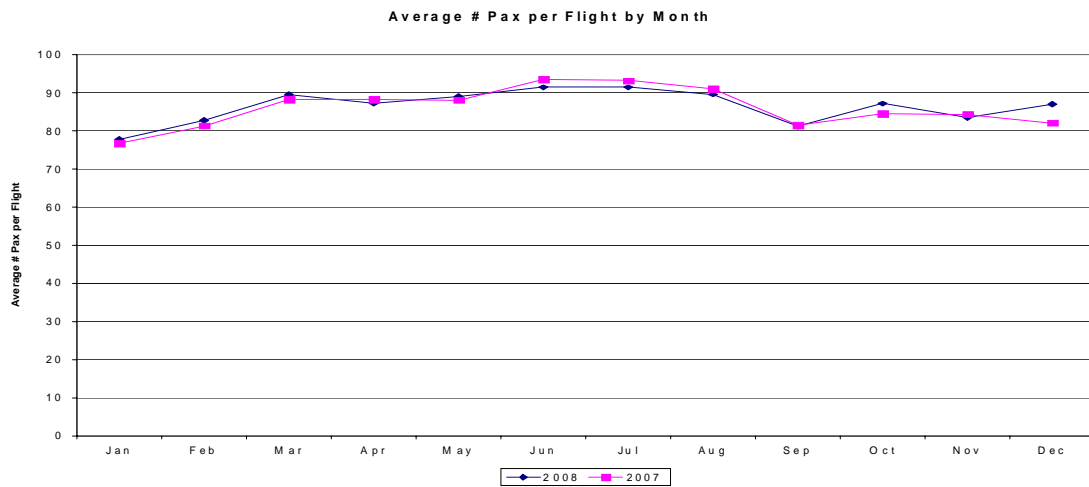
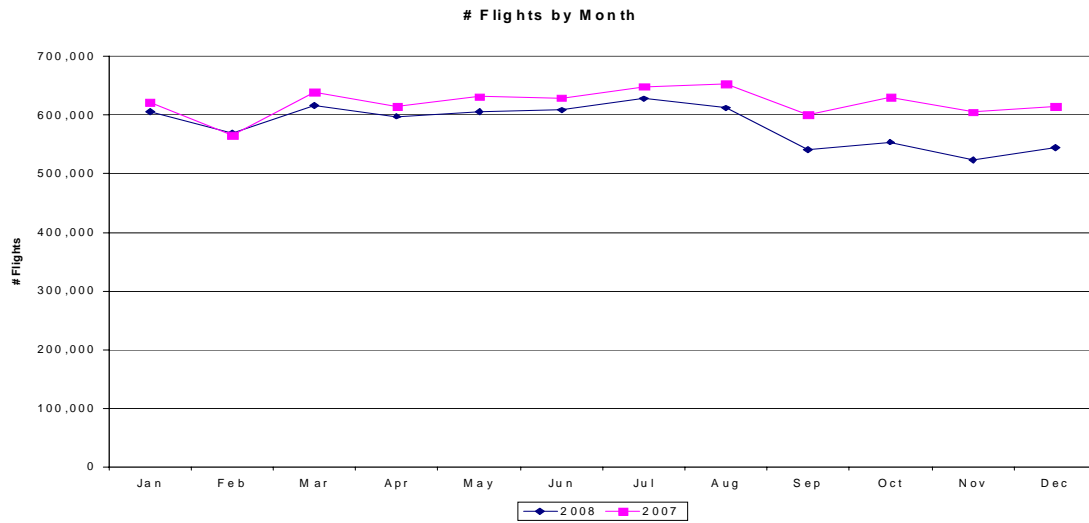
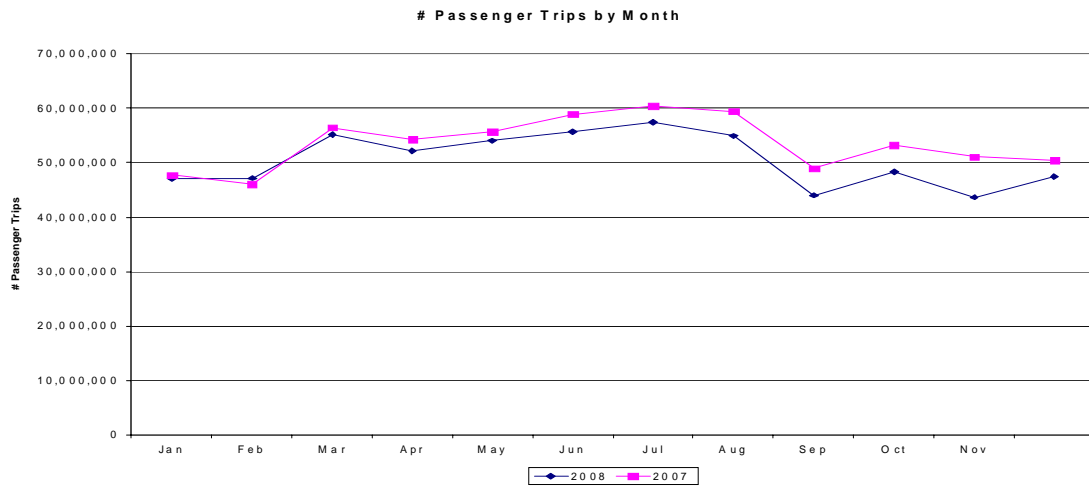
92	Orlando International	11.8
93	San Luis Obispo, CA	11.9
94	Redding, CA	11.9
95	Austin, TX	11.9
96	Bozeman, MT	12.0
97	Crescent City, CA	12.1
98	Prudhoe Bay/Deadhorse, AK	12.1
99	Nashville, TN	12.4
100	Hampton, VA	12.4
101	Tulsa, OK	12.5
102	Rapid City, SD	12.5
103	Long Beach, CA	12.6
104	Kansas City, MO	12.6
105	Portland International	12.6
106	Birmingham, AL	12.7
107	Medford, OR	12.8
108	Modesto, CA	12.9
109	Oklahoma City, OK	13.0
110	Roswell, NM*	13.0
111	Colorado Springs, CO	13.0
112	Louisville, KY	13.1
113	Fort Lauderdale-Hollywood	13.3
114	Charleston, WV	13.3
115	Chico, CA	13.4
116	Fort Myers, FL	13.6
117	Seattle-Tacoma	13.6
118	Fort Walton Beach, FL	13.6
119	St Louis-Lambert	13.7
120	Duluth, MN	14.0
121	Barrow, AK	14.0
122	Bethel, AK	14.1
123	Newburgh/Stewart Field, NY	14.1
124	Knoxville, TN	14.1
125	Alexandria, LA	14.2
126	Gray Aaf, TX	14.3
127	New Orleans, LA	14.3
128	Klamath Falls, OR*	14.3
129	Little Rock, AR	14.4
130	Melbourne, FL	14.4
131	Jacksonville, FL	14.6
132	Beaumont/Port Arthur, TX	14.7
133	Omaha, NE	14.7
134	Indianapolis, IN	14.7
135	Manchester, NH	14.7
136	Evansville, IN	14.7
137	Myrtle Beach, SC	15.0
138	Huntsville, AL	15.0
139	Wichita Falls, TX*	15.1
140	Providence, RI	15.2
141	Houston - Hobby Int'l	15.2

142	Jackson, MS	15.2
143	Pittsburg International	15.2
144	Hartford, CT	15.3
145	Fargo, ND	15.3
146	Henry E Rohlsen, VI	15.3
147	Corpus Christi, TX	15.4
148	West Palm Beach, FL	15.4
149	Elmira, NY	15.4
150	Arcata, CA	15.5
151	Cleveland-Hopkins	15.6
152	Borinquen, PR	15.7
153	Lincoln, NE	15.7
	Fayetteville, AR - Northwest Arkansas	
154	Regional	15.7
155	Minneapolis-St Paul	15.8
156	State College/University Park, PA	15.9
157	Atlanta-Hartsfield-Jackson	15.9
158	San Francisco International	16.0
159	Cincinnati-Northern Kentucky	16.0
160	Hayden, CO	16.1
161	Waco, TX*	16.1
162	Anchorage, AK	16.2
163	Adak Island, AK	16.2
164	Sioux Falls, SD	16.3
165	Sarasota, FL	16.4
166	Biloxi/Gulfport, MS	16.4
167	Kotzebue, AK	16.5
168	Durham, NC	16.7
169	Tallahassee, FL	16.7
170	Albany, NY*	16.8
171	Detroit-Metropolitan Wayne	16.9
172	Jackson Hole, WY	17.0
173	Memphis International	17.2
174	Mobile, AL	17.3
175	Washington-National	17.4
176	Houston-George Bush	17.5
177	Montgomery, AL	17.6
178	Charlotte-Midway	17.7
179	Norfolk, VA	17.7
180	Abilene, TX	17.7
181	Mcallen, TX	17.7
182	Sioux City, IA*	17.8
183	San Juan, Puerto Rico	17.9
184	Augusta, GA	17.9
185	Panama City, FL	18.0
186	Cyril E King, VI	18.0
187	Monroe, LA	18.1
188	Juneau, AK	18.1
189	Twin Falls, ID	18.1
190	Lexington, KY	18.1

191	Ponce, Puerto Rico	18.2
192	Butte, MT	18.2
193	Daytona Beach, FL	18.2
194	Columbus, OH	18.2
195	Philadelphia International	18.3
196	Nome, AK	18.5
197	Dayton, OH	18.6
198	Richmond, VA	18.6
199	Wichita, KS	18.7
200	Flagstaff, AZ	18.9
201	Buffalo, NY	19.1
202	Springfield, MO	19.1
203	Greenville/Spartanburg, SC	19.1
204	Shreveport, LA	19.1
205	Moline, IL	19.2
206	Chattanooga, TN	19.2
207	Akron/Canton, OH	19.4
208	Miami International	19.6
209	North Bend, OR	19.7
210	Milwaukee, WI	19.7
211	Lansing, MI	20.0
212	College Station, TX	20.0
213	Charleston, SC	20.3
214	Pensacola, FL	20.3
215	Grand Rapids, MI	20.3
216	Westchester County, NY	20.4
217	Bay City, MI	20.6
218	La Crosse, WI	20.6
219	Kodiak, AK	20.7
220	Vail, CO - Eagle County Airport	20.8
221	Ketchikan, AK	20.9
222	Roanoke, VA	20.9
223	Greensboro, NC	21.1
224	Harrisburg, PA	21.2
225	Harlingen, TX	21.3
226	Gladewater/Kilgore, TX*	21.4
227	Brownsville, TX	21.5
228	Wilmington, NC	21.6
229	Boston-Logan	21.7
230	Lake Charles, LA	21.7
231	Green Bay, WI	21.8
232	Traverse City, MI	21.8
233	Hailey, ID	22.0
234	Washington-Dulles	22.0
235	Asheville, NC	22.1
236	Macon, GA*	22.2
237	Rochester, NY	22.3
238	Peoria, IL	22.6
239	Allentown, PA	22.6
240	Stevens Point/Wausau, WI	22.6

241	Fort Wayne, IN	22.7
242	Savannah, GA	22.9
243	Wrangell, AK	23.0
244	Des Moines, IA	23.1
245	Burlington, VT	23.2
246	Dallas-Ft Worth	23.2
247	Syracuse, NY	23.5
248	Gunnison, CO	23.7
249	Madison, WI	23.8
250	Baton Rouge, LA	23.8
251	Petersburg, AK	23.8
252	Bangor, ME	24.0
253	Rochester, MN	24.0
254	Appleton, WI	24.5
255	Laredo, TX	24.9
256	Columbia, SC	25.0
257	Lafayette, LA	25.5
258	Sitka, AK	25.6
259	Fort Smith, AR	25.9
260	Cedar Rapids, IA	26.1
261	Binghamton, NY	26.3
262	Portland, ME	27.0
263	Erie, PA	27.1
264	Bloomington, IL	27.1
265	Springfield, IL	29.0
266	Chicago-O'Hare	29.0
267	Aspen, CO	29.4
268	South Bend, IN	29.5
269	New York-John F Kennedy	29.7
270	New York-La Guardia	30.0
271	Scranton, PA	30.6
272	Kalamazoo, MI	31.3
273	Newark International	32.1
274	Rhineland, WI,	35.1
275	Ithaca, NY*	39.6
276	Hancock, MI	45.4
277	Nantucket, MA*	58.0
278	Waterloo, IA	70.5
279	Telluride, CO*	91.4

Monthly Totals 2007 Figure 1

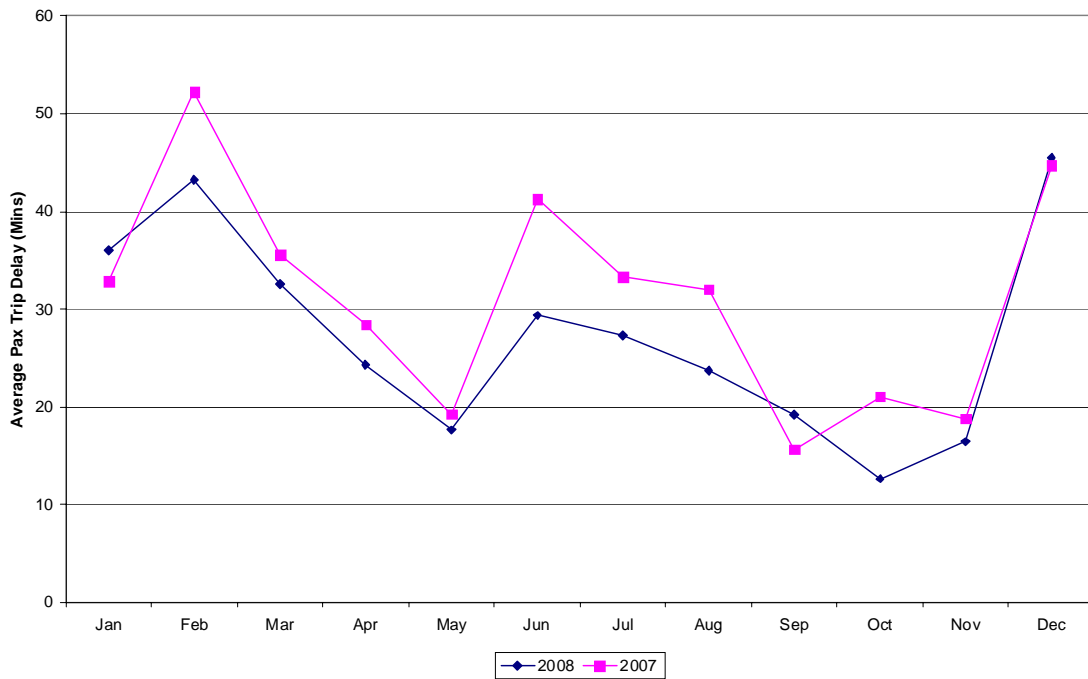


Monthly Totals 2007 Figure 1 cont/d

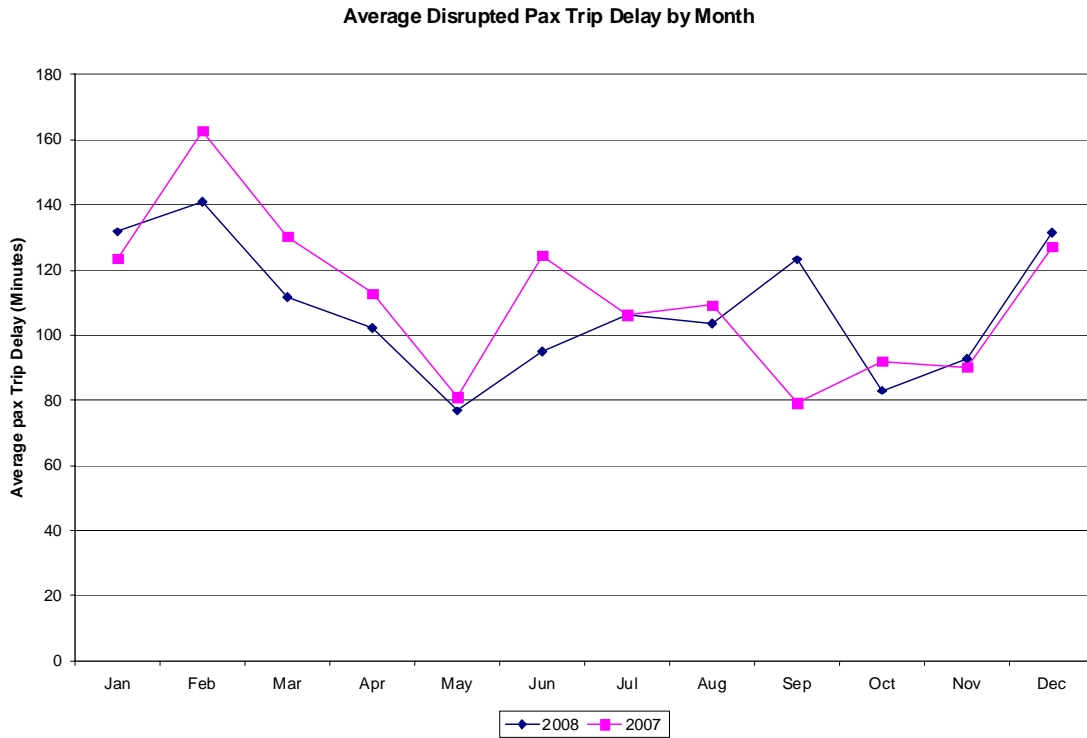
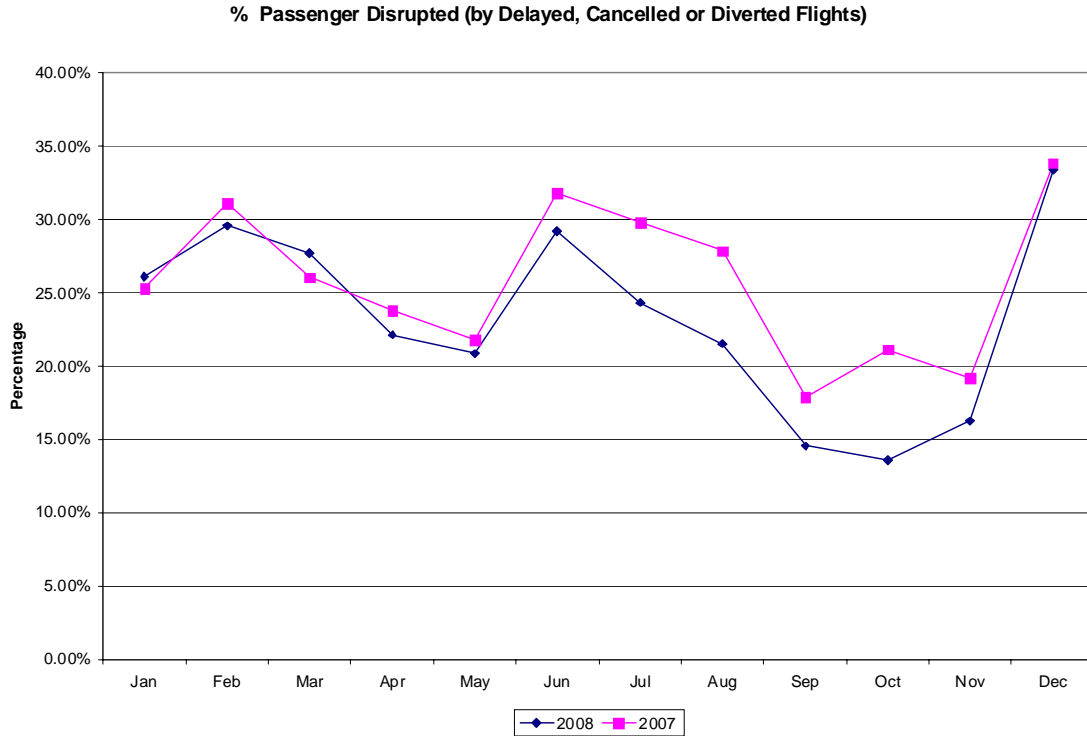
Total Monthly Pax Trip Delay (Hours)



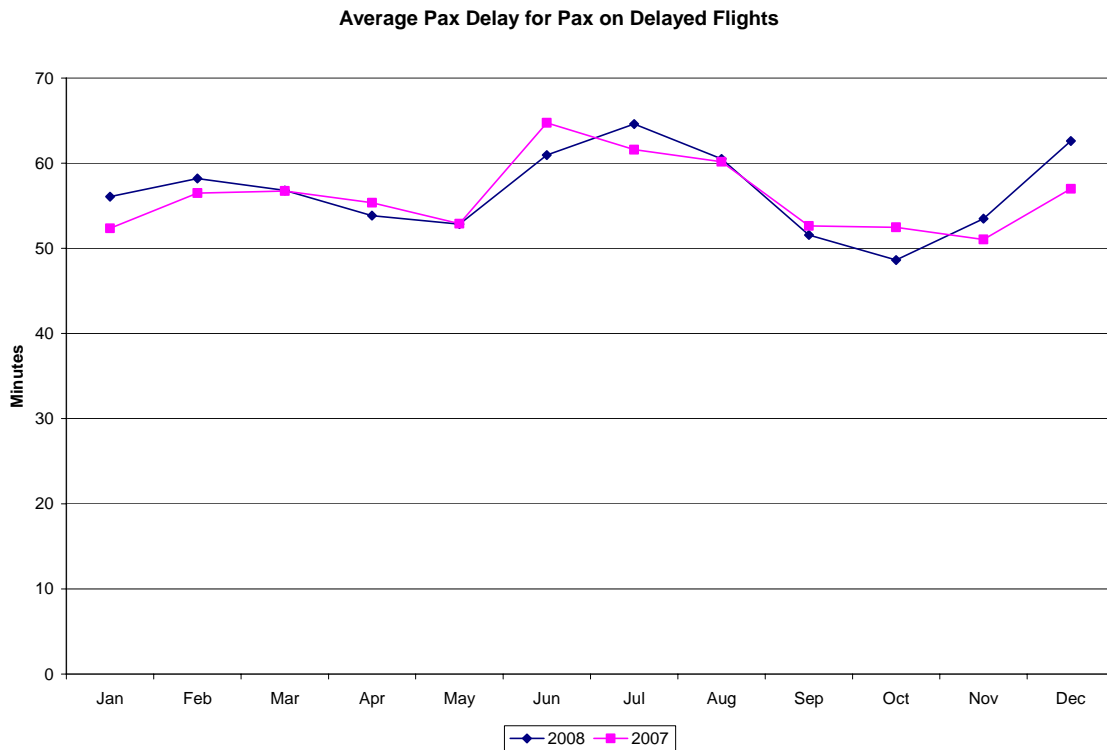
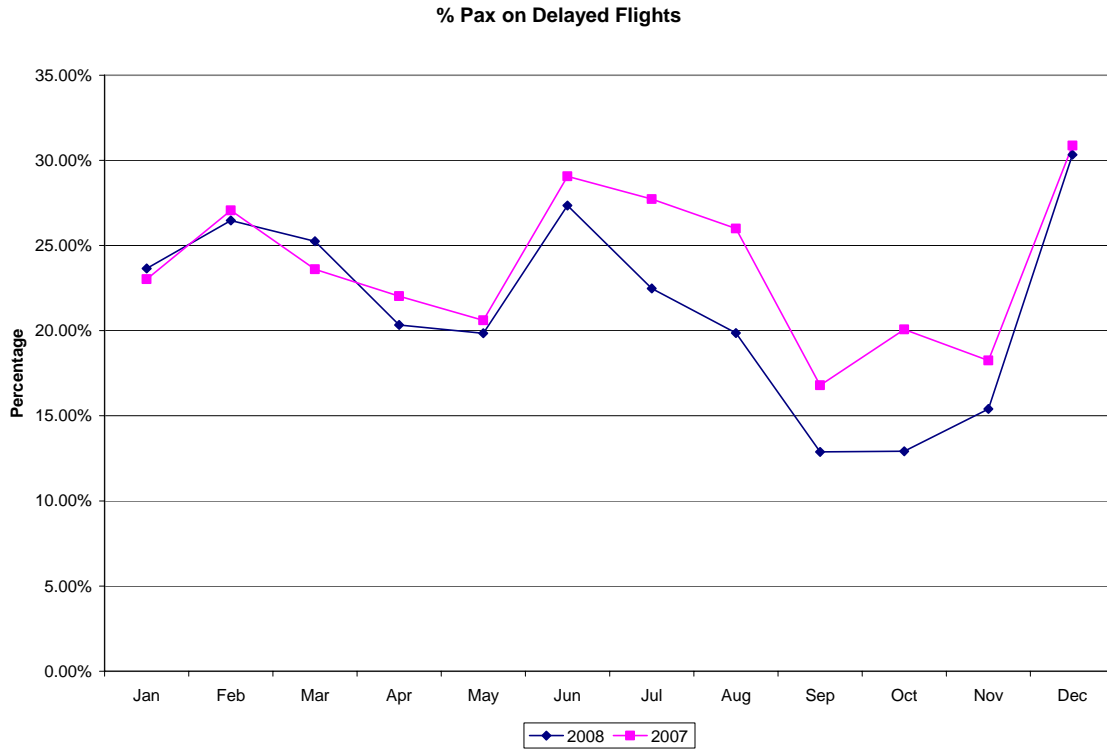
Average Monthly Pax Trip Delay (Mins)



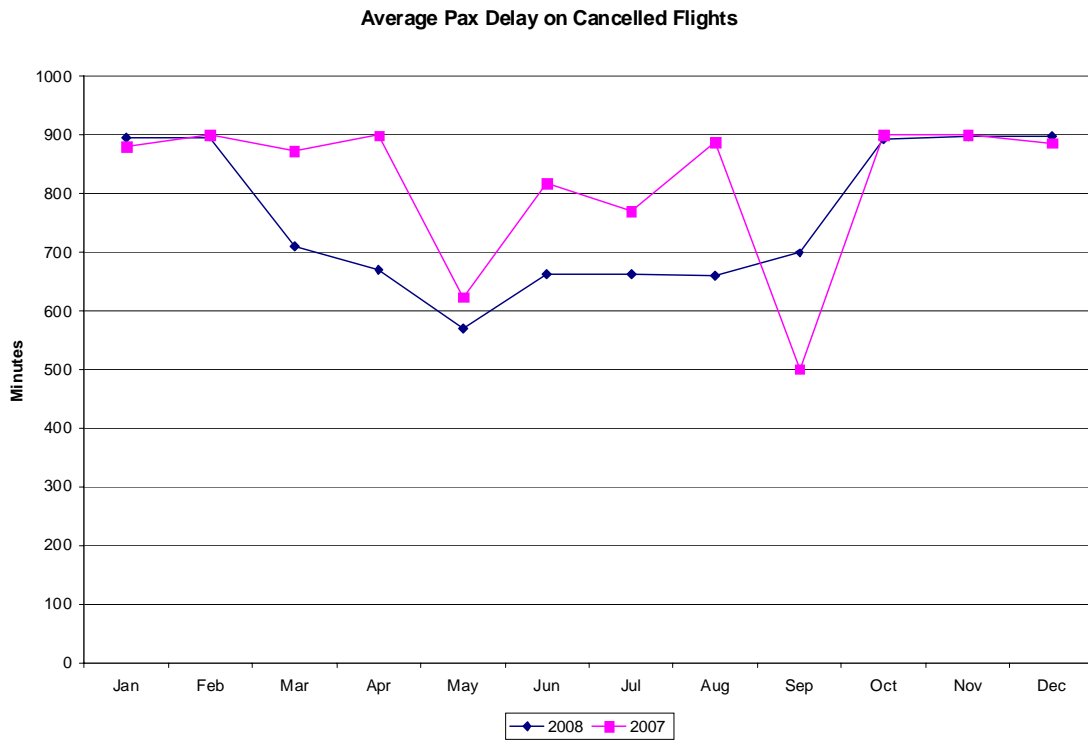
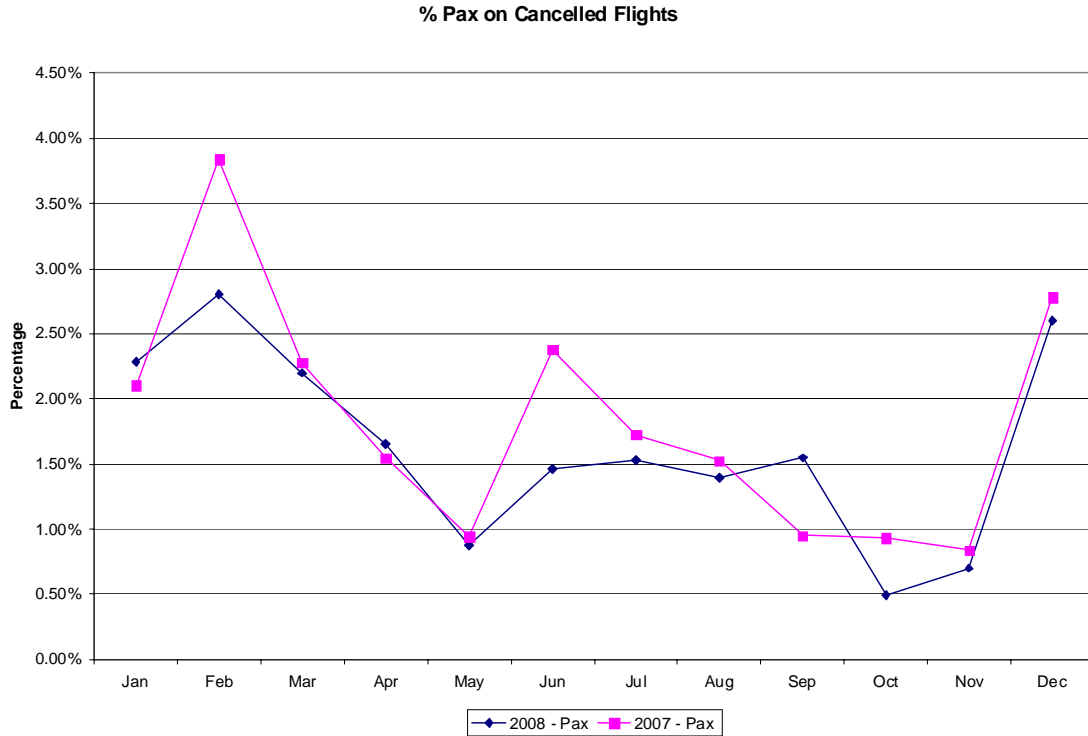
Monthly Average Passenger Trip Delay for Disrupted Passengers (Delayed, Cancelled, Diverted, Over-sold) Figure 2



Monthly Average Passenger Trip Delay for Disrupted Passengers on Delayed Flights Figure 3



Monthly Average Passenger Trip Delay for Disrupted Passengers on Cancelled Flights Figure 4



Notes on the Statistics and Sources of Data in this Report

All of the statistics reported in this document are Expected Values of Passenger Trip Delay. This parameter represents the “average” amount of trip delay “expected” by passengers on a large sample of flights in the presence of fixed probabilities for: on-time flights, delayed flights, cancelled flights, diverted flights, and oversold flights.

It should be noted that the average Passenger Trip Delay reported is: (i) drawn from asymmetrical statistical distributions with long right tails, and that (ii) the long right tails exhibit significant delay penalties. In the case of Passenger Trip Delays there are a growing number of “unlucky” passengers in the tails of the distribution that experience significant disruptions to their travel.

This report covers only “single-segment” flights. Passenger trip delays due to missed connections are not reported as the itineraries of connecting passengers are not readily available and cannot be accurately estimated. Research on passenger trip delays from missed connections has shown that missed-connections contributes less than 10% of the total passenger trip delays, and that passenger trip delays are relatively small. The small contribution of missed connections to passenger trip delays is a result of the process whereby only a small number of passengers have to be accommodated on each flight.

The statistics reported are estimates based on data provided the Bureau of Transportation Statistics (<http://www.bts.gov/>) and other secondary sources.

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- (2) Discrete Simulation Models of Airports (e.g. runways, taxiways, gates) and Airspace (e.g. departure/arrival procedures, NAS operations)
- (3) Discrete Simulation Models of Airport Terminals (i.e. passengers and baggage)
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